6581 Highway 6, Fergus, ON

Transportation Impact Assessment

Paradigm Transportation Solutions Limited

March 2025
230599

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Project Summary

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6581 Highway 6, Fergus, ON Transportation Impact Assessment

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Executive Summary

Content

Polocorp retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Assessment (6581 Highway 6, Fergus, in the Township of Centre Wellington, Ontario.

This TIS includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for an opening-year horizon (2030), five-year horizon from opening (2035), ten-year horizon from opening (2040),and assessment of traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The preliminary concept plan shows the subject development to have up to 661 residential units, being a mix of single detached houses, street townhouses, and stacked townhouses.

The concept plan shows one new municipal connection (Street F), approximately 400 metres to the north of Sideroad 18.

Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service and within capacity
- **Development Trip Generation:** The overall development at full build-out is forecast to generate 249 new trips in the AM peak hour and 310 new trips in the PM peak hour.
- **Background Traffic Operations:** As the traffic volumes increase at the study area intersections, capacity issues are identified at the following intersections:
  - Highway 6 and Sideroad 18/Street B;
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- **Total Traffic Operations:** The capacity deficiencies identified under background conditions would be further exacerbated with the addition of site generated traffic. Site generated traffic results in capacity deficiencies at the following intersections:

- Highway 6 and Sideroad 18/Street B;
- Highway 6/St. David Street and Sideroad 19;
- St. David Street and Gordon Street; and
- Highway 6 and Street F.

- Traffic control signals are not warranted for the unsignalized study area intersections.
- A southbound left-turn lane on Highway 6 at Street F is warranted with a minimum of 40 metres of storage.

Recommendations

Based on the findings of this study, it is recommended that the development be approved with the following improvements to the road network:

- Highway 6 and Street F
  - Southbound left-turn lane with minimum of 40 metres of storage.

It is further recommended that the Township of Centre Wellington and the Ministry of Transportation come to an agreement on either extending the connecting link, widening Highway 6/St. David Street in the study are, or the provision of Highway 6 by-pass of Fergus to reduce the through volumes in the community.

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1 Introduction

1.1 Overview

Polocorp retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Assessment (TIA) for a proposed mixed-use development located at 6581 Highway 6, Fergus, in the Township of Centre Wellington, Ontario. **Figure 1.1** shows the subject development location.

1.2 Purpose and Scope

The purpose of this study is to review the adequacy of the proposed parking supply to support the revised parking supply. The scope of the study, developed in consultation with Ministry of Transportation (MTO) staff via email in March 2024, includes:

- Documentation of current traffic and site conditions near the development;
- Estimation of the future background traffic growth in the area;
- Estimation of development site generated traffic;
- Assignment of the development traffic to the subject road network;
- Traffic forecasts for assumed full buildout (2030), five years from full buildout (2035), and ten years from full buildout (2040); and
- Identification of any operational or safety concerns and any mitigation measures that may be required to improve operations.

Appendix A contains the pre-study consultation with the MTO.

1.3 Study Area

The study area intersections include:

- Highway 6 and Nichol Road 15;
- Highway 6 and Sideroad 18
- Highway 6/St. David Street North and Sideroad 19;
- St. David Street North and Gordon Street; and
- One new municipal roadway connection to Highway 6.

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Location of Subject Site

6581 Highway 6, Fergus
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Figure 1.1

2 Existing Conditions

2.1 Roadways

The main roadway under the jurisdiction of the Ministry of Transportation (MTO)[1] near the subject site include:

- **Highway 6** is a north-south 2B-Arterial provincial highway with a two-lane rural cross-section. Highway 6 transitions to its connecting link (St. David Street) just south of the Sideroad 19 intersection. It has a posted speed limit of 60 km/h from Sideroad 19 northwards where it transitions to 80 km/h north of Sideroad 18.

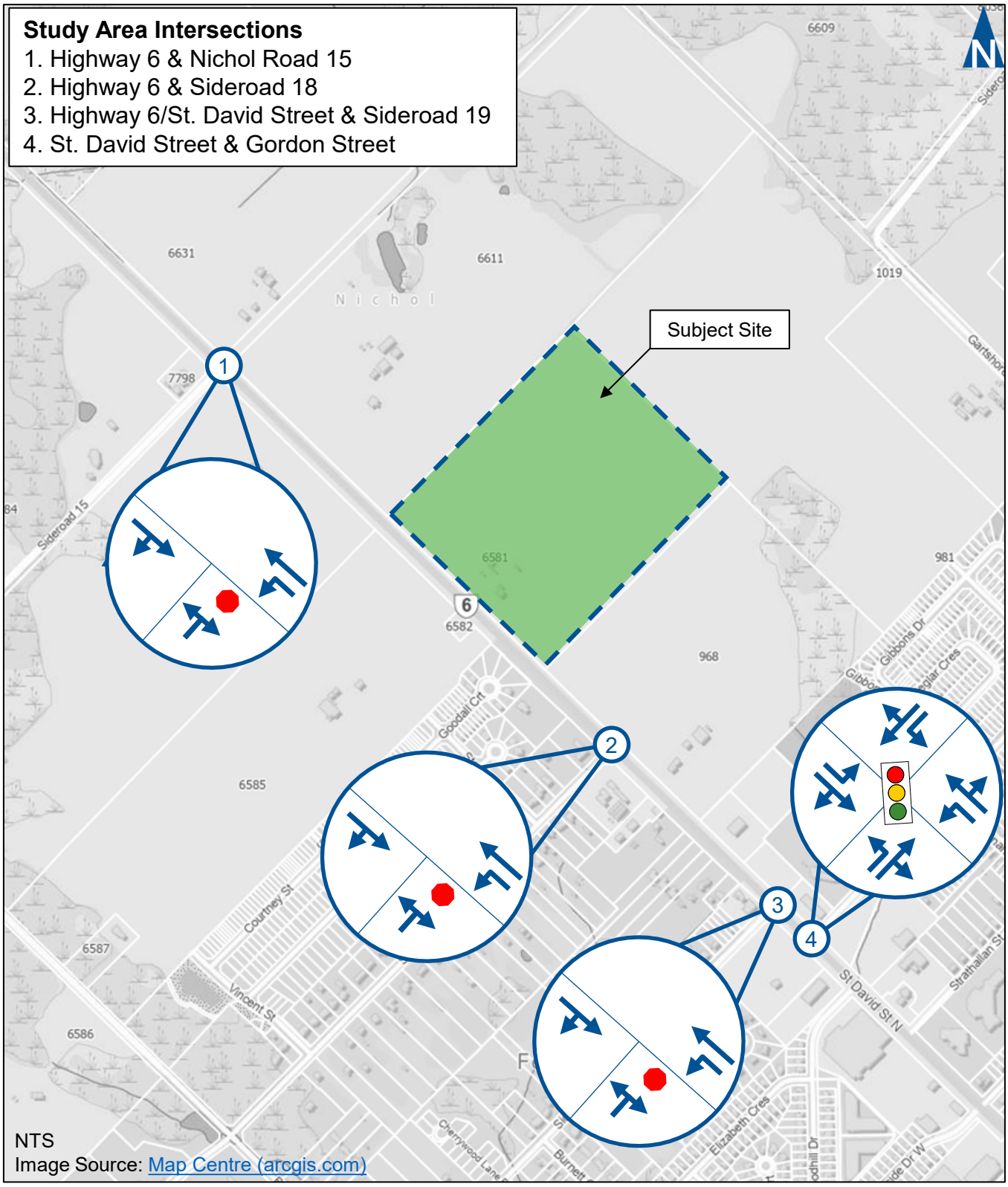
The main roadways under the jurisdiction of the Township of Centre Wellington[2] near the subject site include:

- **St. David Street North** is a north-south arterial roadway with a three-lane cross-section (one travel lane per direction and a two-way centre left-turn lane). It is the connecting link for Highway 6 within the north end of Fergus. It has a posted speed limit of 50 km/h;
- **Nichol Road 15** is an east-west collector roadway with a two-lane cross-section. It has a posted speed limit of 80 km/h;
- **Sideroad 18** is an east-west local roadway with a two-lane cross-section and posted speed limit of 40 km/h;
- **Sideroad 19** is an east-west local roadway with a two-lane cross-section and posted speed limit of 40 km/h; and
- **Gordon Street** is an east-west collector roadway with a two-lane cross-section and posted speed limit of 50 km/h.

Figure 2.1 illustrates the existing lane configuration and traffic control in the study area.

[1] Ontario Ministry of Transportation, *Highway Corridor Management Manual*, (Toronto: Queen's Printer for Ontario, September 2018), Figure 4.5.3: Access Management Classification – Southern Ontario.

[2] WSP, *Township of Centre Wellington Transportation Master Plan Final Report*, (WSP: Centre Wellington, January 2019), Figure 12: Principal Roadway Classification in Elora and Fergus.



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Existing Lane Configurations & Traffic Control

6581 Highway 6, Fergus
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Figure 2.1

2.2 Active Transportation

2.2.1 Pedestrian

St. David Street North have sidewalks on both sides of the roadway from Gordon Street southwards. There is a sidewalk in the west side of St. David Street between Gordon Street and Sideroad 19. A sidewalk on the southside of Sideroad 19 runs from St. David Street the length of the commercial plaza. Sideroad 18 has sidewalks on both side of the roadway from Highway 6 to Steele Street. Gordon Street has sidewalks on both sides of the roadway.

The signalized intersection of St. David Street North and Gordon Street has pedestrian crossing signals and pavement markings.

The subject site is noted to score a Walk Score[3] of 41 and is considered “Car-Dependent” which means that most errands require a car. Walk Score is an online tool that assigns a numerical walkability score between 0 and 100. Walk Score ranks communities nationwide based on how many businesses, parks, theatres, schools, and other common destinations are within walking distance.

2.2.2 Cycling

There are currently no on-road cycling facilities provided near the subject site. Travel by bicycle to/from the subject site is not restricted by any access-controlled roadways. Cyclists are permitted to ride on all roadways in the study area.

There are short-term bicycle parking spaces on site located close to the main entrances of the buildings.

The subject site is noted to score a cycle score of 38. This is considered “Somewhat Bikeable,” meaning that some bicycle infrastructure is available.

2.3 Transit

The Township of Centre Wellington does not currently provide a public transit service; however, the following public transit options are available in Fergus with the following:

- **County of Wellington Ride Well** – a county wide demand based public transit service available to all residents and visitors. It uses a rideshare model of operation to provide on-demand shared rides. The service operates Monday to Friday,

[3] www.walkscore.com/score/968-saint-david-st-n-fergus-on-canada

6:00 AM to 7:00 PM with bookings made from any address in Wellington County; and

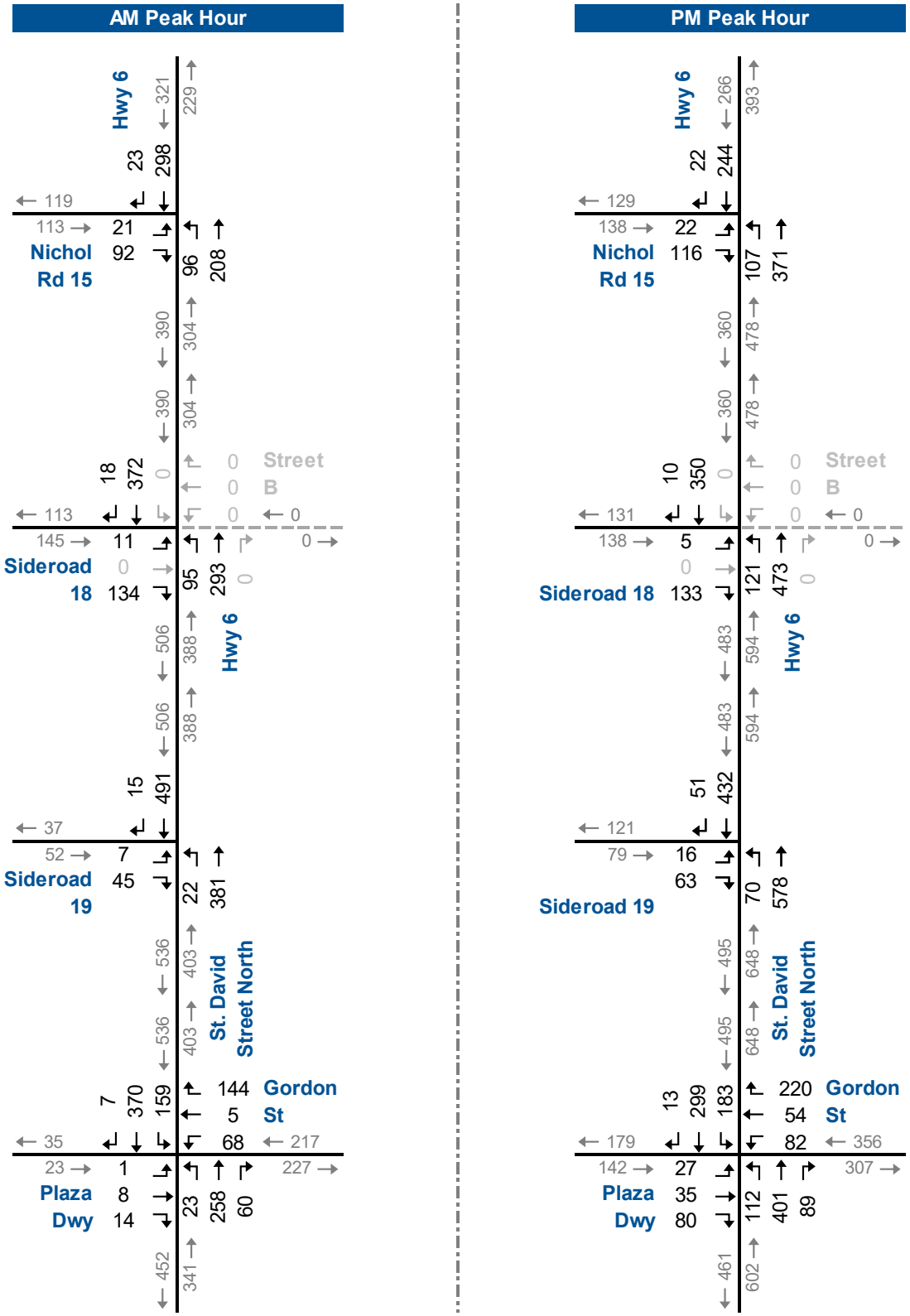
- **GOST (Guelph-Owen Sound Transit)** – a public transportation service connecting people from Owen Sound to Guelph and locations in between run by the City of Owen sound and Voyago. The service runs seven days a week with two trips southbound and two trips northbound. The only stop in Fergus is located at the Centre Wellington Community Sportsplex in the southeast end of the community.

2.4 Traffic Volumes

Turning movement counts were conducted at the study area intersections in February 2024.

Figure 2.2 illustrates the balanced base year weekday AM and PM peak hour traffic volumes.

Appendix B contains the observed traffic count and signal timing plans.



Base Year Traffic Volumes

6581 Highway 6, Fergus
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Figure 2.2

2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.0, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations of the study intersections were evaluated using the existing lane configurations, traffic controls and signal timing plans, and the base year traffic peak hour volumes.

The level of service conditions on the existing road network have been assessed using Synchro 11. Individual turning movements are considered critical when the volume/capacity ratio (v/c ratio) for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above.

Table 2.1 summarizes the existing intersection operations. The entries in the table indicating the AM and PM peak hour level of service (LOS), volume to capacity ratios (V/C), and 95th percentile queues experienced.

The study area intersections are currently operating at acceptable levels of service with no specific problem movements.

Appendix C contains the detailed Synchro reports.

TABLE 2.1: BASE YEAR OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	B		>	**B**					A	A	>	**A**		A	>	**A**	**A**
			Delay	13		>	**13**					8	0	>	**3**		0	>	**0**	**3**
			V/C	0.21		>						0.09	0.13	>			0.21	>		
			Q	6		>						2	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						113	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	B		>	**B**					A	A		**A**		A	>	**A**	**A**
			Delay	14		>	**14**					9	0		**2**		0	>	**0**	**3**
			V/C	0.27		>						0.09	0.19				0.25	>		
			Q	9		>						3	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						108	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	B		>	**B**					A	A		**A**		A	>	**A**	**A**
			Delay	14		>	**14**					9	0		**1**		0	>	**0**	**1**
			V/C	0.12		>						0.03	0.24				0.32	>		
			Q	3		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	**B**	B	B	>	**B**	A	B	>	**B**	A	B	>	**B**	**B**
			Delay	17	17	>	**17**	20	18	>	**18**	6	13	>	**13**	6	13	>	**11**	**13**
			V/C	0.01	0.05	>		0.39	0.14	>		0.05	0.53	>		0.31	0.59	>		**0.50**
			Q	1	6	>		18	14	>		3	46	>		13	56	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	19	-	>		7	-	>		17	-	>		12	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	B		>	**B**					A	A	>	**A**		A	>	**A**	**A**
			Delay	13		>	**13**					8	0	>	**3**		0	>	**0**	**3**
			V/C	0.25		>						0.09	0.24	>			0.17	>		
			Q	7		>						2	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						113	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	B		>	**B**					A	A		**A**		A	>	**A**	**A**
			Delay	13		>	**13**					9	0		**2**		0	>	**0**	**3**
			V/C	0.25		>						0.11	0.30				0.23	>		
			Q	8		>						3	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						108	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	**C**					A	A		**A**		A	>	**A**	**A**
			Delay	18		>	**18**					9	0		**1**		0	>	**0**	**2**
			V/C	0.24		>						0.08	0.37				0.31	>		
			Q	7		>						2	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						18	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	**B**	C	C	>	**C**	A	B	>	**B**	A	B	>	**B**	**B**
			Delay	20	20	>	**20**	21	21	>	**21**	7	18	>	**16**	8	13	>	**11**	**16**
			V/C	0.21	0.18	>		0.41	0.35	>		0.20	0.71	>		0.46	0.45	>		**0.60**
			Q	10	16	>		22	26	>		11	86	>		18	50	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	10	-	>		3	-	>		9	-	>		7	-	>		

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

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

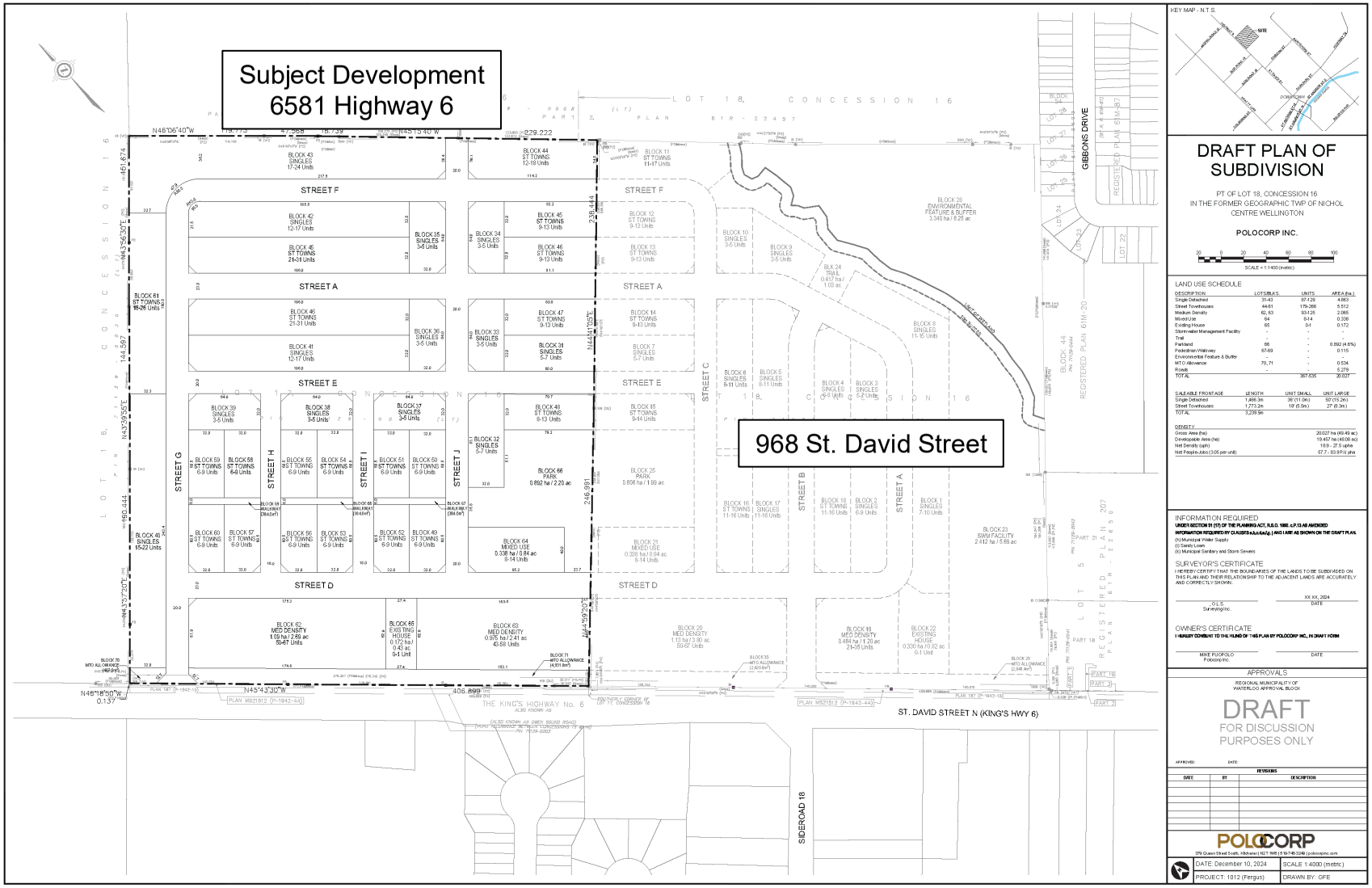
< / > - Shared Turn Lane

3 Development Description

The preliminary concept plan shows the subject development to have up to 661 residential units, being a mix of single detached houses, street townhouses, and stacked townhouses.

The concept plan shows one new municipal connection (Street F), to Highway 6 approximately 400 metre north of Sideroad 18. The plan also connects to the adjacent development to the south (968 St. David Street), which connects to Highway 6, opposite of Sideroad 18.

Figure 3.1 illustrates the concept plan



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Draft Plan of Subdivision

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Figure 3.1

3.1 Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*[4] provides rates and equations used to estimate the peak hour traffic volumes generated by the development. The following Land Use Codes (LUC) were used:

- 210 – Single-Family, Detached Homes (dwelling Units);
- 215 – Single-Family, Attached Housing (dwelling units); and
- 220 – Multi-Family Housing, Low-Rise (dwelling units).

Table 3.1 summarizes the estimated trip generation. It is forecast that the subject development will generate approximately 249 and 310 new trips during the AM and PM peak hours.

TABLE 3.1: TRIP GENERATION FORECASTS

ITE Land Use	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
210 - Single Family, Detached Housing (Dwelling Units)	109	20	61	81	68	40	108
215 - Single Family, Attached Housing (Dwelling Units)	256	32	95	127	88	62	150
220 - Multifamily Housing, Low-Rise (Dwelling Units)	296	10	31	41	33	19	52
Net New Trips		**62**	**187**	**249**	**189**	**121**	**310**

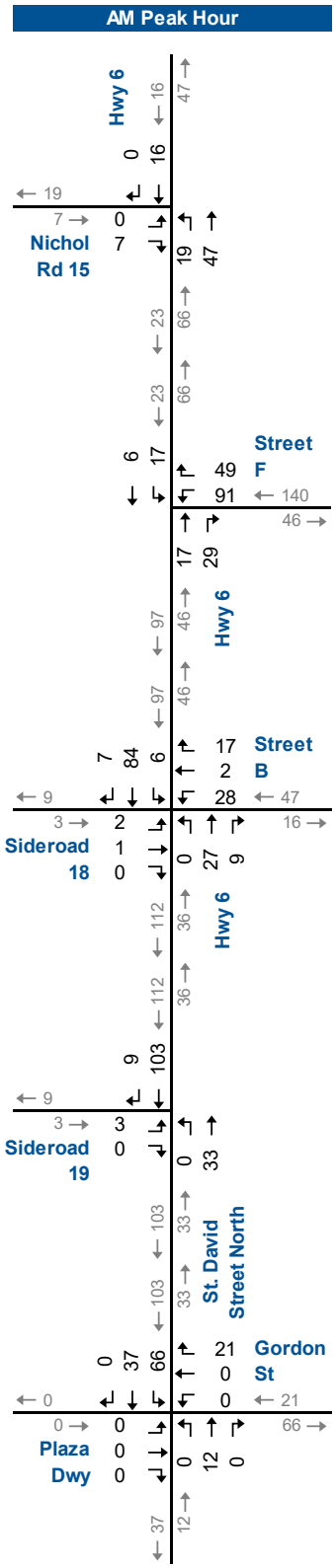
The estimated site generated trips were distributed and assigned to the road network based on the observed traffic volumes entering and exiting the study area. **Table 3.2** summarizes the trip distribution.

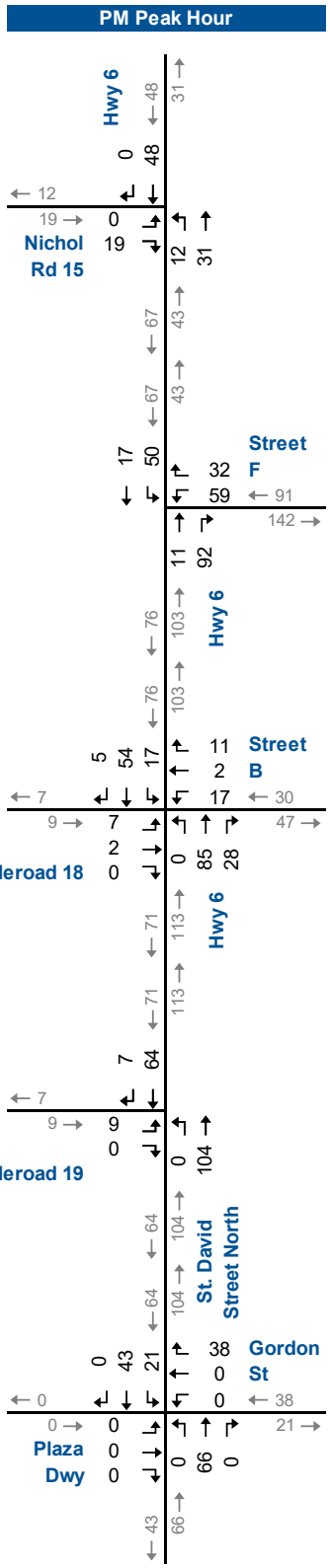
TABLE 3.2: TRIP DISTRIBUTION

Direction	Route	AM Peak Hour	PM Peak Hour
North	Highway 6	25%	25%
West	Nichol Road 15	10%	10%
	Sideroad 18	5%	5%
	Sideroad 19	5%	5%
South	St. David Street	20%	35%
East	Gordon Street	35%	20%
Total		**100%**	**100%**

Figure 3.2 illustrates the site generated trip assignment for the AM and PM peak hours.

[4] Institute of Transportation Engineers, *Trip Generation Manual,* 11th ed., (Washington, DC: ITE, 2021).





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Site Generated Traffic Volumes

6581 Highway 6, Fergus
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Figure 3.2

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions contained in this section includes estimates of future background and total traffic volumes and analyses for the assumed full buildout year (2030) horizon, five years from full buildout (2035), and ten years from full buildout (2040) horizons. The future traffic volumes near the development will consist of increased non-site traffic volumes (background traffic), traffic generated by other developments, and the traffic forecast to be generated by the proposed development.

4.1 Future Traffic Forecasts

4.1.1 Background Growth

The non-site traffic increase is the generalized traffic growth on the study area road network. In pre-study consultation, the MTO staff confirmed a growth rate of 1.0% per annum, which was applied to the base year traffic volumes to the forecast horizon years.

4.1.2 Other Area Developments

Traffic generated from the following nearby developments have been included in the future background traffic forecasts:

- 950-961 St. David Street North[5], a mixed-use development consisting of 13,500 sq. ft. retail use and 112 townhouse units;
- 960 St. David Street North[6], a residential development consisting of 13 single detached homes and 37 townhomes;
- Centre Wellington Operations Centre[7], a new multi-department operations centre at 965 Gartshore Street;
- Dickson Drive Industrial Lands, a 360,000 sq. ft. business park. The site traffic for this development was taken from the Centre Wellington Operations Centre traffic study;
- 820 St. David Street North[8], a five-storey mixed-use development with residential units and commercial ground floor units; and

[5] Paradigm Transportation Solutions Limited, *950-960 St. David Street North Transportation Impact Study*, (PTSL: Reid Heritage Homes, May 2022).
[6] Paradigm Transportation Solutions Limited, *961 St. David Street North Transportation Study,* (PTSL: RE/MAX, April 2021).
[7] R.J. Burnside & Associates Limited, *Centre Wellington Operations Centre Transportation Study (Final Revised)*, (RJB: Centre Wellington, November 2022).
[8] Trans-Plan Transportation Engineering, *Transportation Study Proposed Mixed Use Development 820 Saint David Street North*, (TPTE: Harper Dell, October 2020).

- 935 St. David Street North, a five-storey mixed-use development with residential units and daycare on ground floor. Traffic generated from this development was derived from ITE trip rates and the study distribution shown in **Section 3.2**; and
- 968 St. David Street North[9], a mixed-use community with approximately 308 residential units (single family and townhomes) and small commercial land uses. This development is directly adjacent to the subject development and shares internal street connections.

Appendix D contains the background development trip assignments.

4.1.3 Future Background Traffic Volumes

The future background traffic volumes include the non-site generated traffic growth and the traffic from the other nearby developments.

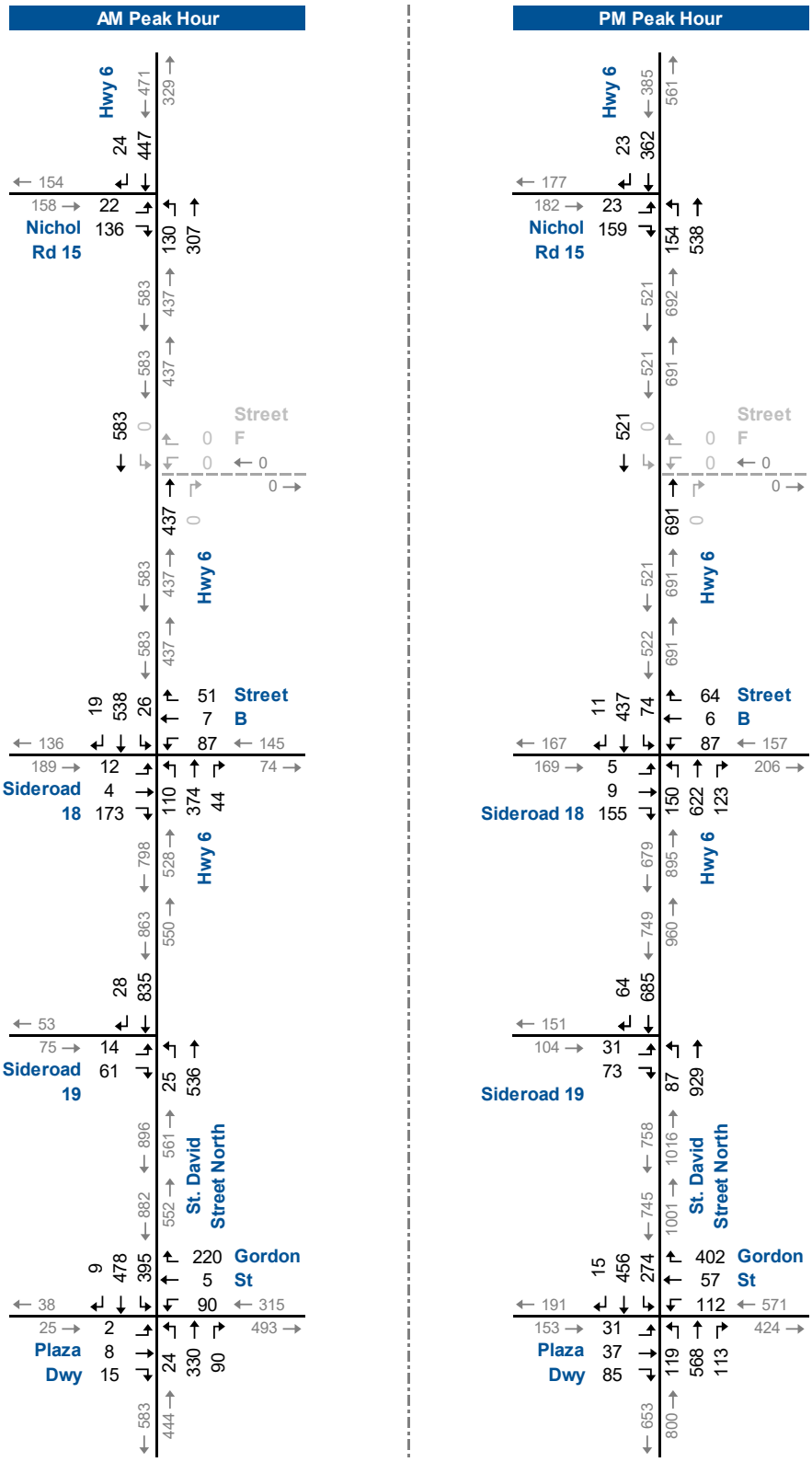
Figure 4.1 illustrates the 2030 future background traffic volumes for the AM and PM peak hours. **Figure 4.2** illustrates the 2035 future background traffic volumes for the AM and PM peak hours. **Figure 4.3** illustrates the 2040 future background traffic volumes for the AM and PM peak hours.

4.1.4 Future Total Traffic Volumes

The future total traffic volumes include the future background traffic volumes plus the site generated traffic volumes.

Figure 4.4 illustrates the 2030 total background traffic volumes for the AM and PM peak hours. **Figure 4.5** illustrates the 2035 future total traffic volumes for the AM and PM peak hours. **Figure 4.6** illustrates the 2040 future total traffic volumes for the AM and PM peak hours.

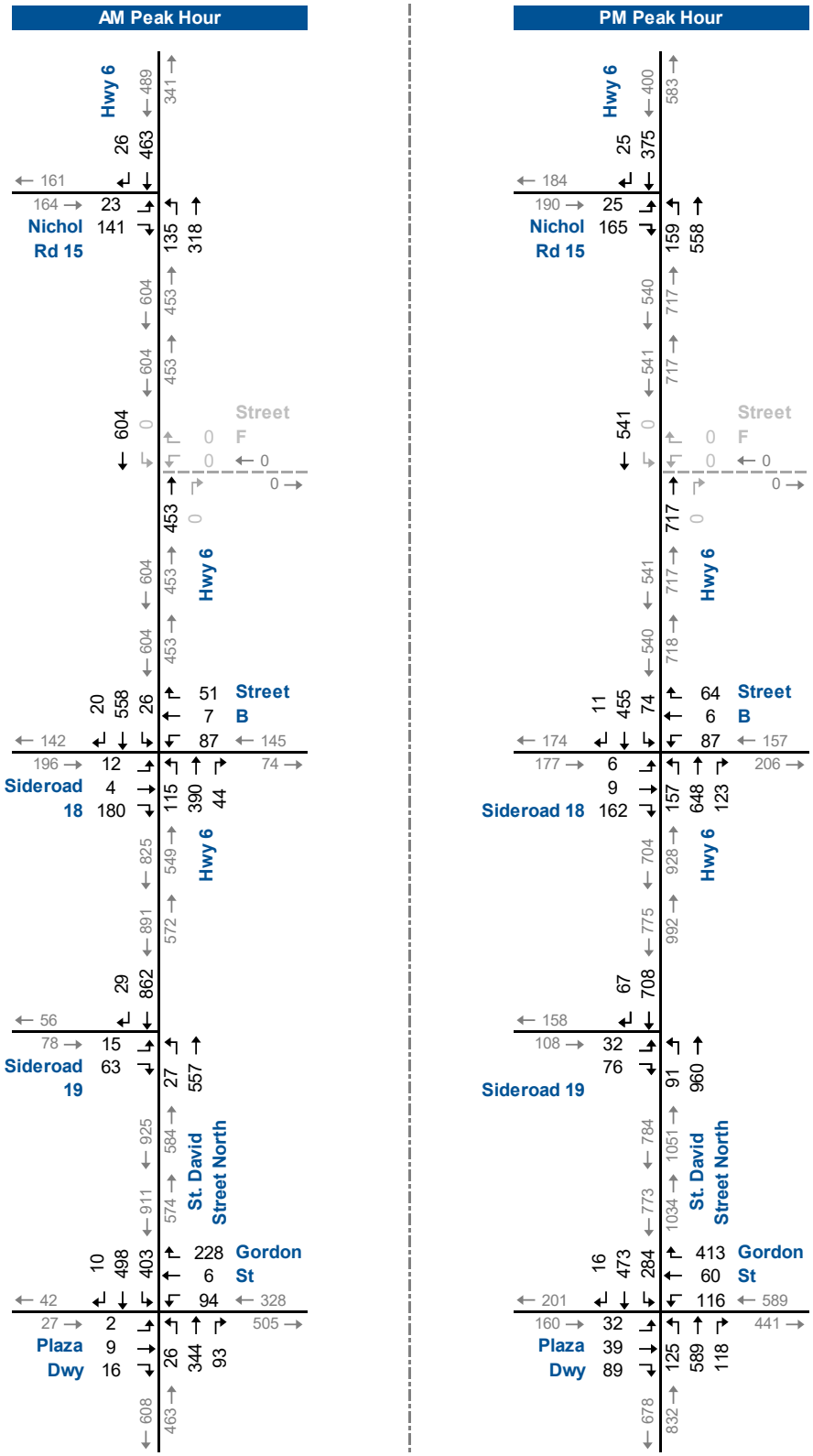
[9] Paradigm Transportation Solutions Limited, *968 St. David Street North, Fergus, ON Transportation Impact Assessment*, (PTSL: Polocorp, February 2025).



2030 Future Background Traffic Volumes

6581 Highway 6, Fergus
230599

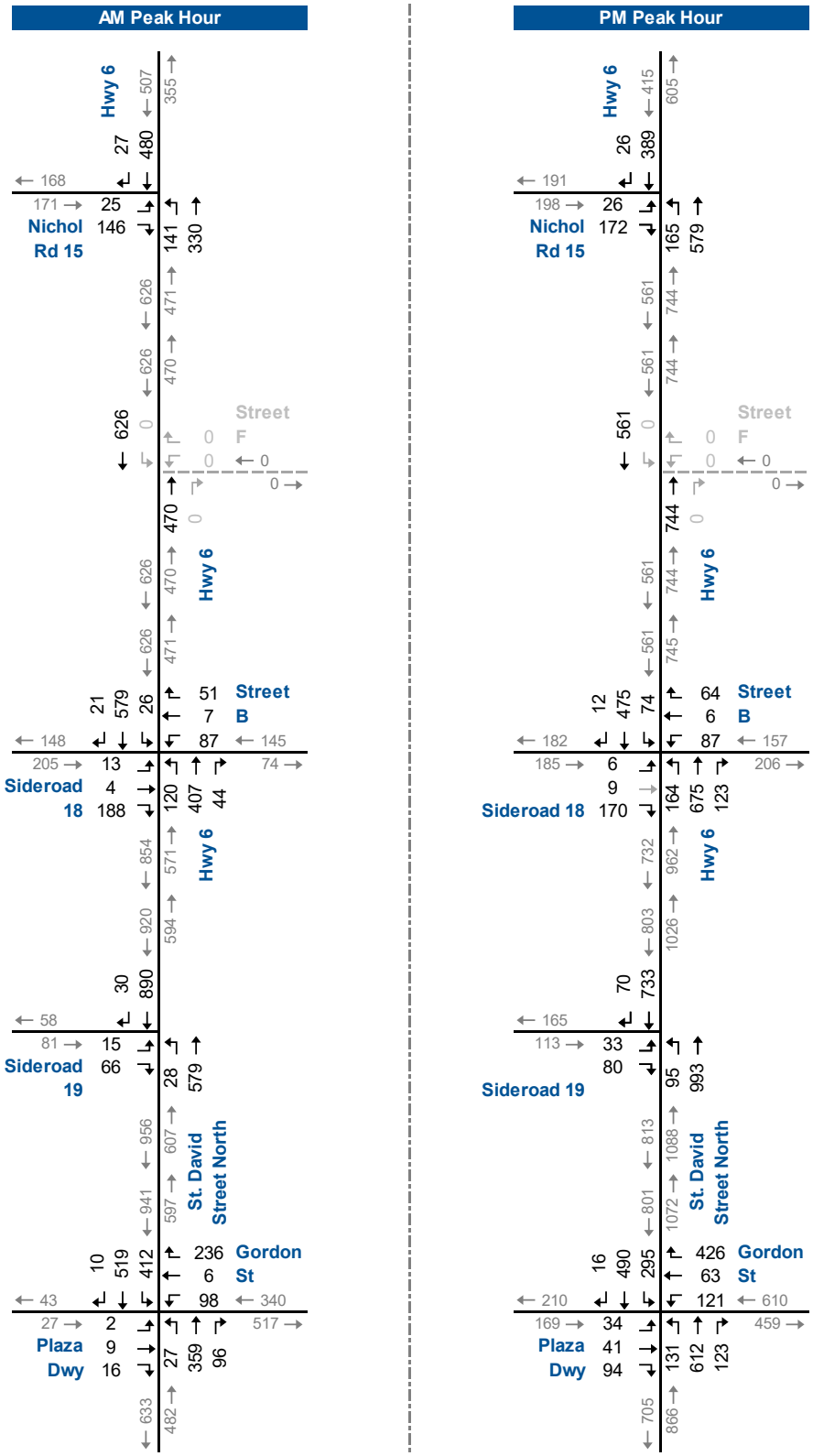
Figure 4.1



2035 Future Background Traffic Volumes

6581 Highway 6, Fergus
230599

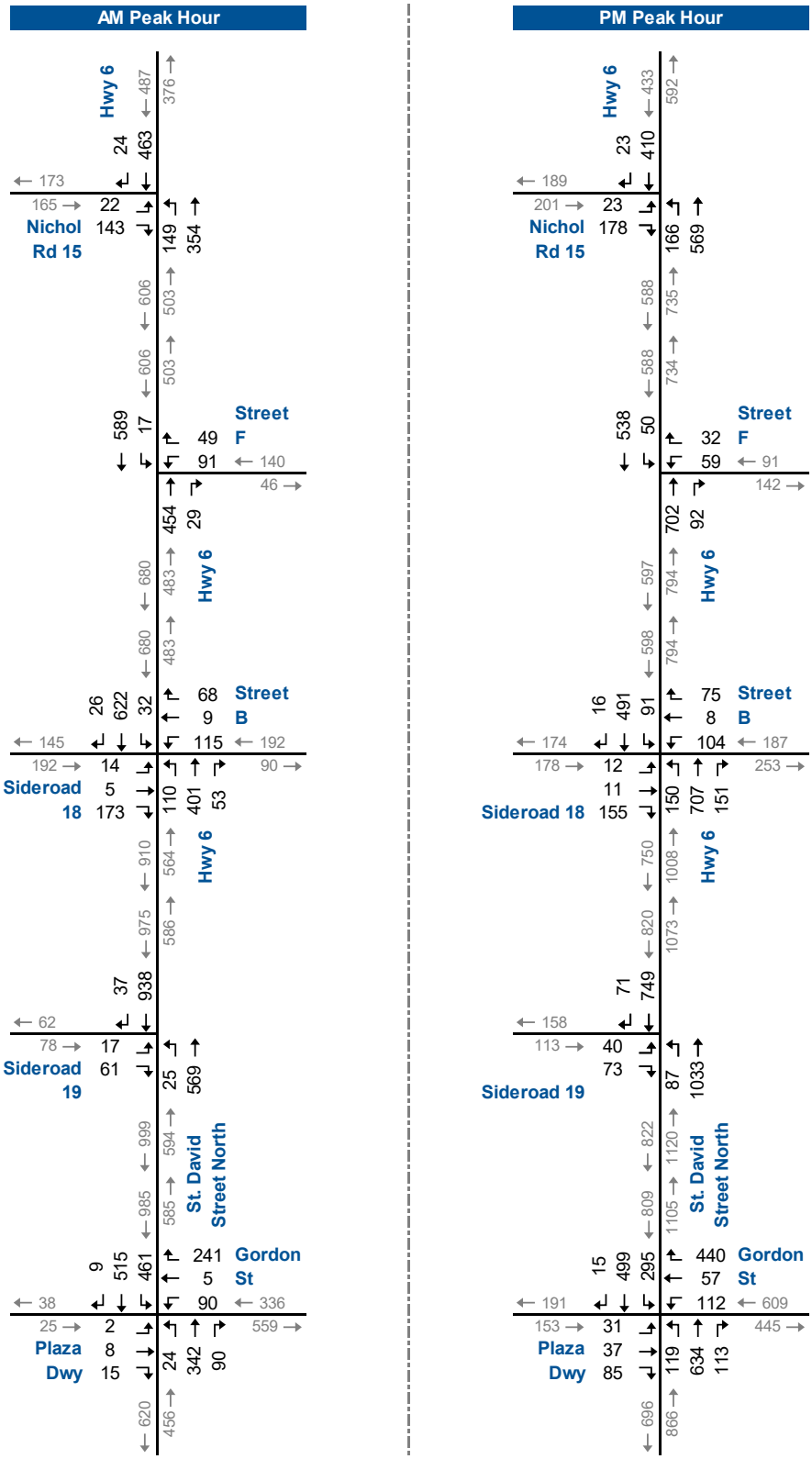
Figure 4.2



2040 Future Background Traffic Volumes

6581 Highway 6, Fergus
230599

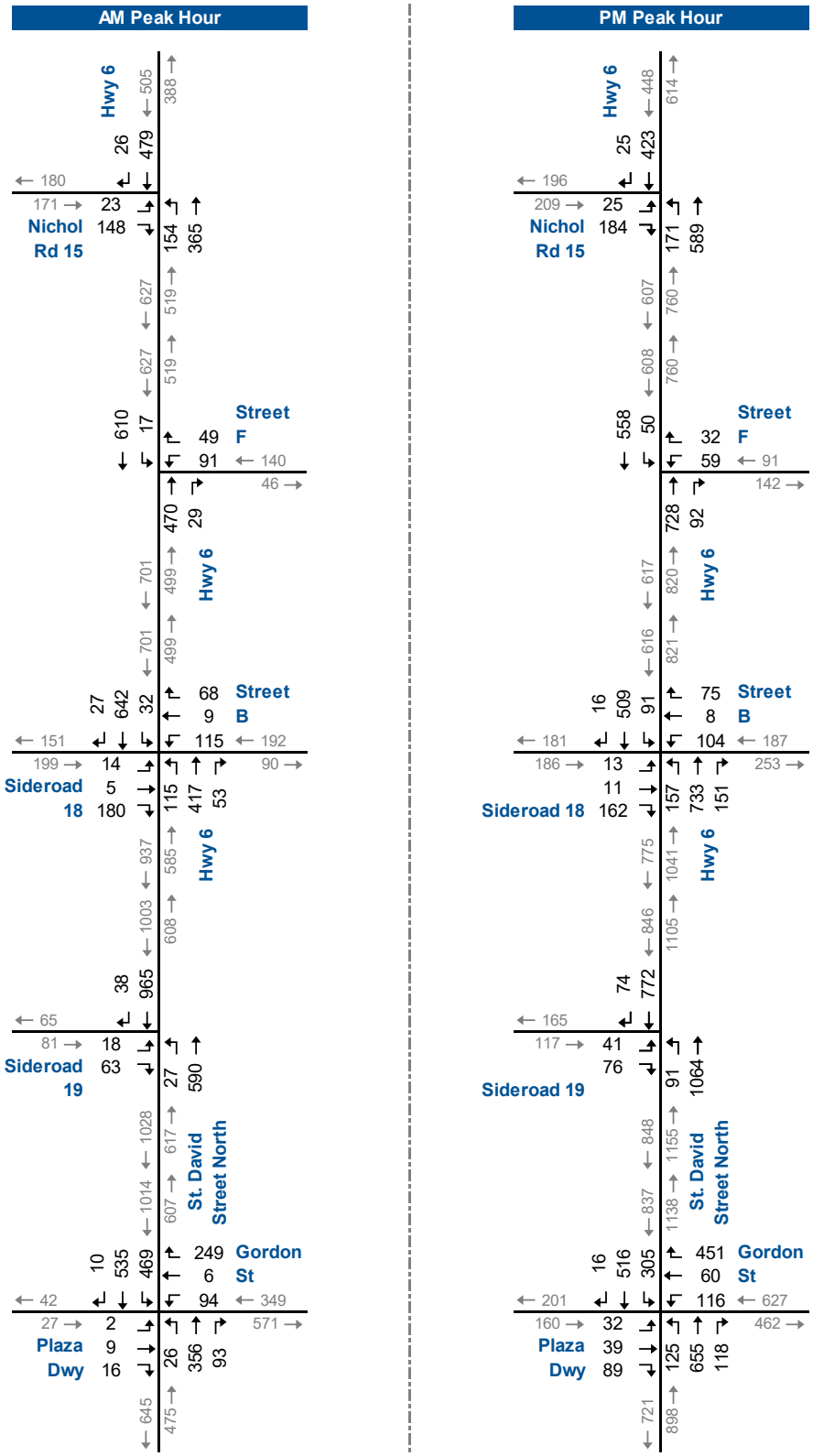
Figure 4.3



2030 Future Total Traffic Volumes

6581 Highway 6, Fergus
230599

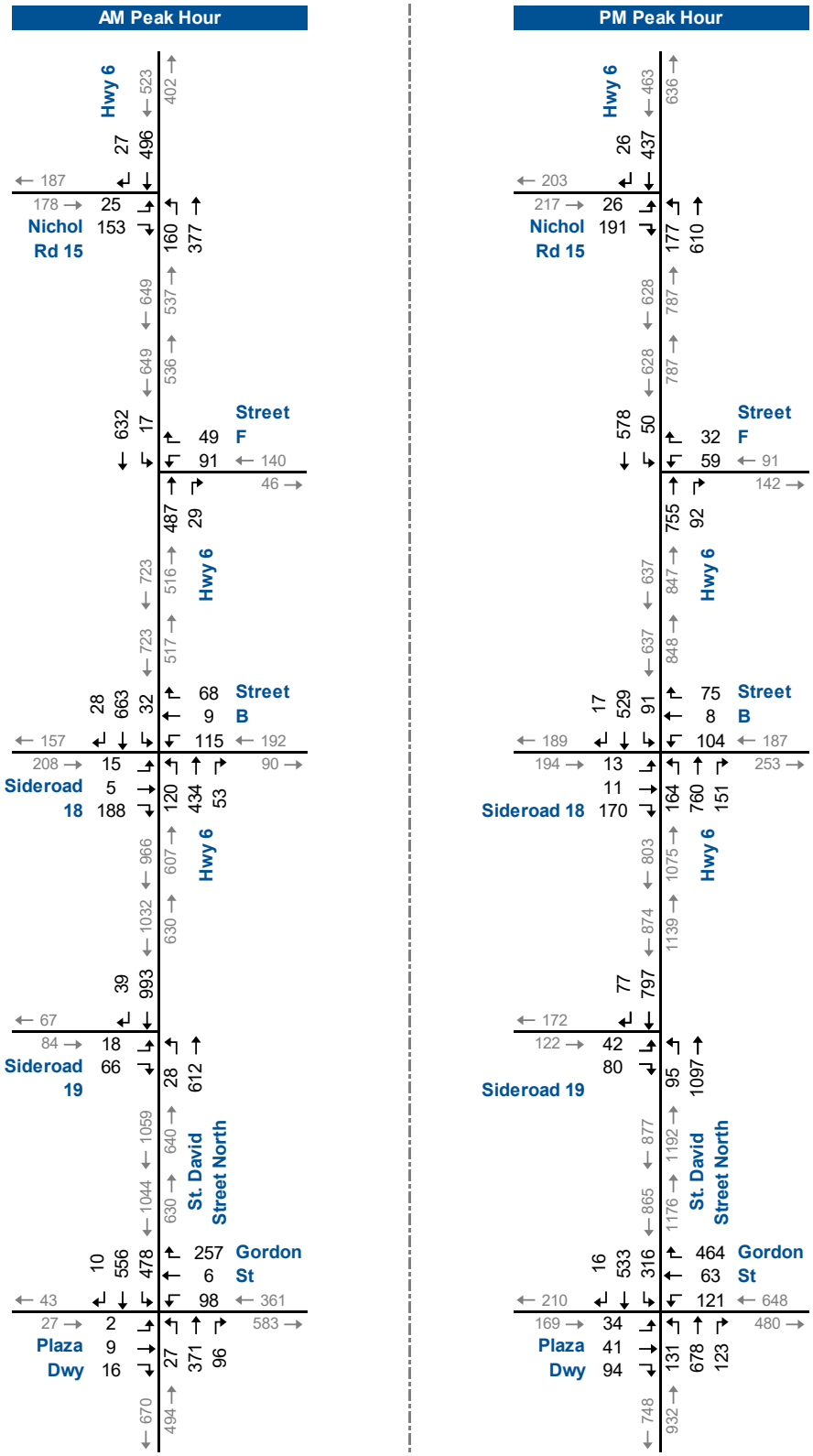
Figure 4.4



2035 Future Total Traffic Volumes

6581 Highway 6, Fergus
230599

Figure 4.5



2040 Future Total Traffic Volumes

6581 Highway 6, Fergus
230599

Figure 4.6

4.2 Background Traffic Operations

The operational analysis of background traffic conditions (without development) followed the same methodology and parameters used for existing traffic conditions.

4.2.1 Year 2030

Table 4.1 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn movement with LOS D and v/c ratio of 0.93 during the PM peak hour; and
  - Southbound left-turn with LOS D, v/c ratio of 0.95, and queue reach greater than its available storage during the AM peak hour. LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the PM peak hour.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix E1 contains the detailed Synchro reports.

TABLE 4.1: 2030 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	18		>	18					9	0	>	3		0	>	0	4
			V/C	0.38		>						0.13	0.20	>			0.30	>		
			Q	14		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	C	>	C	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	25	>	25	<	548	>	548	9	0	>	2	<	1	>	1	59
			V/C	<	0.54	>		<	1.94	>		0.13	0.27	>		<	0.03	>		
			Q	<	25	>		<	111	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	D		>	D					B	A		A		A	>	A	A
			Delay	30		>	30					11	0		1		0	>	0	2
			V/C	0.36		>						0.04	0.34				0.55	>		
			Q	13		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	D	B	>	C	C
			Delay	18	18	>	18	21	19	>	20	8	17	>	16	39	17	>	27	23
			V/C	0.01	0.04	>		0.40	0.19	>		0.06	0.67	>		0.95	0.70	>		0.84
			Q	2	6	>		23	17	>		3	69	>		67	82	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		2	-	>		17	-	>		-42	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	19		>	19					9	0	>	2		0	>	0	4
			V/C	0.43		>						0.14	0.34	>			0.25	>		
			Q	17		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	29	>	29	<	Err	>	Err	9	0	>	2	<	3	>	3	912
			V/C	<	0.56	>		<	3.69	>		0.15	0.48	>		<	0.10	>		
			Q	<	26	>		<	Err	>		4	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	C
			Delay	396		>	396					10	0		1		0	>	0	23
			V/C	1.54		>						0.12	0.59				0.48	>		
			Q	76		>						3	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						17	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	D	>	C	F	B	>	D	D
			Delay	22	21	>	22	24	32	>	31	9	35	>	31	96	16	>	46	35
			V/C	0.29	0.17	>		0.48	0.74	>		0.29	0.93	>		1.10	0.63	>		1.00
			Q	11	16	>		28	64	>		14	173	>		78	91	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	9	-	>		-3	-	>		6	-	>		-53	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared Turn Lane

4.2.2 Year 2035

Table 4.2 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement with LOS E and v/c ratio of 0.66 during PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn movement with LOS D and v/c ratio of 0.98 during the PM peak hour; and
  - Southbound left-turn with LOS D, v/c ratio of 0.99, and queue reach greater than its available storage during the AM peak hour. LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the PM peak hour.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix E2 contains the detailed Synchro reports.

TABLE 4.2: 2035 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	19		>	19					9	0	>	3		0	>	0	4
			V/C	0.41		>						0.14	0.20	>			0.31	>		
			Q	16		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	28	>	28	<	688	>	688	10	0	>	2	<	1	>	1	72
			V/C	<	0.58	>		<	2.23	>		0.14	0.28	>		<	0.03	>		
			Q	<	28	>		<	119	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	D		>	D					B	A		A		A	>	A	A
			Delay	34		>	34					11	0		1		0	>	0	2
			V/C	0.41		>						0.04	0.36				0.57	>		
			Q	15		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	D	B	>	C	C
			Delay	19	19	>	19	21	20	>	20	8	17	>	17	52	17	>	32	26
			V/C	0.01	0.04	>		0.42	0.20	>		0.07	0.68	>		0.99	0.72	>		0.88
			Q	2	7	>		24	18	>		4	73	>		74	88	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		1	-	>		16	-	>		-49	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	2		0	>	0	4
			V/C	0.48		>						0.15	0.36	>			0.26	>		
			Q	20		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	39	>	39	<	Err	>	Err	9	0	>	2	<	3	>	3	882
			V/C	<	0.66	>		<	4.36	>		0.16	0.49	>		<	0.10	>		
			Q	<	35	>		<	Err	>		5	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	D
			Delay	605		>	605					11	0		1		0	>	0	34
			V/C	1.98		>						0.13	0.61				0.50	>		
			Q	90		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	D	>	D	F	B	>	D	D
			Delay	23	21	>	21	24	35	>	33	9	45	>	39	115	17	>	54	41
			V/C	0.30	0.17	>		0.48	0.78	>		0.32	0.98	>		1.15	0.66	>		1.04
			Q	12	17	>		29	76	>		15	182	>		82	95	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-4	-	>		5	-	>		-57	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared Turn Lane

4.2.3 Year 2040

Table 4.3 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement LOS E and v/c ratio of 0.71 during PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS E and v/c ratio of 0.45 during the AM peak hour. LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn movement with LOS E and v/c ratio greater than 1.0 during the PM peak hour; and
  - Southbound left-turn with LOS E/F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the AM and PM peak hours.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix E3 contains the detailed Synchro reports.

TABLE 4.3: 2040 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	3		0	>	0	4
			V/C	0.50		>						0.15	0.21	>			0.32	>		
			Q	18		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	32	>	32	<	859	>	859	10	0	>	2	<	1	>	1	86
			V/C	<	0.64	>		<	2.58	>		0.15	0.29	>		<	0.03	>		
			Q	<	34	>		<	127	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	E		>	E					B	A		A		A	>	A	A
			Delay	38		>	38					11	0		1		0	>	0	2
			V/C	0.45		>						0.05	0.37				0.59	>		
			Q	17		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	C	A	B	>	B	E	B	>	D	C
			Delay	19	19	>	19	22	20	>	20	8	18	>	17	68	18	>	40	30
			V/C	0.01	0.04	>		0.44	0.21	>		0.08	0.70	>		1.05	0.74	>		0.92
			Q	2	7	>		25	18	>		4	78	>		81	94	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		0	-	>		16	-	>		-56	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	2		0	>	0	4
			V/C	0.52		>						0.16	0.37	>			0.27	>		
			Q	23		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	44	>	44	<	Err	>	Err	9	0	>	2	<	3	>	3	862
			V/C	<	0.71	>		<	4.97	>		0.17	0.51	>		<	0.10	>		
			Q	<	40	>		<	Err	>		5	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	E
			Delay	832		>	832					11	0		1		0	>	0	48
			V/C	2.45		>						0.14	0.63				0.51	>		
			Q	102		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	C	A	E	>	D	F	B	>	E	D
			Delay	23	21	>	21	23	37	>	34	10	61	>	53	138	19	>	63	49
			V/C	0.32	0.18	>		0.48	0.82	>		0.36	1.03	>		1.21	0.70	>		1.09
			Q	12	18	>		30	84	>		15	192	>		86	102	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-5	-	>		5	-	>		-61	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared Turn Lane

4.3 Total Traffic Operations

The operational analysis of total traffic conditions (with development) followed the same methodology used for existing and background traffic conditions.

4.3.1 Year 2030 (Build-out)

Table 4.4 summarizes the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement with LOS E and v/c ratio of 0.69 during the AM peak hour and LOS F and v/c ratio greater than 1.00 during the PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS E and v/c ratio of 0.49 during the AM peak hour and LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn with LOS E and v/c ratio greater than 1.00 during the PM peak hour; and
  - Southbound left-turn LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the AM and PM peak hours.
- Highway 6 and Street F:
  - Westbound left/right-turn with LOS E and v/c ratio of 0.57 during the AM peak hour and LOS F and v/c ratio of 0.60 during the PM peak hour.

Appendix F1 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.4: 2030 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	20		>	20					9	0	>	3		0	>	0	4
			V/C	0.42		>						0.16	0.23	>			0.31	>		
			Q	17		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	39	>	39	<	Err	>	Err	10	0	>	2	<	1	>	1	1186
			V/C	<	0.69	>		<	3.53	>		0.14	0.29	>		<	0.03	>		
			Q	<	38	>		<	Err	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	E		>	E					B	A		A		A	>	A	A
			Delay	44		>	44					11	0		1		0	>	0	2
			V/C	0.49		>						0.04	0.36				0.62	>		
			Q	19		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	C	A	B	>	B	F	B	>	D	D
			Delay	19	19	>	19	21	20	>	20	8	17	>	16	89	18	>	51	36
			V/C	0.01	0.04	>		0.41	0.21	>		0.07	0.67	>		1.12	0.74	>		0.97
			Q	2	6	>		23	18	>		3	71	>		95	91	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		2	-	>		17	-	>		-70	-	>		
	Highway 6 & Street F	TWSC	LOS					E		>	E		A	>	A	<	A		A	A
			Delay					35		>	35		0	>	0	<	1		1	4
			V/C					0.57		>			0.31	>		<	0.02			
			Q					26		>			0	>		<	0			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	2		0	>	0	4
			V/C	0.52		>						0.16	0.36	>			0.28	>		
			Q	23		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	F	>	F	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	141	>	141	<	Err	>	Err	9	0	>	1	<	3	>	3	967
			V/C	<	1.07	>		<	7.22	>		0.16	0.55	>		<	0.13	>		
			Q	<	75	>		<	Err	>		5	0	>		<	4	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	F
			Delay	Err		>	Err					11	0		1		0	>	0	547
			V/C	3.18		>						0.13	0.66				0.52	>		
			Q	Err		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	D	A	E	>	E	F	B	>	E	D
			Delay	23	21	>	21	23	39	>	36	10	68	>	60	144	20	>	65	53
			V/C	0.30	0.16	>		0.42	0.84	>		0.34	1.06	>		1.22	0.71	>		1.10
			Q	12	16	>		28	89	>		14	197	>		86	106	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-3	-	>		6	-	>		-61	-	>		
	Highway 6 & Street F	TWSC	LOS					F		>	F		A	>	A	<	A		A	A
			Delay					55		>	55		0	>	0	<	2		2	4
			V/C					0.60		>			0.51	>		<	0.07			
			Q					26		>			0	>		<	2			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			

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

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.3.2 Year 2035 (Five-Year Horizon)

Table 4.5 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement with LOS E and v/c ratio of 0.74 during the AM peak hour and LOS F and v/c ratio greater than 1.00 during the PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio of 0.55 during the AM peak hour and LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn with LOS E and v/c ratio greater than 1.00 during the PM peak hour; and
  - Southbound left-turn with LOS F, v/c ratio greater than 1.00, and queue reach greater than its available storage during the AM and PM peak hours.
- Highway 6 and Street F:
  - Westbound left/right-turn with LOS E and v/c ratio of 0.60 during the AM peak hour and LOS F and v/c ratio of 0.64 during the PM peak hour.

Appendix F2 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.5: 2035 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	3		0	>	0	4
			V/C	0.46		>						0.16	0.23	>			0.32	>		
			Q	19		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	B	A	>	A	<	A	>	A	F
			Delay	<	45	>	45	<	Err	>	Err	10	0	>	2	<	1	>	1	1157
			V/C	<	0.74	>		<	4.02	>		0.14	0.30	>		<	0.03	>		
			Q	<	43	>		<	Err	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	A
			Delay	55		>	55					11	0		1		0	>	0	3
			V/C	0.57		>						0.05	0.38				0.64	>		
			Q	23		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	C	>	C	A	B	>	B	F	B	>	E	D
			Delay	19	19	>	19	22	20	>	21	8	17	>	16	107	18	>	59	41
			V/C	0.01	0.04	>		0.43	0.22	>		0.07	0.68	>		1.16	0.75	>		1.01
			Q	2	7	>		24	18	>		4	76	>		103	100	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		1	-	>		16	-	>		-78	-	>		
	Highway 6 & Street F	TWSC	LOS					E		>	E		A	>	A	<	A		A	A
			Delay					39		>	39		0	>	0	<	1		1	5
			V/C					0.60		>			0.32	>		<	0.02			
			Q					28		>			0	>		<	0			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	D		>	D					A	A	>	A		A	>	A	A
			Delay	26		>	26					9	0	>	2		0	>	0	5
			V/C	0.57		>						0.17	0.38	>			0.29	>		
			Q	28		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	F	>	F	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	208	>	208	<	Err	>	Err	9	0	>	1	<	4	>	4	945
			V/C	<	1.25	>		<	8.72	>		0.17	0.57	>		<	0.14	>		
			Q	<	93	>		<	Err	>		5	0	>		<	4	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	F
			Delay	Err		>	Err					11	0		1		0	>	0	556
			V/C	3.93		>						0.14	0.68				0.54	>		
			Q	Err		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	D	B	F	>	E	F	C	>	E	E
			Delay	23	20	>	21	23	42	>	38	11	86	>	76	164	22	>	74	62
			V/C	0.31	0.16	>		0.42	0.87	>		0.38	1.11	>		1.27	0.75	>		1.10
			Q	12	17	>		29	95	>		15	206	>		90	120	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-4	-	>		5	-	>		-65	-	>		
	Highway 6 & Street F	TWSC	LOS					F		>	F		A	>	A	<	A		A	A
			Delay					63		>	63		0	>	0	<	2		2	5
			V/C					0.64		>			0.52	>		<	0.07			
			Q					29		>			0	>		<	2			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			

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

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.3.3 Year 2040 (Ten-Year Horizon)

Table 4.6 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement with LOS F and v/c ratio of 0.83 during the AM peak hour and LOS F and v/c ratio greater than 1.00 during the PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio of 0.63 during the AM peak hour and LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn with LOS E and v/c ratio greater than 1.00 during the PM peak hour; and
  - Southbound left-turn with LOS F, v/c ratio greater than 1.00, and queue reach greater than its available storage during the AM and PM peak hours.
- Highway 6 and Street F:
  - Westbound left/right-turn with LOS E and v/c ratio of 0.63 during the AM peak hour and LOS F and v/c ratio of 0.69 during the PM peak hour.

Appendix F3 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.6: 2040 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	3		0	>	0	5
			V/C	0.50		>						0.17	0.24	>			0.33	>		
			Q	22		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	F	>	F	<	F	>	F	B	A	>	A	<	A	>	A	F
			Delay	<	59	>	59	<	Err	>	Err	10	0	>	2	<	1	>	1	1120
			V/C	<	0.83	>		<	4.86	>		0.16	0.31	>		<	0.03	>		
			Q	<	53	>		<	Err	>		5	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	A
			Delay	65		>	65					12	0		1		0	>	0	3
			V/C	0.63		>						0.05	0.39				0.66	>		
			Q	27		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	C	>	C	A	B	>	B	F	B	>	E	D
			Delay	20	20	>	20	22	21	>	21	8	17	>	17	128	19	>	69	46
			V/C	0.01	0.04	>		0.45	0.23	>		0.08	0.69	>		1.21	0.77	>		1.06
			Q	2	7	>		25	19	>		4	81	>		112	118	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		0	-	>		16	-	>		-87	-	>		
	Highway 6 & Street F	TWSC	LOS					E		>	E		A	>	A	<	A		A	A
			Delay					43		>	43		0	>	0	<	1		1	5
			V/C					0.63		>			0.33	>		<	0.02			
			Q					31		>			0	>		<	0			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	D		>	D					A	A	>	A		A	>	A	A
			Delay	29		>	29					9	0	>	2		0	>	0	5
			V/C	0.62		>						0.18	0.39	>			0.30	>		
			Q	32		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	F	>	F	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	277	>	277	<	Err	>	Err	10	0	>	1	<	4	>	4	924
			V/C	<	1.41	>		<	10.72	>		0.18	0.58	>		<	0.14	>		
			Q	<	108	>		<	Err	>		5	0	>		<	4	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	F
			Delay	Err		>	Err					11	0		1		0	>	0	560
			V/C	4.80		>						0.15	0.70				0.56	>		
			Q	Err		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	D	B	F	>	F	F	C	>	F	E
			Delay	23	20	>	21	22	45	>	41	11	108	>	94	190	24	>	84	73
			V/C	0.34	0.17	>		0.43	0.89	>		0.42	1.16	>		1.33	0.79	>		1.19
			Q	13	18	>		30	103	>		15	216	>		94	126	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	7	-	>		-5	-	>		5	-	>		-69	-	>		
	Highway 6 & Street F	TWSC	LOS					F		>	F		A	>	A	<	A		A	A
			Delay					73		>	73		0	>	0	<	2		2	5
			V/C					0.69		>			0.54	>		<	0.07			
			Q					31		>			0	>		<	2			
			Ex					-		>			-	>		<	-			
			Avail.					-		>			-	>		<	-			

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5 Remedial Measures

5.1 Traffic Signal Control

The future traffic analysis indicates that traffic control improvements may be required to accommodate forecast traffic volumes at the unsignalized intersections along Highway 6/St. David Street North.

The intersection was assessed using the Ontario Traffic Manual (OTM Book 12 signal warrant procedures[10] for Justification 7 (forecast volumes). **Appendix G** contains the warrant analysis. For forecast traffic, the signal warrant threshold is increased to 120% to be considered met.

Table 5.1 summarizes the traffic control signal warrants, and it indicates that traffic control signals are not warranted at the study area intersections.

The intersection of Highway 6 and Sideroad 18 / Street B is forecast to operate very poorly for the side street movements, particularly the movements exiting the subject development. The signal warrant calculations show that while the signal warrants are not met at the 120% threshold, they do exceed 100%. Therefore, if the forecasts hold to be accurate, a traffic control signal could become warranted by the future horizons, after the development is built. Therefore, with the high delays and the volumes approaching the warrant threshold, it is recommended that this intersection be regularly monitored as construction of the subject development proceeds and that signalization of this intersection be considered to be installed upon opening of the subject development.

A recommendation for a signal at this intersection was also made in the TIS for the adjacent property (968 St. David Street)[11].

[10] Ontario Ministry of Transportation, *Ontario Traffic Manual Book 12: Traffic Signals*, (Toronto: Queen's Printer for Ontario, 2012.

[11] Paradigm Transportation Solutions Limited, *968 St. David Street North, Fergus, ON Transportation Impact Assessment*, (PTSL: Polocorp, February 2025).

TABLE 5.1: TRAFFIC CONTROL SIGNAL WARRANT SUMMARY

Intersection	Horizon	OTM Warrant Sumamry				Warranted	
		1A	1B	2A	2B	120%	150%
Highway 6 & Nichol Road 15	Background 2030	121%	47%	103%	23%	No	No
	Background 2035	126%	49%	107%	24%	No	No
	Background 2040	131%	51%	111%	26%	No	No
	Total 2030	131%	51%	112%	23%	No	No
	Total 2035	136%	53%	116%	24%	No	No
	Total 2040	141%	55%	120%	26%	No	No
Highway 6 & Sideroad 18/Street B	Background 2030	111%	65%	88%	75%	No	No
	Background 2035	114%	66%	91%	75%	No	No
	Background 2040	118%	68%	94%	75%	No	No
	Total 2030	125%	110%	99%	94%	No	No
	Total 2035	129%	112%	102%	94%	No	No
	Total 2040	133%	115%	106%	95%	No	No
Highway 6 & Sideroad 19	Background 2030	117%	18%	111%	22%	No	No
	Background 2035	121%	18%	115%	22%	No	No
	Background 2040	125%	19%	119%	23%	No	No
	Total 2030	128%	19%	122%	26%	No	No
	Total 2035	133%	19%	126%	26%	No	No
	Total 2040	137%	20%	130%	27%	No	No
Highway 6 & Street F	Total 2030	141%	32%	129%	80%	No	No
	Total 2035	145%	32%	133%	80%	No	No
	Total 2040	150%	32%	138%	80%	No	No

5.2 Left-Turn Lanes

The Ministry of Transportation's (MTO) *Design Supplement*[12] for the *TAC Geometric Design Guide for Canadian Roads*[13] provides guidance on the assessment and/or need for auxiliary left-turn lanes.

The warrants have been completed for the Highway 6 at Street F intersection for the AM and PM peak hour for the future total horizon years using the two-lane highways unsignalized nomographs. **Appendix H** contains the left-turn warrant nomographs.

The percentages of left-turning vehicles in the approaching volume were rounded to the nearest 5%, as nomographs are only provided for 5% increments. This apparent requirement is due to the nature of the warrant procedure that assumes a minimum of 5% of left turning

[12] MTO. *Design Supplement for the TAC Geometric Design Guide for Canadian Roads: Appendix 9A for Section 9.17 (Left-Turn Lanes).* October 2023.

[13] Transportation Association of Canada (TAC). *Geometric Design Guide for Canadian Roads*. Ottawa, ON. June 2017.

vehicles in the advancing volume. Therefore, left-turn lanes are automatically not warranted for any left turning volume less than 5%.

Table 5.2 summarizes the left-turn lane warrant for the intersection of Highway 6 and Street F. It indicates that a southbound left-turn lane with a minimum of 40 metres of storage would be warranted under all horizon years.

TABLE 5.2: LEFT-TURN LANE WARRANT SUMMARY – STREET F

Roadway	Highway 6					
Intersection	Street F					
Approach Direction	Southbound					
Design Speed	100 km/h					
Horizon	Total - 2030		Total - 2035		Total - 2040	
Peak Hour	AM	PM	AM	PM	AM	PM
Advancing Volume	606	558	627	608	649	628
Opposing Volumes	483	794	499	820	516	847
Left Turning Traffic	17	50	17	50	17	50
% of Left Turning Traffic	3%	9%	3%	8%	3%	8%
Figure Used*	9A-23	9A-23	9A-23	9A-23	9A-23	9A-23
Warranted	Yes	Yes	Yes	Yes	Yes	Yes
Storage Length Required	15m	40m	15m	40+m	15m	40+m

Based on MTO Design Supplement, October 2023 for TAC Geometric Design Guide for Canadian Roads - Oct. 2023

5.3 Highway 6/St. David Street Corridor

The future traffic forecast shows high volumes of traffic on Highway 6/St. David Street during the AM and PM peak hours. This is confirmed in the analyses with the poor operations of the side street approaches and the forecast queue reach from the St. David Street and Gordon Street intersection.

To mitigate, the widening of Highway 6/St. David Street to include a second northbound and southbound through lane would be required.

Alternatively, a by-pass around the community of Fergus would remove the through traffic on St. David Street. The Township of Centre Wellington have recently requested to the Ministry of Transportation to start discussions on a by-pass as well as extending the connecting link locations further north and south on Highway 6.

5.4 Operational Analysis with Improvements

Synchro analysis was conducted for the 2040 horizon year total traffic conditions with no adjustments to traffic volumes and the following improvements:

- Highway 6/St. David Street Corridor:
  - Second northbound through lane; and
  - Second southbound through lane.

- Highway 6 and Sideroad 18/Street B[14]:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 55 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.
- Highway 6 and Street F:
  - Southbound left-turn lane with minimum of 40 metres of storage.

Table 5.3 summarizes the level of service conditions for the year 2040 total traffic conditions with the remedial measures outlined above. With the implementation of the noted remedial measures, intersection operations are forecast to operate with acceptable level of service.

Appendix I contains the detailed Synchro reports.

[14] Recommendation from the 968 St. David Street Transportation Impact Assessment

TABLE 5.3: 2040 TOTAL OPERATIONS WITH IMPROVEMENTS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	3		0	>	0	5
			V/C	0.50		>						0.17	0.24	>			0.33	>		
			Q	22		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TCS	LOS	C	C	>	C	D	C	>	C	C	B	>	B	B	B	>	B	B
			Delay	23	24	>	24	36	24	>	31	21	14	>	15	12	15	>	15	18
			V/C	0.05	0.15	>		0.69	0.09	>		0.63	0.40	>		0.11	0.55	>		0.53
			Q	7	18	>		32	11	>		45	44	>		10	66	>		
			Ex	25	-	>		25	-	>		110	-	>		50	-	>		
			Avail.	18	-	>		-7	-	>		65	-	>		40	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					B	A		A		A	>	A	A
			Delay	17		>	17					11	0		1		0	>	0	1
			V/C	0.23		>						0.05	0.20				0.42	>		
			Q	7		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	C	>	C	C	C	>	C	B	B	>	B	B	A	>	B	B
			Delay	20	20	>	20	23	21	>	22	13	19	>	18	16	10	>	13	16
			V/C	0.02	0.04	>		0.45	0.23	>		0.09	0.53	>		0.83	0.37	>		0.80
			Q	2	7	>		27	20	>		4	41	>		72	36	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		-2	-	>		16	-	>		-47	-	>		
	Highway 6 & Street F	TWSC	LOS					F		>	F		A	>	A	A	A		A	A
			Delay					53		>	53		0	>	0	9	0		0	6
			V/C					0.70		>			0.33	>		0.02	0.40			
			Q					36		>			0	>		0	0			
			Ex					-		>			-	>		40	-			
			Avail.					-		>			-	>		40	-			
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	D		>	D					A	A	>	A		A	>	A	A
			Delay	29		>	29					9	0	>	2		0	>	0	5
			V/C	0.62		>						0.18	0.39	>			0.30	>		
			Q	32		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						110	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TCS	LOS	B	B	>	B	B	B	>	B	A	A	>	A	A	A	>	A	A
			Delay	15	16	>	16	18	15	>	17	7	7	>	7	7	6	>	6	8
			V/C	0.05	0.15	>		0.49	0.08	>		0.41	0.51	>		0.38	0.31	>		0.50
			Q	5	14	>		22	10	>		25	47	>		17	27	>		
			Ex	25	-	>		25	-	>		110	-	>		50	-	>		
			Avail.	20	-	>		3	-	>		85	-	>		33	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					B	A		A		A	>	A	A
			Delay	18		>	18					12	0		1		0	>	0	2
			V/C	0.32		>						0.16	0.35				0.34	>		
			Q	11		>						5	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						15	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	C	B	C	>	C	A	B	>	B	C
			Delay	25	22	>	23	25	36	>	34	13	23	>	21	3	14	>	16	23
			V/C	0.36	0.17	>		0.45	0.79	>		0.33	0.70	>		0.80	0.39	>		0.83
			Q	14	20	>		35	95	>		18	88	>		69	47	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	6	-	>		-10	-	>		2	-	>		-44	-	>		
	Highway 6 & Street F	TWSC	LOS					D		>	D		A	>	A	A	A		A	A
			Delay					31		>	31		0	>	0	10	0		1	2
			V/C					0.42		>			0.32	>		0.07	0.18			
			Q					16		>			0	>		2	0			
			Ex					-		>			-	>		40	-			
			Avail.					-		>			-	>		38	-			

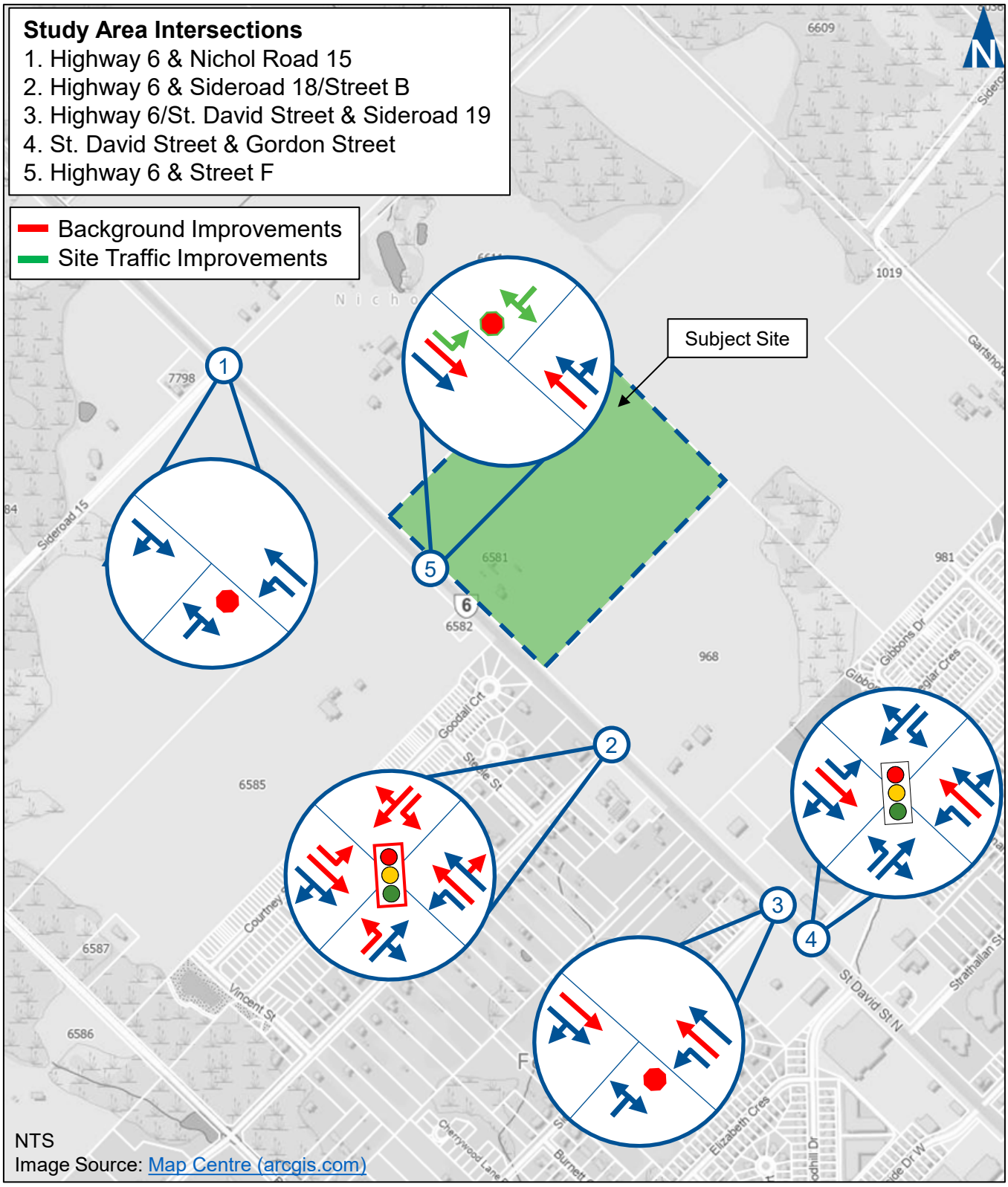
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared Turn Lane

5.5 Summary

Delay and capacity deficiencies are forecast to occur at the study area intersections in the future with the anticipated background growth in traffic. With the addition of the site generated traffic, it is expected to exacerbate the delay and capacity deficiencies. Remedial measures to address the study area intersection operations include:

- Highway 6/St. David Street Corridor:
  - Second northbound through lane; and
  - Second southbound through lane.
- Highway 6 and Sideroad 18/Street B:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 55 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.
- Highway 6 and Street F:
  - Southbound left-turn lane with minimum of 40 metres of storage.

Figure 5.1 illustrates the future lane configuration and traffic control of the study area intersections.



paradigm TRANSPORTATION SOLUTIONS LIMITED

Future Lane Configurations & Traffic Control

6581 Highway 6, Fergus
230599

Figure 5.1

6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service and within capacity
- **Development Trip Generation:** The overall development at full build-out is forecast to generate 249 new trips in the AM peak hour and 310 new trips in the PM peak hour.
- **Background Traffic Operations:** As the traffic volumes increase at the study area intersections, capacity issues are identified at the following intersections:
  - Highway 6 and Sideroad 18/Street B;
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- **Total Traffic Operations:** The capacity deficiencies identified under background conditions would be further exacerbated with the addition of site generated traffic. Site generated traffic results in capacity deficiencies at the following intersections:
  - Highway 6 and Sideroad 18/Street B;
  - Highway 6/St. David Street and Sideroad 19;
  - St. David Street and Gordon Street; and
  - Highway 6 and Street F.
- Traffic control signals are not warranted for the unsignalized study area intersections.
- A southbound left-turn lane on Highway 6 at Street F is warranted with a minimum of 40 metres of storage.

6.2 Recommendations

Based on the findings of this study, it is recommended that the development be approved with the following improvements to the road network:

- Highway 6 and Street F
  - Southbound left-turn lane with minimum of 40 metres of storage.

It is further recommended that the Township of Centre Wellington and the Ministry of Transportation come to an agreement on either extending the connecting link, widening Highway 6/St. David Street in the study are, or the provision of Highway 6 by-pass of Fergus to reduce the through volumes in the community.

Appendix A

Pre-Study Consultation

From:	Hodgins, Allan (MTO)
To:	Matt Brouwer
Cc:	Andrew Evans; CBaker@centrewellington.ca; cpellizzari
Subject:	RE: (230599 968 St David St, Fergus) TIS Scope
Date:	June 20, 2024 10:11:32 PM
Attachments:	image002.png image003.png Traffic Impact Studies Guideline - 2023.pdf CP1012_2024.01.04 - Concept D.pdf

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Hello Matt,

General Note:

- Should the northerly access location be supported, it will limit access to the lands west of Highway 6 if/when these lands are developed to be achieved opposite this proposed location or alternative municipal roads.

The Ministry of Transportation (MTO) has reviewed the Terms of Reference (ToR) attached for the Traffic Impact Study (TIS) to support the proposed development on 182 Elora Street N, Harriston ON. The following outlines our comments:

i. The report shall follow the MTO Traffic Impact Study Guidelines, (attached for your reference, 2023 version), to assess the future impact of the proposed development to identify if there are any warranted highway/road improvements.
ii. Any data collection required shall be collected by a RAQS qualified consultant/company.
iii. Synchro version 12 should be used, and the Digital Synchro files (version 12) shall be included to form a complete submission.
iv. The MTO requires a 2% growth rate to be applied.
v. Sightline analysis shall be included.
    - Existing conditions, confirmed with field verified measurements, compared to TAC with mitigation measures provided if the sightlines don't meet TAC, for Highway 6.
vi. The report shall include LT and RT lane analysis at both access locations proposed on Highway 6.
vii. All intersection capacity analysis on impacted intersections within MTO facilities should follow MTO/TAC protocols.
viii. The need for geometric improvements shall be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements. A schematic representation of

all geometric improvements shall be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.

ix. Signal warrants must be conducted at both access locations proposed on Highway 6.
    - The need for traffic signals and/or underground traffic signal utility provisions shall be reviewed at all locations affected by the proposed development and for each proposed development stage.
    - Determination of whether traffic signals or provisions for signals are warranted shall be made according to the process described in OTM Book 12.
    - Intersection timing and traffic signal improvements required due to development or redevelopment shall be considered as improvements in the TIS.

TOR DISCLAIMER: Although all efforts have been made to ensure the most up to date, proper information and data has been provided, details may be missed or unintentionally incorrect. In all cases if items are missed/incorrect, to reduce any delay to the proponent and the development schedule, upon review of a submitted TIS, MTO may require update an erroneous item. Furthermore, RAQS approved consultants should identify any discrepancies and follow up with MTO prior to completing the study and refer to the latest MTO TIS guidelines.

Once you have had the opportunity to review, should you have any questions MTO would be more than willing to discuss any items further.

Regards,

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

Ontario

Taking pride in strengthening Ontario, its places and its people

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From: Hodgins, Allan (MTO)
Sent: Monday, June 17, 2024 9:24 PM
To: Matt Brouwer <mbrouwer@ptsl.com>
Cc: aevans@ptsl.com
Subject: FW: (230599 968 St David St, Fergus) TIS Scope

Hi Matt,

Just wanted to give you an update, we are reviewing the ToR for the TIS provided below for the concept plan attached, noting the "secondary emergency access" to the north is being requested as a full motion stop controlled "T" intersection with Highway 6 (St David St).

I do not have a timeline for providing comments at this time, but didn't want to leave to hanging without an update for to long. Once I know more, I will send you another quick update to confirm.

Regards,

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

Ontario

Taking pride in strengthening Ontario, its places and its people

---

From: Matt Brouwer <mbrouwer@ptsl.com>
Sent: Wednesday, March 20, 2024 10:28 AM
To: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Cc: Andrew Evans <aevans@ptsl.com>
Subject: (230599 968 St David St, Fergus) TIS Scope

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

Hi Allan,

I have another TIS near the other I contacted you about in Fergus. This one is just a little further north on St David Street at 968 St David St, on the other side of TIS we did earlier for 950-960 St David St. I've attached the proposed concept plan. It shows an access opposite of Sideroad 18 as well as two other accesses north of there. I don't think that they will likely end up at 3 access… probably just 2, but that's still being worked out. I know the developer has had some contact with the MTO and Municipality about the status of St David St / Hwy 6, but I'm not sure if that necessarily will feed into the TIS in a major way, since we'll have to do one and it'll be the same guidelines we follow. Anyway, I'd like to get the scope approved with you on this. It'll be very similar to the TIS we did at 950/960 St David, and the one I proposed to you for 930 St David St.

For the intersections in our study area, based on the size and location of the development I suggest:

- St David St & Sideroad 19 / proposed access
- St David St & Sideroad 18
- Any additional accesses onto St David St / Highway 6.

For background growth rate, we've used 1% in the TIS we did for 950/960 St David St last year, and that's what I proposed for the 930 St David St TIS. Would this still apply?

We'll include 950/960 St David St as a background development. Let me know how you would like to handle forecasts from 930 St David St, since there hasn't been an application filed for it yet, since it's underway.

Otherwise, we'll follow the MTO TIS guidelines.

Thanks,

Matt Brouwer, P.Eng.
Senior Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
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Appendix B

Traffic Data

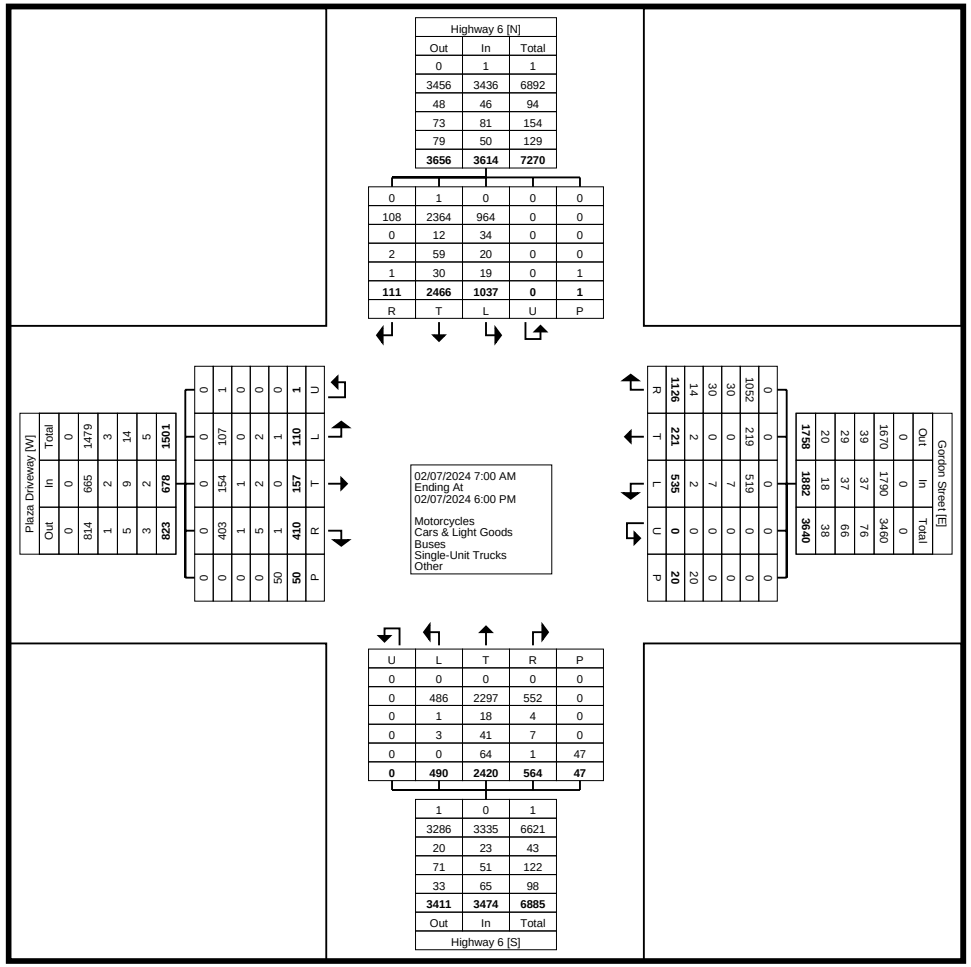
Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 1

Turning Movement Data

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	0	3	0	0	3	7	0	30	0	0	37	2	33	15	0	0	50	22	71	1	0	0	94	184
7:15 AM	0	0	3	0	1	3	9	0	32	0	1	41	2	59	11	0	0	72	40	79	0	0	0	119	235
7:30 AM	0	1	0	0	2	1	19	0	29	0	1	48	2	61	14	0	0	77	49	80	0	0	0	129	255
7:45 AM	2	1	2	0	0	5	13	2	39	0	0	54	7	64	25	0	3	96	57	82	1	0	0	140	295
Hourly Total	2	2	8	0	3	12	48	2	130	0	2	180	13	217	65	0	3	295	168	312	2	0	0	482	969
8:00 AM	0	2	6	0	0	8	15	1	38	0	0	54	3	76	7	0	1	86	41	82	0	0	0	123	271
8:15 AM	0	4	2	0	0	6	20	1	41	0	0	62	2	51	9	0	1	62	30	101	2	0	0	133	263
8:30 AM	1	1	3	0	1	5	22	1	24	0	1	47	4	61	12	0	0	77	49	90	4	0	0	143	272
8:45 AM	0	1	3	0	5	4	11	2	41	0	2	54	14	70	32	0	1	116	39	97	1	0	0	137	311
Hourly Total	1	8	14	0	6	23	68	5	144	0	3	217	23	258	60	0	3	341	159	370	7	0	0	536	1117
9:00 AM	3	4	14	0	4	21	15	8	33	0	0	56	4	62	19	0	2	85	21	74	2	0	0	97	259
9:15 AM	0	3	8	0	1	11	15	6	24	0	0	45	8	59	7	0	1	74	21	63	7	0	0	91	221
9:30 AM	0	2	8	0	1	10	8	4	23	0	1	35	8	64	10	0	1	82	22	69	3	0	0	94	221
9:45 AM	3	1	8	0	1	12	7	2	13	0	0	22	18	68	16	0	1	102	20	63	2	0	0	85	221
Hourly Total	6	10	38	0	7	54	45	20	93	0	1	158	38	253	52	0	5	343	84	269	14	0	0	367	922
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	4	4	14	0	2	22	13	8	19	0	1	40	12	54	12	0	0	78	15	72	8	0	0	95	235
11:45 AM	8	4	19	0	0	31	18	4	23	0	0	45	18	73	13	0	1	104	23	68	1	0	0	92	272
Hourly Total	12	8	33	0	2	53	31	12	42	0	1	85	30	127	25	0	1	182	38	140	9	0	0	187	507
12:00 PM	3	7	16	0	1	26	22	13	24	0	2	59	21	61	20	0	1	102	13	70	3	0	0	86	273
12:15 PM	4	7	9	0	2	20	20	3	20	0	0	43	16	70	19	0	3	105	20	79	8	0	0	107	275
12:30 PM	3	8	21	0	4	32	14	10	33	0	1	57	21	84	15	0	2	120	23	83	4	0	0	110	319
12:45 PM	3	8	15	0	1	26	17	5	29	0	1	51	21	71	18	0	0	110	29	90	5	0	0	124	311
Hourly Total	13	30	61	0	8	104	73	31	106	0	4	210	79	286	72	0	6	437	85	322	20	0	0	427	1178
1:00 PM	3	2	18	0	0	23	21	6	24	0	1	51	15	66	19	0	0	100	18	84	7	0	0	109	283
1:15 PM	3	5	17	1	2	26	9	8	21	0	0	38	17	80	15	0	5	112	15	79	5	0	0	99	275
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	7	35	1	2	49	30	14	45	0	1	89	32	146	34	0	5	212	33	163	12	0	0	208	558
3:00 PM	6	3	12	0	3	21	25	6	35	0	1	66	15	75	19	0	2	109	29	62	7	0	0	98	294
3:15 PM	4	6	17	0	8	27	19	6	50	0	0	75	21	100	27	0	5	148	38	77	4	0	0	119	369
3:30 PM	9	10	24	0	1	43	15	12	42	0	2	69	25	102	26	0	1	153	38	62	3	0	0	103	368
3:45 PM	2	10	17	0	4	29	20	12	37	0	0	69	25	92	19	0	3	136	41	92	4	0	0	137	371
Hourly Total	21	29	70	0	16	120	79	36	164	0	3	279	86	369	91	0	11	546	146	293	18	0	0	457	1402
4:00 PM	6	9	23	0	0	38	17	10	61	0	0	88	24	85	18	0	2	127	31	78	2	0	0	111	364
4:15 PM	6	6	22	0	0	34	17	11	46	0	0	74	24	100	18	0	0	142	41	53	3	0	0	97	347

4:30 PM	8	7	20	0	4	35	28	13	64	0	0	105	35	99	18	0	4	152	44	70	5	0	0	119	411
4:45 PM	4	11	18	0	0	33	18	18	57	0	0	93	28	88	34	0	3	150	49	90	3	0	0	142	418
Hourly Total	24	33	83	0	4	140	80	52	228	0	0	360	111	372	88	0	9	571	165	291	13	0	0	469	1540
5:00 PM	9	11	20	0	0	40	19	12	53	0	3	84	25	114	19	0	0	158	49	86	2	0	0	137	419
5:15 PM	7	6	16	0	0	29	14	10	39	0	0	63	12	99	24	0	1	135	41	74	5	0	1	120	347
5:30 PM	5	7	14	0	1	26	21	15	40	0	2	76	18	93	17	0	1	128	37	72	3	0	0	112	342
5:45 PM	4	6	18	0	1	28	27	12	42	0	0	81	23	86	17	0	2	126	32	74	6	0	0	112	347
Hourly Total	25	30	68	0	2	123	81	49	174	0	5	304	78	392	77	0	4	547	159	306	16	0	1	481	1455
Grand Total	110	157	410	1	50	678	535	221	1126	0	20	1882	490	2420	564	0	47	3474	1037	2466	111	0	1	3614	9648
Approach %	16.2	23.2	60.5	0.1	-	-	28.4	11.7	59.8	0.0	-	-	14.1	69.7	16.2	0.0	-	-	28.7	68.2	3.1	0.0	-	-	-
Total %	1.1	1.6	4.2	0.0	-	7.0	5.5	2.3	11.7	0.0	-	19.5	5.1	25.1	5.8	0.0	-	36.0	10.7	25.6	1.2	0.0	-	37.5	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	107	154	403	1	-	665	519	219	1052	0	-	1790	486	2297	552	0	-	3335	964	2364	108	0	-	3436	9226
% Cars & Light Goods	97.3	98.1	98.3	100.0	-	98.1	97.0	99.1	93.4	-	-	95.1	99.2	94.9	97.9	-	-	96.0	93.0	95.9	97.3	-	-	95.1	95.6
Buses	0	1	1	0	-	2	7	0	30	0	-	37	1	18	4	0	-	23	34	12	0	0	-	46	108
% Buses	0.0	0.6	0.2	0.0	-	0.3	1.3	0.0	2.7	-	-	2.0	0.2	0.7	0.7	-	-	0.7	3.3	0.5	0.0	-	-	1.3	1.1
Single-Unit Trucks	2	2	5	0	-	9	7	0	30	0	-	37	3	41	7	0	-	51	20	59	2	0	-	81	178
% Single-Unit Trucks	1.8	1.3	1.2	0.0	-	1.3	1.3	0.0	2.7	-	-	2.0	0.6	1.7	1.2	-	-	1.5	1.9	2.4	1.8	-	-	2.2	1.8
Articulated Trucks	1	0	1	0	-	2	2	0	13	0	-	15	0	64	1	0	-	65	19	30	1	0	-	50	132
% Articulated Trucks	0.9	0.0	0.2	0.0	-	0.3	0.4	0.0	1.2	-	-	0.8	0.0	2.6	0.2	-	-	1.9	1.8	1.2	0.9	-	-	1.4	1.4
Bicycles on Road	0	0	0	0	-	0	0	2	1	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.9	0.1	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	2.0	-	-	-	-	-	10.0	-	-	-	-	-	4.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	49	-	-	-	-	-	18	-	-	-	-	-	45	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	98.0	-	-	-	-	-	90.0	-	-	-	-	-	95.7	-	-	-	-	-	100.0	-	-

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 3

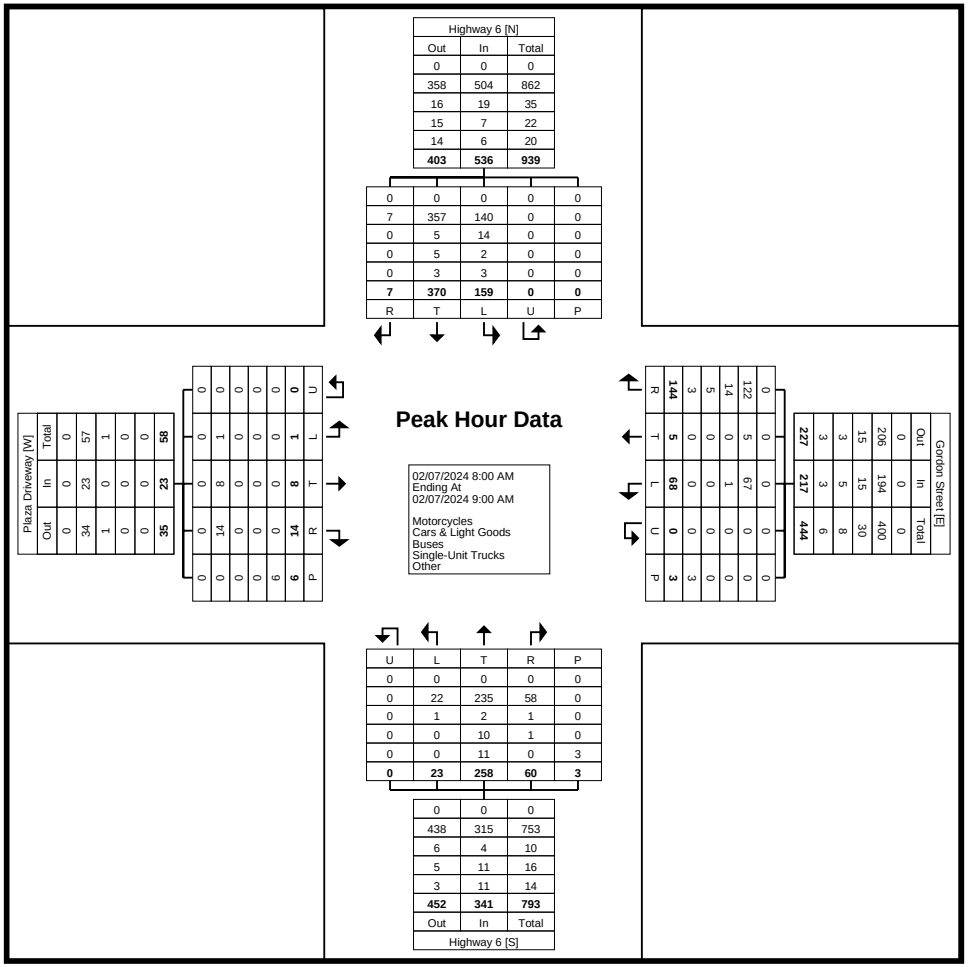


Turning Movement Data Plot

Turning Movement Peak Hour Data (8:00 AM)

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 4

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:00 AM	0	2	6	0	0	8	15	1	38	0	0	54	3	76	7	0	1	86	41	82	0	0	0	123	271
8:15 AM	0	4	2	0	0	6	20	1	41	0	0	62	2	51	9	0	1	62	30	101	2	0	0	133	263
8:30 AM	1	1	3	0	1	5	22	1	24	0	1	47	4	61	12	0	0	77	49	90	4	0	0	143	272
8:45 AM	0	1	3	0	5	4	11	2	41	0	2	54	14	70	32	0	1	116	39	97	1	0	0	137	311
Total	1	8	14	0	6	23	68	5	144	0	3	217	23	258	60	0	3	341	159	370	7	0	0	536	1117
Approach %	4.3	34.8	60.9	0.0	-	-	31.3	2.3	66.4	0.0	-	-	6.7	75.7	17.6	0.0	-	-	29.7	69.0	1.3	0.0	-	-	-
Total %	0.1	0.7	1.3	0.0	-	2.1	6.1	0.4	12.9	0.0	-	19.4	2.1	23.1	5.4	0.0	-	30.5	14.2	33.1	0.6	0.0	-	48.0	-
PHF	0.250	0.500	0.583	0.000	-	0.719	0.773	0.625	0.878	0.000	-	0.875	0.411	0.849	0.469	0.000	-	0.735	0.811	0.916	0.438	0.000	-	0.937	0.898
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1	8	14	0	-	23	67	5	122	0	-	194	22	235	58	0	-	315	140	357	7	0	-	504	1036
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	98.5	100.0	84.7	-	-	89.4	95.7	91.1	96.7	-	-	92.4	88.1	96.5	100.0	-	-	94.0	92.7
Buses	0	0	0	0	-	0	1	0	14	0	-	15	1	2	1	0	-	4	14	5	0	0	-	19	38
% Buses	0.0	0.0	0.0	-	-	0.0	1.5	0.0	9.7	-	-	6.9	4.3	0.8	1.7	-	-	1.2	8.8	1.4	0.0	-	-	3.5	3.4
Single-Unit Trucks	0	0	0	0	-	0	0	0	5	0	-	5	0	10	1	0	-	11	2	5	0	0	-	7	23
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.5	-	-	2.3	0.0	3.9	1.7	-	-	3.2	1.3	1.4	0.0	-	-	1.3	2.1
Articulated Trucks	0	0	0	0	-	0	0	0	3	0	-	3	0	11	0	0	-	11	3	3	0	0	-	6	20
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.1	-	-	1.4	0.0	4.3	0.0	-	-	3.2	1.9	0.8	0.0	-	-	1.1	1.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

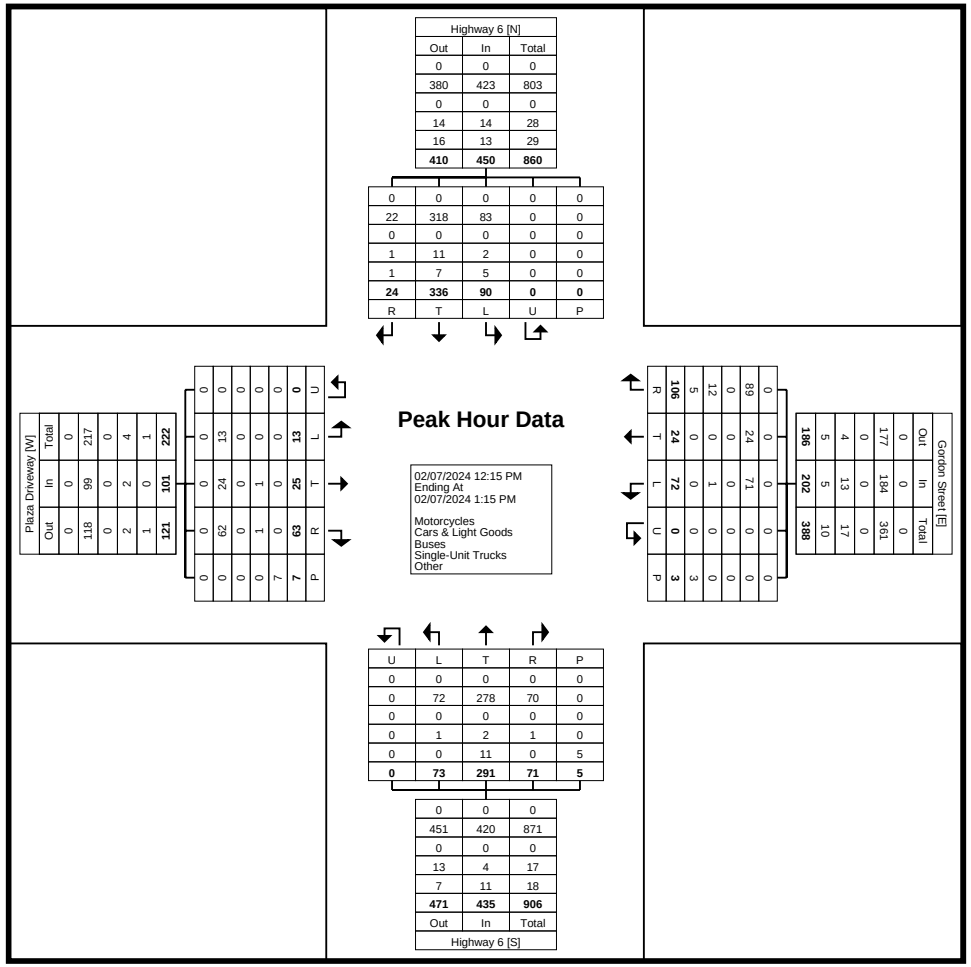


Turning Movement Peak Hour Data Plot (8:00 AM)

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 6

Turning Movement Peak Hour Data (12:15 PM)

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:15 PM	4	7	9	0	2	20	20	3	20	0	0	43	16	70	19	0	3	105	20	79	8	0	0	107	275
12:30 PM	3	8	21	0	4	32	14	10	33	0	1	57	21	84	15	0	2	120	23	83	4	0	0	110	319
12:45 PM	3	8	15	0	1	26	17	5	29	0	1	51	21	71	18	0	0	110	29	90	5	0	0	124	311
1:00 PM	3	2	18	0	0	23	21	6	24	0	1	51	15	66	19	0	0	100	18	84	7	0	0	109	283
Total	13	25	63	0	7	101	72	24	106	0	3	202	73	291	71	0	5	435	90	336	24	0	0	450	1188
Approach %	12.9	24.8	62.4	0.0	-	-	35.6	11.9	52.5	0.0	-	-	16.8	66.9	16.3	0.0	-	-	20.0	74.7	5.3	0.0	-	-	-
Total %	1.1	2.1	5.3	0.0	-	8.5	6.1	2.0	8.9	0.0	-	17.0	6.1	24.5	6.0	0.0	-	36.6	7.6	28.3	2.0	0.0	-	37.9	-
PHF	0.813	0.781	0.750	0.000	-	0.789	0.857	0.600	0.803	0.000	-	0.886	0.869	0.866	0.934	0.000	-	0.906	0.776	0.933	0.750	0.000	-	0.907	0.931
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	13	24	62	0	-	99	71	24	89	0	-	184	72	278	70	0	-	420	83	318	22	0	-	423	1126
% Cars & Light Goods	100.0	96.0	98.4	-	-	98.0	98.6	100.0	84.0	-	-	91.1	98.6	95.5	98.6	-	-	96.6	92.2	94.6	91.7	-	-	94.0	94.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	1	0	-	2	1	0	12	0	-	13	1	2	1	0	-	4	2	11	1	0	-	14	33
% Single-Unit Trucks	0.0	4.0	1.6	-	-	2.0	1.4	0.0	11.3	-	-	6.4	1.4	0.7	1.4	-	-	0.9	2.2	3.3	4.2	-	-	3.1	2.8
Articulated Trucks	0	0	0	0	-	0	0	0	4	0	-	4	0	11	0	0	-	11	5	7	1	0	-	13	28
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.8	-	-	2.0	0.0	3.8	0.0	-	-	2.5	5.6	2.1	4.2	-	-	2.9	2.4
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.9	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

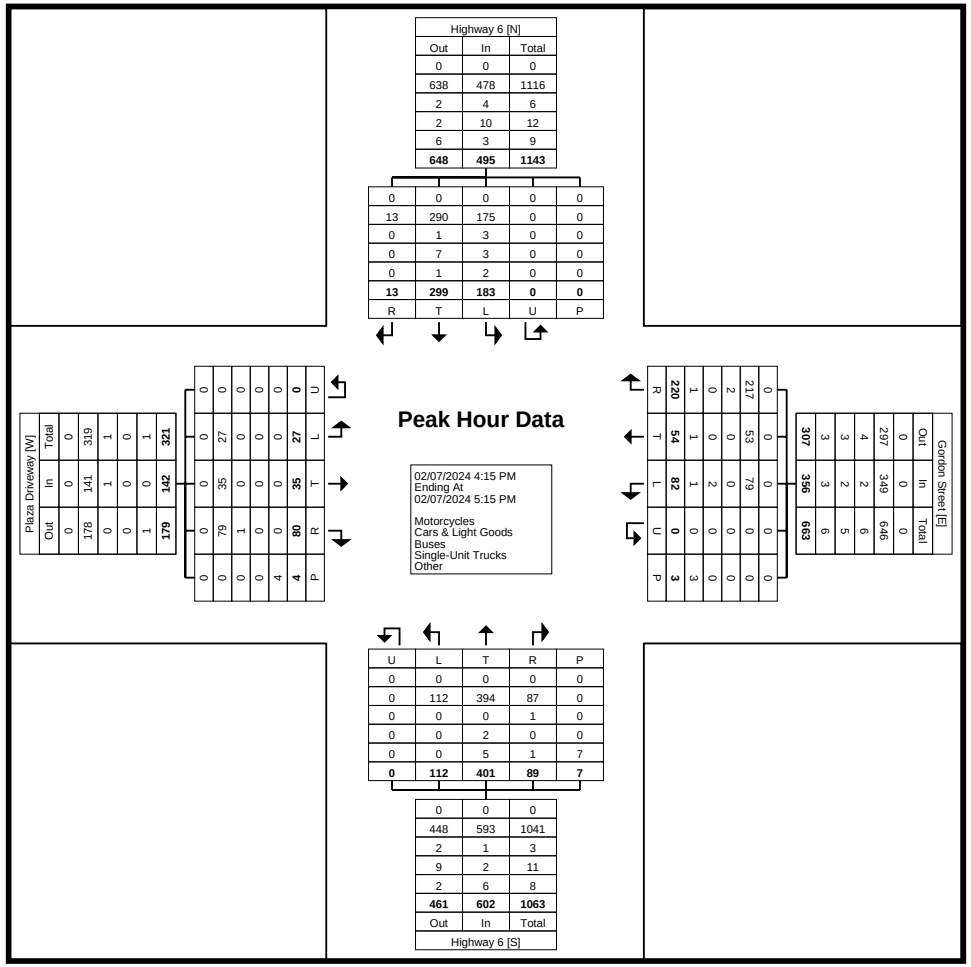


Turning Movement Peak Hour Data Plot (12:15 PM)

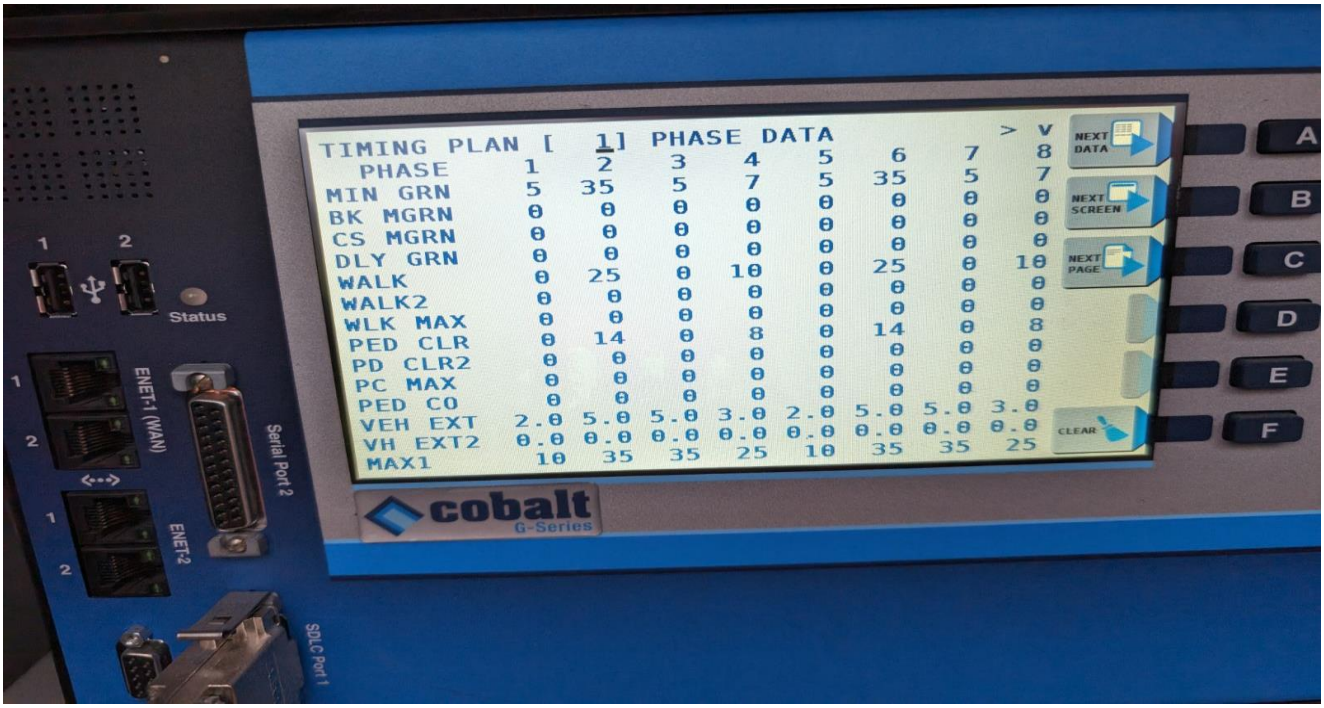
Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 8

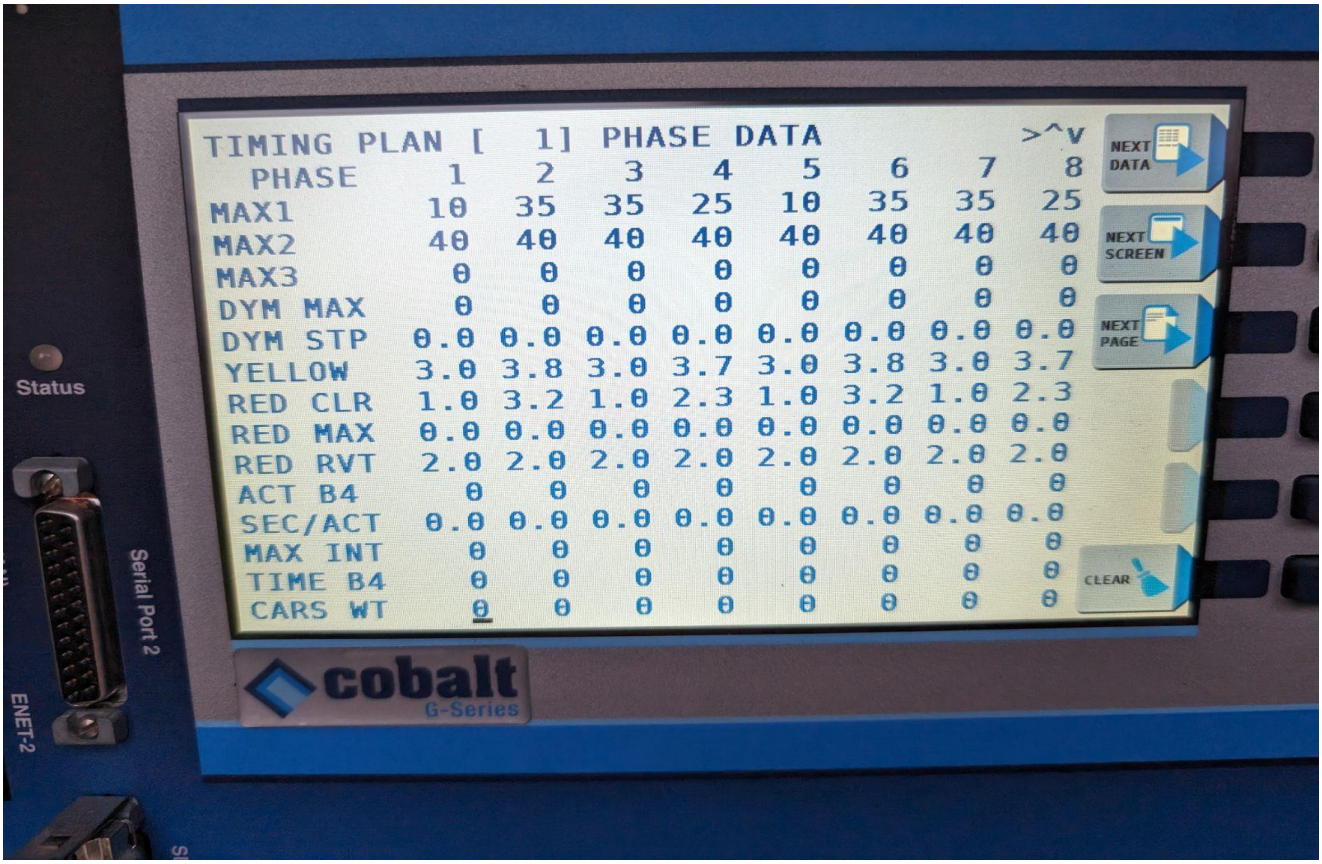
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	6	6	22	0	0	34	17	11	46	0	0	74	24	100	18	0	0	142	41	53	3	0	0	97	347
4:30 PM	8	7	20	0	4	35	28	13	64	0	0	105	35	99	18	0	4	152	44	70	5	0	0	119	411
4:45 PM	4	11	18	0	0	33	18	18	57	0	0	93	28	88	34	0	3	150	49	90	3	0	0	142	418
5:00 PM	9	11	20	0	0	40	19	12	53	0	3	84	25	114	19	0	0	158	49	86	2	0	0	137	419
Total	27	35	80	0	4	142	82	54	220	0	3	356	112	401	89	0	7	602	183	299	13	0	0	495	1595
Approach %	19.0	24.6	56.3	0.0	-	-	23.0	15.2	61.8	0.0	-	-	18.6	66.6	14.8	0.0	-	-	37.0	60.4	2.6	0.0	-	-	-
Total %	1.7	2.2	5.0	0.0	-	8.9	5.1	3.4	13.8	0.0	-	22.3	7.0	25.1	5.6	0.0	-	37.7	11.5	18.7	0.8	0.0	-	31.0	-
PHF	0.750	0.795	0.909	0.000	-	0.888	0.732	0.750	0.859	0.000	-	0.848	0.800	0.879	0.654	0.000	-	0.953	0.934	0.831	0.650	0.000	-	0.871	0.952
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	27	35	79	0	-	141	79	53	217	0	-	349	112	394	87	0	-	593	175	290	13	0	-	478	1561
% Cars & Light Goods	100.0	100.0	98.8	-	-	99.3	96.3	98.1	98.6	-	-	98.0	100.0	98.3	97.8	-	-	98.5	95.6	97.0	100.0	-	-	96.6	97.9
Buses	0	0	1	0	-	1	0	0	2	0	-	2	0	0	1	0	-	1	3	1	0	0	-	4	8
% Buses	0.0	0.0	1.3	-	-	0.7	0.0	0.0	0.9	-	-	0.6	0.0	0.0	1.1	-	-	0.2	1.6	0.3	0.0	-	-	0.8	0.5
Single-Unit Trucks	0	0	0	0	-	0	2	0	0	0	-	2	0	2	0	0	-	2	3	7	0	0	-	10	14
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	2.4	0.0	0.0	-	-	0.6	0.0	0.5	0.0	-	-	0.3	1.6	2.3	0.0	-	-	2.0	0.9
Articulated Trucks	0	0	0	0	-	0	1	0	1	0	-	2	0	5	1	0	-	6	2	1	0	0	-	3	11
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.5	-	-	0.6	0.0	1.2	1.1	-	-	1.0	1.1	0.3	0.0	-	-	0.6	0.7
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	1.9	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:15 PM)


TIMING PLAN [1] PHASE DATA > V
PHASE 1 2 3 4 5 6 7 8
MIN GRN 5 35 5 7 5 35 5 7
BK MGRN 0 0 0 0 0 0 0 0
CS MGRN 0 0 0 0 0 0 0 0
DLY GRN 0 0 0 0 0 0 0 0
WALK 0 25 0 10 0 25 0 10
WALK2 0 0 0 0 0 0 0 0
WLK MAX 0 0 0 0 0 0 0 0
PED CLR 0 14 0 8 0 14 0 8
PD CLR2 0 0 0 0 0 0 0 0
PC MAX 0 0 0 0 0 0 0 0
PED CO 0 0 0 0 0 0 0 0
VEH EXT 2.0 5.0 5.0 3.0 2.0 5.0 5.0 3.0
VH EXT2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
MAX1 10 35 35 25 10 35 35 25
NEXT DATA
NEXT SCREEN
NEXT PAGE
CLEAR
A
B
C
D
E
F
Status
ENET-1 (WAN)
Serial Port 2
ENET-2
SDLC Port 1
cobalt
G-Series


TIMING PLAN [1] PHASE DATA >^V
PHASE 1 2 3 4 5 6 7 8
MAX1 10 35 35 25 10 35 35 25
MAX2 40 40 40 40 40 40 40 40
MAX3 0 0 0 0 0 0 0 0
DYM MAX 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
YELLOW 3.0 3.8 3.0 3.7 3.0 3.8 3.0 3.7
RED CLR 1.0 3.2 1.0 2.3 1.0 3.2 1.0 2.3
RED MAX 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RED RVT 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
SEC/ACT 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
TIME B4 0 0 0 0 0 0 0 0
CARS WT 0 0 0 0 0 0 0 0
NEXT DATA
NEXT SCREEN
NEXT PAGE
CLEAR
Status
Serial Port 2
ENET-2
cobalt
G-Series

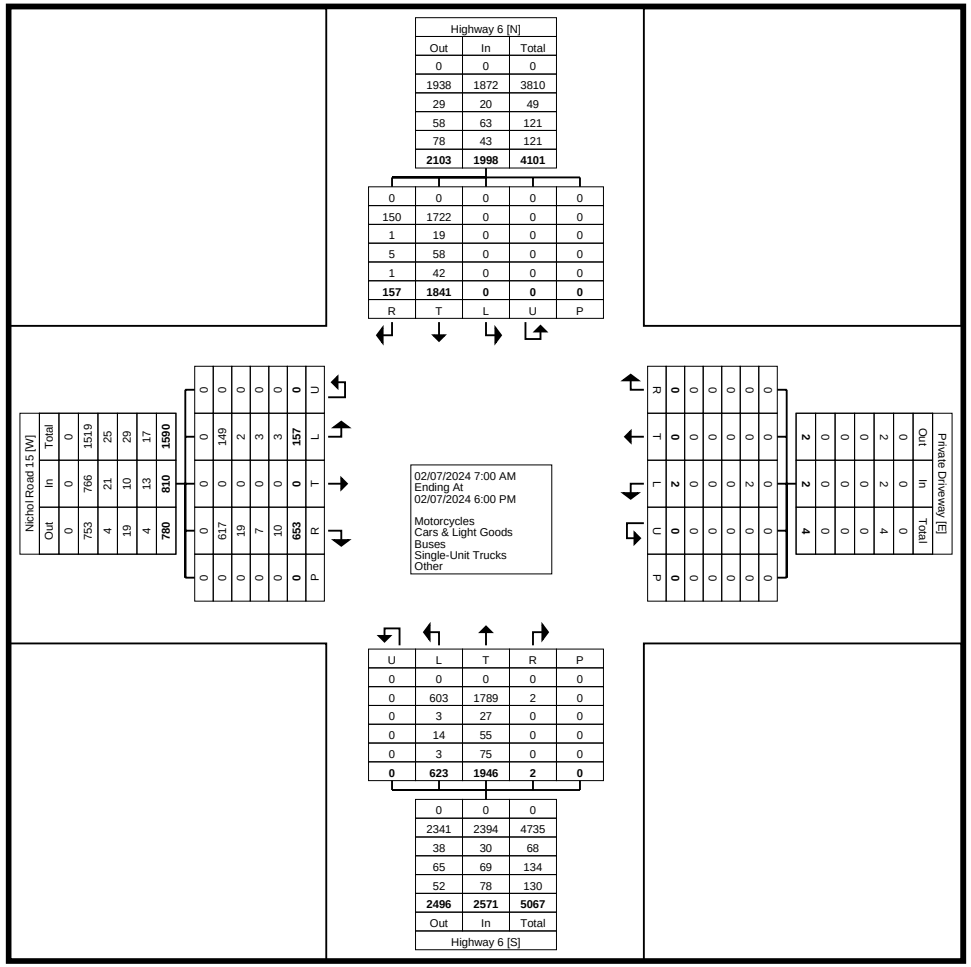
Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 1

Turning Movement Data

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	6	0	16	0	0	22	0	0	0	0	0	0	14	32	0	0	0	46	0	52	5	0	0	57	125
7:15 AM	3	0	13	0	0	16	0	0	0	0	0	0	22	44	0	0	0	66	0	79	7	0	0	86	168
7:30 AM	9	0	15	0	0	24	0	0	0	0	0	0	23	44	1	0	0	68	0	81	4	0	0	85	177
7:45 AM	5	0	26	0	0	31	0	0	0	0	0	0	22	65	1	0	0	88	0	76	5	0	0	81	200
Hourly Total	23	0	70	0	0	93	0	0	0	0	0	0	81	185	2	0	0	268	0	288	21	0	0	309	670
8:00 AM	4	0	27	0	0	31	0	0	0	0	0	0	28	54	0	0	0	82	0	61	4	0	0	65	178
8:15 AM	3	0	22	0	0	25	1	0	0	0	0	1	25	48	0	0	0	73	0	73	10	0	0	83	182
8:30 AM	6	0	18	0	0	24	1	0	0	0	0	1	23	41	0	0	0	64	0	72	5	0	0	77	166
8:45 AM	3	0	31	0	0	34	0	0	0	0	0	0	15	42	0	0	0	57	0	73	7	0	0	80	171
Hourly Total	16	0	98	0	0	114	2	0	0	0	0	2	91	185	0	0	0	276	0	279	26	0	0	305	697
9:00 AM	3	0	18	0	0	21	0	0	0	0	0	0	15	49	0	0	0	64	0	53	5	0	0	58	143
9:15 AM	5	0	10	0	0	15	0	0	0	0	0	0	15	39	0	0	0	54	0	48	4	0	0	52	121
9:30 AM	3	0	15	0	0	18	0	0	0	0	0	0	10	53	0	0	0	63	0	55	7	0	0	62	143
9:45 AM	2	0	15	0	0	17	0	0	0	0	0	0	12	42	0	0	0	54	0	46	6	0	0	52	123
Hourly Total	13	0	58	0	0	71	0	0	0	0	0	0	52	183	0	0	0	235	0	202	22	0	0	224	530
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	5	0	16	0	0	21	0	0	0	0	0	0	10	31	0	0	0	41	0	49	5	0	0	54	116
11:45 AM	1	0	10	0	0	11	0	0	0	0	0	0	20	53	0	0	0	73	0	34	7	0	0	41	125
Hourly Total	6	0	26	0	0	32	0	0	0	0	0	0	30	84	0	0	0	114	0	83	12	0	0	95	241
12:00 PM	3	0	11	0	0	14	0	0	0	0	0	0	23	36	0	0	0	59	0	50	3	0	0	53	126
12:15 PM	3	0	10	0	0	13	0	0	0	0	0	0	17	47	0	0	0	64	0	50	2	0	0	52	129
12:30 PM	6	0	15	0	0	21	0	0	0	0	0	0	12	59	0	0	0	71	0	61	3	0	0	64	156
12:45 PM	2	0	19	0	0	21	0	0	0	0	0	0	10	54	0	0	0	64	0	65	1	0	0	66	151
Hourly Total	14	0	55	0	0	69	0	0	0	0	0	0	62	196	0	0	0	258	0	226	9	0	0	235	562
1:00 PM	4	0	16	0	0	20	0	0	0	0	0	0	18	48	0	0	0	66	0	59	3	0	0	62	148
1:15 PM	2	0	15	0	0	17	0	0	0	0	0	0	16	58	0	0	0	74	0	48	7	0	0	55	146
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	0	31	0	0	37	0	0	0	0	0	0	34	106	0	0	0	140	0	107	10	0	0	117	294
3:00 PM	8	0	22	0	0	30	0	0	0	0	0	0	17	73	0	0	0	90	0	45	0	0	0	45	165
3:15 PM	5	0	28	0	0	33	0	0	0	0	0	0	29	79	0	0	0	108	0	49	6	0	0	55	196
3:30 PM	11	0	26	0	0	37	0	0	0	0	0	0	20	82	0	0	0	102	0	50	6	0	0	56	195
3:45 PM	7	0	30	0	0	37	0	0	0	0	0	0	20	78	0	0	0	98	0	57	6	0	0	63	198
Hourly Total	31	0	106	0	0	137	0	0	0	0	0	0	86	312	0	0	0	398	0	201	18	0	0	219	754
4:00 PM	4	0	26	0	0	30	0	0	0	0	0	0	22	83	0	0	0	105	0	47	6	0	0	53	188
4:15 PM	13	0	21	0	0	34	0	0	0	0	0	0	25	79	0	0	0	104	0	57	6	0	0	63	201

4:30 PM	6	0	30	0	0	36	0	0	0	0	0	0	34	103	0	0	0	137	0	49	8	0	0	57	230
4:45 PM	4	0	33	0	0	37	0	0	0	0	0	0	23	82	0	0	0	105	0	67	7	0	0	74	216
Hourly Total	27	0	110	0	0	137	0	0	0	0	0	0	104	347	0	0	0	451	0	220	27	0	0	247	835
5:00 PM	7	0	30	0	0	37	0	0	0	0	0	0	23	102	0	0	0	125	0	66	5	0	0	71	233
5:15 PM	5	0	25	0	0	30	0	0	0	0	0	0	28	88	0	0	0	116	0	65	2	0	0	67	213
5:30 PM	5	0	23	0	0	28	0	0	0	0	0	0	13	81	0	0	0	94	0	46	2	0	0	48	170
5:45 PM	4	0	21	0	0	25	0	0	0	0	0	0	19	77	0	0	0	96	0	58	3	0	0	61	182
Hourly Total	21	0	99	0	0	120	0	0	0	0	0	0	83	348	0	0	0	431	0	235	12	0	0	247	798
Grand Total	157	0	653	0	0	810	2	0	0	0	0	2	623	1946	2	0	0	2571	0	1841	157	0	0	1998	5381
Approach %	19.4	0.0	80.6	0.0	-	-	100.0	0.0	0.0	0.0	-	-	24.2	75.7	0.1	0.0	-	-	0.0	92.1	7.9	0.0	-	-	-
Total %	2.9	0.0	12.1	0.0	-	15.1	0.0	0.0	0.0	0.0	-	0.0	11.6	36.2	0.0	0.0	-	47.8	0.0	34.2	2.9	0.0	-	37.1	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	149	0	617	0	-	766	2	0	0	0	-	2	603	1789	2	0	-	2394	0	1722	150	0	-	1872	5034
% Cars & Light Goods	94.9	-	94.5	-	-	94.6	100.0	-	-	-	-	100.0	96.8	91.9	100.0	-	-	93.1	-	93.5	95.5	-	-	93.7	93.6
Buses	2	0	19	0	-	21	0	0	0	0	-	0	3	27	0	0	-	30	0	19	1	0	-	20	71
% Buses	1.3	-	2.9	-	-	2.6	0.0	-	-	-	-	0.0	0.5	1.4	0.0	-	-	1.2	-	1.0	0.6	-	-	1.0	1.3
Single-Unit Trucks	3	0	7	0	-	10	0	0	0	0	-	0	14	55	0	0	-	69	0	58	5	0	-	63	142
% Single-Unit Trucks	1.9	-	1.1	-	-	1.2	0.0	-	-	-	-	0.0	2.2	2.8	0.0	-	-	2.7	-	3.2	3.2	-	-	3.2	2.6
Articulated Trucks	3	0	10	0	-	13	0	0	0	0	-	0	3	75	0	0	-	78	0	42	1	0	-	43	134
% Articulated Trucks	1.9	-	1.5	-	-	1.6	0.0	-	-	-	-	0.0	0.5	3.9	0.0	-	-	3.0	-	2.3	0.6	-	-	2.2	2.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 3



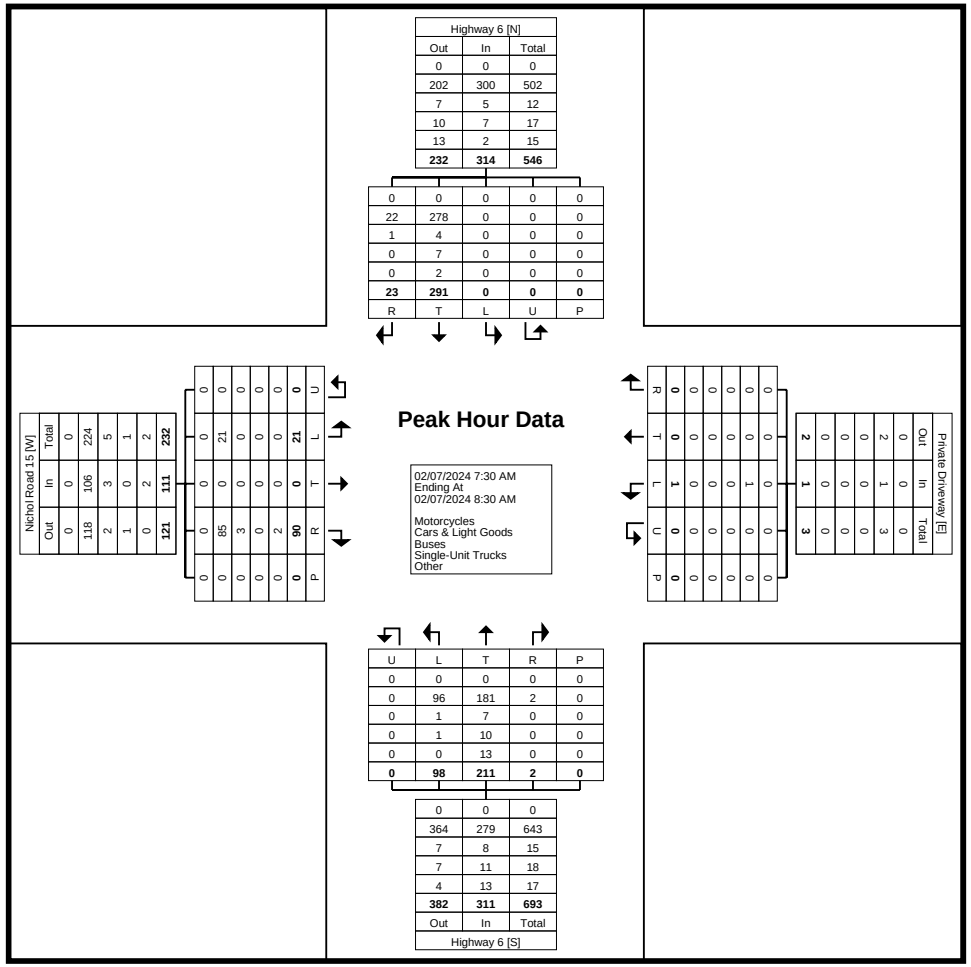
Turning Movement Data Plot

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	9	0	15	0	0	24	0	0	0	0	0	0	23	44	1	0	0	68	0	81	4	0	0	85	177
7:45 AM	5	0	26	0	0	31	0	0	0	0	0	0	22	65	1	0	0	88	0	76	5	0	0	81	200
8:00 AM	4	0	27	0	0	31	0	0	0	0	0	0	28	54	0	0	0	82	0	61	4	0	0	65	178
8:15 AM	3	0	22	0	0	25	1	0	0	0	0	1	25	48	0	0	0	73	0	73	10	0	0	83	182
Total	21	0	90	0	0	111	1	0	0	0	0	1	98	211	2	0	0	311	0	291	23	0	0	314	737
Approach %	18.9	0.0	81.1	0.0	-	-	100.0	0.0	0.0	0.0	-	-	31.5	67.8	0.6	0.0	-	-	0.0	92.7	7.3	0.0	-	-	-
Total %	2.8	0.0	12.2	0.0	-	15.1	0.1	0.0	0.0	0.0	-	0.1	13.3	28.6	0.3	0.0	-	42.2	0.0	39.5	3.1	0.0	-	42.6	-
PHF	0.583	0.000	0.833	0.000	-	0.895	0.250	0.000	0.000	0.000	-	0.250	0.875	0.812	0.500	0.000	-	0.884	0.000	0.898	0.575	0.000	-	0.924	0.921
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	21	0	85	0	-	106	1	0	0	0	-	1	96	181	2	0	-	279	0	278	22	0	-	300	686
% Cars & Light Goods	100.0	-	94.4	-	-	95.5	100.0	-	-	-	-	100.0	98.0	85.8	100.0	-	-	89.7	-	95.5	95.7	-	-	95.5	93.1
Buses	0	0	3	0	-	3	0	0	0	0	-	0	1	7	0	0	-	8	0	4	1	0	-	5	16
% Buses	0.0	-	3.3	-	-	2.7	0.0	-	-	-	-	0.0	1.0	3.3	0.0	-	-	2.6	-	1.4	4.3	-	-	1.6	2.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	10	0	0	-	11	0	7	0	0	-	7	18
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	1.0	4.7	0.0	-	-	3.5	-	2.4	0.0	-	-	2.2	2.4
Articulated Trucks	0	0	2	0	-	2	0	0	0	0	-	0	0	13	0	0	-	13	0	2	0	0	-	2	17
% Articulated Trucks	0.0	-	2.2	-	-	1.8	0.0	-	-	-	-	0.0	0.0	6.2	0.0	-	-	4.2	-	0.7	0.0	-	-	0.6	2.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 5

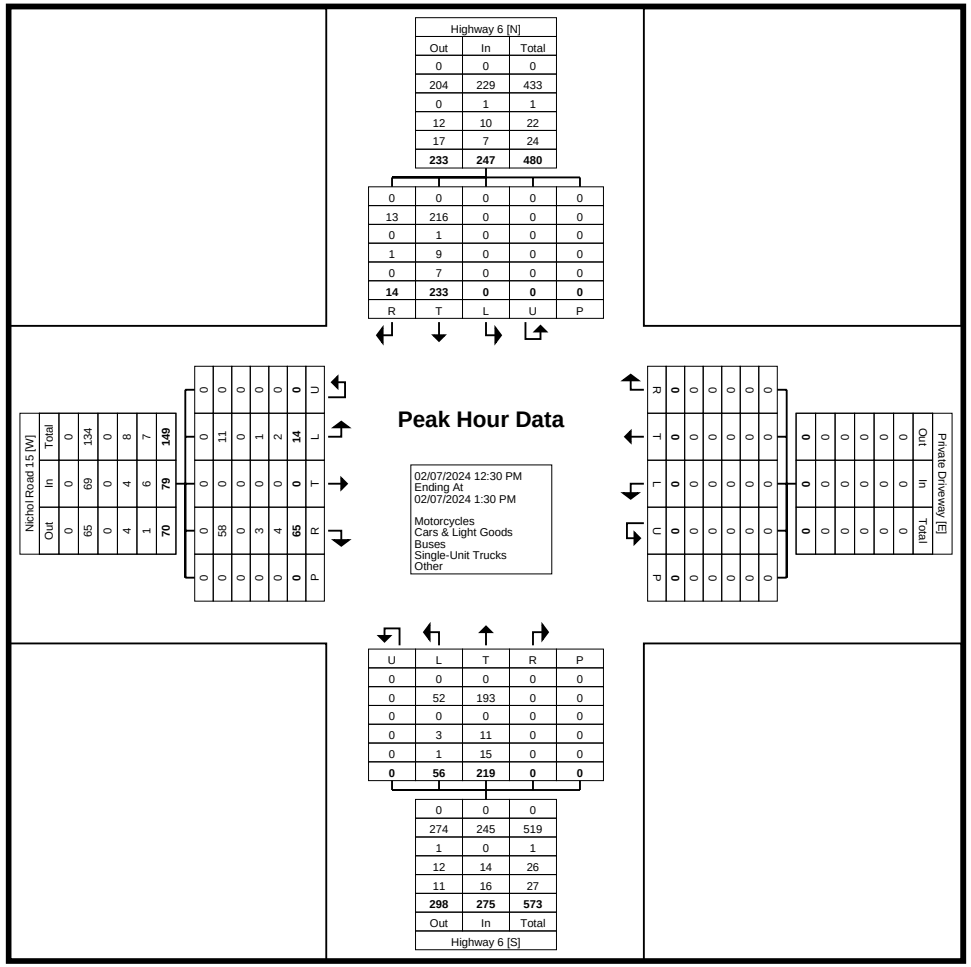


Turning Movement Peak Hour Data Plot (7:30 AM)

Turning Movement Peak Hour Data (12:30 PM)

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 6

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	6	0	15	0	0	21	0	0	0	0	0	0	12	59	0	0	0	71	0	61	3	0	0	64	156
12:45 PM	2	0	19	0	0	21	0	0	0	0	0	0	10	54	0	0	0	64	0	65	1	0	0	66	151
1:00 PM	4	0	16	0	0	20	0	0	0	0	0	0	18	48	0	0	0	66	0	59	3	0	0	62	148
1:15 PM	2	0	15	0	0	17	0	0	0	0	0	0	16	58	0	0	0	74	0	48	7	0	0	55	146
Total	14	0	65	0	0	79	0	0	0	0	0	0	56	219	0	0	0	275	0	233	14	0	0	247	601
Approach %	17.7	0.0	82.3	0.0	-	-	0.0	0.0	0.0	0.0	-	-	20.4	79.6	0.0	0.0	-	-	0.0	94.3	5.7	0.0	-	-	-
Total %	2.3	0.0	10.8	0.0	-	13.1	0.0	0.0	0.0	0.0	-	0.0	9.3	36.4	0.0	0.0	-	45.8	0.0	38.8	2.3	0.0	-	41.1	-
PHF	0.583	0.000	0.855	0.000	-	0.940	0.000	0.000	0.000	0.000	-	0.000	0.778	0.928	0.000	0.000	-	0.929	0.000	0.896	0.500	0.000	-	0.936	0.963
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	11	0	58	0	-	69	0	0	0	0	-	0	52	193	0	0	-	245	0	216	13	0	-	229	543
% Cars & Light Goods	78.6	-	89.2	-	-	87.3	-	-	-	-	-	-	92.9	88.1	-	-	-	89.1	-	92.7	92.9	-	-	92.7	90.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.4	0.0	-	-	0.4	0.2
Single-Unit Trucks	1	0	3	0	-	4	0	0	0	0	-	0	3	11	0	0	-	14	0	9	1	0	-	10	28
% Single-Unit Trucks	7.1	-	4.6	-	-	5.1	-	-	-	-	-	-	5.4	5.0	-	-	-	5.1	-	3.9	7.1	-	-	4.0	4.7
Articulated Trucks	2	0	4	0	-	6	0	0	0	0	-	0	1	15	0	0	-	16	0	7	0	0	-	7	29
% Articulated Trucks	14.3	-	6.2	-	-	7.6	-	-	-	-	-	-	1.8	6.8	-	-	-	5.8	-	3.0	0.0	-	-	2.8	4.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

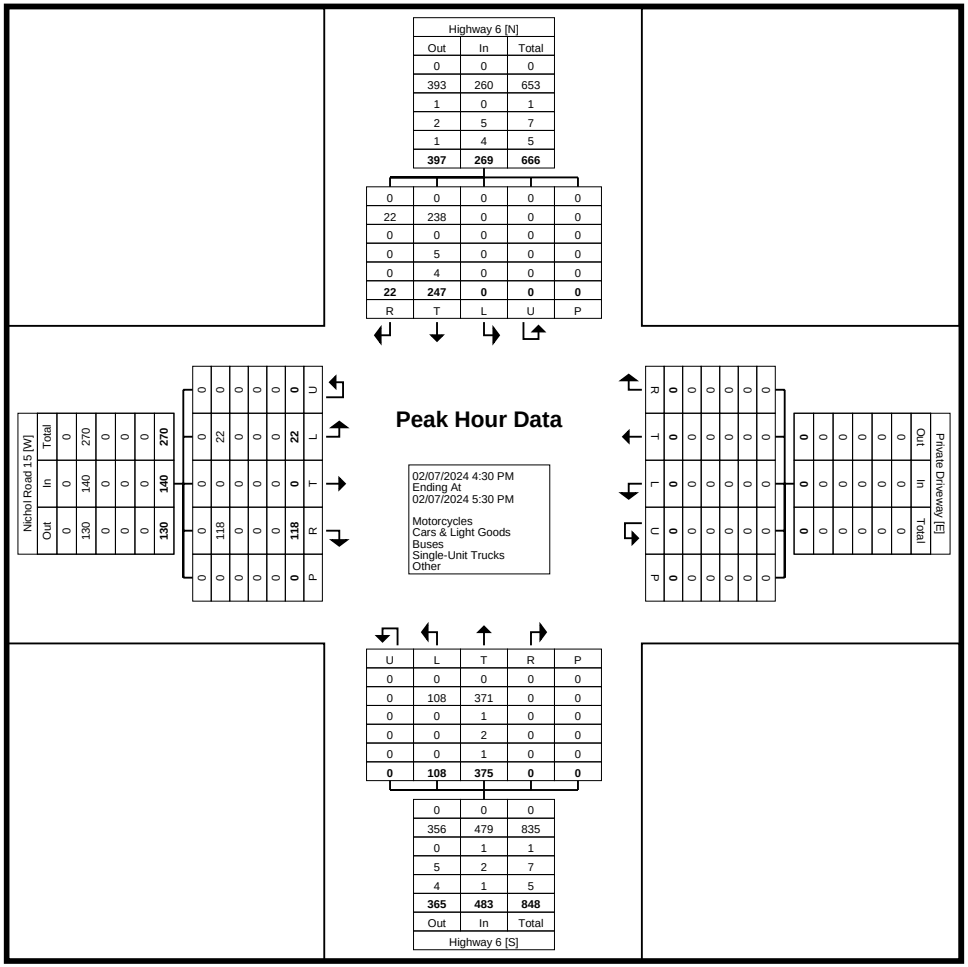


Turning Movement Peak Hour Data Plot (12:30 PM)

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 8

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	6	0	30	0	0	36	0	0	0	0	0	0	34	103	0	0	0	137	0	49	8	0	0	57	230
4:45 PM	4	0	33	0	0	37	0	0	0	0	0	0	23	82	0	0	0	105	0	67	7	0	0	74	216
5:00 PM	7	0	30	0	0	37	0	0	0	0	0	0	23	102	0	0	0	125	0	66	5	0	0	71	233
5:15 PM	5	0	25	0	0	30	0	0	0	0	0	0	28	88	0	0	0	116	0	65	2	0	0	67	213
Total	22	0	118	0	0	140	0	0	0	0	0	0	108	375	0	0	0	483	0	247	22	0	0	269	892
Approach %	15.7	0.0	84.3	0.0	-	-	0.0	0.0	0.0	0.0	-	-	22.4	77.6	0.0	0.0	-	-	0.0	91.8	8.2	0.0	-	-	-
Total %	2.5	0.0	13.2	0.0	-	15.7	0.0	0.0	0.0	0.0	-	0.0	12.1	42.0	0.0	0.0	-	54.1	0.0	27.7	2.5	0.0	-	30.2	-
PHF	0.786	0.000	0.894	0.000	-	0.946	0.000	0.000	0.000	0.000	-	0.000	0.794	0.910	0.000	0.000	-	0.881	0.000	0.922	0.688	0.000	-	0.909	0.957
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	22	0	118	0	-	140	0	0	0	0	-	0	108	371	0	0	-	479	0	238	22	0	-	260	879
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	-	-	-	-	-	-	100.0	98.9	-	-	-	99.2	-	96.4	100.0	-	-	96.7	98.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.3	-	-	-	0.2	-	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	5	0	0	-	5	7
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.5	-	-	-	0.4	-	2.0	0.0	-	-	1.9	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	4	0	0	-	4	5
% Articulated Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.3	-	-	-	0.2	-	1.6	0.0	-	-	1.5	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

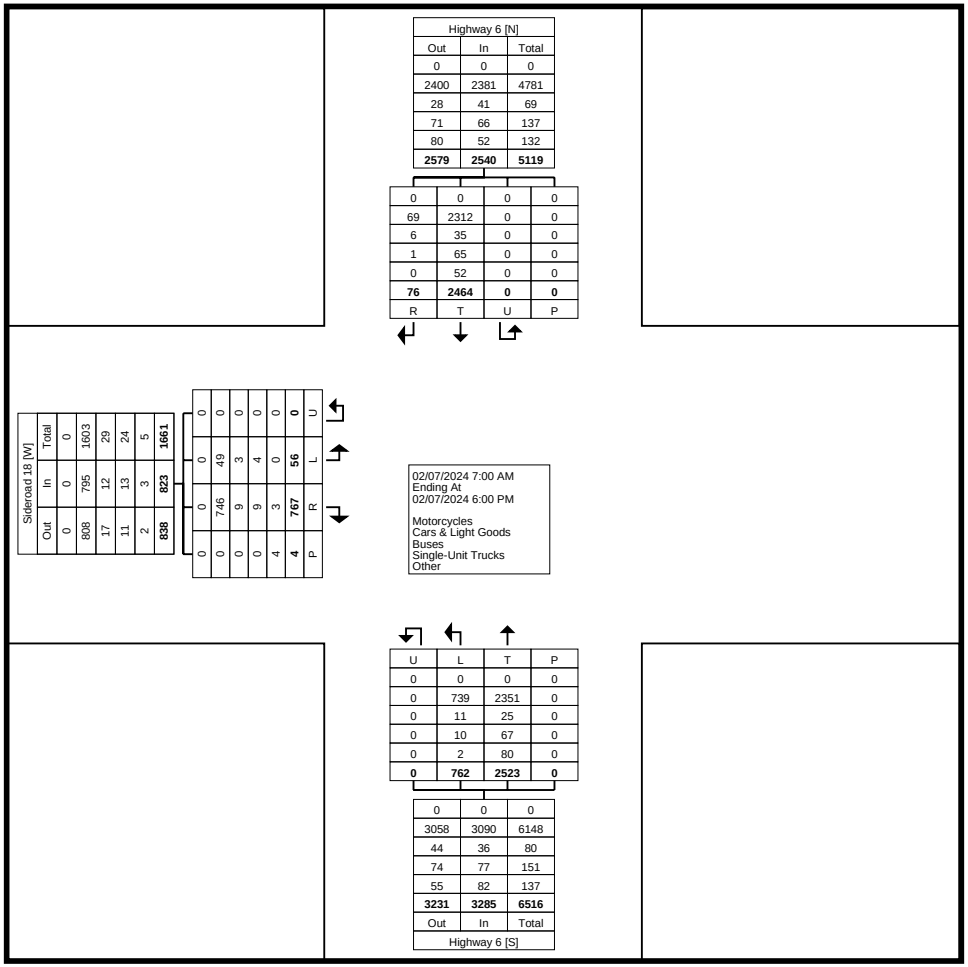
Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 1

Turning Movement Data

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	3	22	0	0	25	11	51	0	0	62	69	0	0	0	69	156
7:15 AM	4	28	0	0	32	22	62	0	0	84	86	7	0	0	93	209
7:30 AM	2	21	0	0	23	14	73	0	0	87	97	0	0	0	97	207
7:45 AM	2	28	0	0	30	24	77	0	0	101	95	4	0	0	99	230
Hourly Total	11	99	0	0	110	71	263	0	0	334	347	11	0	0	358	802
8:00 AM	1	23	0	0	24	23	86	0	0	109	84	3	0	0	87	220
8:15 AM	6	37	0	0	43	24	64	0	0	88	96	7	0	0	103	234
8:30 AM	2	42	0	0	44	21	58	0	0	79	87	4	0	0	91	214
8:45 AM	2	24	0	0	26	28	59	0	0	87	104	3	0	0	107	220
Hourly Total	11	126	0	0	137	96	267	0	0	363	371	17	0	0	388	888
9:00 AM	3	16	0	0	19	25	63	0	0	88	67	5	0	0	72	179
9:15 AM	0	21	0	0	21	22	53	0	0	75	59	0	0	0	59	155
9:30 AM	0	20	0	0	20	19	62	0	0	81	67	1	0	0	68	169
9:45 AM	1	13	0	0	14	18	51	0	0	69	60	1	0	0	61	144
Hourly Total	4	70	0	0	74	84	229	0	0	313	253	7	0	0	260	647
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	19	0	0	19	16	42	0	0	58	59	2	0	0	61	138
11:45 AM	0	20	0	0	20	16	72	0	0	88	47	2	0	0	49	157
Hourly Total	0	39	0	0	39	32	114	0	0	146	106	4	0	0	110	295
12:00 PM	0	23	0	0	23	17	61	0	0	78	62	0	0	0	62	163
12:15 PM	0	25	0	0	25	24	60	0	0	84	61	1	0	0	62	171
12:30 PM	0	29	0	0	29	22	76	0	0	98	75	1	0	0	76	203
12:45 PM	2	26	0	0	28	23	61	0	0	84	85	2	0	0	87	199
Hourly Total	2	103	0	0	105	86	258	0	0	344	283	4	0	0	287	736
1:00 PM	1	11	0	0	12	18	62	0	0	80	73	1	0	0	74	166
1:15 PM	1	10	0	0	11	17	72	0	0	89	65	1	0	0	66	166
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	2	21	0	0	23	35	134	0	0	169	138	2	0	0	140	332
3:00 PM	6	18	0	0	24	20	88	0	0	108	63	1	0	0	64	196
3:15 PM	6	20	0	0	26	37	99	0	0	136	79	5	0	0	84	246
3:30 PM	5	15	0	0	20	29	94	0	0	123	82	3	0	0	85	228
3:45 PM	1	30	0	1	31	29	94	0	0	123	92	3	0	0	95	249
Hourly Total	18	83	0	1	101	115	375	0	0	490	316	12	0	0	328	919
4:00 PM	0	18	0	0	18	26	109	0	0	135	70	3	0	0	73	226
4:15 PM	2	19	0	0	21	35	101	0	0	136	79	1	0	0	80	237
4:30 PM	3	38	0	0	41	28	137	0	0	165	73	3	0	0	76	282

4:45 PM	0	36	0	0	36	36	101	0	0	137	99	3	0	0	102	275
Hourly Total	5	111	0	0	116	125	448	0	0	573	321	10	0	0	331	1020
5:00 PM	1	34	0	0	35	30	123	0	0	153	98	2	0	0	100	288
5:15 PM	1	26	0	3	27	28	116	0	0	144	83	2	0	0	85	256
5:30 PM	1	33	0	0	34	32	96	0	0	128	75	2	0	0	77	239
5:45 PM	0	22	0	0	22	28	100	0	0	128	73	3	0	0	76	226
Hourly Total	3	115	0	3	118	118	435	0	0	553	329	9	0	0	338	1009
Grand Total	56	767	0	4	823	762	2523	0	0	3285	2464	76	0	0	2540	6648
Approach %	6.8	93.2	0.0	-	-	23.2	76.8	0.0	-	-	97.0	3.0	0.0	-	-	-
Total %	0.8	11.5	0.0	-	12.4	11.5	38.0	0.0	-	49.4	37.1	1.1	0.0	-	38.2	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	49	746	0	-	795	739	2351	0	-	3090	2312	69	0	-	2381	6266
% Cars & Light Goods	87.5	97.3	-	-	96.6	97.0	93.2	-	-	94.1	93.8	90.8	-	-	93.7	94.3
Buses	3	9	0	-	12	11	25	0	-	36	35	6	0	-	41	89
% Buses	5.4	1.2	-	-	1.5	1.4	1.0	-	-	1.1	1.4	7.9	-	-	1.6	1.3
Single-Unit Trucks	4	9	0	-	13	10	67	0	-	77	65	1	0	-	66	156
% Single-Unit Trucks	7.1	1.2	-	-	1.6	1.3	2.7	-	-	2.3	2.6	1.3	-	-	2.6	2.3
Articulated Trucks	0	2	0	-	2	2	80	0	-	82	52	0	0	-	52	136
% Articulated Trucks	0.0	0.3	-	-	0.2	0.3	3.2	-	-	2.5	2.1	0.0	-	-	2.0	2.0
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 3



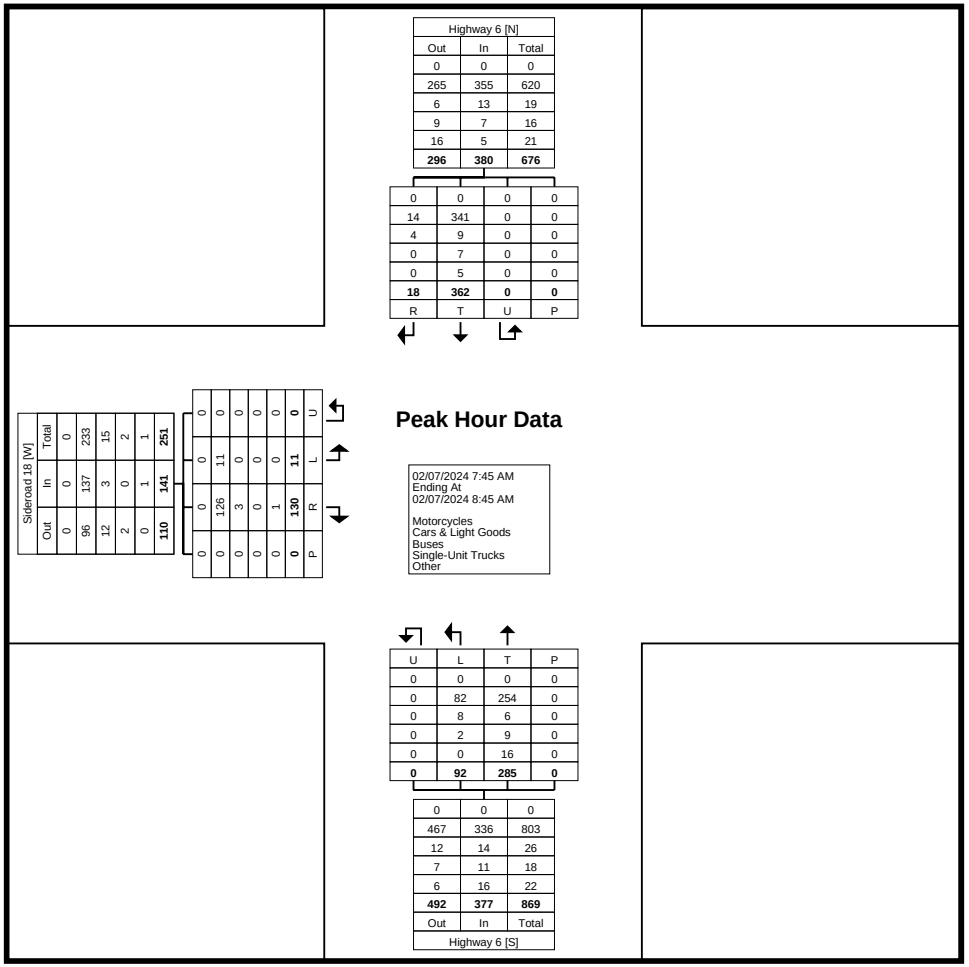
Turning Movement Data Plot

Turning Movement Peak Hour Data (7:45 AM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:45 AM	2	28	0	0	30	24	77	0	0	101	95	4	0	0	99	230
8:00 AM	1	23	0	0	24	23	86	0	0	109	84	3	0	0	87	220
8:15 AM	6	37	0	0	43	24	64	0	0	88	96	7	0	0	103	234
8:30 AM	2	42	0	0	44	21	58	0	0	79	87	4	0	0	91	214
Total	11	130	0	0	141	92	285	0	0	377	362	18	0	0	380	898
Approach %	7.8	92.2	0.0	-	-	24.4	75.6	0.0	-	-	95.3	4.7	0.0	-	-	-
Total %	1.2	14.5	0.0	-	15.7	10.2	31.7	0.0	-	42.0	40.3	2.0	0.0	-	42.3	-
PHF	0.458	0.774	0.000	-	0.801	0.958	0.828	0.000	-	0.865	0.943	0.643	0.000	-	0.922	0.959
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	11	126	0	-	137	82	254	0	-	336	341	14	0	-	355	828
% Cars & Light Goods	100.0	96.9	-	-	97.2	89.1	89.1	-	-	89.1	94.2	77.8	-	-	93.4	92.2
Buses	0	3	0	-	3	8	6	0	-	14	9	4	0	-	13	30
% Buses	0.0	2.3	-	-	2.1	8.7	2.1	-	-	3.7	2.5	22.2	-	-	3.4	3.3
Single-Unit Trucks	0	0	0	-	0	2	9	0	-	11	7	0	0	-	7	18
% Single-Unit Trucks	0.0	0.0	-	-	0.0	2.2	3.2	-	-	2.9	1.9	0.0	-	-	1.8	2.0
Articulated Trucks	0	1	0	-	1	0	16	0	-	16	5	0	0	-	5	22
% Articulated Trucks	0.0	0.8	-	-	0.7	0.0	5.6	-	-	4.2	1.4	0.0	-	-	1.3	2.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 5



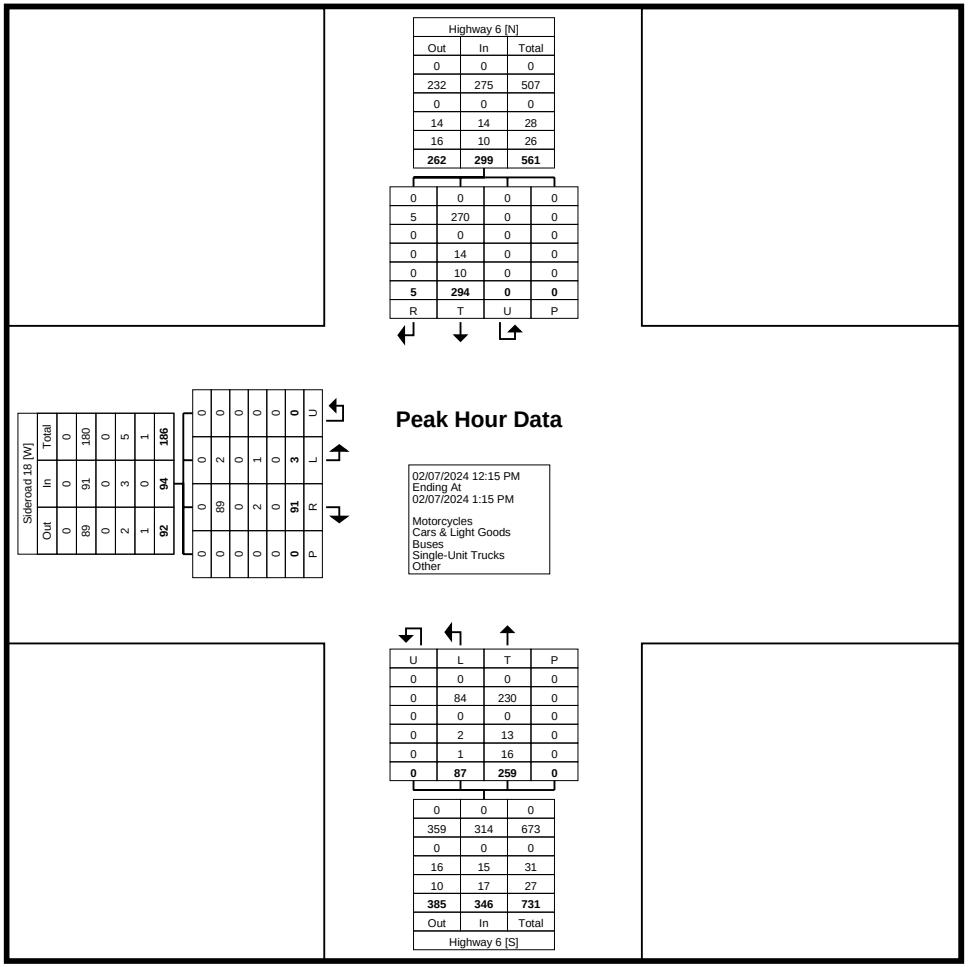
Turning Movement Peak Hour Data Plot (7:45 AM)

Turning Movement Peak Hour Data (12:15 PM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 6

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:15 PM	0	25	0	0	25	24	60	0	0	84	61	1	0	0	62	171
12:30 PM	0	29	0	0	29	22	76	0	0	98	75	1	0	0	76	203
12:45 PM	2	26	0	0	28	23	61	0	0	84	85	2	0	0	87	199
1:00 PM	1	11	0	0	12	18	62	0	0	80	73	1	0	0	74	166
Total	3	91	0	0	94	87	259	0	0	346	294	5	0	0	299	739
Approach %	3.2	96.8	0.0	-	-	25.1	74.9	0.0	-	-	98.3	1.7	0.0	-	-	-
Total %	0.4	12.3	0.0	-	12.7	11.8	35.0	0.0	-	46.8	39.8	0.7	0.0	-	40.5	-
PHF	0.375	0.784	0.000	-	0.810	0.906	0.852	0.000	-	0.883	0.865	0.625	0.000	-	0.859	0.910
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	2	89	0	-	91	84	230	0	-	314	270	5	0	-	275	680
% Cars & Light Goods	66.7	97.8	-	-	96.8	96.6	88.8	-	-	90.8	91.8	100.0	-	-	92.0	92.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	2	0	-	3	2	13	0	-	15	14	0	0	-	14	32
% Single-Unit Trucks	33.3	2.2	-	-	3.2	2.3	5.0	-	-	4.3	4.8	0.0	-	-	4.7	4.3
Articulated Trucks	0	0	0	-	0	1	16	0	-	17	10	0	0	-	10	27
% Articulated Trucks	0.0	0.0	-	-	0.0	1.1	6.2	-	-	4.9	3.4	0.0	-	-	3.3	3.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 7

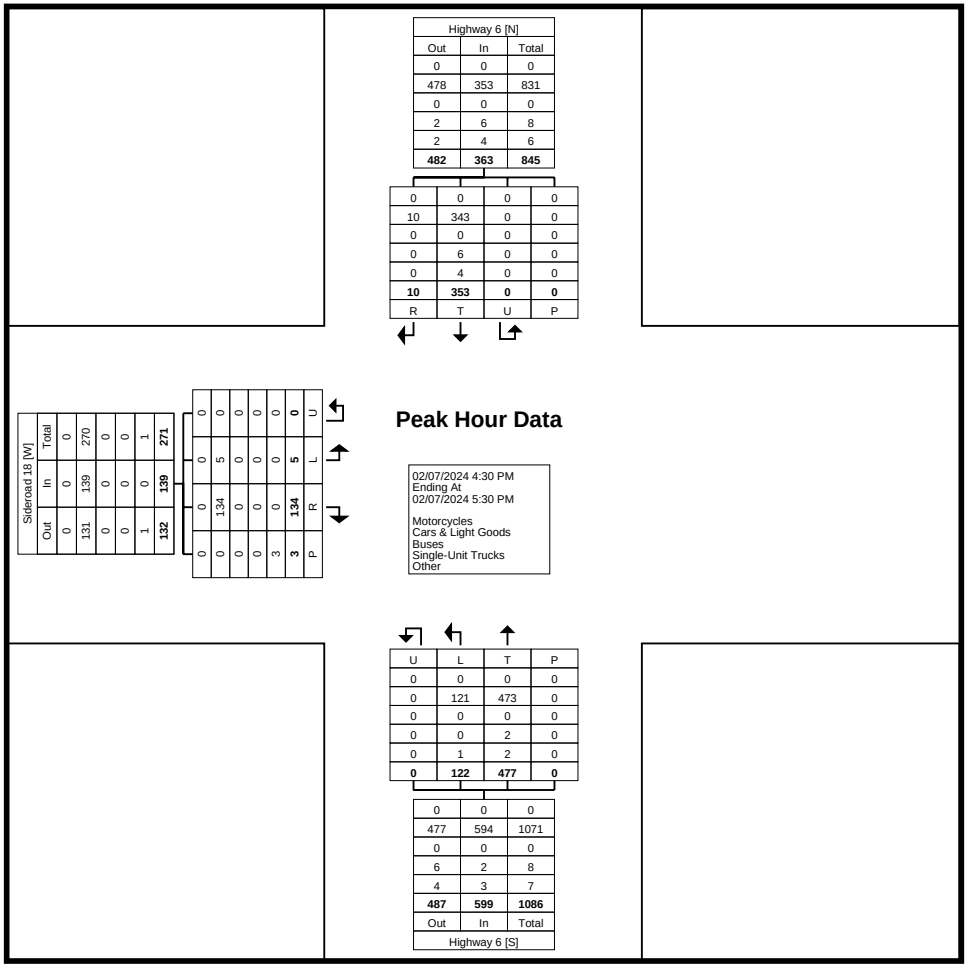


Turning Movement Peak Hour Data Plot (12:15 PM)

Turning Movement Peak Hour Data (4:30 PM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 8

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	3	38	0	0	41	28	137	0	0	165	73	3	0	0	76	282
4:45 PM	0	36	0	0	36	36	101	0	0	137	99	3	0	0	102	275
5:00 PM	1	34	0	0	35	30	123	0	0	153	98	2	0	0	100	288
5:15 PM	1	26	0	3	27	28	116	0	0	144	83	2	0	0	85	256
Total	5	134	0	3	139	122	477	0	0	599	353	10	0	0	363	1101
Approach %	3.6	96.4	0.0	-	-	20.4	79.6	0.0	-	-	97.2	2.8	0.0	-	-	-
Total %	0.5	12.2	0.0	-	12.6	11.1	43.3	0.0	-	54.4	32.1	0.9	0.0	-	33.0	-
PHF	0.417	0.882	0.000	-	0.848	0.847	0.870	0.000	-	0.908	0.891	0.833	0.000	-	0.890	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	5	134	0	-	139	121	473	0	-	594	343	10	0	-	353	1086
% Cars & Light Goods	100.0	100.0	-	-	100.0	99.2	99.2	-	-	99.2	97.2	100.0	-	-	97.2	98.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	6	0	0	-	6	8
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.4	-	-	0.3	1.7	0.0	-	-	1.7	0.7
Articulated Trucks	0	0	0	-	0	1	2	0	-	3	4	0	0	-	4	7
% Articulated Trucks	0.0	0.0	-	-	0.0	0.8	0.4	-	-	0.5	1.1	0.0	-	-	1.1	0.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

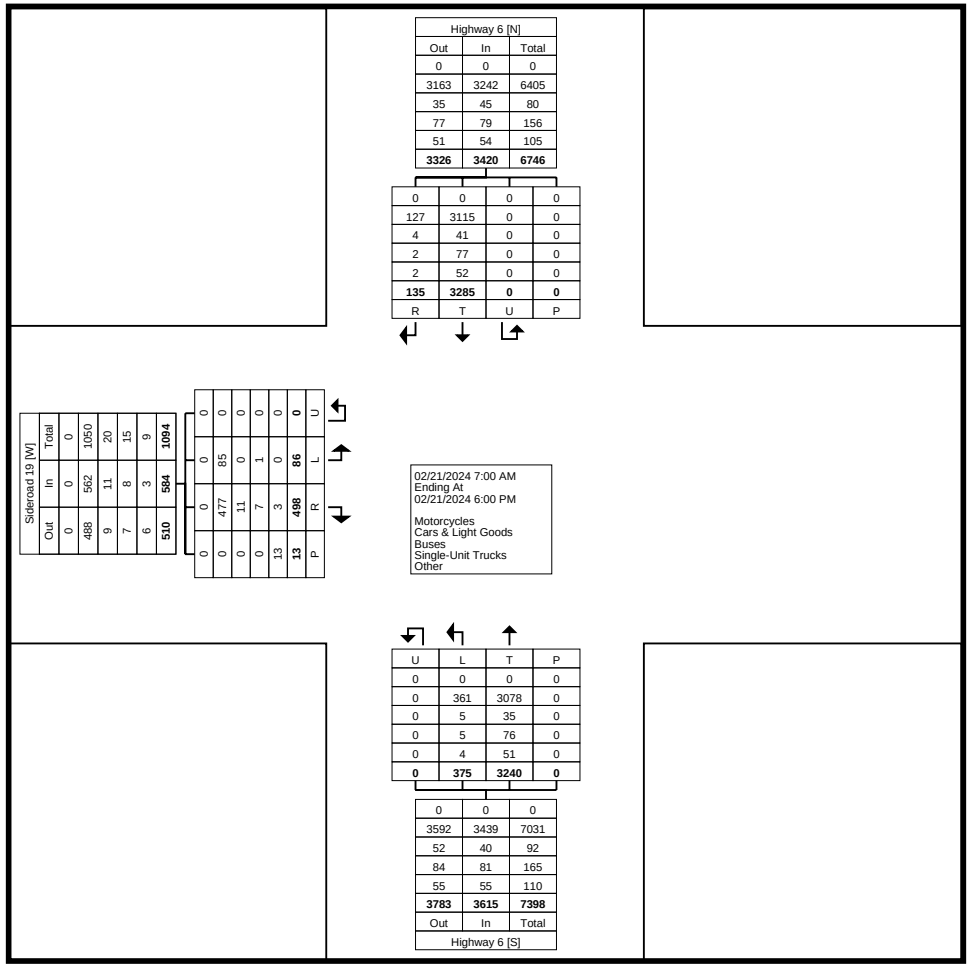
Turning Movement Data

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 1

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	7	0	0	8	8	59	0	0	67	84	3	0	0	87	162
7:15 AM	3	8	0	1	11	4	83	0	0	87	103	5	0	0	108	206
7:30 AM	2	11	0	0	13	1	90	0	0	91	132	2	0	0	134	238
7:45 AM	1	9	0	0	10	6	110	0	0	116	104	1	0	0	105	231
Hourly Total	7	35	0	1	42	19	342	0	0	361	423	11	0	0	434	837
8:00 AM	0	11	0	0	11	4	86	0	0	90	100	7	0	0	107	208
8:15 AM	4	11	0	0	15	10	79	0	0	89	124	5	0	0	129	233
8:30 AM	1	18	0	0	19	6	62	0	0	68	116	4	0	0	120	207
8:45 AM	1	11	0	3	12	11	71	0	0	82	123	1	0	0	124	218
Hourly Total	6	51	0	3	57	31	298	0	0	329	463	17	0	0	480	866
9:00 AM	1	10	0	0	11	9	104	0	0	113	100	3	0	0	103	227
9:15 AM	0	11	0	0	11	10	76	0	0	86	76	2	0	0	78	175
9:30 AM	3	9	0	0	12	8	66	0	0	74	86	3	0	0	89	175
9:45 AM	1	20	0	0	21	12	76	0	0	88	88	1	0	0	89	198
Hourly Total	5	50	0	0	55	39	322	0	0	361	350	9	0	0	359	775
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	3	14	0	1	17	13	68	0	0	81	78	5	0	0	83	181
11:45 AM	1	11	0	1	12	10	73	0	0	83	88	7	0	0	95	190
Hourly Total	4	25	0	2	29	23	141	0	0	164	166	12	0	0	178	371
12:00 PM	3	22	0	0	25	10	105	0	0	115	97	4	0	0	101	241
12:15 PM	3	17	0	3	20	8	90	0	0	98	66	2	0	0	68	186
12:30 PM	6	19	0	0	25	13	77	0	0	90	85	4	0	0	89	204
12:45 PM	0	13	0	1	13	11	84	0	0	95	88	5	0	0	93	201
Hourly Total	12	71	0	4	83	42	356	0	0	398	336	15	0	0	351	832
1:00 PM	4	16	0	0	20	11	93	0	0	104	91	3	0	0	94	218
1:15 PM	5	20	0	0	25	8	93	0	0	101	80	5	0	0	85	211
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	9	36	0	0	45	19	186	0	0	205	171	8	0	0	179	429
3:00 PM	3	20	0	1	23	12	100	0	0	112	83	3	0	0	86	221
3:15 PM	3	17	0	1	20	22	124	0	0	146	101	6	0	0	107	273
3:30 PM	3	13	0	0	16	18	141	0	0	159	124	10	0	0	134	309
3:45 PM	4	26	0	1	30	18	118	0	0	136	123	8	0	0	131	297
Hourly Total	13	76	0	3	89	70	483	0	0	553	431	27	0	0	458	1100
4:00 PM	5	15	0	0	20	17	147	0	0	164	101	6	0	0	107	291
4:15 PM	5	18	0	0	23	11	136	0	0	147	115	6	0	0	121	291
4:30 PM	1	20	0	0	21	19	140	0	0	159	101	6	0	0	107	287

4:45 PM	4	28	0	0	32	18	146	0	0	164	129	5	0	0	134	330
Hourly Total	15	81	0	0	96	65	569	0	0	634	446	23	0	0	469	1199
5:00 PM	4	15	0	0	19	18	170	0	0	188	140	3	0	0	143	350
5:15 PM	4	12	0	0	16	16	129	0	0	145	137	5	0	0	142	303
5:30 PM	4	23	0	0	27	18	130	0	0	148	125	2	0	0	127	302
5:45 PM	3	23	0	0	26	15	114	0	0	129	97	3	0	0	100	255
Hourly Total	15	73	0	0	88	67	543	0	0	610	499	13	0	0	512	1210
Grand Total	86	498	0	13	584	375	3240	0	0	3615	3285	135	0	0	3420	7619
Approach %	14.7	85.3	0.0	-	-	10.4	89.6	0.0	-	-	96.1	3.9	0.0	-	-	-
Total %	1.1	6.5	0.0	-	7.7	4.9	42.5	0.0	-	47.4	43.1	1.8	0.0	-	44.9	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	85	477	0	-	562	361	3078	0	-	3439	3115	127	0	-	3242	7243
% Cars & Light Goods	98.8	95.8	-	-	96.2	96.3	95.0	-	-	95.1	94.8	94.1	-	-	94.8	95.1
Buses	0	11	0	-	11	5	35	0	-	40	41	4	0	-	45	96
% Buses	0.0	2.2	-	-	1.9	1.3	1.1	-	-	1.1	1.2	3.0	-	-	1.3	1.3
Single-Unit Trucks	1	7	0	-	8	5	76	0	-	81	77	2	0	-	79	168
% Single-Unit Trucks	1.2	1.4	-	-	1.4	1.3	2.3	-	-	2.2	2.3	1.5	-	-	2.3	2.2
Articulated Trucks	0	3	0	-	3	4	50	0	-	54	52	1	0	-	53	110
% Articulated Trucks	0.0	0.6	-	-	0.5	1.1	1.5	-	-	1.5	1.6	0.7	-	-	1.5	1.4
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	7.7	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	12	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	92.3	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 3



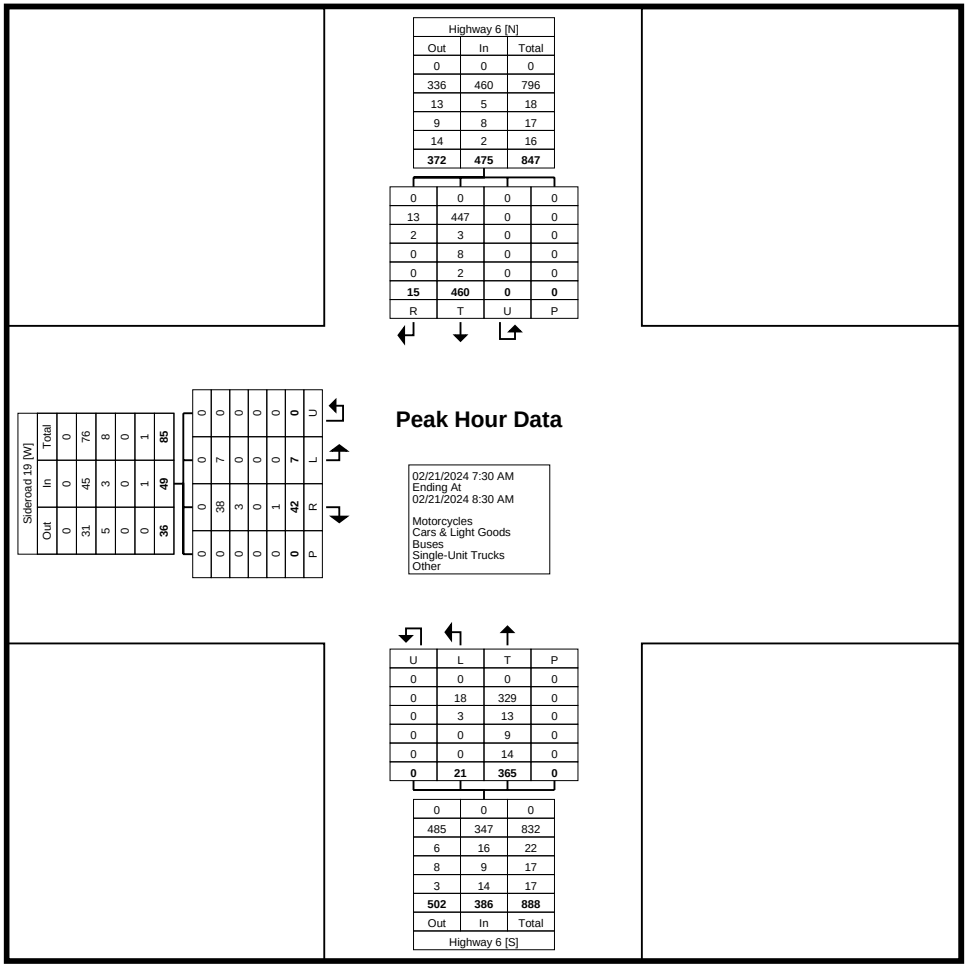
Turning Movement Data Plot

Turning Movement Peak Hour Data (7:30 AM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	2	11	0	0	13	1	90	0	0	91	132	2	0	0	134	238
7:45 AM	1	9	0	0	10	6	110	0	0	116	104	1	0	0	105	231
8:00 AM	0	11	0	0	11	4	86	0	0	90	100	7	0	0	107	208
8:15 AM	4	11	0	0	15	10	79	0	0	89	124	5	0	0	129	233
Total	7	42	0	0	49	21	365	0	0	386	460	15	0	0	475	910
Approach %	14.3	85.7	0.0	-	-	5.4	94.6	0.0	-	-	96.8	3.2	0.0	-	-	-
Total %	0.8	4.6	0.0	-	5.4	2.3	40.1	0.0	-	42.4	50.5	1.6	0.0	-	52.2	-
PHF	0.438	0.955	0.000	-	0.817	0.525	0.830	0.000	-	0.832	0.871	0.536	0.000	-	0.886	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	7	38	0	-	45	18	329	0	-	347	447	13	0	-	460	852
% Cars & Light Goods	100.0	90.5	-	-	91.8	85.7	90.1	-	-	89.9	97.2	86.7	-	-	96.8	93.6
Buses	0	3	0	-	3	3	13	0	-	16	3	2	0	-	5	24
% Buses	0.0	7.1	-	-	6.1	14.3	3.6	-	-	4.1	0.7	13.3	-	-	1.1	2.6
Single-Unit Trucks	0	0	0	-	0	0	9	0	-	9	8	0	0	-	8	17
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	2.5	-	-	2.3	1.7	0.0	-	-	1.7	1.9
Articulated Trucks	0	1	0	-	1	0	14	0	-	14	2	0	0	-	2	17
% Articulated Trucks	0.0	2.4	-	-	2.0	0.0	3.8	-	-	3.6	0.4	0.0	-	-	0.4	1.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 5



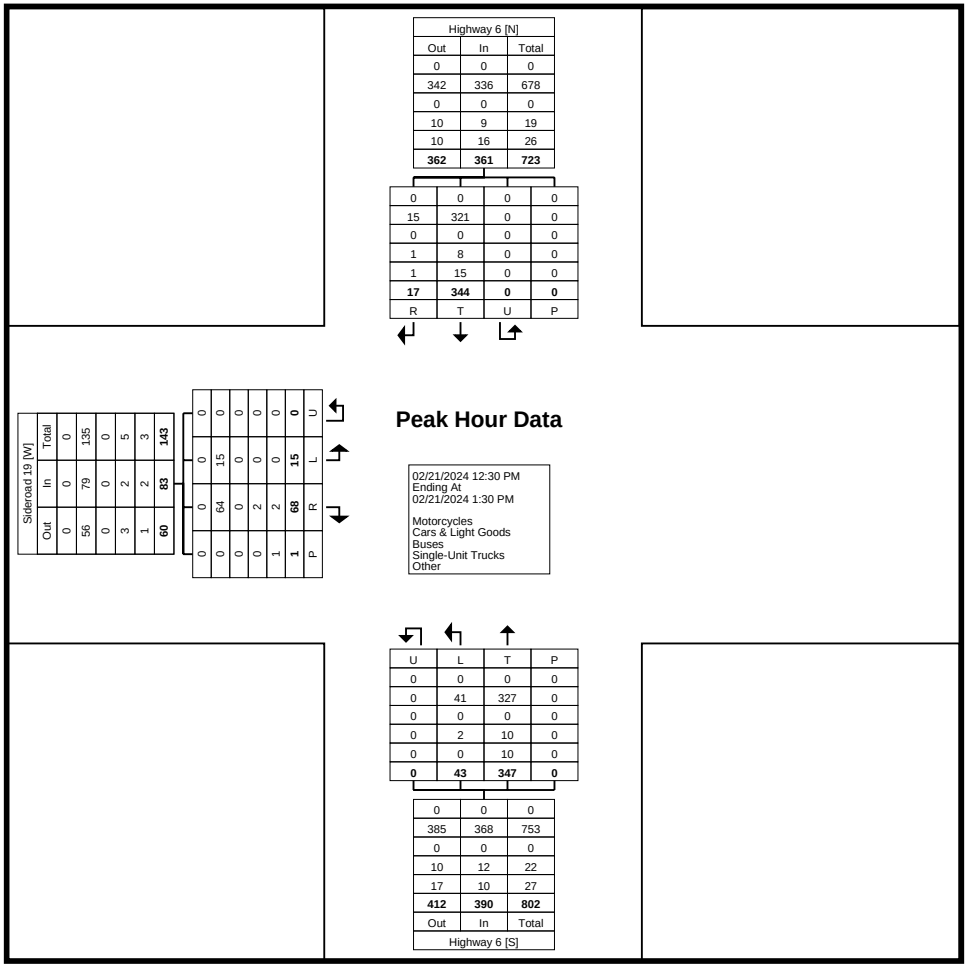
Turning Movement Peak Hour Data Plot (7:30 AM)

Turning Movement Peak Hour Data (12:30 PM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 6

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	6	19	0	0	25	13	77	0	0	90	85	4	0	0	89	204
12:45 PM	0	13	0	1	13	11	84	0	0	95	88	5	0	0	93	201
1:00 PM	4	16	0	0	20	11	93	0	0	104	91	3	0	0	94	218
1:15 PM	5	20	0	0	25	8	93	0	0	101	80	5	0	0	85	211
Total	15	68	0	1	83	43	347	0	0	390	344	17	0	0	361	834
Approach %	18.1	81.9	0.0	-	-	11.0	89.0	0.0	-	-	95.3	4.7	0.0	-	-	-
Total %	1.8	8.2	0.0	-	10.0	5.2	41.6	0.0	-	46.8	41.2	2.0	0.0	-	43.3	-
PHF	0.625	0.850	0.000	-	0.830	0.827	0.933	0.000	-	0.938	0.945	0.850	0.000	-	0.960	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	15	64	0	-	79	41	327	0	-	368	321	15	0	-	336	783
% Cars & Light Goods	100.0	94.1	-	-	95.2	95.3	94.2	-	-	94.4	93.3	88.2	-	-	93.1	93.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	-	2	2	10	0	-	12	8	1	0	-	9	23
% Single-Unit Trucks	0.0	2.9	-	-	2.4	4.7	2.9	-	-	3.1	2.3	5.9	-	-	2.5	2.8
Articulated Trucks	0	2	0	-	2	0	10	0	-	10	15	0	0	-	15	27
% Articulated Trucks	0.0	2.9	-	-	2.4	0.0	2.9	-	-	2.6	4.4	0.0	-	-	4.2	3.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	5.9	-	-	0.3	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 7

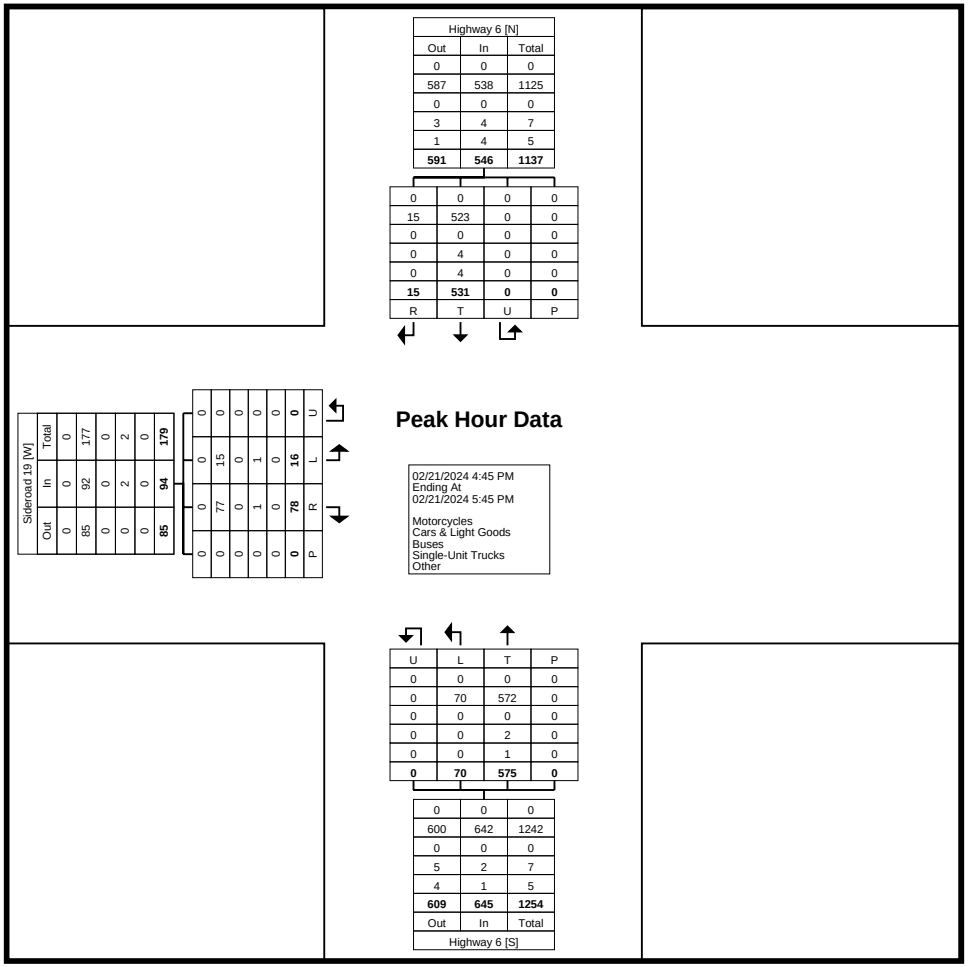


Turning Movement Peak Hour Data Plot (12:30 PM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 8

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	4	28	0	0	32	18	146	0	0	164	129	5	0	0	134	330
5:00 PM	4	15	0	0	19	18	170	0	0	188	140	3	0	0	143	350
5:15 PM	4	12	0	0	16	16	129	0	0	145	137	5	0	0	142	303
5:30 PM	4	23	0	0	27	18	130	0	0	148	125	2	0	0	127	302
Total	16	78	0	0	94	70	575	0	0	645	531	15	0	0	546	1285
Approach %	17.0	83.0	0.0	-	-	10.9	89.1	0.0	-	-	97.3	2.7	0.0	-	-	-
Total %	1.2	6.1	0.0	-	7.3	5.4	44.7	0.0	-	50.2	41.3	1.2	0.0	-	42.5	-
PHF	1.000	0.696	0.000	-	0.734	0.972	0.846	0.000	-	0.858	0.948	0.750	0.000	-	0.955	0.918
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	15	77	0	-	92	70	572	0	-	642	523	15	0	-	538	1272
% Cars & Light Goods	93.8	98.7	-	-	97.9	100.0	99.5	-	-	99.5	98.5	100.0	-	-	98.5	99.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	1	0	-	2	0	2	0	-	2	4	0	0	-	4	8
% Single-Unit Trucks	6.3	1.3	-	-	2.1	0.0	0.3	-	-	0.3	0.8	0.0	-	-	0.7	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	4	0	0	-	4	5
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.8	0.0	-	-	0.7	0.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:45 PM)

Appendix C

Base Year Operation Synchro Reports

Lanes, Volumes, Timings
101: Highway 6 & Nichol Rd 15

Base Year - 2024
AM Peak Hour

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	92	96	208	298	23
Future Volume (vph)	21	92	96	208	298	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.990	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1598	0	1770	1667	1809	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1598	0	1770	1667	1809	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	23	100	104	226	324	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	104	226	349	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

HCM Unsignalized Intersection Capacity Analysis
101: Highway 6 & Nichol Rd 15

Base Year - 2024
AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	92	96	208	298	23
Future Volume (Veh/h)	21	92	96	208	298	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	100	104	226	324	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	770	336	349			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	770	336	349			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	86	91			
cM capacity (veh/h)	340	696	1210			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	123	104	226	349
Volume Left	23	104	0	0
Volume Right	100	0	0	25
cSH	582	1210	1700	1700
Volume to Capacity	0.21	0.09	0.13	0.21
Queue Length 95th (m)	6.3	2.3	0.0	0.0
Control Delay (s)	12.8	8.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.8	2.6		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	134	95	293	372	18
Future Volume (vph)	11	134	95	293	372	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875				0.994	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1611	0	1626	1712	1769	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1611	0	1626	1712	1769	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	11%	11%	6%	22%
Adj. Flow (vph)	12	146	103	318	404	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	0	103	318	424	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	134	95	293	372	18
Future Volume (Veh/h)	11	134	95	293	372	18
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)	12	146	103	318	404	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	938	414	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	938	414	424			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	96	77	91			
cM capacity (veh/h)	268	636	1089			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	158	103	318	424
Volume Left	12	103	0	0
Volume Right	146	0	0	20
cSH	576	1089	1700	1700
Volume to Capacity	0.27	0.09	0.19	0.25
Queue Length 95th (m)	8.9	2.5	0.0	0.0
Control Delay (s)	13.6	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.6	2.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	45	22	381	491	15
Future Volume (vph)	7	45	22	381	491	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.996	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1536	0	1583	1727	1832	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1536	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	8	49	24	414	534	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	24	414	550	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	45	22	381	491	15
Future Volume (Veh/h)	7	45	22	381	491	15
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)	8	49	24	414	534	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.90					
vC, conflicting volume	1004	542	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	950	542	550			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	97	91	98			
cM capacity (veh/h)	256	525	962			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	57	24	414	550
Volume Left	8	24	0	0
Volume Right	49	0	0	16
cSH	458	962	1700	1700
Volume to Capacity	0.12	0.02	0.24	0.32
Queue Length 95th (m)	3.4	0.6	0.0	0.0
Control Delay (s)	14.0	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.0	0.5		0.0
Approach LOS	B			

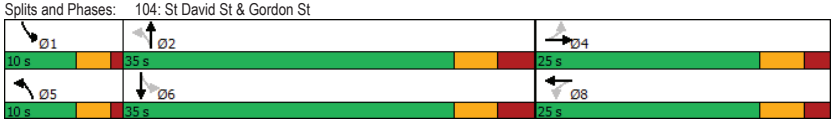
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Future Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.855			0.972			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1418	0	1736	1705	0	1612	1822	0
Flt Permitted	0.654			0.742			0.502			0.529		
Satd. Flow (perm)	1243	1694	0	1388	1418	0	915	1705	0	896	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			157			20			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	1	9	15	74	5	157	25	280	65	173	402	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	24	0	74	162	0	25	345	0	173	410	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	8.4	8.4		8.4	8.4		25.6	17.1		27.2	17.9	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.56	0.37		0.59	0.39	
v/c Ratio	0.00	0.07		0.29	0.42		0.04	0.54		0.28	0.58	
Control Delay	19.0	13.7		22.8	8.6		4.2	15.1		5.4	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.0	13.7		22.8	8.6		4.2	15.1		5.4	15.7	
LOS	B	B		C	A		A	B		A	B	
Approach Delay		13.9			13.0			14.4			12.7	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 46			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	24	74	162	25	345	173	410
v/c Ratio	0.00	0.07	0.29	0.42	0.04	0.54	0.28	0.58
Control Delay	19.0	13.7	22.8	8.6	4.2	15.1	5.4	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	13.7	22.8	8.6	4.2	15.1	5.4	15.7
Queue Length 50th (m)	0.1	0.7	5.7	0.4	0.7	22.4	5.2	27.9
Queue Length 95th (m)	1.3	6.3	18.2	14.4	2.9	46.0	13.4	56.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	562	774	627	727	652	1110	642	1179
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.03	0.12	0.22	0.04	0.31	0.27	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Future Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1696		1780	1418		1734	1705		1611	1822	
Flt Permitted	0.65	1.00		0.74	1.00		0.50	1.00		0.53	1.00	
Satd. Flow (perm)	1243	1696		1390	1418		917	1705		897	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	9	15	74	5	157	25	280	65	173	402	8
RTOR Reduction (vph)	0	13	0	0	135	0	0	13	0	0	1	0
Lane Group Flow (vph)	1	11	0	74	27	0	25	332	0	173	409	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.4	6.4		6.4	6.4		22.2	17.0		23.8	17.8	
Effective Green, g (s)	6.4	6.4		6.4	6.4		22.2	17.0		23.8	17.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.48	0.37		0.51	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	171	233		191	195		530	624		552	698	
v/s Ratio Prot		0.01			0.02		0.01	0.19		c0.04	c0.22	
v/s Ratio Perm	0.00			c0.05			0.02			0.12		
v/c Ratio	0.01	0.05		0.39	0.14		0.05	0.53		0.31	0.59	
Uniform Delay, d1	17.3	17.4		18.2	17.6		6.4	11.6		6.2	11.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.3	0.3		0.0	1.6		0.1	1.9	
Delay (s)	17.3	17.4		19.5	17.9		6.4	13.2		6.3	13.3	
Level of Service	B	B		B	B		A	B		A	B	
Approach Delay (s)		17.4			18.4			12.7			11.2	
Approach LOS		B			B			B			B	

Intersection Summary

HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Future Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99		1.00	1.00		0.99	1.00	
Frt		0.976			0.945			0.985			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1754	0	1770	1738	0	1543	1674	0	1543	1825	0
Flt Permitted	0.650			0.673			0.458			0.579		
Satd. Flow (perm)	1206	1754	0	1233	1738	0	743	1674	0	934	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			50			14			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Adj. Flow (vph)	42	111	21	68	108	62	13	266	30	32	430	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	132	0	68	170	0	13	296	0	32	459	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.6	10.6		10.6	10.6		22.1	22.1		22.1	22.1	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.56	0.56		0.56	0.56	
v/c Ratio	0.13	0.27		0.20	0.34		0.03	0.31		0.06	0.44	
Control Delay	13.8	13.1		14.6	11.8		6.8	8.0		7.0	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.8	13.1		14.6	11.8		6.8	8.0		7.0	9.3	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		13.3			12.6			7.9			9.2	
Approach LOS		B			B			A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 39.2	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 51.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	132	68	170	13	296	32	459
v/c Ratio	0.13	0.27	0.20	0.34	0.03	0.31	0.06	0.44
Control Delay	13.8	13.1	14.6	11.8	6.8	8.0	7.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	13.1	14.6	11.8	6.8	8.0	7.0	9.3
Queue Length 50th (m)	2.1	5.9	3.5	6.2	0.5	11.3	1.1	20.0
Queue Length 95th (m)	9.3	20.0	13.3	22.1	2.8	29.5	5.0	48.4
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	613	899	626	907	589	1331	741	1449
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.15	0.11	0.19	0.02	0.22	0.04	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Future Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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	
Frt	1.00	0.98		1.00	0.95		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765	1756		1750	1740		1542	1674		1536	1824	
Flt Permitted	0.65	1.00		0.67	1.00		0.46	1.00		0.58	1.00	
Satd. Flow (perm)	1207	1756		1239	1740		743	1674		936	1824	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	111	21	68	108	62	13	266	30	32	430	29
RTOR Reduction (vph)	0	13	0	0	39	0	0	7	0	0	4	0
Lane Group Flow (vph)	42	119	0	68	131	0	13	289	0	32	455	0
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.6	8.6		8.6	8.6		20.7	20.7		20.7	20.7	
Effective Green, g (s)	8.6	8.6		8.6	8.6		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	257	374		264	371		381	859		480	936	
v/s Ratio Prot		0.07			c0.08			0.17			c0.25	
v/s Ratio Perm	0.03			0.05			0.02			0.03		
v/c Ratio	0.16	0.32		0.26	0.35		0.03	0.34		0.07	0.49	
Uniform Delay, d1	12.9	13.4		13.2	13.5		4.9	5.8		4.9	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.0		1.1	1.2		0.1	0.5		0.1	0.8	
Delay (s)	13.5	14.4		14.3	14.7		4.9	6.3		5.1	7.2	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.2			14.6			6.2			7.0	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	51.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	116	107	371	244	22
Future Volume (vph)	22	116	107	371	244	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.887				0.989	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1672	0	1805	1881	1813	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1672	0	1805	1881	1813	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	24	126	116	403	265	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	116	403	289	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	116	107	371	244	22
Future Volume (Veh/h)	22	116	107	371	244	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	126	116	403	265	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	912	277	289			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	912	277	289			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	84	91			
cM capacity (veh/h)	279	767	1284			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	116	403	289
Volume Left	24	116	0	0
Volume Right	126	0	0	24
cSH	599	1284	1700	1700
Volume to Capacity	0.25	0.09	0.24	0.17
Queue Length 95th (m)	7.9	2.4	0.0	0.0
Control Delay (s)	13.0	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.0	1.8		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	133	121	473	350	10
Future Volume (vph)	5	133	121	473	350	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.869				0.996	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1648	0	1787	1881	1839	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1648	0	1787	1881	1839	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	3%	0%
Adj. Flow (vph)	5	145	132	514	380	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	132	514	391	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	133	121	473	350	10
Future Volume (Veh/h)	5	133	121	473	350	10
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)	5	145	132	514	380	11
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1166	388	394			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1166	388	394			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	78	89			
cM capacity (veh/h)	191	662	1167			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	132	514	391
Volume Left	5	132	0	0
Volume Right	145	0	0	11
cSH	612	1167	1700	1700
Volume to Capacity	0.25	0.11	0.30	0.23
Queue Length 95th (m)	7.7	3.1	0.0	0.0
Control Delay (s)	12.8	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.8	1.7		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	63	70	578	432	51
Future Volume (vph)	16	63	70	578	432	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.892				0.986	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1516	0	1583	1720	1786	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1516	0	1583	1720	1786	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	17	68	76	628	470	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	76	628	525	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	63	70	578	432	51
Future Volume (Veh/h)	16	63	70	578	432	51
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)	17	68	76	628	470	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.80					
vC, conflicting volume	1278	498	525			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1221	498	525			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	88	88	92			
cM capacity (veh/h)	147	557	983			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	85	76	628	525
Volume Left	17	76	0	0
Volume Right	68	0	0	55
cSH	358	983	1700	1700
Volume to Capacity	0.24	0.08	0.37	0.31
Queue Length 95th (m)	7.3	2.0	0.0	0.0
Control Delay (s)	18.2	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.2	1.0		0.0
Approach LOS	C			

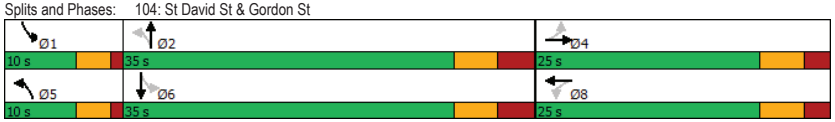
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Future Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.880			0.973			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1651	0	1736	1652	0	1805	1805	0	1736	1834	0
Flt Permitted	0.417			0.677			0.549			0.322		
Satd. Flow (perm)	792	1651	0	1223	1652	0	1041	1805	0	588	1834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			239			19			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	29	38	87	89	59	239	122	436	97	199	325	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	125	0	89	298	0	122	533	0	199	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.6	9.6		9.6	9.6		30.8	22.0		31.3	22.2	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.56	0.40		0.57	0.40	
v/c Ratio	0.21	0.35		0.42	0.61		0.18	0.73		0.43	0.46	
Control Delay	24.9	12.1		28.0	12.2		5.2	20.4		7.8	14.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.9	12.1		28.0	12.2		5.2	20.4		7.8	14.5	
LOS	C	B		C	B		A	C		A	B	
Approach Delay		14.5			15.8			17.6			12.0	
Approach LOS		B			B			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 55	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 15.2	Intersection LOS: B
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	125	89	298	122	533	199	339
v/c Ratio	0.21	0.35	0.42	0.61	0.18	0.73	0.43	0.46
Control Delay	24.9	12.1	28.0	12.2	5.2	20.4	7.8	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	12.1	28.0	12.2	5.2	20.4	7.8	14.5
Queue Length 50th (m)	2.7	3.5	8.5	5.4	4.0	42.6	6.7	24.2
Queue Length 95th (m)	9.5	16.3	21.5	25.6	11.3	85.5	17.6	49.5
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	281	642	434	740	677	953	465	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.19	0.21	0.40	0.18	0.56	0.43	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Future Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.88		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1654		1720	1652		1803	1805		1735	1834	
Flt Permitted	0.42	1.00		0.68	1.00		0.55	1.00		0.32	1.00	
Satd. Flow (perm)	792	1654		1225	1652		1043	1805		589	1834	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	38	87	89	59	239	122	436	97	199	325	14
RTOR Reduction (vph)	0	72	0	0	197	0	0	11	0	0	2	0
Lane Group Flow (vph)	29	53	0	89	101	0	122	522	0	199	337	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6		27.8	22.1		28.2	22.3	
Effective Green, g (s)	9.6	9.6		9.6	9.6		27.8	22.1		28.2	22.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.51	0.40		0.52	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	139	290		215	290		610	730		428	749	
v/s Ratio Prot		0.03			0.06		0.02	c0.29		c0.05	0.18	
v/s Ratio Perm	0.04			c0.07			0.08			0.19		
v/c Ratio	0.21	0.18		0.41	0.35		0.20	0.71		0.46	0.45	
Uniform Delay, d1	19.3	19.2		20.0	19.8		7.1	13.6		7.8	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.3		1.3	0.7		0.1	4.1		0.3	0.9	
Delay (s)	20.0	19.5		21.3	20.5		7.1	17.7		8.1	12.6	
Level of Service	B	B		C	C		A	B		A	B	
Approach Delay (s)		19.6			20.7			15.8			10.9	
Approach LOS		B			C			B			B	

Intersection Summary

HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Future Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99			0.99	1.00		1.00	1.00	
Frt		0.988			0.941			0.988			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1789	0	1752	1730	0	1597	1835	0	1805	1821	0
Flt Permitted	0.654			0.665			0.459			0.391		
Satd. Flow (perm)	1230	1789	0	1210	1730	0	765	1835	0	740	1821	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			57			10			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)			10	10			19		11	11		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Adj. Flow (vph)	91	133	12	68	98	64	9	499	42	41	428	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	145	0	68	162	0	9	541	0	41	460	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.1	11.1		11.0	11.0		24.4	24.4		24.4	24.4	
Actuated g/C Ratio	0.27	0.27		0.26	0.26		0.59	0.59		0.59	0.59	
v/c Ratio	0.28	0.30		0.21	0.33		0.02	0.50		0.09	0.43	
Control Delay	16.7	15.3		15.9	11.9		6.5	9.8		7.3	8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.7	15.3		15.9	11.9		6.5	9.8		7.3	8.9	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		15.9			13.1			9.8			8.8	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	91	145	68	162	9	541	41	460
v/c Ratio	0.28	0.30	0.21	0.33	0.02	0.50	0.09	0.43
Control Delay	16.7	15.3	15.9	11.9	6.5	9.8	7.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	15.3	15.9	11.9	6.5	9.8	7.3	8.9
Queue Length 50th (m)	5.1	7.8	3.8	5.9	0.3	25.6	1.5	20.5
Queue Length 95th (m)	17.9	24.1	14.1	21.5	2.2	60.4	6.3	48.7
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	590	863	581	860	575	1383	557	1372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.17	0.12	0.19	0.02	0.39	0.07	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Future Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	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	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1789		1735	1729		1586	1836		1799	1821	
Flt Permitted	0.65	1.00		0.66	1.00		0.46	1.00		0.39	1.00	
Satd. Flow (perm)	1231	1789		1214	1729		767	1836		741	1821	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	133	12	68	98	64	9	499	42	41	428	32
RTOR Reduction (vph)	0	6	0	0	45	0	0	5	0	0	4	0
Lane Group Flow (vph)	91	139	0	68	117	0	9	536	0	41	456	0
Confl. Peds. (#/hr)			10	10			19		11	11		19
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.8	8.8		8.8	8.8		22.9	22.9		22.9	22.9	
Effective Green, g (s)	8.8	8.8		8.8	8.8		22.9	22.9		22.9	22.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	253	368		250	356		411	984		397	976	
v/s Ratio Prot		c0.08			0.07			c0.29			0.25	
v/s Ratio Perm	0.07			0.06			0.01			0.06		
v/c Ratio	0.36	0.38		0.27	0.33		0.02	0.55		0.10	0.47	
Uniform Delay, d1	14.5	14.6		14.3	14.4		4.6	6.5		4.9	6.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.4		1.2	1.1		0.0	1.1		0.2	0.7	
Delay (s)	16.4	15.9		15.5	15.6		4.7	7.6		5.1	6.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		16.1			15.5			7.5			6.7	
Approach LOS		B			B			A			A	

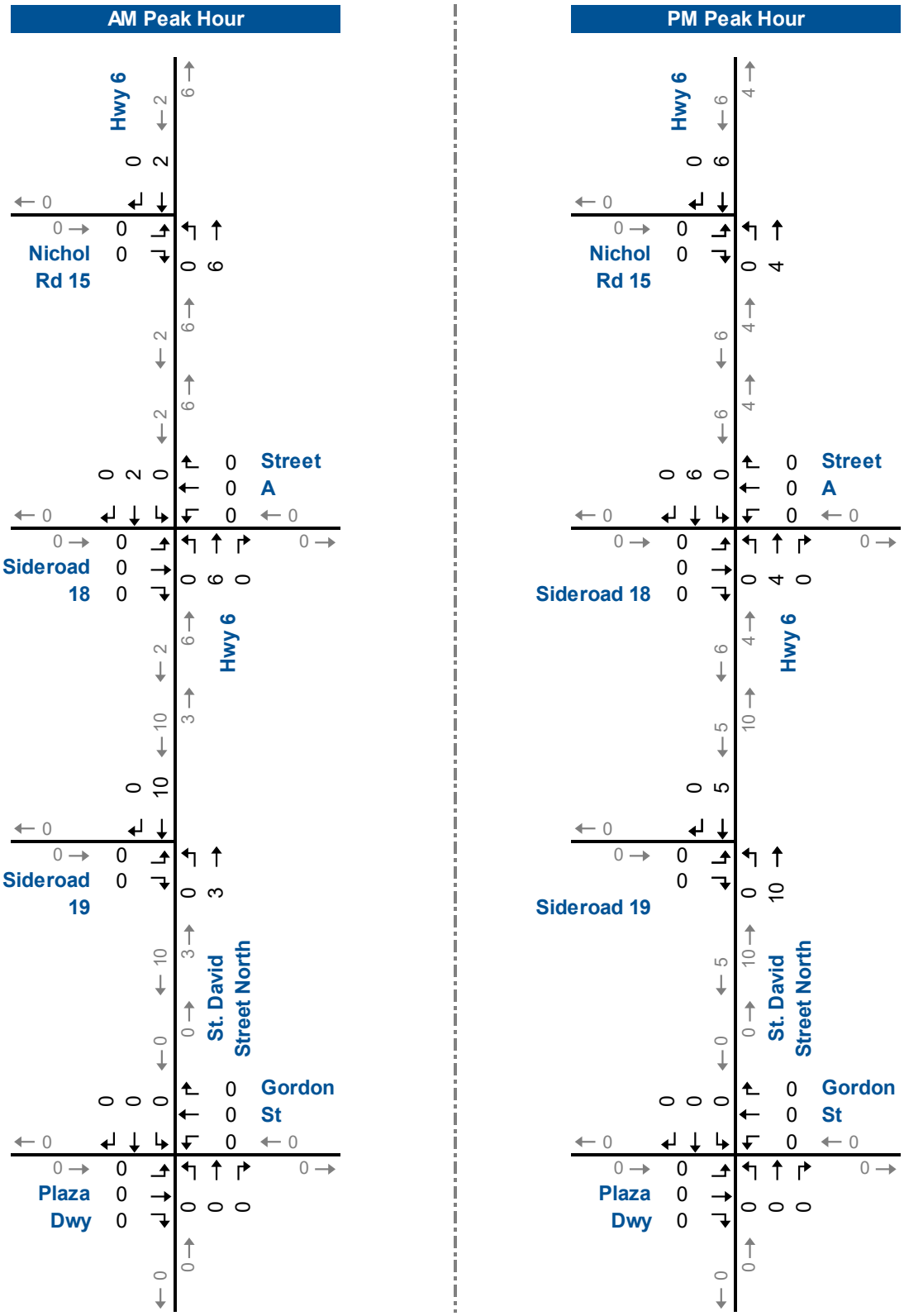
Intersection Summary

HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix D

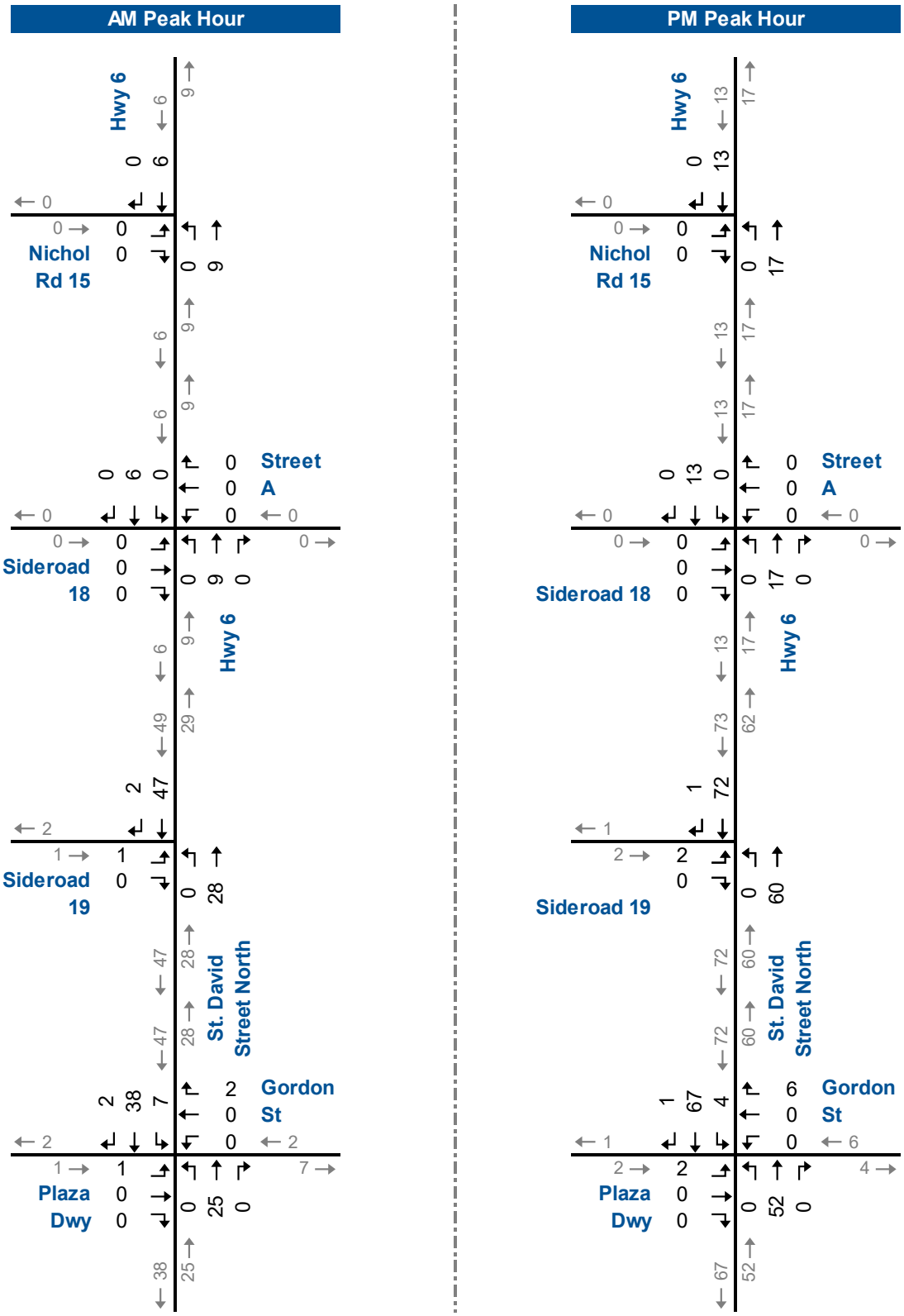
Background Development Traffic Volumes



961 St. David Street Traffic Volumes

6581 Highway 6, Fergus
230599

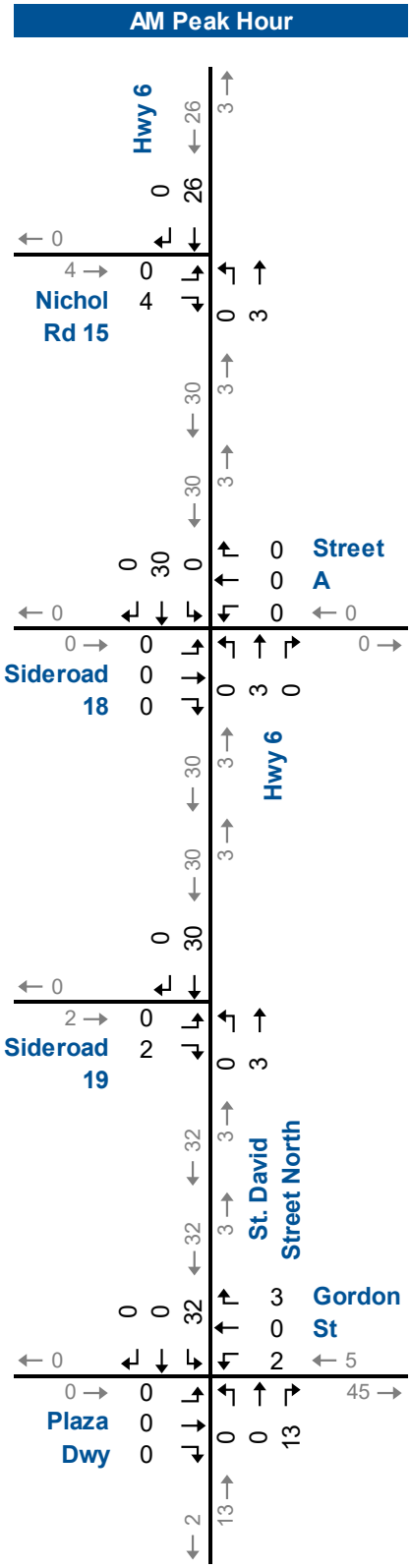
Figure 1

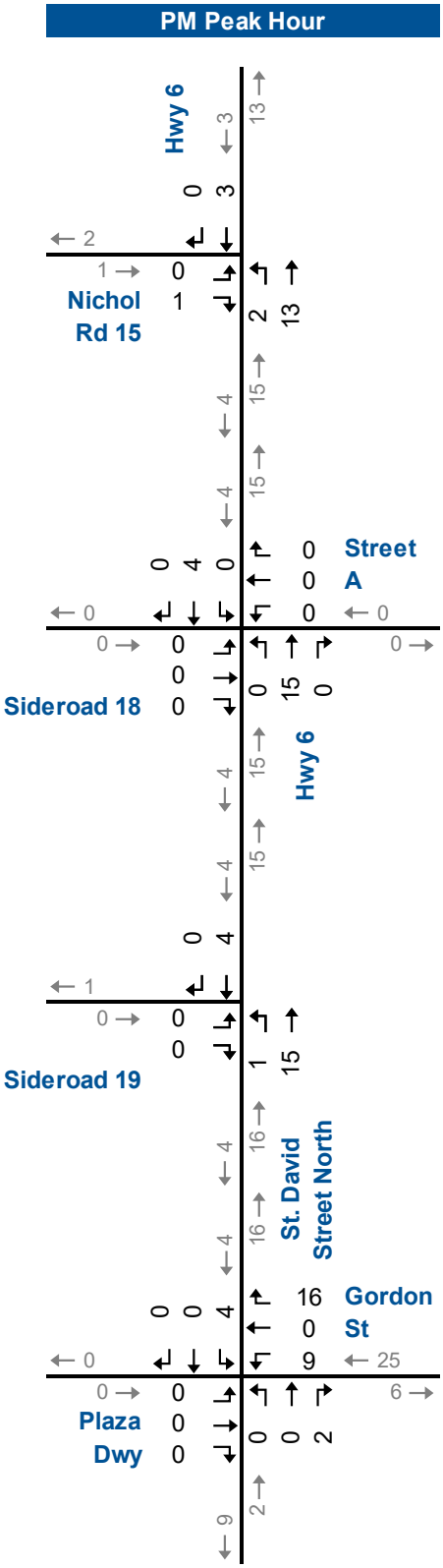


950-960 St. David Street Traffic Volumes

6581 Highway 6, Fergus
230599

Figure 2

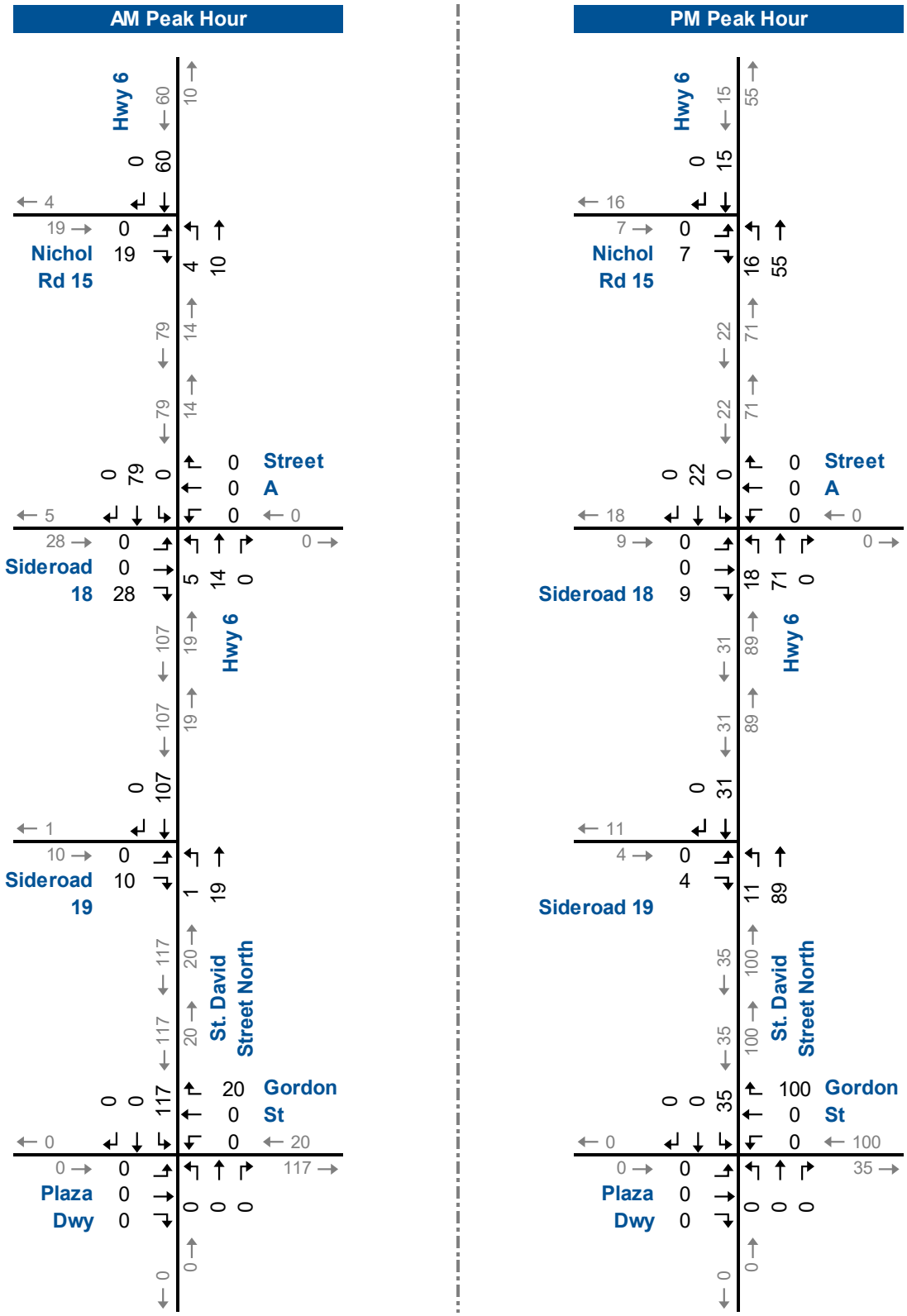




Centre Wellington Operations Centre Traffic Volumes

6581 Highway 6, Fergus
230599

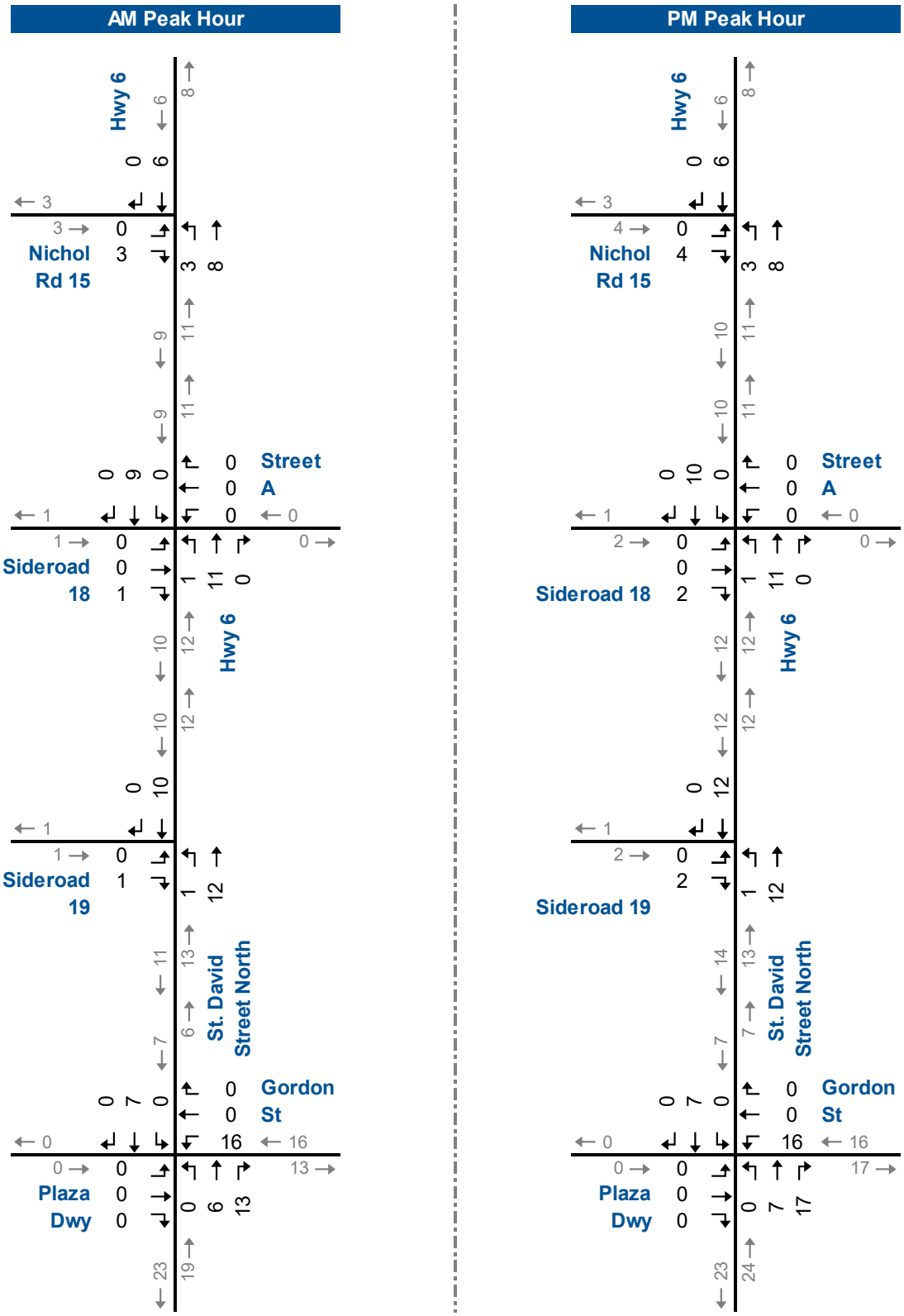
Figure 3



Dickson Drive Industrial Lands Traffic Volumes

6581 Highway 6, Fergus
230599

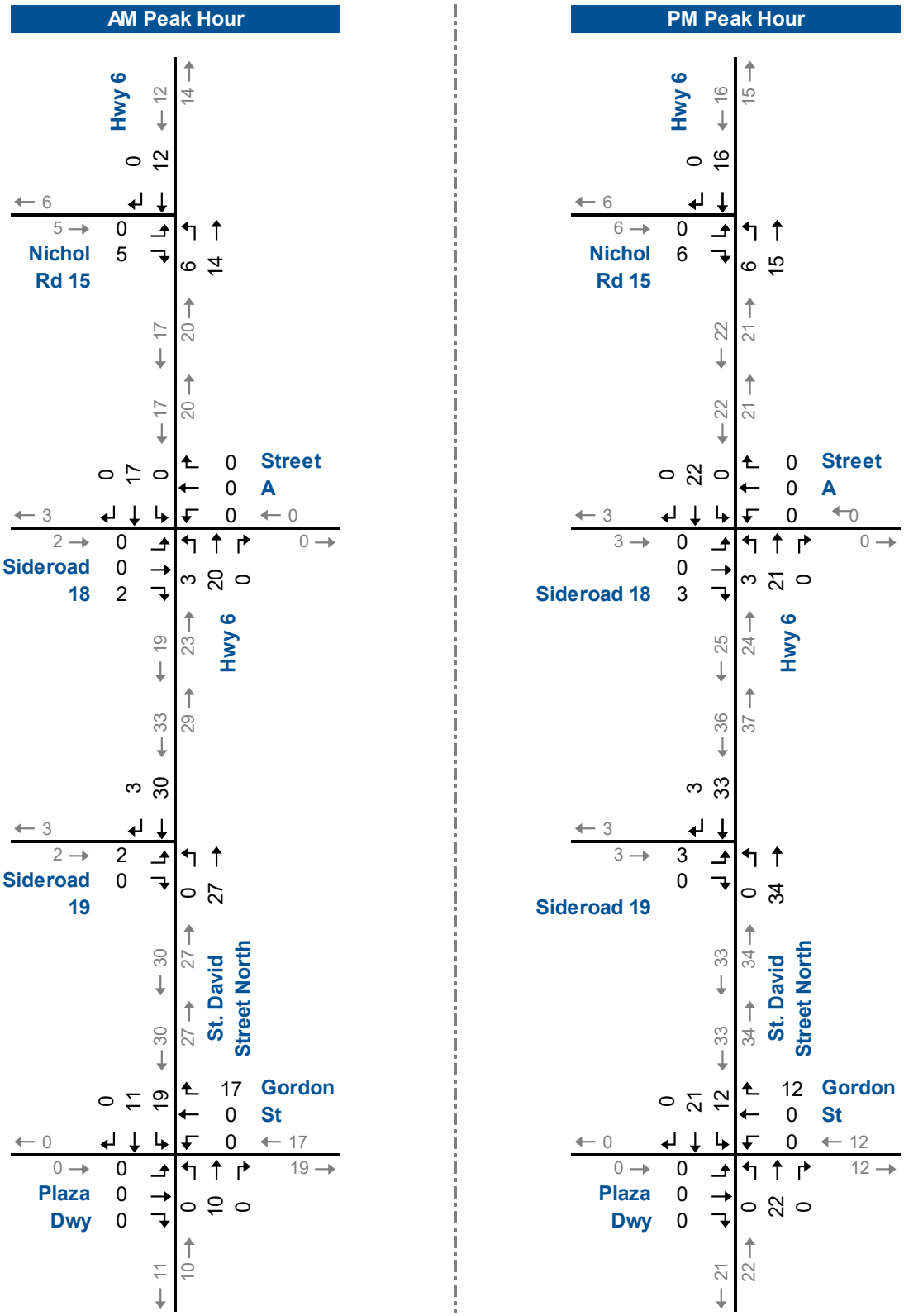
Figure 4



820 St. David Street North Traffic Volumes

6581 Highway 6, Fergus
230599

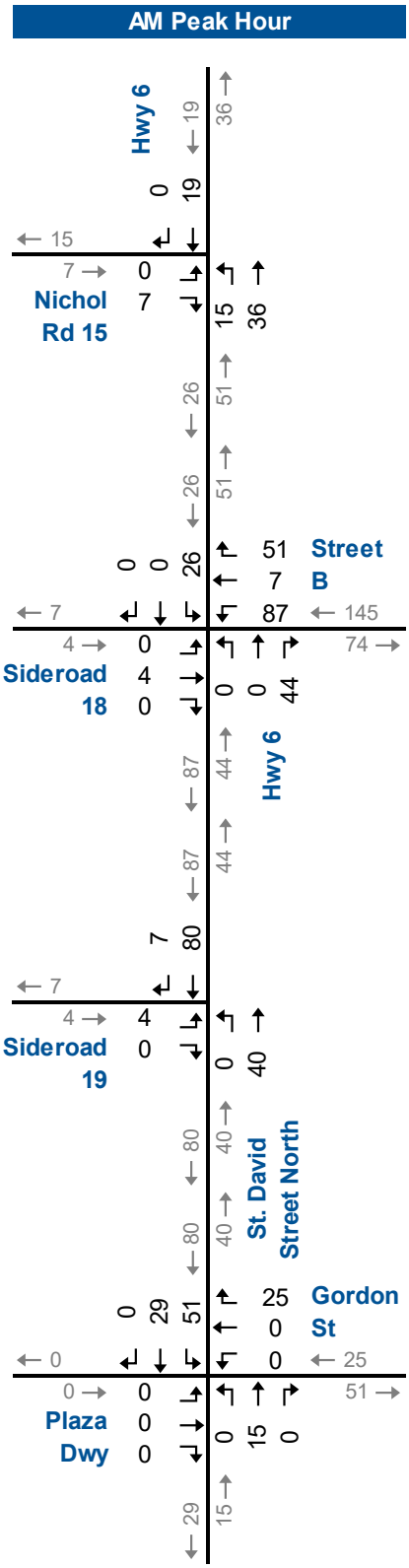
Figure 5

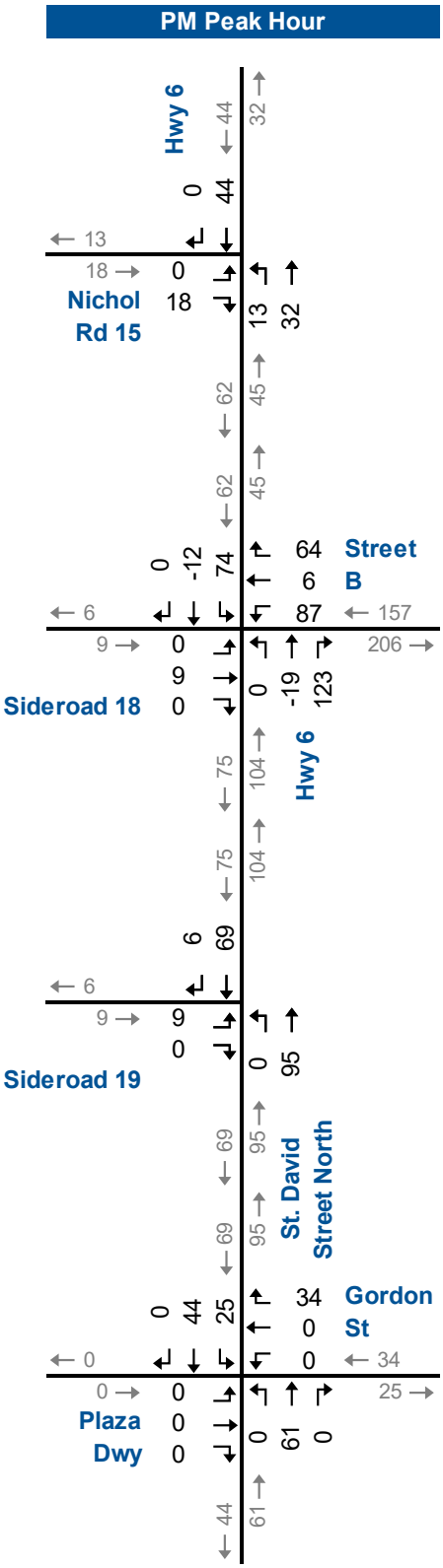


930 St. David Street North Traffic Volumes

6581 Highway 6, Fergus
230599

Figure 6





968 St. David Street North Traffic Volumes

6581 Highway 6, Fergus
230599

Figure 6

Appendix E1

2030 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	136	130	307	447	24
Future Volume (vph)	22	136	130	307	447	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	24	148	141	334	486	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	0	141	334	512	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	136	130	307	447	24
Future Volume (Veh/h)	22	136	130	307	447	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	148	141	334	486	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1115	499	512			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1115	499	512			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	88	74	87			
cM capacity (veh/h)	201	564	1053			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	172	141	334	512
Volume Left	24	141	0	0
Volume Right	148	0	0	26
cSH	450	1053	1700	1700
Volume to Capacity	0.38	0.13	0.20	0.30
Queue Length 95th (m)	14.1	3.7	0.0	0.0
Control Delay (s/veh)	17.9	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	17.9	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	173	87	7	51	110	374	44	26	538	19
Future Volume (vph)	12	4	173	87	7	51	110	374	44	26	538	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.876			0.953			0.984			0.996	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1699	0	0	1776	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1699	0	0	1776	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	13	4	188	95	8	55	120	407	48	28	585	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	0	0	158	0	120	455	0	0	634	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	4	173	87	7	51	110	374	44	26	538	19
Future Volume (Veh/h)	12	4	173	87	7	51	110	374	44	26	538	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	188	95	8	55	120	407	48	28	585	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	1358	1347	596	1513	1333	431	606			455		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1358	1347	596	1513	1333	431	606			455		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	87	97	63	0	94	91	87			97		
cM capacity (veh/h)	98	128	502	53	131	624	930			1106		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	205	158	120	455	634
Volume Left	13	95	120	0	28
Volume Right	188	55	0	48	21
cSH	381	82	930	1700	1106
Volume to Capacity	0.54	1.94	0.13	0.27	0.03
Queue Length 95th (m)	24.6	110.7	3.5	0.0	0.6
Control Delay (s/veh)	24.9	547.8	9.4	0.0	0.7
Lane LOS	C	F	A		A
Approach Delay (s/veh)	24.9	547.8	2.0		0.7
Approach LOS	C	F			

Intersection Summary			
Average Delay	59.3		
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	61	25	536	835	28
Future Volume (vph)	14	61	25	536	835	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1550	0	1583	1727	1832	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1550	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	15	66	27	583	908	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	0	27	583	938	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	61	25	536	835	28
Future Volume (Veh/h)	14	61	25	536	835	28
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)	15	66	27	583	908	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.83					
vC, conflicting volume	1560	923	938			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1572	923	938			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	85	79	96			
cM capacity (veh/h)	98	316	684			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	81	27	583	938
Volume Left	15	27	0	0
Volume Right	66	0	0	30
cSH	224	684	1700	1700
Volume to Capacity	0.36	0.04	0.34	0.55
Queue Length 95th (m)	12.5	1.0	0.0	0.0
Control Delay (s/veh)	29.9	10.5	0.0	0.0
Lane LOS	D	B		
Approach Delay (s/veh)	29.9	0.5		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Future Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.904			0.853			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1689	0	1787	1413	0	1736	1699	0	1612	1822	0
Flt Permitted	0.549			0.741			0.358			0.380		
Satd. Flow (perm)	1043	1689	0	1386	1413	0	653	1699	0	644	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			239			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	9	16	98	5	239	26	359	98	429	520	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	25	0	98	244	0	26	457	0	429	530	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.3	9.3		9.3	9.3		28.9	20.8		31.3	22.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.54	0.39		0.58	0.41	
v/c Ratio	0.01	0.08		0.41	0.55		0.06	0.68		0.88	0.71	
Control Delay (s/veh)	20.5	14.0		26.8	9.3		4.6	18.9		32.1	19.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	14.0		26.8	9.3		4.6	18.9		32.1	19.4	
LOS	C	B		C	A		A	B		C	B	
Approach Delay (s/veh)		14.4			14.3			18.1			25.1	
Approach LOS		B			B			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 53.8	
Natural Cycle: 75	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 21.0	Intersection LOS: C
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	25	98	244	26	457	429	530
v/c Ratio	0.01	0.08	0.41	0.55	0.06	0.68	0.88	0.71
Control Delay (s/veh)	20.5	14.0	26.8	9.3	4.6	18.9	32.1	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	14.0	26.8	9.3	4.6	18.9	32.1	19.4
Queue Length 50th (m)	0.2	0.8	9.0	0.4	0.8	34.3	17.3	41.6
Queue Length 95th (m)	1.7	6.3	23.0	17.2	3.3	68.8	#66.6	82.3
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	378	623	502	665	489	919	485	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.20	0.37	0.05	0.50	0.88	0.54

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)	2	8	15	90	5	220	24	330	90	395	478	9
Future Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1691		1779	1413		1735	1699		1611	1822	
Flt Permitted	0.55	1.00		0.74	1.00		0.36	1.00		0.38	1.00	
Satd. Flow (perm)	1042	1691		1388	1413		653	1699		645	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	9	16	98	5	239	26	359	98	429	520	10
RTOR Reduction (vph)	0	13	0	0	197	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	12	0	98	47	0	26	443	0	429	529	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.3	9.3		9.3	9.3		25.8	20.8		28.2	22.0	
Effective Green, g (s)	9.3	9.3		9.3	9.3		25.8	20.8		28.2	22.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.48	0.39		0.53	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	181	295		242	246		417	663		453	752	
v/s Ratio Prot		0.01			0.03		0.01	0.26		c0.11	0.29	
v/s Ratio Perm	0.00			c0.07			0.02			c0.39		
v/c Ratio	0.01	0.04		0.40	0.19		0.06	0.67		0.95	0.70	
Uniform Delay, d1	18.2	18.3		19.5	18.8		7.4	13.4		10.6	12.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.1	0.4		0.0	3.4		28.7	3.8	
Delay (s)	18.2	18.3		20.7	19.2		7.5	16.8		39.3	16.7	
Level of Service	B	B		C	B		A	B		D	B	
Approach Delay (s/veh)		18.3			19.6			16.3			26.8	
Approach LOS		B			B			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	159	154	538	362	23
Future Volume (vph)	23	159	154	538	362	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1816	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1816	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	25	173	167	585	393	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	0	167	585	418	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	159	154	538	362	23
Future Volume (Veh/h)	23	159	154	538	362	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	173	167	585	393	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	1325	406	418			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1325	406	418			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	73	86			
cM capacity (veh/h)	148	650	1152			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	198	167	585	418
Volume Left	25	167	0	0
Volume Right	173	0	0	25
cSH	456	1152	1700	1700
Volume to Capacity	0.43	0.14	0.34	0.25
Queue Length 95th (m)	17.3	4.1	0.0	0.0
Control Delay (s/veh)	18.8	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	18.8	1.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	9	155	87	6	64	150	622	123	74	437	11
Future Volume (vph)	5	9	155	87	6	64	150	622	123	74	437	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.876			0.945			0.975			0.997	
Flt Protected		0.999			0.973		0.950				0.993	
Satd. Flow (prot)	0	1661	0	0	1713	0	1787	1831	0	0	1830	0
Flt Permitted		0.999			0.973		0.950				0.993	
Satd. Flow (perm)	0	1661	0	0	1713	0	1787	1831	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	5	10	168	95	7	70	163	676	134	80	475	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	172	0	163	810	0	0	567	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	100.7%	ICU Level of Service G	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	9	155	87	6	64	150	622	123	74	437	11
Future Volume (Veh/h)	5	9	155	87	6	64	150	622	123	74	437	11
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)	5	10	168	95	7	70	163	676	134	80	475	12
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1720	1780	484	1883	1719	743	490			810		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1720	1780	484	1883	1719	743	490			810		
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 %	89	84	71	0	90	83	85			90		
cM capacity (veh/h)	45	63	585	28	68	415	1076			816		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	183	172	163	810	567
Volume Left	5	95	163	0	80
Volume Right	168	70	0	134	12
cSH	328	47	1076	1700	816
Volume to Capacity	0.56	3.69	0.15	0.48	0.10
Queue Length 95th (m)	25.8	Err	4.3	0.0	2.6
Control Delay (s/veh)	29.0	Err	8.9	0.0	2.6
Lane LOS	D	F	A		A
Approach Delay (s/veh)	29.0	Err	1.5		2.6
Approach LOS	D	F			

Intersection Summary			
Average Delay	911.9		
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	73	87	929	685	64
Future Volume (vph)	31	73	87	929	685	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.906				0.988	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1547	0	1583	1720	1793	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1547	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	34	79	95	1010	745	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	95	1010	815	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	73	87	929	685	64
Future Volume (Veh/h)	31	73	87	929	685	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	79	95	1010	745	70
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.63					
vC, conflicting volume	1980	780	815			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2257	780	815			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	79	88			
cM capacity (veh/h)	26	383	762			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	113	95	1010	815
Volume Left	34	95	0	0
Volume Right	79	0	0	70
cSH	73	762	1700	1700
Volume to Capacity	1.54	0.12	0.59	0.48
Queue Length 95th (m)	75.5	3.4	0.0	0.0
Control Delay (s/veh)	395.9	10.4	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	395.9	0.9		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	22.5		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Future Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.292			0.673			0.356			0.140		
Satd. Flow (perm)	555	1649	0	1216	1633	0	675	1809	0	256	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			308			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	34	40	92	122	62	437	129	617	123	298	496	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	132	0	122	499	0	129	740	0	298	512	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.7	13.7		13.7	13.7		36.8	28.2		37.6	28.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.57	0.43		0.58	0.44	
v/c Ratio	0.29	0.31		0.48	0.85		0.27	0.93		1.05	0.63	
Control Delay (s/veh)	27.6	10.4		28.4	24.3		7.5	40.7		84.5	19.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.6	10.4		28.4	24.3		7.5	40.7		84.5	19.8	
LOS	C	B		C	C		A	D		F	B	
Approach Delay (s/veh)		13.9			25.1			35.7			43.6	
Approach LOS		B			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 65	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay (s/veh): 34.2	Intersection LOS: C
Intersection Capacity Utilization 102.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	132	122	499	129	740	298	512
v/c Ratio	0.29	0.31	0.48	0.85	0.27	0.93	1.05	0.63
Control Delay (s/veh)	27.6	10.4	28.4	24.3	7.5	40.7	84.5	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	10.4	28.4	24.3	7.5	40.7	84.5	19.8
Queue Length 50th (m)	3.6	4.1	13.6	21.6	5.9	86.8	~26.4	50.2
Queue Length 95th (m)	11.2	16.4	27.9	#63.8	13.9	#173.0	#78.2	90.5
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	163	549	357	697	491	793	285	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.24	0.34	0.72	0.26	0.93	1.05	0.63

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Future Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1632		1804	1810		1735	1836	
Flt Permitted	0.29	1.00		0.67	1.00		0.36	1.00		0.14	1.00	
Satd. Flow (perm)	555	1651		1216	1632		677	1810		255	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	40	92	122	62	437	129	617	123	298	496	16
RTOR Reduction (vph)	0	73	0	0	243	0	0	10	0	0	2	0
Lane Group Flow (vph)	34	59	0	122	256	0	129	730	0	298	510	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.7	13.7		13.7	13.7		33.8	28.2		34.6	28.6	
Effective Green, g (s)	13.7	13.7		13.7	13.7		33.8	28.2		34.6	28.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.52	0.43		0.53	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	117	348		256	344		449	786		272	809	
v/s Ratio Prot		0.04			c0.16		0.02	0.40		c0.10	0.28	
v/s Ratio Perm	0.06			0.10			0.12			c0.48		
v/c Ratio	0.29	0.17		0.48	0.74		0.29	0.93		1.10	0.63	
Uniform Delay, d1	21.5	21.0		22.5	24.0		8.5	17.4		13.7	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.2		1.4	8.5		0.1	17.8		82.5	2.2	
Delay (s)	22.9	21.2		23.9	32.4		8.6	35.2		96.2	16.3	
Level of Service	C	C		C	C		A	D		F	B	
Approach Delay (s/veh)		21.5			30.7			31.2			45.7	
Approach LOS		C			C			C			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix E2

2035 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	141	135	318	463	26
Future Volume (vph)	23	141	135	318	463	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	25	153	147	346	503	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	147	346	531	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	141	135	318	463	26
Future Volume (Veh/h)	23	141	135	318	463	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	153	147	346	503	28
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	1157	517	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1157	517	531			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	87	72	86			
cM capacity (veh/h)	188	550	1036			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	178	147	346	531
Volume Left	25	147	0	0
Volume Right	153	0	0	28
cSH	433	1036	1700	1700
Volume to Capacity	0.41	0.14	0.20	0.31
Queue Length 95th (m)	15.8	3.9	0.0	0.0
Control Delay (s/veh)	19.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	19.0	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	180	87	7	51	115	390	44	26	558	20
Future Volume (vph)	12	4	180	87	7	51	115	390	44	26	558	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.876			0.953			0.985			0.995	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	13	4	196	95	8	55	125	424	48	28	607	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	158	0	125	472	0	0	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 88.4%		ICU Level of Service E	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	4	180	87	7	51	115	390	44	26	558	20
Future Volume (Veh/h)	12	4	180	87	7	51	115	390	44	26	558	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	196	95	8	55	125	424	48	28	607	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	1407	1396	618	1570	1383	448	629			472		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1407	1396	618	1570	1383	448	629			472		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	85	97	60	0	93	91	86			97		
cM capacity (veh/h)	89	119	487	46	121	611	911			1090		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	213	158	125	472	657
Volume Left	13	95	125	0	28
Volume Right	196	55	0	48	22
cSH	366	71	911	1700	1090
Volume to Capacity	0.58	2.23	0.14	0.28	0.03
Queue Length 95th (m)	28.2	118.9	3.8	0.0	0.6
Control Delay (s/veh)	27.6	687.9	9.6	0.0	0.7
Lane LOS	D	F	A		A
Approach Delay (s/veh)	27.6	687.9	2.0		0.7
Approach LOS	D	F			

Intersection Summary			
Average Delay	71.5		
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	63	27	557	862	29
Future Volume (vph)	15	63	27	557	862	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.891				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1552	0	1583	1727	1831	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1552	0	1583	1727	1831	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	16	68	29	605	937	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	29	605	969	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	63	27	557	862	29
Future Volume (Veh/h)	15	63	27	557	862	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	68	29	605	937	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)				98		
pX, platoon unblocked	0.82					
vC, conflicting volume	1616	953	969			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1641	953	969			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	82	78	96			
cM capacity (veh/h)	87	304	665			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	29	605	969
Volume Left	16	29	0	0
Volume Right	68	0	0	32
cSH	206	665	1700	1700
Volume to Capacity	0.41	0.04	0.36	0.57
Queue Length 95th (m)	14.7	1.1	0.0	0.0
Control Delay (s/veh)	34.0	10.7	0.0	0.0
Lane LOS	D	B		
Approach Delay (s/veh)	34.0	0.5		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Future Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1699	0	1612	1822	0
Flt Permitted	0.514			0.740			0.336			0.363		
Satd. Flow (perm)	977	1694	0	1384	1416	0	613	1699	0	615	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			248			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	102	7	248	28	374	101	438	541	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	102	255	0	28	475	0	438	552	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.5	9.5		9.5	9.5		29.6	21.5		31.9	22.6	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.54	0.39		0.58	0.41	
v/c Ratio	0.01	0.09		0.42	0.56		0.06	0.70		0.93	0.73	
Control Delay (s/veh)	20.5	13.8		27.3	9.4		4.7	19.5		40.3	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	13.8		27.3	9.4		4.7	19.5		40.3	20.3	
LOS	C	B		C	A		A	B		D	C	
Approach Delay (s/veh)		14.3			14.5			18.7			29.2	
Approach LOS		B			B			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 54.6	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 23.3	Intersection LOS: C
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	102	255	28	475	438	552
v/c Ratio	0.01	0.09	0.42	0.56	0.06	0.70	0.93	0.73
Control Delay (s/veh)	20.5	13.8	27.3	9.4	4.7	19.5	40.3	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	13.8	27.3	9.4	4.7	19.5	40.3	20.3
Queue Length 50th (m)	0.2	0.9	9.7	0.6	0.9	36.7	18.3	44.7
Queue Length 95th (m)	1.7	6.8	23.8	17.7	3.6	73.0	#73.5	88.0
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	348	615	493	664	471	904	471	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.21	0.38	0.06	0.53	0.93	0.57

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)	2	9	16	94	6	228	26	344	93	403	498	10
Future Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1416		1735	1700		1611	1822	
Flt Permitted	0.51	1.00		0.74	1.00		0.34	1.00		0.36	1.00	
Satd. Flow (perm)	977	1694		1385	1416		613	1700		616	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	102	7	248	28	374	101	438	541	11
RTOR Reduction (vph)	0	14	0	0	205	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	13	0	102	50	0	28	461	0	438	551	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		26.5	21.5		28.9	22.7	
Effective Green, g (s)	9.5	9.5		9.5	9.5		26.5	21.5		28.9	22.7	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.49	0.40		0.53	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	171	296		242	248		403	674		442	763	
v/s Ratio Prot		0.01			0.04		0.01	0.27		c0.11	0.30	
v/s Ratio Perm	0.00			c0.07			0.03			c0.41		
v/c Ratio	0.01	0.04		0.42	0.20		0.07	0.68		0.99	0.72	
Uniform Delay, d1	18.5	18.6		19.9	19.1		7.5	13.5		11.3	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	3.7		40.2	4.1	
Delay (s)	18.5	18.6		21.1	19.5		7.5	17.2		51.5	17.3	
Level of Service	B	B		C	B		A	B		D	B	
Approach Delay (s/veh)		18.6			20.0			16.7			32.4	
Approach LOS		B			B			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	165	159	558	375	25
Future Volume (vph)	25	165	159	558	375	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.992	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1817	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1817	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	27	179	173	607	408	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	206	0	173	607	435	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	165	159	558	375	25
Future Volume (Veh/h)	25	165	159	558	375	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	179	173	607	408	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1375	422	435			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1375	422	435			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	72	85			
cM capacity (veh/h)	137	636	1135			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	206	173	607	435
Volume Left	27	173	0	0
Volume Right	179	0	0	27
cSH	431	1135	1700	1700
Volume to Capacity	0.48	0.15	0.36	0.26
Queue Length 95th (m)	20.2	4.3	0.0	0.0
Control Delay (s/veh)	20.8	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	20.8	1.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	162	87	6	64	157	648	123	74	455	11
Future Volume (vph)	6	9	162	87	6	64	157	648	123	74	455	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.877			0.945			0.976			0.997	
Flt Protected		0.998			0.973		0.950				0.993	
Satd. Flow (prot)	0	1661	0	0	1713	0	1787	1833	0	0	1830	0
Flt Permitted		0.998			0.973		0.950				0.993	
Satd. Flow (perm)	0	1661	0	0	1713	0	1787	1833	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	7	10	176	95	7	70	171	704	134	80	495	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	172	0	171	838	0	0	587	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 103.5%		ICU Level of Service G	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	9	162	87	6	64	157	648	123	74	455	11
Future Volume (Veh/h)	6	9	162	87	6	64	157	648	123	74	455	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	10	176	95	7	70	171	704	134	80	495	12
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1784	1844	504	1955	1783	771	510			838		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1784	1844	504	1955	1783	771	510			838		
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 %	82	82	69	0	89	83	84			90		
cM capacity (veh/h)	39	56	570	23	62	400	1058			796		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	193	172	171	838	587
Volume Left	7	95	171	0	80
Volume Right	176	70	0	134	12
cSH	290	39	1058	1700	796
Volume to Capacity	0.66	4.36	0.16	0.49	0.10
Queue Length 95th (m)	35.0	Err	4.6	0.0	2.7
Control Delay (s/veh)	38.9	Err	9.1	0.0	2.6
Lane LOS	E	F	A		A
Approach Delay (s/veh)	38.9	Err	1.5		2.6
Approach LOS	E	F			

Intersection Summary			
Average Delay	882.4		
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	76	91	960	708	67
Future Volume (vph)	32	76	91	960	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.988	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1544	0	1583	1720	1793	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1544	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	35	83	99	1043	770	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	99	1043	843	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	76	91	960	708	67
Future Volume (Veh/h)	32	76	91	960	708	67
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	83	99	1043	770	73
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2048	807	843			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2394	807	843			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	78	87			
cM capacity (veh/h)	20	370	744			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	118	99	1043	843
Volume Left	35	99	0	0
Volume Right	83	0	0	73
cSH	60	744	1700	1700
Volume to Capacity	1.98	0.13	0.61	0.50
Queue Length 95th (m)	89.9	3.7	0.0	0.0
Control Delay (s/veh)	605.0	10.6	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	605.0	0.9		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	34.4		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Future Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.278			0.668			0.331			0.140		
Satd. Flow (perm)	528	1649	0	1207	1633	0	628	1809	0	256	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			299			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	35	42	97	126	65	449	136	640	128	309	514	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	139	0	126	514	0	136	768	0	309	531	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	14.4	14.4		14.4	14.4		36.9	28.2		37.6	28.6	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.56	0.43		0.57	0.44	
v/c Ratio	0.30	0.32		0.48	0.87		0.30	0.98		1.10	0.66	
Control Delay (s/veh)	28.2	10.2		28.2	27.0		8.0	49.8		100.8	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.2	10.2		28.2	27.0		8.0	49.8		100.8	21.1	
LOS	C	B		C	C		A	D		F	C	
Approach Delay (s/veh)		13.8			27.2			43.5			50.4	
Approach LOS		B			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 65.7	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay (s/veh): 39.7	Intersection LOS: D
Intersection Capacity Utilization 105.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	139	126	514	136	768	309	531
v/c Ratio	0.30	0.32	0.48	0.87	0.30	0.98	1.10	0.66
Control Delay (s/veh)	28.2	10.2	28.2	27.0	8.0	49.8	100.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	10.2	28.2	27.0	8.0	49.8	100.8	21.1
Queue Length 50th (m)	3.8	4.3	14.1	25.6	6.8	~100.1	~31.8	55.6
Queue Length 95th (m)	11.6	16.9	28.8	#75.8	14.6	#182.4	#81.9	95.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	153	548	351	687	463	785	282	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.25	0.36	0.75	0.29	0.98	1.10	0.66

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Future Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1633		1804	1809		1735	1836	
Flt Permitted	0.28	1.00		0.67	1.00		0.33	1.00		0.14	1.00	
Satd. Flow (perm)	528	1651		1208	1633		628	1809		256	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	42	97	126	65	449	136	640	128	309	514	17
RTOR Reduction (vph)	0	76	0	0	233	0	0	10	0	0	2	0
Lane Group Flow (vph)	35	63	0	126	281	0	136	758	0	309	529	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.4	14.4		14.4	14.4		33.9	28.2		34.5	28.5	
Effective Green, g (s)	14.4	14.4		14.4	14.4		33.9	28.2		34.5	28.5	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.52	0.43		0.53	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	115	362		265	358		426	777		269	797	
v/s Ratio Prot		0.04			c0.17		0.03	0.42		c0.10	0.29	
v/s Ratio Perm	0.07			0.10			0.14			c0.50		
v/c Ratio	0.30	0.17		0.48	0.78		0.32	0.98		1.15	0.66	
Uniform Delay, d1	21.4	20.8		22.3	24.1		8.9	18.4		14.1	14.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.3	10.7		0.2	26.5		101.1	2.8	
Delay (s)	22.9	21.0		23.7	34.8		9.1	44.8		115.3	17.5	
Level of Service	C	C		C	C		A	D		F	B	
Approach Delay (s/veh)		21.4			32.6			39.4			53.5	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix E3

2040 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	146	141	330	480	27
Future Volume (vph)	25	146	141	330	480	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1588	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1588	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	159	153	359	522	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	153	359	551	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	146	141	330	480	27
Future Volume (Veh/h)	25	146	141	330	480	27
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)	27	159	153	359	522	29
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	1202	537	551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	537	551			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	85	70	85			
cM capacity (veh/h)	175	537	1019			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	186	153	359	551
Volume Left	27	153	0	0
Volume Right	159	0	0	29
cSH	413	1019	1700	1700
Volume to Capacity	0.45	0.15	0.21	0.32
Queue Length 95th (m)	18.2	4.2	0.0	0.0
Control Delay (s/veh)	20.7	9.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	20.7	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.876			0.953			0.985			0.995	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	14	4	204	95	8	55	130	442	48	28	629	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	158	0	130	490	0	0	680	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 91.5%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (Veh/h)	13	4	188	87	7	51	120	407	44	26	579	21
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)	14	4	204	95	8	55	130	442	48	28	629	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	1458	1447	641	1629	1434	466	652			490		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1458	1447	641	1629	1434	466	652			490		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	83	96	57	0	93	91	85			97		
cM capacity (veh/h)	81	109	473	39	111	597	893			1073		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	222	158	130	490	680
Volume Left	14	95	130	0	28
Volume Right	204	55	0	48	23
cSH	347	61	893	1700	1073
Volume to Capacity	0.64	2.58	0.15	0.29	0.03
Queue Length 95th (m)	33.6	126.6	4.1	0.0	0.6
Control Delay (s/veh)	32.1	859.2	9.7	0.0	0.7
Lane LOS	D	F	A		A
Approach Delay (s/veh)	32.1	859.2	2.0		0.7
Approach LOS	D	F			

Intersection Summary				
Average Delay	86.1			
Intersection Capacity Utilization	91.5%	ICU Level of Service	F	
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	66	28	579	890	30
Future Volume (vph)	15	66	28	579	890	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1549	0	1583	1727	1831	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1549	0	1583	1727	1831	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	16	72	30	629	967	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	30	629	1000	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	66	28	579	890	30
Future Volume (Veh/h)	15	66	28	579	890	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	72	30	629	967	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)				98		
pX, platoon unblocked	0.81					
vC, conflicting volume	1673	984	1000			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1714	984	1000			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	79	75	95			
cM capacity (veh/h)	77	291	647			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	88	30	629	1000
Volume Left	16	30	0	0
Volume Right	72	0	0	33
cSH	194	647	1700	1700
Volume to Capacity	0.45	0.05	0.37	0.59
Queue Length 95th (m)	17.2	1.2	0.0	0.0
Control Delay (s/veh)	38.1	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s/veh)	38.1	0.5		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1699	0	1612	1822	0
Flt Permitted	0.487			0.740			0.311			0.348		
Satd. Flow (perm)	925	1694	0	1384	1416	0	567	1699	0	590	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			257			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	264	0	29	494	0	448	575	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.8	9.8		9.8	9.8		30.3	22.2		32.6	23.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.55	0.40		0.59	0.42	
v/c Ratio	0.01	0.09		0.44	0.57		0.07	0.71		0.98	0.75	
Control Delay (s/veh)	20.5	13.8		27.8	9.4		4.8	20.1		50.9	21.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	13.8		27.8	9.4		4.8	20.1		50.9	21.3	
LOS	C	B		C	A		A	C		D	C	
Approach Delay (s/veh)		14.2			14.7			19.3			34.2	
Approach LOS		B			B			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 55.5	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 26.2	Intersection LOS: C
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	264	29	494	448	575
v/c Ratio	0.01	0.09	0.44	0.57	0.07	0.71	0.98	0.75
Control Delay (s/veh)	20.5	13.8	27.8	9.4	4.8	20.1	50.9	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	13.8	27.8	9.4	4.8	20.1	50.9	21.3
Queue Length 50th (m)	0.2	0.9	10.6	0.6	0.9	39.2	19.1	47.8
Queue Length 95th (m)	1.7	6.7	24.8	18.0	3.8	78.1	#80.8	94.4
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	323	604	484	662	450	888	458	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.22	0.40	0.06	0.56	0.98	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)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1416		1735	1700		1611	1822	
Flt Permitted	0.49	1.00		0.74	1.00		0.31	1.00		0.35	1.00	
Satd. Flow (perm)	925	1694		1385	1416		568	1700		590	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
RTOR Reduction (vph)	0	14	0	0	211	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	13	0	107	53	0	29	480	0	448	574	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.8	9.8		9.8	9.8		27.3	22.3		29.5	23.4	
Effective Green, g (s)	9.8	9.8		9.8	9.8		27.3	22.3		29.5	23.4	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.49	0.40		0.53	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	164	300		245	251		386	686		428	772	
v/s Ratio Prot		0.01			0.04		0.01	0.28		c0.12	0.31	
v/s Ratio Perm	0.00			c0.08			0.03			c0.44		
v/c Ratio	0.01	0.04		0.44	0.21		0.08	0.70		1.05	0.74	
Uniform Delay, d1	18.7	18.8		20.2	19.4		7.6	13.7		11.7	13.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	4.0		56.2	4.7	
Delay (s)	18.7	18.9		21.5	19.8		7.6	17.7		67.9	18.0	
Level of Service	B	B		C	B		A	B		E	B	
Approach Delay (s/veh)		18.9			20.3			17.2			39.9	
Approach LOS		B			C			B			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	172	165	579	389	26
Future Volume (vph)	26	172	165	579	389	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1817	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1817	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	187	179	629	423	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	0	179	629	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	172	165	579	389	26
Future Volume (Veh/h)	26	172	165	579	389	26
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)	28	187	179	629	423	28
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	1424	437	451			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1424	437	451			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	70	84			
cM capacity (veh/h)	127	624	1120			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	215	179	629	451
Volume Left	28	179	0	0
Volume Right	187	0	0	28
cSH	413	1120	1700	1700
Volume to Capacity	0.52	0.16	0.37	0.27
Queue Length 95th (m)	23.3	4.5	0.0	0.0
Control Delay (s/veh)	22.8	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	22.8	2.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	170	87	6	64	164	675	123	74	457	12
Future Volume (vph)	6	9	170	87	6	64	164	675	123	74	457	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.876			0.945			0.977			0.997	
Flt Protected		0.998			0.973		0.950				0.993	
Satd. Flow (prot)	0	1659	0	0	1713	0	1787	1835	0	0	1830	0
Flt Permitted		0.998			0.973		0.950				0.993	
Satd. Flow (perm)	0	1659	0	0	1713	0	1787	1835	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	7	10	185	95	7	70	178	734	134	80	497	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	172	0	178	868	0	0	590	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	105.6%	ICU Level of Service G	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	9	170	87	6	64	164	675	123	74	457	12
Future Volume (Veh/h)	6	9	170	87	6	64	164	675	123	74	457	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	10	185	95	7	70	178	734	134	80	497	13
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1830	1891	507	2011	1830	801	513			868		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1830	1891	507	2011	1830	801	513			868		
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 %	80	81	67	0	88	82	83			90		
cM capacity (veh/h)	35	52	569	20	57	384	1055			776		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	202	172	178	868	590
Volume Left	7	95	178	0	80
Volume Right	185	70	0	134	13
cSH	283	35	1055	1700	776
Volume to Capacity	0.71	4.97	0.17	0.51	0.10
Queue Length 95th (m)	40.1	Err	4.8	0.0	2.7
Control Delay (s/veh)	44.1	Err	9.1	0.0	2.7
Lane LOS	E	F	A		A
Approach Delay (s/veh)	44.1	Err	1.5		2.7
Approach LOS	E	F			

Intersection Summary			
Average Delay	861.7		
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	80	95	993	733	70
Future Volume (vph)	33	80	95	993	733	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.988	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1545	0	1583	1720	1793	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1545	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	36	87	103	1079	797	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	103	1079	873	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	80	95	993	733	70
Future Volume (Veh/h)	33	80	95	993	733	70
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)	36	87	103	1079	797	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2120	835	873			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2519	835	873			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	76	86			
cM capacity (veh/h)	16	356	724			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	123	103	1079	873
Volume Left	36	103	0	0
Volume Right	87	0	0	76
cSH	50	724	1700	1700
Volume to Capacity	2.45	0.14	0.63	0.51
Queue Length 95th (m)	101.7	4.0	0.0	0.0
Control Delay (s/veh)	832.2	10.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	832.2	0.9		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	47.5		
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1652	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.260			0.663			0.304			0.141		
Satd. Flow (perm)	494	1652	0	1198	1633	0	577	1809	0	257	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			290			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	531	0	142	799	0	321	550	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	15.4	15.4		15.4	15.4		36.8	28.1		37.5	28.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.55	0.42		0.56	0.43	
v/c Ratio	0.32	0.32		0.48	0.89		0.33	1.03		1.15	0.70	
Control Delay (s/veh)	29.2	10.0		27.9	29.4		8.6	64.6		122.3	22.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	29.2	10.0		27.9	29.4		8.6	64.6		122.3	22.8	
LOS	C	A		C	C		A	E		F	C	
Approach Delay (s/veh)		13.8			29.1			56.1			59.5	
Approach LOS		B			C			E			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 66.6	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay (s/veh): 47.6	Intersection LOS: D
Intersection Capacity Utilization 108.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	531	142	799	321	550
v/c Ratio	0.32	0.32	0.48	0.89	0.33	1.03	1.15	0.70
Control Delay (s/veh)	29.2	10.0	27.9	29.4	8.6	64.6	122.3	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.2	10.0	27.9	29.4	8.6	64.6	122.3	22.8
Queue Length 50th (m)	4.0	4.6	14.9	30.1	7.8	~124.5	~37.9	61.8
Queue Length 95th (m)	12.2	17.6	30.2	#83.9	15.2	#192.4	#86.3	#101.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	141	546	343	674	433	773	278	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.27	0.38	0.79	0.33	1.03	1.15	0.70

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1652		1717	1633		1804	1809		1735	1836	
Flt Permitted	0.26	1.00		0.66	1.00		0.30	1.00		0.14	1.00	
Satd. Flow (perm)	494	1652		1199	1633		578	1809		257	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
RTOR Reduction (vph)	0	78	0	0	223	0	0	10	0	0	2	0
Lane Group Flow (vph)	37	69	0	132	308	0	142	789	0	321	548	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.4	15.4		15.4	15.4		33.8	28.1		34.4	28.4	
Effective Green, g (s)	15.4	15.4		15.4	15.4		33.8	28.1		34.4	28.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.51	0.42		0.52	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	114	382		277	378		398	764		266	784	
v/s Ratio Prot		0.04			c0.19		0.03	0.44		c0.11	0.30	
v/s Ratio Perm	0.07			0.11			0.15			c0.51		
v/c Ratio	0.32	0.18		0.48	0.82		0.36	1.03		1.21	0.70	
Uniform Delay, d1	21.2	20.5		22.1	24.2		9.5	19.2		14.8	15.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.2		1.3	12.7		0.2	41.3		122.9	3.5	
Delay (s)	22.9	20.7		23.4	36.9		9.7	60.5		137.8	19.0	
Level of Service	C	C		C	D		A	E		F	B	
Approach Delay (s/veh)		21.1			34.2			52.9			62.8	
Approach LOS		C			C			D			E	

Intersection Summary

HCM 2000 Control Delay (s/veh)	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix F1

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	143	149	354	463	24
Future Volume (vph)	22	143	149	354	463	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1584	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1584	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	24	155	162	385	503	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	0	162	385	529	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	143	149	354	463	24
Future Volume (Veh/h)	22	143	149	354	463	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	155	162	385	503	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1225	516	529			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1225	516	529			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	86	72	84			
cM capacity (veh/h)	168	551	1038			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	179	162	385	529
Volume Left	24	162	0	0
Volume Right	155	0	0	26
cSH	422	1038	1700	1700
Volume to Capacity	0.42	0.16	0.23	0.31
Queue Length 95th (m)	16.5	4.4	0.0	0.0
Control Delay (s/veh)	19.7	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	19.7	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	5	173	115	9	68	110	401	53	32	622	26
Future Volume (vph)	14	5	173	115	9	68	110	401	53	32	622	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.878			0.952			0.982			0.995	
Flt Protected		0.996			0.971		0.950				0.998	
Satd. Flow (prot)	0	1617	0	0	1722	0	1626	1697	0	0	1773	0
Flt Permitted		0.996			0.971		0.950				0.998	
Satd. Flow (perm)	0	1617	0	0	1722	0	1626	1697	0	0	1773	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	15	5	188	125	10	74	120	436	58	35	676	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	0	0	209	0	120	494	0	0	739	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 93.2%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	5	173	115	9	68	110	401	53	32	622	26
Future Volume (Veh/h)	14	5	173	115	9	68	110	401	53	32	622	26
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)	15	5	188	125	10	74	120	436	58	35	676	28
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	1515	1494	690	1656	1479	465	704			494		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1515	1494	690	1656	1479	465	704			494		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	79	95	58	0	90	88	86			97		
cM capacity (veh/h)	70	102	443	38	104	597	853			1070		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	208	209	120	494	739
Volume Left	15	125	120	0	35
Volume Right	188	74	0	58	28
cSH	303	59	853	1700	1070
Volume to Capacity	0.69	3.53	0.14	0.29	0.03
Queue Length 95th (m)	37.7	Err	3.9	0.0	0.8
Control Delay (s/veh)	39.4	Err	9.9	0.0	0.9
Lane LOS	E	F	A		A
Approach Delay (s/veh)	39.4	Err	1.9		0.9
Approach LOS	E	F			

Intersection Summary				
Average Delay	1186.3			
Intersection Capacity Utilization	93.2%	ICU Level of Service		F
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	17	61	25	569	938	37
Future Volume (vph)	17	61	25	569	938	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894				0.995	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1558	0	1583	1727	1829	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1558	0	1583	1727	1829	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	18	66	27	618	1020	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	27	618	1060	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	61	25	569	938	37
Future Volume (Veh/h)	17	61	25	569	938	37
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)	18	66	27	618	1020	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.82					
vC, conflicting volume	1712	1040	1060			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1757	1040	1060			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	76	76	96			
cM capacity (veh/h)	74	270	613			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	27	618	1060
Volume Left	18	27	0	0
Volume Right	66	0	0	40
cSH	173	613	1700	1700
Volume to Capacity	0.49	0.04	0.36	0.62
Queue Length 95th (m)	18.8	1.1	0.0	0.0
Control Delay (s/veh)	44.2	11.1	0.0	0.0
Lane LOS	E	B		
Approach Delay (s/veh)	44.2	0.5		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	241	24	342	90	461	515	9
Future Volume (vph)	2	8	15	90	5	241	24	342	90	461	515	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.904			0.853			0.969			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1689	0	1787	1413	0	1736	1701	0	1612	1822	0
Flt Permitted	0.477			0.741			0.318			0.374		
Satd. Flow (perm)	906	1689	0	1386	1413	0	580	1701	0	634	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			262			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	9	16	98	5	262	26	372	98	501	560	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	25	0	98	267	0	26	470	0	501	570	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.4	9.4		9.4	9.4		30.0	22.0		32.4	23.2	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.55	0.40		0.59	0.42	
v/c Ratio	0.01	0.08		0.42	0.58		0.06	0.68		1.04	0.74	
Control Delay (s/veh)	20.5	14.0		27.4	9.5		4.6	18.6		65.8	20.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	14.0		27.4	9.5		4.6	18.6		65.8	20.5	
LOS	C	B		C	A		A	B		E	C	
Approach Delay (s/veh)		14.4			14.3			17.9			41.7	
Approach LOS		B			B			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 54.9	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 30.2	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	25	98	267	26	470	501	570
v/c Ratio	0.01	0.08	0.42	0.58	0.06	0.68	1.04	0.74
Control Delay (s/veh)	20.5	14.0	27.4	9.5	4.6	18.6	65.8	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	14.0	27.4	9.5	4.6	18.6	65.8	20.5
Queue Length 50th (m)	0.2	0.8	9.5	0.5	0.8	35.8	~23.4	46.3
Queue Length 95th (m)	1.7	6.3	23.0	17.8	3.3	71.3	#95.1	91.3
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	320	608	491	669	458	899	483	955
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.20	0.40	0.06	0.52	1.04	0.60

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	241	24	342	90	461	515	9
Future Volume (vph)	2	8	15	90	5	241	24	342	90	461	515	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1691		1779	1412		1735	1700		1611	1823	
Flt Permitted	0.48	1.00		0.74	1.00		0.32	1.00		0.37	1.00	
Satd. Flow (perm)	907	1691		1388	1412		581	1700		635	1823	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	9	16	98	5	262	26	372	98	501	560	10
RTOR Reduction (vph)	0	13	0	0	217	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	12	0	98	50	0	26	456	0	501	569	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.4	9.4		9.4	9.4		27.0	22.0		29.2	23.1	
Effective Green, g (s)	9.4	9.4		9.4	9.4		27.0	22.0		29.2	23.1	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.50	0.40		0.54	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	156	291		239	243		393	686		449	772	
v/s Ratio Prot		0.01			0.04		0.01	0.27		c0.12	0.31	
v/s Ratio Perm	0.00			c0.07			0.03			c0.47		
v/c Ratio	0.01	0.04		0.41	0.21		0.07	0.67		1.12	0.74	
Uniform Delay, d1	18.7	18.8		20.1	19.3		7.4	13.2		11.5	13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.1	0.4		0.0	3.2		77.9	4.5	
Delay (s)	18.7	18.8		21.2	19.8		7.5	16.5		89.4	17.6	
Level of Service	B	B		C	B		A	B		F	B	
Approach Delay (s/veh)		18.8			20.2			16.0			51.2	
Approach LOS		B			C			B			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	49	454	29	17	589
Future Volume (vph)	91	49	454	29	17	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953		0.992			
Flt Protected	0.968					0.999
Satd. Flow (prot)	1753	0	1800	0	0	1810
Flt Permitted	0.968					0.999
Satd. Flow (perm)	1753	0	1800	0	0	1810
Link Speed (k/h)	50		80			80
Link Distance (m)	252.7		85.9			640.4
Travel Time (s)	18.2		3.9			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	5%
Adj. Flow (vph)	99	53	493	32	18	640
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	525	0	0	658
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	91	49	454	29	17	589
Future Volume (Veh/h)	91	49	454	29	17	589
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)	99	53	493	32	18	640
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	1185	509			525	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1185	509			525	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	52	91			98	
cM capacity (veh/h)	207	568			1052	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	152	525	658
Volume Left	99	0	18
Volume Right	53	32	0
cSH	266	1700	1052
Volume to Capacity	0.57	0.31	0.02
Queue Length 95th (m)	26.0	0.0	0.4
Control Delay (s/veh)	35.1	0.0	0.5
Lane LOS	E		A
Approach Delay (s/veh)	35.1	0.0	0.5
Approach LOS	E		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	178	166	569	410	23
Future Volume (vph)	23	178	166	569	410	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.880				0.993	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1662	0	1805	1881	1818	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1662	0	1805	1881	1818	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	25	193	180	618	446	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	218	0	180	618	471	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	178	166	569	410	23
Future Volume (Veh/h)	23	178	166	569	410	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	193	180	618	446	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	1437	459	471			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1437	459	471			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	68	84			
cM capacity (veh/h)	124	607	1101			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	218	180	618	471
Volume Left	25	180	0	0
Volume Right	193	0	0	25
cSH	420	1101	1700	1700
Volume to Capacity	0.52	0.16	0.36	0.28
Queue Length 95th (m)	23.3	4.7	0.0	0.0
Control Delay (s/veh)	22.5	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	22.5	2.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	11	155	104	8	75	150	707	151	91	491	16
Future Volume (vph)	12	11	155	104	8	75	150	707	151	91	491	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.882			0.946			0.974			0.996	
Flt Protected		0.997			0.973		0.950				0.992	
Satd. Flow (prot)	0	1669	0	0	1715	0	1787	1829	0	0	1827	0
Flt Permitted		0.997			0.973		0.950				0.992	
Satd. Flow (perm)	0	1669	0	0	1715	0	1787	1829	0	0	1827	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	13	12	168	113	9	82	163	768	164	99	534	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	204	0	163	932	0	0	650	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	113.2%	ICU Level of Service H	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	11	155	104	8	75	150	707	151	91	491	16
Future Volume (Veh/h)	12	11	155	104	8	75	150	707	151	91	491	16
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)	13	12	168	113	9	82	163	768	164	99	534	17
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1924	2002	546	2091	1928	850	554			932		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1924	2002	546	2091	1928	850	554			932		
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 %	51	72	69	0	81	77	84			87		
cM capacity (veh/h)	27	43	540	17	48	360	1019			734		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	193	204	163	932	650
Volume Left	13	113	163	0	99
Volume Right	168	82	0	164	17
cSH	180	28	1019	1700	734
Volume to Capacity	1.07	7.22	0.16	0.55	0.13
Queue Length 95th (m)	75.0	Err	4.5	0.0	3.7
Control Delay (s/veh)	141.2	Err	9.2	0.0	3.4
Lane LOS	F	F	A		A
Approach Delay (s/veh)	141.2	Err	1.4		3.4
Approach LOS	F	F			

Intersection Summary			
Average Delay	966.8		
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	73	87	1033	749	71
Future Volume (vph)	40	73	87	1033	749	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.913				0.988	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1563	0	1583	1720	1793	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1563	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	43	79	95	1123	814	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	0	95	1123	891	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	73	87	1033	749	71
Future Volume (Veh/h)	40	73	87	1033	749	71
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	79	95	1123	814	77
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2166	853	891			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2600	853	891			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	77	87			
cM capacity (veh/h)	15	347	713			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	122	95	1123	891
Volume Left	43	95	0	0
Volume Right	79	0	0	77
cSH	38	713	1700	1700
Volume to Capacity	3.18	0.13	0.66	0.52
Queue Length 95th (m)	Err	3.7	0.0	0.0
Control Delay (s/veh)	Err	10.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	Err	0.8		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	547.2		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	440	119	634	113	295	499	15
Future Volume (vph)	31	37	85	112	57	440	119	634	113	295	499	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.867			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1629	0	1805	1814	0	1736	1838	0
Flt Permitted	0.250			0.673			0.292			0.140		
Satd. Flow (perm)	475	1649	0	1216	1629	0	554	1814	0	256	1838	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			282			15			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	34	40	92	122	62	478	129	689	123	321	542	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	132	0	122	540	0	129	812	0	321	558	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		36.8	28.1		37.5	28.5	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.42		0.56	0.42	
v/c Ratio	0.30	0.29		0.42	0.90		0.32	1.06		1.17	0.72	
Control Delay (s/veh)	28.5	9.8		26.2	31.5		8.6	72.3		126.2	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.5	9.8		26.2	31.5		8.6	72.3		126.2	23.6	
LOS	C	A		C	C		A	E		F	C	
Approach Delay (s/veh)		13.6			30.6			63.6			61.0	
Approach LOS		B			C			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 67.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay (s/veh): 51.3		Intersection LOS: D	
Intersection Capacity Utilization 109.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	132	122	540	129	812	321	558
v/c Ratio	0.30	0.29	0.42	0.90	0.32	1.06	1.17	0.72
Control Delay (s/veh)	28.5	9.8	26.2	31.5	8.6	72.3	126.2	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	9.8	26.2	31.5	8.6	72.3	126.2	23.6
Queue Length 50th (m)	3.7	4.1	13.6	33.0	7.1	~129.8	~38.6	63.8
Queue Length 95th (m)	11.6	16.4	27.9	#88.9	13.9	#196.6	#86.4	#106.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	134	534	345	664	418	767	275	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.35	0.81	0.31	1.06	1.17	0.72

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	440	119	634	113	295	499	15
Future Volume (vph)	31	37	85	112	57	440	119	634	113	295	499	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1630		1804	1814		1735	1837	
Flt Permitted	0.25	1.00		0.67	1.00		0.29	1.00		0.14	1.00	
Satd. Flow (perm)	475	1651		1215	1630		555	1814		256	1837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	40	92	122	62	478	129	689	123	321	542	16
RTOR Reduction (vph)	0	70	0	0	215	0	0	9	0	0	2	0
Lane Group Flow (vph)	34	62	0	122	325	0	129	803	0	321	556	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		33.9	28.2		34.5	28.5	
Effective Green, g (s)	16.0	16.0		16.0	16.0		33.9	28.2		34.5	28.5	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.50	0.42		0.51	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	113	393		289	388		385	761		263	779	
v/s Ratio Prot		0.04			c0.20		0.03	0.44		c0.11	0.30	
v/s Ratio Perm	0.07			0.10			0.14			c0.52		
v/c Ratio	0.30	0.16		0.42	0.84		0.34	1.06		1.22	0.71	
Uniform Delay, d1	21.0	20.3		21.7	24.4		9.8	19.5		15.0	16.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.0	14.6		0.2	48.3		128.5	3.9	
Delay (s)	22.5	20.5		22.7	38.9		10.0	67.8		143.5	19.9	
Level of Service	C	C		C	D		A	E		F	B	
Approach Delay (s/veh)		20.9			35.9			59.9			65.0	
Approach LOS		C			D			E			E	

Intersection Summary

HCM 2000 Control Delay (s/veh)	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	109.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	32	702	92	50	538
Future Volume (vph)	59	32	702	92	50	538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952		0.984			
Flt Protected	0.969					0.996
Satd. Flow (prot)	1753	0	1837	0	0	1858
Flt Permitted	0.969					0.996
Satd. Flow (perm)	1753	0	1837	0	0	1858
Link Speed (k/h)	50		80			80
Link Distance (m)	230.9		85.2			641.1
Travel Time (s)	16.6		3.8			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%
Adj. Flow (vph)	64	35	763	100	54	585
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	863	0	0	639
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	32	702	92	50	538
Future Volume (Veh/h)	59	32	702	92	50	538
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)	64	35	763	100	54	585
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	1506	813			863	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1506	813			863	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	49	91			93	
cM capacity (veh/h)	125	382			788	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	99	863	639
Volume Left	64	0	54
Volume Right	35	100	0
cSH	164	1700	788
Volume to Capacity	0.60	0.51	0.07
Queue Length 95th (m)	26.0	0.0	1.8
Control Delay (s/veh)	55.4	0.0	1.8
Lane LOS	F		A
Approach Delay (s/veh)	55.4	0.0	1.8
Approach LOS	F		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

Appendix F2

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	148	154	365	479	26
Future Volume (vph)	23	148	154	365	479	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1584	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1584	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	25	161	167	397	521	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	167	397	549	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	148	154	365	479	26
Future Volume (Veh/h)	23	148	154	365	479	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	161	167	397	521	28
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	1266	535	549			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1266	535	549			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	84	70	84			
cM capacity (veh/h)	158	538	1021			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	186	167	397	549
Volume Left	25	167	0	0
Volume Right	161	0	0	28
cSH	406	1021	1700	1700
Volume to Capacity	0.46	0.16	0.23	0.32
Queue Length 95th (m)	18.7	4.7	0.0	0.0
Control Delay (s/veh)	21.1	9.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	21.1	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	5	180	115	9	68	110	417	53	32	642	26
Future Volume (vph)	14	5	180	115	9	68	110	417	53	32	642	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.877			0.952			0.983			0.995	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1617	0	0	1722	0	1626	1698	0	0	1773	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1617	0	0	1722	0	1626	1698	0	0	1773	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	15	5	196	125	10	74	120	453	58	35	698	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	216	0	0	209	0	120	511	0	0	761	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 94.7%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	5	180	115	9	68	110	417	53	32	642	26
Future Volume (Veh/h)	14	5	180	115	9	68	110	417	53	32	642	26
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)	15	5	196	125	10	74	120	453	58	35	698	28
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	1554	1533	712	1703	1518	482	726			511		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1554	1533	712	1703	1518	482	726			511		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	77	95	54	0	90	87	86			97		
cM capacity (veh/h)	65	96	431	33	99	584	837			1054		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	216	209	120	511	761
Volume Left	15	125	120	0	35
Volume Right	196	74	0	58	28
cSH	293	52	837	1700	1054
Volume to Capacity	0.74	4.02	0.14	0.30	0.03
Queue Length 95th (m)	43.1	Err	4.0	0.0	0.8
Control Delay (s/veh)	45.1	Err	10.0	0.0	0.9
Lane LOS	E	F	B		A
Approach Delay (s/veh)	45.1	Err	1.9		0.9
Approach LOS	E	F			

Intersection Summary				
Average Delay	1156.5			
Intersection Capacity Utilization	94.7%	ICU Level of Service		F
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	63	27	590	965	38
Future Volume (vph)	18	63	27	590	965	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.896				0.995	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1563	0	1583	1727	1829	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1563	0	1583	1727	1829	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	20	68	29	641	1049	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	29	641	1090	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	63	27	590	965	38
Future Volume (Veh/h)	18	63	27	590	965	38
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)	20	68	29	641	1049	41
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.81					
vC, conflicting volume	1769	1070	1090			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1830	1070	1090			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	70	74	95			
cM capacity (veh/h)	66	259	597			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	88	29	641	1090
Volume Left	20	29	0	0
Volume Right	68	0	0	41
cSH	155	597	1700	1700
Volume to Capacity	0.57	0.05	0.38	0.64
Queue Length 95th (m)	23.3	1.2	0.0	0.0
Control Delay (s/veh)	54.7	11.3	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	54.7	0.5		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	249	26	356	93	469	535	10
Future Volume (vph)	2	9	16	94	6	249	26	356	93	469	535	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.969			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1701	0	1612	1822	0
Flt Permitted	0.441			0.740			0.298			0.359		
Satd. Flow (perm)	838	1694	0	1384	1416	0	543	1701	0	608	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			271			22			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	102	7	271	28	387	101	510	582	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	102	278	0	28	488	0	510	593	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.6	9.6		9.6	9.6		31.0	22.9		33.2	24.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.55	0.41		0.59	0.43	
v/c Ratio	0.01	0.09		0.43	0.60		0.07	0.69		1.08	0.76	
Control Delay (s/veh)	20.5	13.9		28.1	9.7		4.7	19.1		81.2	21.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	13.9		28.1	9.7		4.7	19.1		81.2	21.5	
LOS	C	B		C	A		A	B		F	C	
Approach Delay (s/veh)		14.4			14.6			18.3			49.1	
Approach LOS		B			B			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 56			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay (s/veh): 34.3		Intersection LOS: C	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	102	278	28	488	510	593
v/c Ratio	0.01	0.09	0.43	0.60	0.07	0.69	1.08	0.76
Control Delay (s/veh)	20.5	13.9	28.1	9.7	4.7	19.1	81.2	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	13.9	28.1	9.7	4.7	19.1	81.2	21.5
Queue Length 50th (m)	0.2	1.0	10.5	0.7	0.9	38.3	~26.9	49.8
Queue Length 95th (m)	1.7	6.8	23.8	18.4	3.6	75.9	#102.8	#99.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	290	598	480	668	442	880	471	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.21	0.42	0.06	0.55	1.08	0.63

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	249	26	356	93	469	535	10
Future Volume (vph)	2	9	16	94	6	249	26	356	93	469	535	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1415		1735	1701		1611	1822	
Flt Permitted	0.44	1.00		0.74	1.00		0.30	1.00		0.36	1.00	
Satd. Flow (perm)	839	1694		1385	1415		544	1701		609	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	102	7	271	28	387	101	510	582	11
RTOR Reduction (vph)	0	14	0	0	224	0	0	13	0	0	1	0
Lane Group Flow (vph)	2	13	0	102	54	0	28	475	0	510	592	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6		27.9	22.9		30.1	24.0	
Effective Green, g (s)	9.6	9.6		9.6	9.6		27.9	22.9		30.1	24.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.50	0.41		0.54	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	144	292		239	244		380	700		439	786	
v/s Ratio Prot		0.01			0.04		0.01	0.28		c0.13	0.32	
v/s Ratio Perm	0.00			c0.07			0.03			c0.50		
v/c Ratio	0.01	0.04		0.43	0.22		0.07	0.68		1.16	0.75	
Uniform Delay, d1	19.1	19.2		20.5	19.8		7.5	13.3		11.6	13.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.5		0.0	3.4		95.3	4.9	
Delay (s)	19.1	19.2		21.8	20.2		7.6	16.8		106.9	18.2	
Level of Service	B	B		C	C		A	B		F	B	
Approach Delay (s/veh)		19.2			20.7			16.3			59.2	
Approach LOS		B			C			B			E	

Intersection Summary

HCM 2000 Control Delay (s/veh)	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	49	470	29	17	610
Future Volume (vph)	91	49	470	29	17	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953		0.992			
Flt Protected	0.968					0.999
Satd. Flow (prot)	1753	0	1800	0	0	1810
Flt Permitted	0.968					0.999
Satd. Flow (perm)	1753	0	1800	0	0	1810
Link Speed (k/h)	50		80			80
Link Distance (m)	252.7		85.9			640.4
Travel Time (s)	18.2		3.9			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	5%
Adj. Flow (vph)	99	53	511	32	18	663
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	543	0	0	681
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	91	49	470	29	17	610
Future Volume (Veh/h)	91	49	470	29	17	610
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)	99	53	511	32	18	663
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	1226	527			543	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1226	527			543	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	49	90			98	
cM capacity (veh/h)	196	555			1036	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	152	543	681
Volume Left	99	0	18
Volume Right	53	32	0
cSH	253	1700	1036
Volume to Capacity	0.60	0.32	0.02
Queue Length 95th (m)	28.3	0.0	0.4
Control Delay (s/veh)	38.7	0.0	0.5
Lane LOS	E		A
Approach Delay (s/veh)	38.7	0.0	0.5
Approach LOS	E		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	184	171	589	423	25
Future Volume (vph)	25	184	171	589	423	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.881				0.993	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1664	0	1805	1881	1818	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1664	0	1805	1881	1818	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	27	200	186	640	460	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	0	186	640	487	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	184	171	589	423	25
Future Volume (Veh/h)	25	184	171	589	423	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	200	186	640	460	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1486	474	487			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1486	474	487			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	66	83			
cM capacity (veh/h)	115	595	1086			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	227	186	640	487
Volume Left	27	186	0	0
Volume Right	200	0	0	27
cSH	397	1086	1700	1700
Volume to Capacity	0.57	0.17	0.38	0.29
Queue Length 95th (m)	27.5	4.9	0.0	0.0
Control Delay (s/veh)	25.5	9.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s/veh)	25.5	2.0		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	11	162	104	8	75	157	733	151	91	509	16
Future Volume (vph)	13	11	162	104	8	75	157	733	151	91	509	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.882			0.946			0.974			0.997	
Flt Protected		0.997			0.973		0.950				0.993	
Satd. Flow (prot)	0	1669	0	0	1715	0	1787	1829	0	0	1830	0
Flt Permitted		0.997			0.973		0.950				0.993	
Satd. Flow (perm)	0	1669	0	0	1715	0	1787	1829	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	14	12	176	113	9	82	171	797	164	99	553	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	204	0	171	961	0	0	669	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	116.0%	ICU Level of Service H	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	11	162	104	8	75	157	733	151	91	509	16
Future Volume (Veh/h)	13	11	162	104	8	75	157	733	151	91	509	16
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)	14	12	176	113	9	82	171	797	164	99	553	17
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1988	2066	565	2163	1992	879	573			961		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1988	2066	565	2163	1992	879	573			961		
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 %	39	69	67	0	79	76	83			86		
cM capacity (veh/h)	23	39	527	14	43	347	1002			716		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	202	204	171	961	669
Volume Left	14	113	171	0	99
Volume Right	176	82	0	164	17
cSH	162	23	1002	1700	716
Volume to Capacity	1.25	8.72	0.17	0.57	0.14
Queue Length 95th (m)	92.5	Err	4.9	0.0	3.8
Control Delay (s/veh)	208.0	Err	9.3	0.0	3.5
Lane LOS	F	F	A		A
Approach Delay (s/veh)	208.0	Err	1.4		3.5
Approach LOS	F	F			

Intersection Summary			
Average Delay	945.1		
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	41	76	91	1064	772	74
Future Volume (vph)	41	76	91	1064	772	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.988	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1561	0	1583	1720	1793	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1561	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	45	83	99	1157	839	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	99	1157	919	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	76	91	1064	772	74
Future Volume (Veh/h)	41	76	91	1064	772	74
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)	45	83	99	1157	839	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2234	879	919			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2712	879	919			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	75	86			
cM capacity (veh/h)	12	335	695			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	128	99	1157	919
Volume Left	45	99	0	0
Volume Right	83	0	0	80
cSH	33	695	1700	1700
Volume to Capacity	3.93	0.14	0.68	0.54
Queue Length 95th (m)	Err	4.0	0.0	0.0
Control Delay (s/veh)	Err	11.0	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	Err	0.9		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	556.2		
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	451	125	655	118	305	516	16
Future Volume (vph)	32	39	89	116	60	451	125	655	118	305	516	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.868			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1631	0	1805	1814	0	1736	1838	0
Flt Permitted	0.240			0.668			0.267			0.141		
Satd. Flow (perm)	456	1649	0	1207	1631	0	507	1814	0	257	1838	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			276			15			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	35	42	97	126	65	490	136	712	128	332	561	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	139	0	126	555	0	136	840	0	332	578	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	16.7	16.7		16.7	16.7		36.8	28.1		37.4	28.3	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.54	0.41		0.55	0.42	
v/c Ratio	0.31	0.29		0.42	0.91		0.35	1.11		1.22	0.75	
Control Delay (s/veh)	29.0	9.7		26.2	34.0		9.2	89.3		146.8	25.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	29.0	9.7		26.2	34.0		9.2	89.3		146.8	25.4	
LOS	C	A		C	C		A	F		F	C	
Approach Delay (s/veh)		13.5			32.6			78.1			69.7	
Approach LOS		B			C			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 67.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay (s/veh): 59.9		Intersection LOS: E	
Intersection Capacity Utilization 112.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	139	126	555	136	840	332	578
v/c Ratio	0.31	0.29	0.42	0.91	0.35	1.11	1.22	0.75
Control Delay (s/veh)	29.0	9.7	26.2	34.0	9.2	89.3	146.8	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.0	9.7	26.2	34.0	9.2	89.3	146.8	25.4
Queue Length 50th (m)	3.8	4.3	14.1	36.7	7.5	~138.3	~41.8	67.1
Queue Length 95th (m)	12.0	16.9	28.8	#95.3	14.6	#206.0	#90.2	#119.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	127	532	338	656	392	759	272	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.26	0.37	0.85	0.35	1.11	1.22	0.75

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	451	125	655	118	305	516	16
Future Volume (vph)	32	39	89	116	60	451	125	655	118	305	516	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1630		1804	1814		1735	1837	
Flt Permitted	0.24	1.00		0.67	1.00		0.27	1.00		0.14	1.00	
Satd. Flow (perm)	455	1651		1208	1630		506	1814		257	1837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	42	97	126	65	490	136	712	128	332	561	17
RTOR Reduction (vph)	0	73	0	0	208	0	0	9	0	0	2	0
Lane Group Flow (vph)	35	66	0	126	347	0	136	831	0	332	576	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.7	16.7		16.7	16.7		33.8	28.1		34.4	28.4	
Effective Green, g (s)	16.7	16.7		16.7	16.7		33.8	28.1		34.4	28.4	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.50	0.41		0.51	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	112	406		297	401		361	751		261	769	
v/s Ratio Prot		0.04			c0.21		0.03	0.46		c0.11	0.31	
v/s Ratio Perm	0.08			0.10			0.16			c0.53		
v/c Ratio	0.31	0.16		0.42	0.87		0.38	1.11		1.27	0.75	
Uniform Delay, d1	20.9	20.1		21.5	24.5		10.3	19.8		15.0	16.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.2		1.0	17.4		0.2	66.1		148.9	4.8	
Delay (s)	22.5	20.2		22.5	41.9		10.6	86.0		164.0	21.5	
Level of Service	C	C		C	D		B	F		F	C	
Approach Delay (s/veh)		20.7			38.3			75.5			73.5	
Approach LOS		C			D			E			E	

Intersection Summary

HCM 2000 Control Delay (s/veh)	62.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	32	728	92	50	558
Future Volume (vph)	59	32	728	92	50	558
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952		0.985			
Flt Protected	0.969					0.996
Satd. Flow (prot)	1753	0	1839	0	0	1858
Flt Permitted	0.969					0.996
Satd. Flow (perm)	1753	0	1839	0	0	1858
Link Speed (k/h)	50		80			80
Link Distance (m)	230.9		85.2			641.1
Travel Time (s)	16.6		3.8			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%
Adj. Flow (vph)	64	35	791	100	54	607
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	891	0	0	661
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	32	728	92	50	558
Future Volume (Veh/h)	59	32	728	92	50	558
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)	64	35	791	100	54	607
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	1556	841			891	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1556	841			891	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	45	90			93	
cM capacity (veh/h)	117	368			769	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	99	891	661
Volume Left	64	0	54
Volume Right	35	100	0
cSH	154	1700	769
Volume to Capacity	0.64	0.52	0.07
Queue Length 95th (m)	28.5	0.0	1.8
Control Delay (s/veh)	63.1	0.0	1.8
Lane LOS	F		A
Approach Delay (s/veh)	63.1	0.0	1.8
Approach LOS	F		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

Appendix F3

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	153	160	377	496	27
Future Volume (vph)	25	153	160	377	496	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	166	174	410	539	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	193	0	174	410	568	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	153	160	377	496	27
Future Volume (Veh/h)	25	153	160	377	496	27
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)	27	166	174	410	539	29
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	1312	554	568			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1312	554	568			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	82	68	83			
cM capacity (veh/h)	146	525	1004			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	193	174	410	568
Volume Left	27	174	0	0
Volume Right	166	0	0	29
cSH	385	1004	1700	1700
Volume to Capacity	0.50	0.17	0.24	0.33
Queue Length 95th (m)	21.7	5.0	0.0	0.0
Control Delay (s/veh)	23.4	9.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	23.4	2.8		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	188	115	9	68	120	434	53	32	663	28
Future Volume (vph)	15	5	188	115	9	68	120	434	53	32	663	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Frt		0.878			0.952			0.984			0.995	
Flt Protected		0.996			0.971		0.950				0.998	
Satd. Flow (prot)	0	1617	0	0	1722	0	1626	1699	0	0	1773	0
Flt Permitted		0.996			0.971		0.950				0.998	
Satd. Flow (perm)	0	1617	0	0	1722	0	1626	1699	0	0	1773	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	16	5	204	125	10	74	130	472	58	35	721	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	225	0	0	209	0	130	530	0	0	786	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	188	115	9	68	120	434	53	32	663	28
Future Volume (Veh/h)	15	5	188	115	9	68	120	434	53	32	663	28
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)	16	5	204	125	10	74	130	472	58	35	721	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1617	1596	736	1774	1582	501	751			530		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1617	1596	736	1774	1582	501	751			530		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	72	94	51	0	89	87	84			97		
cM capacity (veh/h)	57	87	417	27	88	570	819			1037		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	225	209	130	530	786
Volume Left	16	125	130	0	35
Volume Right	204	74	0	58	30
cSH	273	43	819	1700	1037
Volume to Capacity	0.83	4.86	0.16	0.31	0.03
Queue Length 95th (m)	53.4	Err	4.5	0.0	0.8
Control Delay (s/veh)	59.2	Err	10.2	0.0	0.9
Lane LOS	F	F	B		A
Approach Delay (s/veh)	59.2	Err	2.0		0.9
Approach LOS	F	F			

Intersection Summary				
Average Delay	1119.8			
Intersection Capacity Utilization	96.5%	ICU Level of Service		F
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	66	28	612	993	39
Future Volume (vph)	18	66	28	612	993	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894				0.995	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1558	0	1583	1727	1829	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1558	0	1583	1727	1829	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	20	72	30	665	1079	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	30	665	1121	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	66	28	612	993	39
Future Volume (Veh/h)	18	66	28	612	993	39
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)	20	72	30	665	1079	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.80					
vC, conflicting volume	1825	1100	1121			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1905	1100	1121			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	66	71	95			
cM capacity (veh/h)	58	249	581			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	92	30	665	1121
Volume Left	20	30	0	0
Volume Right	72	0	0	42
cSH	145	581	1700	1700
Volume to Capacity	0.63	0.05	0.39	0.66
Queue Length 95th (m)	27.4	1.3	0.0	0.0
Control Delay (s/veh)	65.1	11.5	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	65.1	0.5		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Future Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.969			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1415	0	1736	1700	0	1612	1822	0
Flt Permitted	0.414			0.740			0.279			0.343		
Satd. Flow (perm)	787	1694	0	1384	1415	0	509	1700	0	581	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			279			22			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	279	29	403	104	520	604	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	286	0	29	507	0	520	615	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.8	9.8		9.8	9.8		31.8	23.7		34.1	24.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.56	0.42		0.60	0.44	
v/c Ratio	0.01	0.09		0.45	0.60		0.07	0.70		1.14	0.77	
Control Delay (s/veh)	20.5	14.0		28.7	9.7		4.8	19.6		100.9	22.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.5	14.0		28.7	9.7		4.8	19.6		100.9	22.4	
LOS	C	B		C	A		A	B		F	C	
Approach Delay (s/veh)		14.4			14.9			18.8			58.4	
Approach LOS		B			B			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 57			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 39.5		Intersection LOS: D	
Intersection Capacity Utilization 83.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	286	29	507	520	615
v/c Ratio	0.01	0.09	0.45	0.60	0.07	0.70	1.14	0.77
Control Delay (s/veh)	20.5	14.0	28.7	9.7	4.8	19.6	100.9	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.5	14.0	28.7	9.7	4.8	19.6	100.9	22.4
Queue Length 50th (m)	0.2	1.0	11.3	0.7	0.9	40.8	~31.4	52.8
Queue Length 95th (m)	1.7	6.7	24.8	18.6	3.8	81.0	#112.2	#118.0
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	267	587	470	665	425	862	457	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.23	0.43	0.07	0.59	1.14	0.67

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Future Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1415		1735	1701		1611	1822	
Flt Permitted	0.41	1.00		0.74	1.00		0.28	1.00		0.34	1.00	
Satd. Flow (perm)	786	1694		1385	1415		510	1701		582	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	279	29	403	104	520	604	11
RTOR Reduction (vph)	0	14	0	0	231	0	0	13	0	0	1	0
Lane Group Flow (vph)	2	13	0	107	55	0	29	494	0	520	614	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.8	9.8		9.8	9.8		28.8	23.8		31.0	24.9	
Effective Green, g (s)	9.8	9.8		9.8	9.8		28.8	23.8		31.0	24.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.51	0.42		0.55	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	135	292		239	244		367	714		428	800	
v/s Ratio Prot		0.01			0.04		0.01	0.29		c0.13	0.34	
v/s Ratio Perm	0.00			c0.08			0.03			c0.53		
v/c Ratio	0.01	0.04		0.45	0.23		0.08	0.69		1.21	0.77	
Uniform Delay, d1	19.4	19.5		21.0	20.2		7.6	13.5		11.7	13.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.3	0.5		0.0	3.7		116.5	5.2	
Delay (s)	19.5	19.6		22.4	20.7		7.7	17.1		128.2	18.7	
Level of Service	B	B		C	C		A	B		F	B	
Approach Delay (s/veh)		19.6			21.1			16.6			68.8	
Approach LOS		B			C			B			E	

Intersection Summary

HCM 2000 Control Delay (s/veh)	45.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	49	487	29	17	632
Future Volume (vph)	91	49	487	29	17	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953		0.992			
Flt Protected	0.968					0.999
Satd. Flow (prot)	1753	0	1800	0	0	1810
Flt Permitted	0.968					0.999
Satd. Flow (perm)	1753	0	1800	0	0	1810
Link Speed (k/h)	50		80			80
Link Distance (m)	252.7		85.9			640.4
Travel Time (s)	18.2		3.9			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	5%
Adj. Flow (vph)	99	53	529	32	18	687
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	561	0	0	705
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	91	49	487	29	17	632
Future Volume (Veh/h)	91	49	487	29	17	632
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)	99	53	529	32	18	687
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	1268	545			561	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1268	545			561	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	46	90			98	
cM capacity (veh/h)	185	542			1020	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	152	561	705
Volume Left	99	0	18
Volume Right	53	32	0
cSH	240	1700	1020
Volume to Capacity	0.63	0.33	0.02
Queue Length 95th (m)	30.8	0.0	0.4
Control Delay (s/veh)	42.9	0.0	0.5
Lane LOS	E		A
Approach Delay (s/veh)	42.9	0.0	0.5
Approach LOS	E		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	191	177	610	437	26
Future Volume (vph)	26	191	177	610	437	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.881				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1664	0	1805	1881	1816	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1664	0	1805	1881	1816	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	208	192	663	475	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	192	663	503	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	191	177	610	437	26
Future Volume (Veh/h)	26	191	177	610	437	26
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)	28	208	192	663	475	28
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	1536	489	503			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1536	489	503			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	64	82			
cM capacity (veh/h)	106	583	1072			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	236	192	663	503
Volume Left	28	192	0	0
Volume Right	208	0	0	28
cSH	380	1072	1700	1700
Volume to Capacity	0.62	0.18	0.39	0.30
Queue Length 95th (m)	32.1	5.2	0.0	0.0
Control Delay (s/veh)	28.8	9.1	0.0	0.0
Lane LOS	D	A		
Approach Delay (s/veh)	28.8	2.0		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Future Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			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	1.00	1.00
Ped Bike Factor												
Frt		0.882			0.946			0.975			0.996	
Flt Protected		0.997			0.973		0.950				0.993	
Satd. Flow (prot)	0	1669	0	0	1715	0	1787	1831	0	0	1828	0
Flt Permitted		0.997			0.973		0.950				0.993	
Satd. Flow (perm)	0	1669	0	0	1715	0	1787	1831	0	0	1828	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	14	12	185	113	9	82	178	826	164	99	575	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	204	0	178	990	0	0	692	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	119.0%	ICU Level of Service H	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	11	170	104	8	75	164	760	151	91	529	17
Future Volume (Veh/h)	13	11	170	104	8	75	164	760	151	91	529	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	12	185	113	9	82	178	826	164	99	575	18
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2054	2131	587	2237	2058	908	596			990		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2054	2131	587	2237	2058	908	596			990		
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 %	29	65	64	0	77	75	82			86		
cM capacity (veh/h)	20	35	512	11	39	334	983			698		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	211	204	178	990	692
Volume Left	14	113	178	0	99
Volume Right	185	82	0	164	18
cSH	149	19	983	1700	698
Volume to Capacity	1.41	10.72	0.18	0.58	0.14
Queue Length 95th (m)	108.3	Err	5.3	0.0	3.9
Control Delay (s/veh)	276.5	Err	9.5	0.0	3.6
Lane LOS	F	F	A		A
Approach Delay (s/veh)	276.5	Err	1.4		3.6
Approach LOS	F	F			

Intersection Summary			
Average Delay	924.1		
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	80	95	1097	797	77
Future Volume (vph)	42	80	95	1097	797	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.988	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1560	0	1583	1720	1793	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1560	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	46	87	103	1192	866	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	103	1192	950	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	80	95	1097	797	77
Future Volume (Veh/h)	42	80	95	1097	797	77
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)	46	87	103	1192	866	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2306	908	950			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2830	908	950			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	73	85			
cM capacity (veh/h)	10	322	676			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	133	103	1192	950
Volume Left	46	103	0	0
Volume Right	87	0	0	84
cSH	28	676	1700	1700
Volume to Capacity	4.80	0.15	0.70	0.56
Queue Length 95th (m)	Err	4.3	0.0	0.0
Control Delay (s/veh)	Err	11.3	0.0	0.0
Lane LOS	F	B		
Approach Delay (s/veh)	Err	0.9		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	559.7		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Future Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.868			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1652	0	1736	1631	0	1805	1814	0	1736	1838	0
Flt Permitted	0.227			0.663			0.239			0.141		
Satd. Flow (perm)	431	1652	0	1198	1631	0	453	1814	0	257	1838	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			269			16			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	504	142	737	134	343	579	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	572	0	142	871	0	343	596	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.5	17.5		17.5	17.5		36.8	28.0		37.3	28.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.54	0.41		0.54	0.41	
v/c Ratio	0.34	0.30		0.43	0.93		0.40	1.16		1.28	0.79	
Control Delay (s/veh)	30.3	9.6		26.2	37.3		10.1	110.1		169.7	27.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	30.3	9.6		26.2	37.3		10.1	110.1		169.7	27.5	
LOS	C	A		C	D		B	F		F	C	
Approach Delay (s/veh)		13.7			35.2			96.0			79.5	
Approach LOS		B			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 68.6			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.28			
Intersection Signal Delay (s/veh): 70.2		Intersection LOS: E	
Intersection Capacity Utilization 115.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	572	142	871	343	596
v/c Ratio	0.34	0.30	0.43	0.93	0.40	1.16	1.28	0.79
Control Delay (s/veh)	30.3	9.6	26.2	37.3	10.1	110.1	169.7	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.3	9.6	26.2	37.3	10.1	110.1	169.7	27.5
Queue Length 50th (m)	4.1	4.6	14.9	41.1	7.9	~147.5	~45.2	70.1
Queue Length 95th (m)	12.7	17.6	30.2	#102.7	15.2	#215.8	#94.1	#125.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	119	531	332	646	363	750	269	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.28	0.40	0.89	0.39	1.16	1.28	0.79

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Future Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		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	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1652		1717	1631		1805	1813		1735	1837	
Flt Permitted	0.23	1.00		0.66	1.00		0.24	1.00		0.14	1.00	
Satd. Flow (perm)	432	1652		1199	1631		454	1813		258	1837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	504	142	737	134	343	579	17
RTOR Reduction (vph)	0	76	0	0	200	0	0	9	0	0	2	0
Lane Group Flow (vph)	37	71	0	132	372	0	142	862	0	343	594	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.6	17.6		17.6	17.6		33.9	28.1		34.3	28.3	
Effective Green, g (s)	17.6	17.6		17.6	17.6		33.9	28.1		34.3	28.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.49	0.41		0.50	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	110	423		307	417		338	741		257	756	
v/s Ratio Prot		0.04			c0.23		0.04	0.48		c0.12	0.32	
v/s Ratio Perm	0.09			0.11			0.17			c0.55		
v/c Ratio	0.34	0.17		0.43	0.89		0.42	1.16		1.33	0.79	
Uniform Delay, d1	20.8	19.9		21.4	24.6		11.0	20.3		15.1	17.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.2		1.0	20.6		0.3	87.7		174.7	6.2	
Delay (s)	22.6	20.0		22.3	45.2		11.3	108.0		189.8	23.8	
Level of Service	C	C		C	D		B	F		F	C	
Approach Delay (s/veh)		20.6			40.9			94.4			84.4	
Approach LOS		C			D			F			F	

Intersection Summary

HCM 2000 Control Delay (s/veh)	73.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	32	755	92	50	578
Future Volume (vph)	59	32	755	92	50	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952		0.985			
Flt Protected	0.969					0.996
Satd. Flow (prot)	1753	0	1839	0	0	1858
Flt Permitted	0.969					0.996
Satd. Flow (perm)	1753	0	1839	0	0	1858
Link Speed (k/h)	50		80			80
Link Distance (m)	230.9		85.2			641.1
Travel Time (s)	16.6		3.8			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%
Adj. Flow (vph)	64	35	821	100	54	628
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	921	0	0	682
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	32	755	92	50	578
Future Volume (Veh/h)	59	32	755	92	50	578
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)	64	35	821	100	54	628
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	1607	871			921	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1607	871			921	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	41	90			93	
cM capacity (veh/h)	108	353			750	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	99	921	682
Volume Left	64	0	54
Volume Right	35	100	0
cSH	144	1700	750
Volume to Capacity	0.69	0.54	0.07
Queue Length 95th (m)	31.3	0.0	1.9
Control Delay (s/veh)	72.7	0.0	1.9
Lane LOS	F		A
Approach Delay (s/veh)	72.7	0.0	1.9
Approach LOS	F		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

Appendix G

Traffic Control Signal Warrants

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	130	307			447	24	22		136				0
PM Peak Hour	154	538			362	23	23		159				0
Average Hourly Volume	71	211	0	0	202	12	11	0	74	0	0	0	0

Warrant	AHV
1A - All	581
1B - Minor	85
2A - Major	496
2B - Cross	11

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	581
					% Fulfilled	121.1%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	85
					% Fulfilled	47.2%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	496
					% Fulfilled	103.4%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	11
					% Fulfilled	22.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	135	318			463	26	23		141				0
PM Peak Hour	159	558			375	25	25		165				0
Average Hourly Volume	74	219	0	0	210	13	12	0	77	0	0	0	0

Warrant	AHV
1A - All	603
1B - Minor	89
2A - Major	515
2B - Cross	12

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	603
					% Fulfilled	125.7%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	89
					% Fulfilled	49.2%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	515
					% Fulfilled	107.2%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	12
					% Fulfilled	24.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	141	330			480	27	25		146				0
PM Peak Hour	165	579			389	26	26		172				0
Average Hourly Volume	77	227	0	0	217	13	13	0	80	0	0	0	0

Warrant	AHV
1A - All	627
1B - Minor	92
2A - Major	534
2B - Cross	13

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	627
					% Fulfilled	130.5%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	92
					% Fulfilled	51.3%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	534
					% Fulfilled	111.3%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	13
					% Fulfilled	25.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	149	354			463	24	22		143				0
PM Peak Hour	166	569			410	23	23		178				0
Average Hourly Volume	79	231	0	0	218	12	11	0	80	0	0	0	0

Warrant	AHV
1A - All	631
1B - Minor	92
2A - Major	540
2B - Cross	11

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	631
					% Fulfilled	131.5%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	92
					% Fulfilled	50.8%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	540
					% Fulfilled	112.4%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	11
					% Fulfilled	22.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	154	365			479	23	23		148				0
PM Peak Hour	171	589			423	25	25		184				0
Average Hourly Volume	81	239	0	0	226	12	12	0	83	0	0	0	0

Warrant	AHV
1A - All	652
1B - Minor	95
2A - Major	557
2B - Cross	12

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	652
					% Fulfilled	135.9%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	95
					% Fulfilled	52.8%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	557
					% Fulfilled	116.1%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	12
					% Fulfilled	24.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	160	377			496	27	25		153				0
PM Peak Hour	177	610			437	26	26		191				0
Average Hourly Volume	84	247	0	0	233	13	13	0	86	0	0	0	0

Warrant	AHV
1A - All	676
1B - Minor	99
2A - Major	578
2B - Cross	13

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	676
					% Fulfilled	140.9%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	99
					% Fulfilled	54.9%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	578
					% Fulfilled	120.3%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	13
					% Fulfilled	25.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	110	374	44	26	538	19	12	4	173	87	7	51	10
PM Peak Hour	150	622	123	74	437	11	5	9	155	87	6	64	10
Average Hourly Volume	65	249	42	25	244	8	4	3	82	44	3	29	5

Warrant	AHV
1A - All	797
1B - Minor	165
2A - Major	632
2B - Cross	56

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	797
					% Fulfilled	110.7%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	165
					% Fulfilled	64.7%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	632
					% Fulfilled	87.8%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	56
					% Fulfilled	74.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	115	390	44	26	558	20	12	4	180	87	7	51	10
PM Peak Hour	157	648	123	74	455	11	6	9	162	87	6	64	10
Average Hourly Volume	68	260	42	25	253	8	5	3	86	44	3	29	5

Warrant	AHV
1A - All	824
1B - Minor	169
2A - Major	655
2B - Cross	56

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	824
					% Fulfilled	114.4%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	169
					% Fulfilled	66.2%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	655
					% Fulfilled	91.0%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	56
					% Fulfilled	75.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	120	407	44	26	579	21	13	4	188	87	7	51	10
PM Peak Hour	164	675	123	74	475	12	6	9	170	87	6	64	10
Average Hourly Volume	71	271	42	25	264	8	5	3	90	44	3	29	5

Warrant	AHV
1A - All	853
1B - Minor	173
2A - Major	680
2B - Cross	57

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	853
					% Fulfilled	118.5%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	173
					% Fulfilled	67.8%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	680
					% Fulfilled	94.4%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	57
					% Fulfilled	75.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	110	401	53	32	622	26	14	5	173	115	9	68	10
PM Peak Hour	150	707	151	91	491	16	12	11	155	104	8	75	10
Average Hourly Volume	65	277	51	31	278	11	7	4	82	55	4	36	5

Warrant	AHV
1A - All	900
1B - Minor	187
2A - Major	713
2B - Cross	71

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	900
					% Fulfilled	125.0%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	187
					% Fulfilled	110.1%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	713
					% Fulfilled	99.0%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	71
					% Fulfilled	94.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	115	417	53	32	642	27	14	5	180	115	9	68	10
PM Peak Hour	157	733	151	91	509	16	13	11	162	104	8	75	10
Average Hourly Volume	68	288	51	31	288	11	7	4	86	55	4	36	5

Warrant	AHV
1A - All	927
1B - Minor	191
2A - Major	736
2B - Cross	71

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	927
					% Fulfilled	128.7%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	191
					% Fulfilled	112.4%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	736
					% Fulfilled	102.2%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	71
					% Fulfilled	94.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	120	434	53	32	663	28	15	5	188	115	9	68	10
PM Peak Hour	164	760	151	91	529	17	13	11	170	104	8	75	10
Average Hourly Volume	71	299	51	31	298	11	7	4	90	55	4	36	5

Warrant	AHV
1A - All	956
1B - Minor	195
2A - Major	761
2B - Cross	71

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	956
					% Fulfilled	132.7%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	195
					% Fulfilled	114.9%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	761
					% Fulfilled	105.6%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	71
					% Fulfilled	94.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Street F

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Street F						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour		454	29	17	589					91		49	5
PM Peak Hour		702	92	50	538					59		32	5
Average Hourly Volume	0	289	30	17	282	0	0	0	0	38	0	20	3

Warrant	AHV
1A - All	676
1B - Minor	58
2A - Major	618
2B - Cross	40

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	676
					% Fulfilled	140.7%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	58
					% Fulfilled	32.1%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	618
					% Fulfilled	128.7%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	40
					% Fulfilled	80.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Street F

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Street F						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour		470	29	17	610					91		49	5
PM Peak Hour		728	92	50	558					59		32	5
Average Hourly Volume	0	300	30	17	292	0	0	0	0	38	0	20	3

Warrant	AHV
1A - All	696
1B - Minor	58
2A - Major	639
2B - Cross	40

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	696
					% Fulfilled	145.1%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	58
					% Fulfilled	32.1%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	639
					% Fulfilled	133.0%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	40
					% Fulfilled	80.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Street F

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Street F						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour		487	29	17	632					91		49	5
PM Peak Hour		755	92	50	578					59		32	5
Average Hourly Volume	0	311	30	17	303	0	0	0	0	38	0	20	3

Warrant	AHV
1A - All	718
1B - Minor	58
2A - Major	660
2B - Cross	40

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	718
					% Fulfilled	149.5%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	58
					% Fulfilled	32.1%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	660
					% Fulfilled	137.5%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	40
					% Fulfilled	80.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	25	536			835	28	14		61				10
PM Peak Hour	87	929			685	64	31		73				10
Average Hourly Volume	28	366	0	0	380	23	11	0	34	0	0	0	5

Warrant	AHV
1A - All	842
1B - Minor	45
2A - Major	797
2B - Cross	16

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	842
					% Fulfilled	116.9%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	45
					% Fulfilled	17.5%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	797
					% Fulfilled	110.7%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	16
					% Fulfilled	21.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	27	557			862	29	15		63				10
PM Peak Hour	91	960			708	67	32		76				10
Average Hourly Volume	30	379	0	0	393	24	12	0	35	0	0	0	5

Warrant	AHV
1A - All	872
1B - Minor	47
2A - Major	825
2B - Cross	17

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	872
					% Fulfilled	121.1%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	47
					% Fulfilled	18.2%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	825
					% Fulfilled	114.6%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	17
					% Fulfilled	22.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	28	579			890	30	15		66				10
PM Peak Hour	95	993			733	70	33		80				10
Average Hourly Volume	31	393	0	0	406	25	12	0	37	0	0	0	5

Warrant	AHV
1A - All	903
1B - Minor	49
2A - Major	855
2B - Cross	17

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	903
					% Fulfilled	125.4%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	49
					% Fulfilled	19.0%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	855
					% Fulfilled	118.7%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	17
					% Fulfilled	22.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	25	569			938	37	17		61				10
PM Peak Hour	87	1033			749	71	40		73				10
Average Hourly Volume	28	401	0	0	422	27	14	0	34	0	0	0	5

Warrant	AHV
1A - All	925
1B - Minor	48
2A - Major	877
2B - Cross	19

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	925
					% Fulfilled	128.5%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	48
					% Fulfilled	18.7%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	877
					% Fulfilled	121.8%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	19
					% Fulfilled	25.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	27	590			965	38	18		63				10
PM Peak Hour	91	1064			772	74	41		76				10
Average Hourly Volume	30	414	0	0	434	28	15	0	35	0	0	0	5

Warrant	AHV
1A - All	955
1B - Minor	50
2A - Major	905
2B - Cross	20

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	955
					% Fulfilled	132.6%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	50
					% Fulfilled	19.4%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	905
					% Fulfilled	125.7%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	20
					% Fulfilled	26.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	28	612			993	39	18		66				10
PM Peak Hour	95	1097			797	77	42		80				10
Average Hourly Volume	31	427	0	0	448	29	15	0	37	0	0	0	5

Warrant	AHV
1A - All	986
1B - Minor	52
2A - Major	935
2B - Cross	20

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	986
					% Fulfilled	136.9%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	52
					% Fulfilled	20.2%

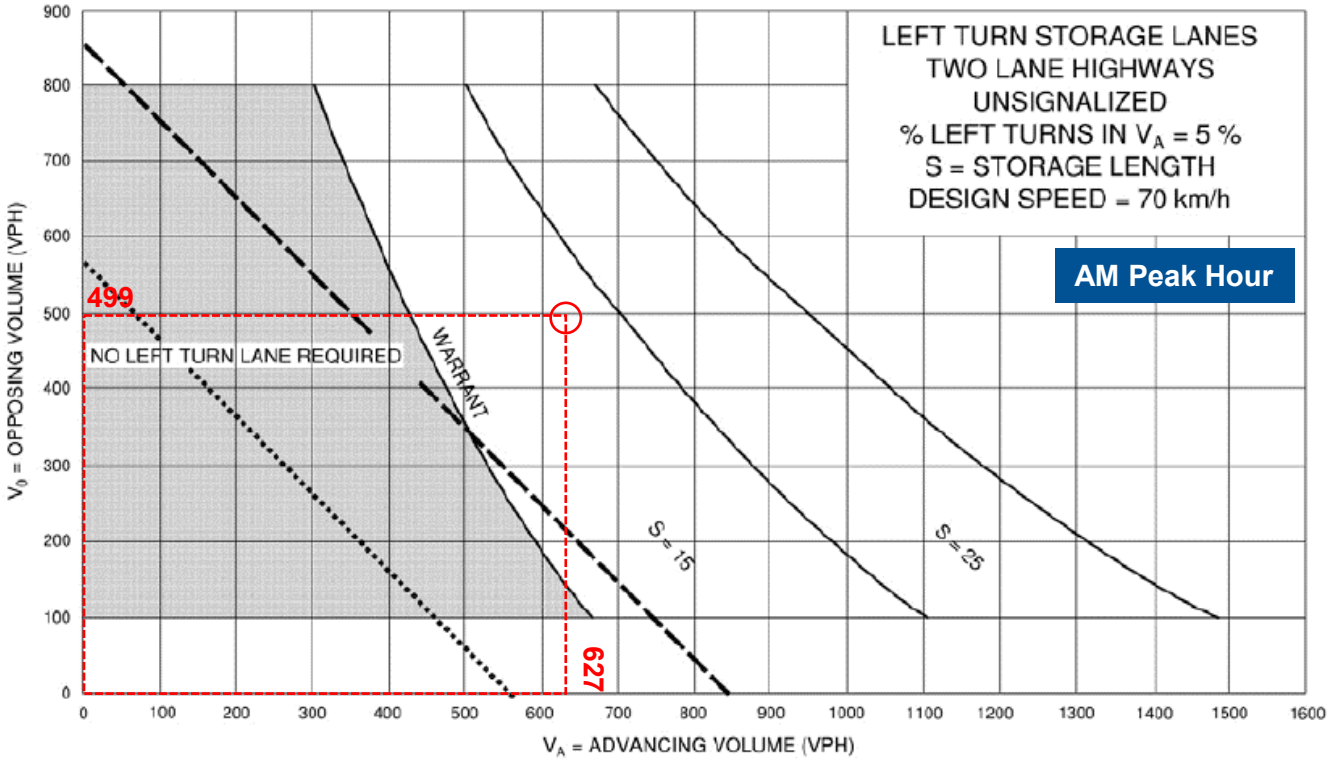
Warrant 2 - Delay To Cross Traffic

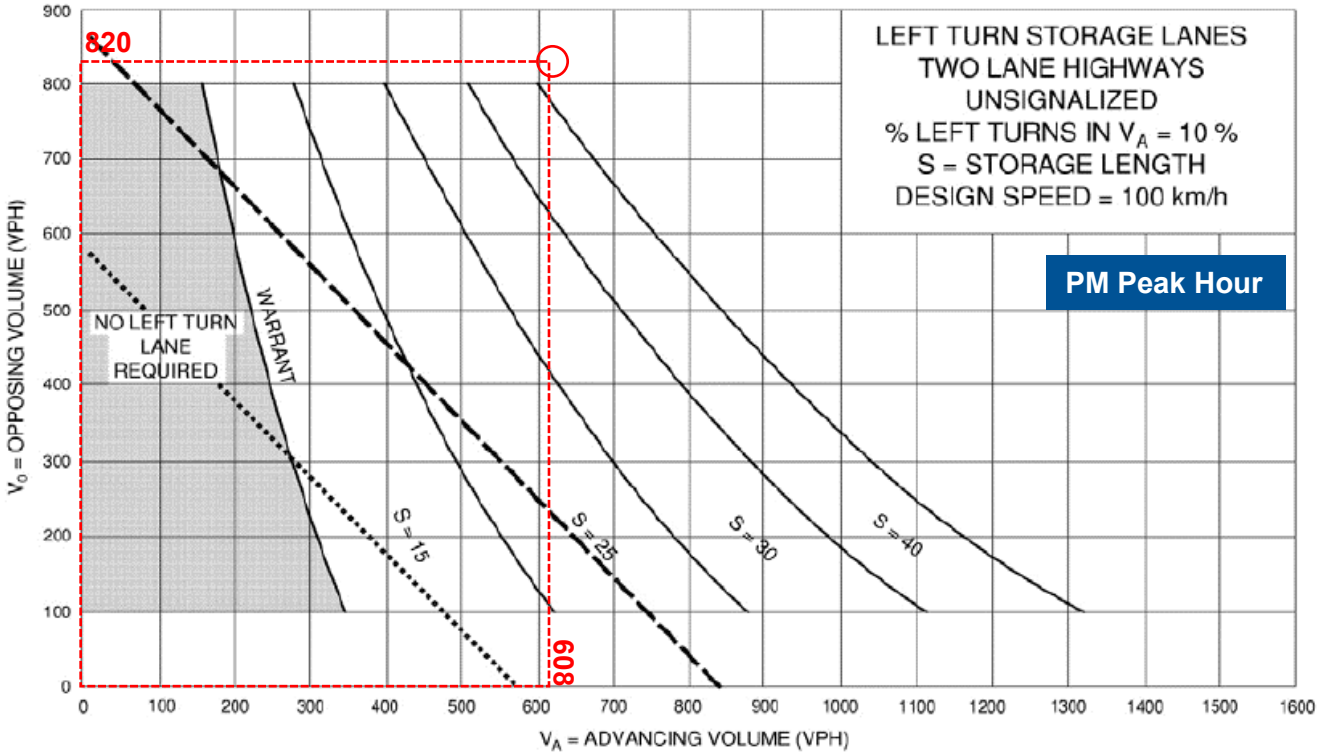
2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	935
					% Fulfilled	129.8%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	20
					% Fulfilled	26.7%

Appendix H

Left-Turn Lane Warrant Nomographs



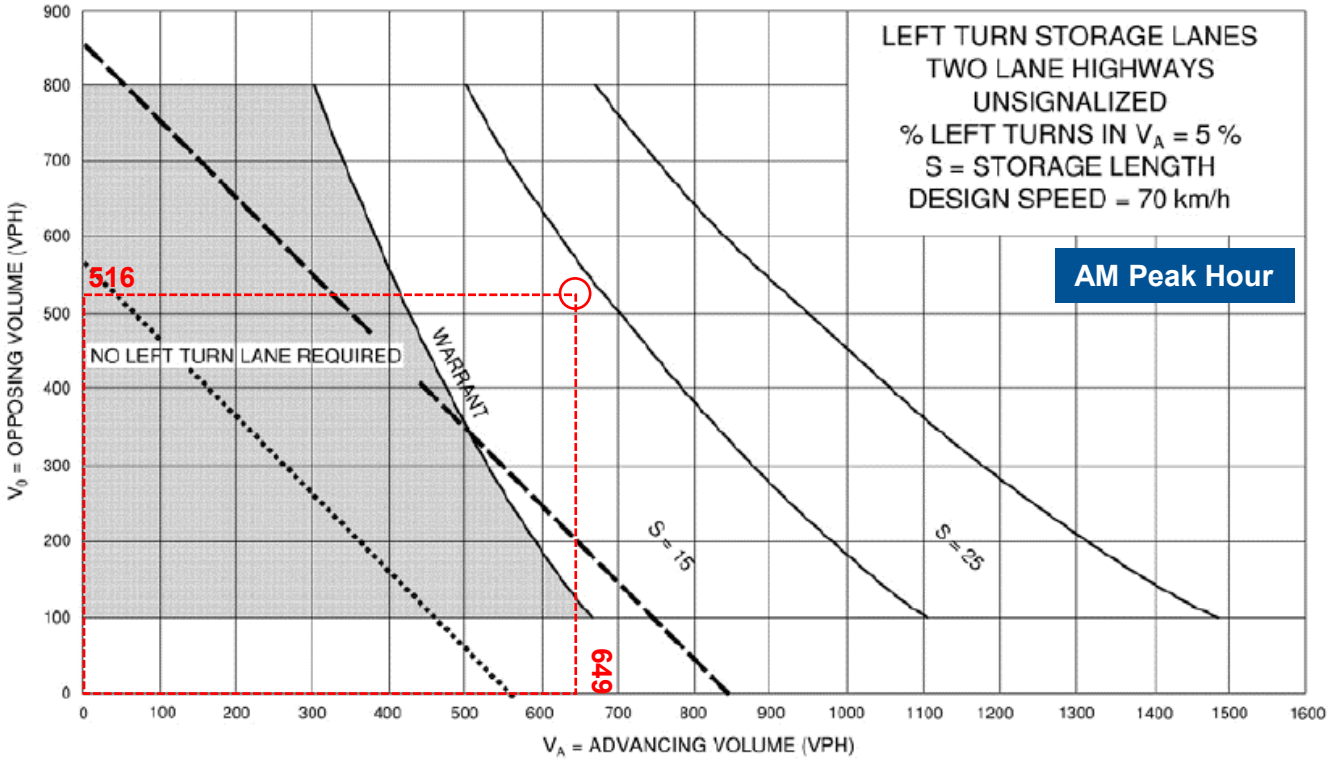


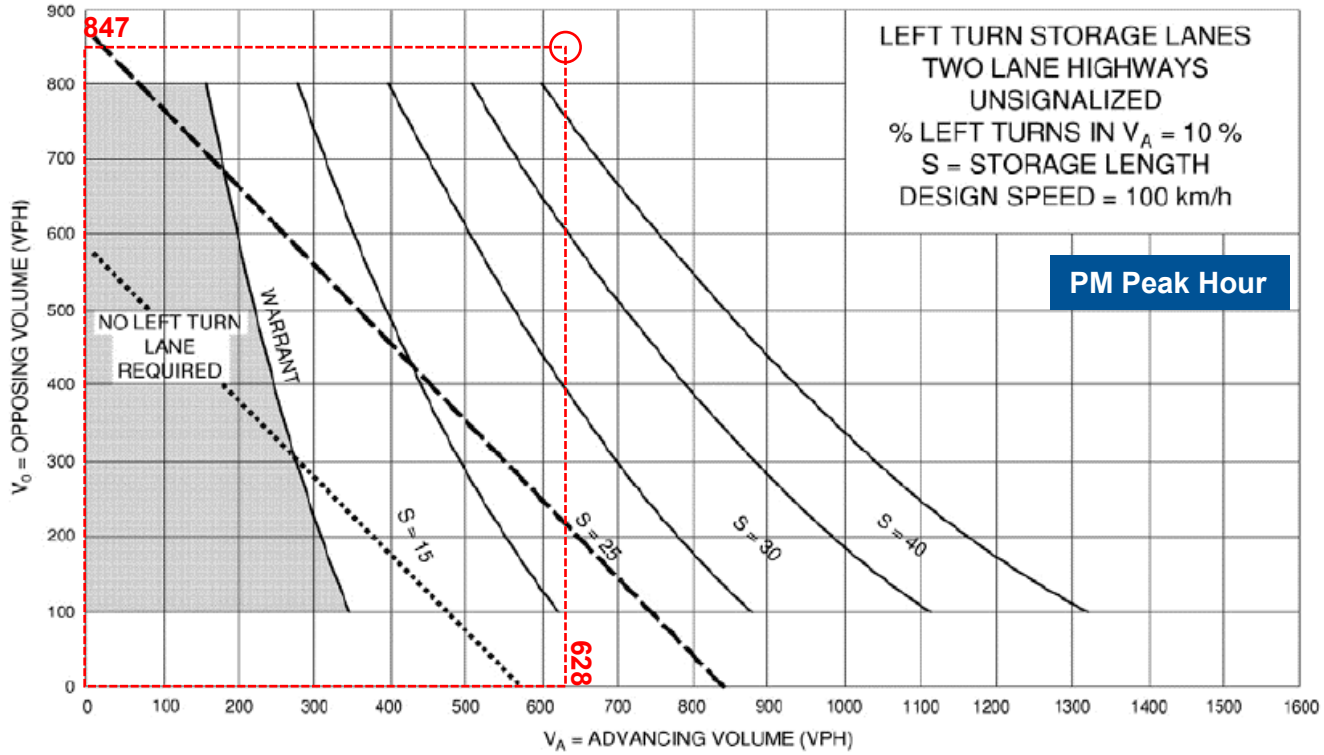
paradigm TRANSPORTATION SOLUTIONS LIMITED

Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2030 Total Traffic

6581 Highway 6, Fergus
230599

Figure 1A



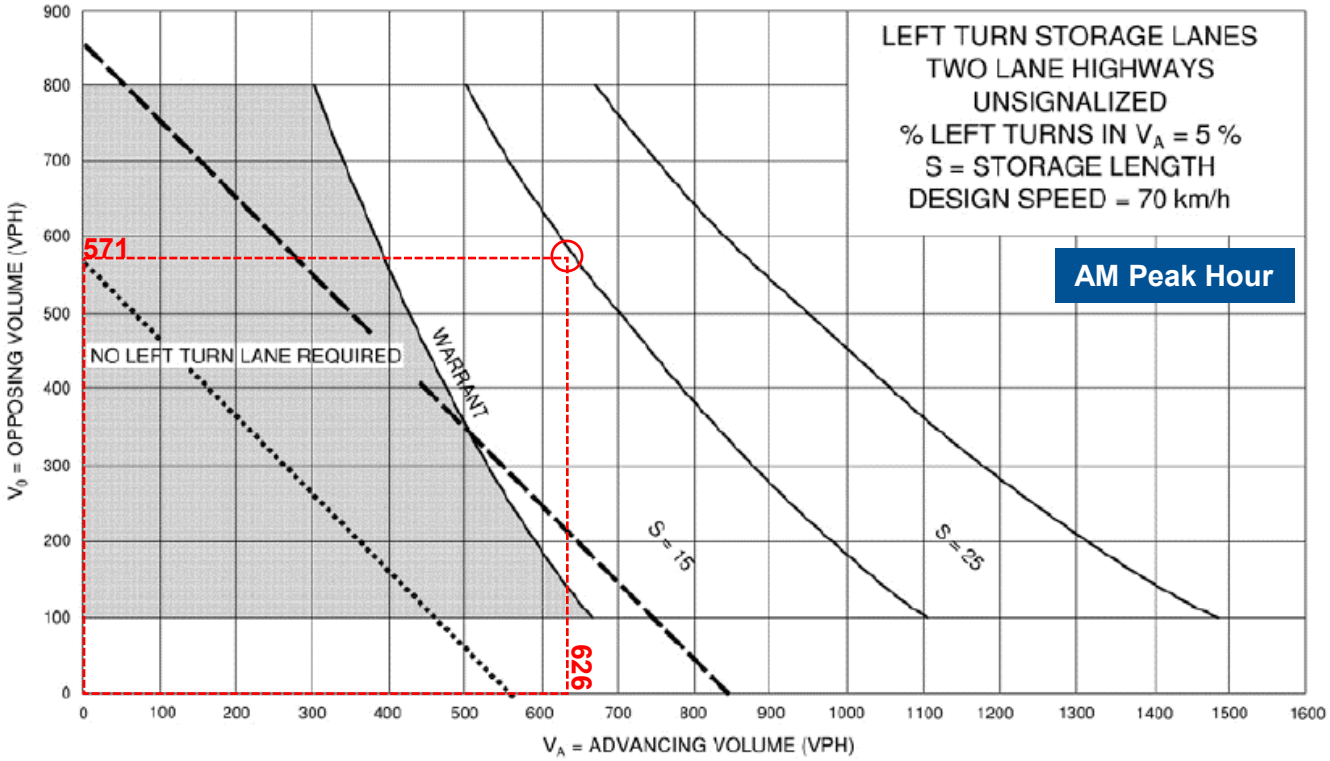


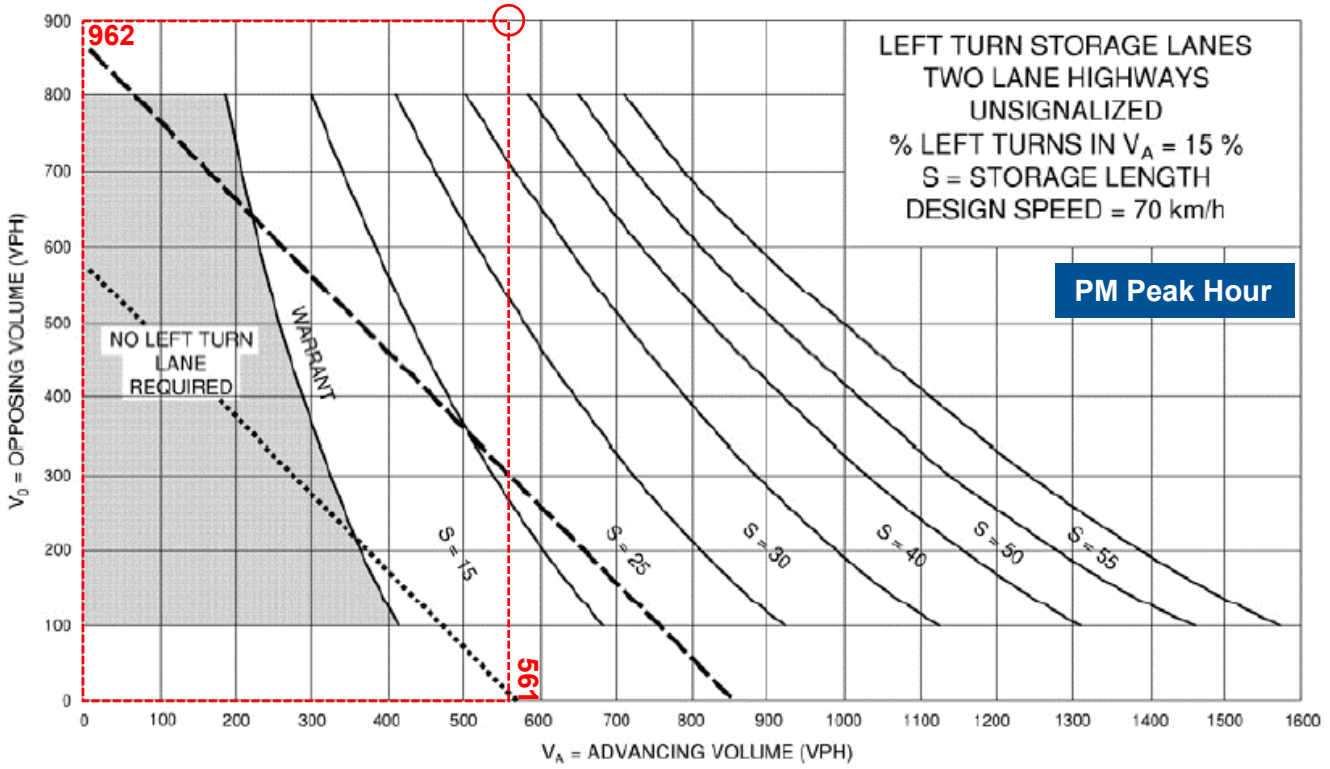
paradigm TRANSPORTATION SOLUTIONS LIMITED

Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2035 Total Traffic

6581 Highway 6, Fergus
230599

Figure 1B





paradigm TRANSPORTATION SOLUTIONS LIMITED

Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2040 Total Traffic

6581 Highway 6, Fergus
230599

Figure 1C

Appendix I

2040 Total with Improvements Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	153	160	377	496	27
Future Volume (vph)	25	153	160	377	496	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	166	174	410	539	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	193	0	174	410	568	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	153	160	377	496	27
Future Volume (Veh/h)	25	153	160	377	496	27
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)	27	166	174	410	539	29
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	1312	554	568			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1312	554	568			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	82	68	83			
cM capacity (veh/h)	146	525	1004			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	193	174	410	568
Volume Left	27	174	0	0
Volume Right	166	0	0	29
cSH	385	1004	1700	1700
Volume to Capacity	0.50	0.17	0.24	0.33
Queue Length 95th (m)	21.7	5.0	0.0	0.0
Control Delay (s/veh)	23.4	9.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s/veh)	23.4	2.8		0.0
Approach LOS	C			

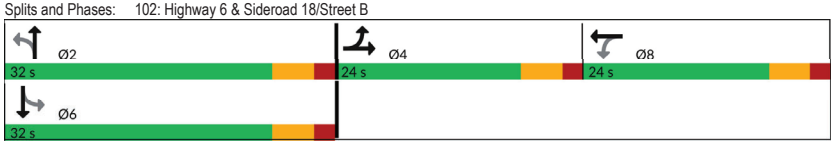
Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	188	115	9	68	120	434	53	32	663	28
Future Volume (vph)	15	5	188	115	9	68	120	434	53	32	663	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	110.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			75.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.854			0.868			0.984			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1576	0	1770	1617	0	1626	3229	0	1770	3365	0
Flt Permitted	0.950			0.627			0.299			0.436		
Satd. Flow (perm)	1805	1576	0	1168	1617	0	512	3229	0	812	3365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		204			74			17			5	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	16	5	204	125	10	74	130	472	58	35	721	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	209	0	125	84	0	130	530	0	35	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0		32.0	32.0		32.0	32.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.6	10.6		12.9	12.9		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.17	0.17		0.20	0.20		0.41	0.41		0.41	0.41	
v/c Ratio	0.05	0.49		0.53	0.22		0.61	0.39		0.10	0.54	
Control Delay (s/veh)	26.3	9.4		33.7	9.2		35.5	15.7		15.9	17.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.3	9.4		33.7	9.2		35.5	15.7		15.9	17.8	
LOS	C	A		C	A		D	B		B	B	
Approach Delay (s/veh)		10.6			23.8			19.6			17.7	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 64.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 18.2		Intersection LOS: B	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 102: Highway 6 & Sideroad 18/Street B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	209	125	84	130	530	35	751
v/c Ratio	0.05	0.49	0.53	0.22	0.61	0.39	0.10	0.54
Control Delay (s/veh)	26.3	9.4	33.7	9.2	35.5	15.7	15.9	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.3	9.4	33.7	9.2	35.5	15.7	15.9	17.8
Queue Length 50th (m)	1.8	0.6	14.9	1.1	13.3	24.4	2.8	38.3
Queue Length 95th (m)	7.2	18.2	31.6	11.4	#45.3	44.0	9.8	65.6
Internal Link Dist (m)		980.3		158.5		395.5		261.9
Turn Bay Length (m)	25.0		25.0		110.0		100.0	
Base Capacity (vph)	517	597	334	516	212	1346	335	1396
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.35	0.37	0.16	0.61	0.39	0.10	0.54

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)	15	5	188	115	9	68	120	434	53	32	663	28
Future Volume (vph)	15	5	188	115	9	68	120	434	53	32	663	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.87		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1575		1770	1617		1626	3228		1770	3365	
Flt Permitted	0.95	1.00		0.63	1.00		0.30	1.00		0.44	1.00	
Satd. Flow (perm)	1805	1575		1168	1617		512	3228		812	3365	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	5	204	125	10	74	130	472	58	35	721	30
RTOR Reduction (vph)	0	171	0	0	62	0	0	10	0	0	3	0
Lane Group Flow (vph)	16	38	0	125	22	0	130	520	0	35	748	0
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	10.6	10.6		10.2	10.2		26.6	26.6		26.6	26.6	
Effective Green, g (s)	10.6	10.6		10.2	10.2		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.41	0.41		0.41	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	292	255		182	252		208	1312		330	1368	
v/s Ratio Prot	0.01	c0.02			0.01			0.16			0.22	
v/s Ratio Perm				c0.11			c0.25			0.04		
v/c Ratio	0.05	0.15		0.69	0.09		0.63	0.40		0.11	0.55	
Uniform Delay, d1	23.2	23.5		26.1	23.6		15.4	13.7		12.0	14.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3		10.3	0.1		5.7	0.2		0.1	0.4	
Delay (s)	23.2	23.8		36.4	23.8		21.2	13.9		12.2	15.3	
Level of Service	C	C		D	C		C	B		B	B	
Approach Delay (s/veh)		23.8			31.3			15.3			15.1	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	66	28	612	993	39
Future Volume (vph)	18	66	28	612	993	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.894				0.994	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1558	0	1583	3282	3471	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1558	0	1583	3282	3471	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	20	72	30	665	1079	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	30	665	1121	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	66	28	612	993	39
Future Volume (Veh/h)	18	66	28	612	993	39
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)	20	72	30	665	1079	42
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				98		
pX, platoon unblocked	0.92					
vC, conflicting volume	1493	561	1121			
vC1, stage 1 conf vol	1100					
vC2, stage 2 conf vol	393					
vCu, unblocked vol	1370	561	1121			
tC, single (s)	6.8	7.1	4.4			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.4	2.3			
p0 queue free %	93	84	95			
cM capacity (veh/h)	270	451	554			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	92	30	333	333	719	402
Volume Left	20	30	0	0	0	0
Volume Right	72	0	0	0	0	42
cSH	394	554	1700	1700	1700	1700
Volume to Capacity	0.23	0.05	0.20	0.20	0.42	0.24
Queue Length 95th (m)	7.1	1.4	0.0	0.0	0.0	0.0
Control Delay (s/veh)	16.9	11.9	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s/veh)	16.9	0.5			0.0	
Approach LOS	C					

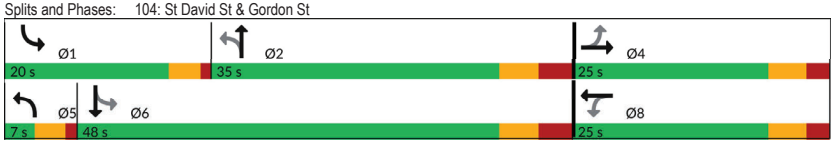
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Future Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		1.00			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.969			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1704	0	1787	1415	0	1736	3231	0	1612	3462	0
Flt Permitted	0.406			0.740			0.419			0.367		
Satd. Flow (perm)	771	1704	0	1387	1415	0	763	3231	0	622	3462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			279			44			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	279	29	403	104	520	604	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	286	0	29	507	0	520	615	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		7.0	35.0		20.0	48.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		8.8%	43.8%		25.0%	60.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		3.0	28.0		16.0	41.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		22.3	16.2		38.0	27.7	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.38	0.28		0.65	0.48	
v/c Ratio	0.02	0.09		0.45	0.60		0.08	0.55		0.80	0.37	
Control Delay (s/veh)	22.0	14.6		29.6	9.9		7.0	19.2		17.4	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.0	14.6		29.6	9.9		7.0	19.2		17.4	10.5	
LOS	C	B		C	A		A	B		B	B	
Approach Delay (s/veh)		15.1			15.3			18.5			13.7	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 58.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 15.2		Intersection LOS: B	
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	286	29	507	520	615
v/c Ratio	0.02	0.09	0.45	0.60	0.08	0.55	0.80	0.37
Control Delay (s/veh)	22.0	14.6	29.6	9.9	7.0	19.2	17.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	14.6	29.6	9.9	7.0	19.2	17.4	10.5
Queue Length 50th (m)	0.2	1.0	11.2	0.7	0.9	23.3	23.7	20.7
Queue Length 95th (m)	1.9	7.1	26.6	19.8	3.7	40.5	#72.0	36.2
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	257	580	463	658	343	1613	684	2497
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.23	0.43	0.08	0.31	0.76	0.25

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)	2	9	16	98	6	257	27	371	96	478	556	10
Future Volume (vph)	2	9	16	98	6	257	27	371	96	478	556	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1704		1782	1415		1734	3232		1611	3463	
Flt Permitted	0.41	1.00		0.74	1.00		0.42	1.00		0.37	1.00	
Satd. Flow (perm)	772	1704		1388	1415		765	3232		623	3463	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	279	29	403	104	520	604	11
RTOR Reduction (vph)	0	14	0	0	231	0	0	32	0	0	2	0
Lane Group Flow (vph)	2	13	0	107	55	0	29	475	0	520	613	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	10.0	10.0		10.0	10.0		19.3	16.2		34.9	27.8	
Effective Green, g (s)	10.0	10.0		10.0	10.0		19.3	16.2		34.9	27.8	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.33	0.28		0.60	0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	133	294		239	244		306	904		626	1662	
v/s Ratio Prot		0.01			0.04		0.01	0.15		c0.21	0.18	
v/s Ratio Perm	0.00			c0.08			0.03			c0.29		
v/c Ratio	0.02	0.04		0.45	0.23		0.09	0.53		0.83	0.37	
Uniform Delay, d1	19.9	20.0		21.5	20.6		13.1	17.6		7.2	9.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.3	0.5		0.0	1.1		8.8	0.3	
Delay (s)	19.9	20.0		22.8	21.1		13.1	18.7		16.0	9.8	
Level of Service	B	C		C	C		B	B		B	A	
Approach Delay (s/veh)		20.0			21.6			18.4			12.6	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	49	487	29	17	632
Future Volume (vph)	91	49	487	29	17	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	40.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				100.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953		0.992			
Flt Protected	0.968				0.950	
Satd. Flow (prot)	1753	0	1800	0	1805	1810
Flt Permitted	0.968				0.950	
Satd. Flow (perm)	1753	0	1800	0	1805	1810
Link Speed (k/h)	50		80			80
Link Distance (m)	204.5		85.9			640.4
Travel Time (s)	14.7		3.9			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	5%
Adj. Flow (vph)	99	53	529	32	18	687
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	561	0	18	687
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	91	49	487	29	17	632
Future Volume (Veh/h)	91	49	487	29	17	632
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)	99	53	529	32	18	687
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			372			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	1268	545			561	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1218	339			359	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	39	91			98	
cM capacity (veh/h)	163	582			996	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	152	561	18	687
Volume Left	99	0	18	0
Volume Right	53	32	0	0
cSH	217	1700	996	1700
Volume to Capacity	0.70	0.33	0.02	0.40
Queue Length 95th (m)	36.0	0.0	0.4	0.0
Control Delay (s/veh)	52.9	0.0	8.7	0.0
Lane LOS	F		A	
Approach Delay (s/veh)	52.9	0.0	0.2	
Approach LOS	F			

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	191	177	610	437	26
Future Volume (vph)	26	191	177	610	437	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.881				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1664	0	1805	1881	1816	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1664	0	1805	1881	1816	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	208	192	663	475	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	192	663	503	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	191	177	610	437	26
Future Volume (Veh/h)	26	191	177	610	437	26
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)	28	208	192	663	475	28
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	1536	489	503			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1536	489	503			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	64	82			
cM capacity (veh/h)	106	583	1072			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	236	192	663	503
Volume Left	28	192	0	0
Volume Right	208	0	0	28
cSH	380	1072	1700	1700
Volume to Capacity	0.62	0.18	0.39	0.30
Queue Length 95th (m)	32.1	5.2	0.0	0.0
Control Delay (s/veh)	28.8	9.1	0.0	0.0
Lane LOS	D	A		
Approach Delay (s/veh)	28.8	2.0		0.0
Approach LOS	D			

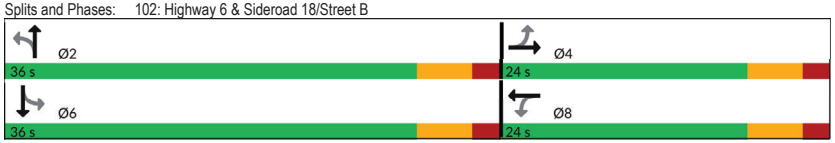
Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Future Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	110.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			75.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00				1.00	
Frt		0.859			0.865			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1630	0	1770	1611	0	1787	3479	0	1770	3488	0
Flt Permitted	0.698			0.634			0.428			0.260		
Satd. Flow (perm)	1326	1630	0	1181	1611	0	803	3479	0	484	3488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		185			82			55			7	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	14	12	185	113	9	82	178	826	164	99	575	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	197	0	113	91	0	178	990	0	99	593	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0		36.0	36.0		36.0	36.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.3	11.3		11.3	11.3		26.7	26.7		26.7	26.7	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.59	0.59		0.59	0.59	
v/c Ratio	0.04	0.36		0.38	0.20		0.38	0.48		0.35	0.29	
Control Delay (s/veh)	14.5	5.8		19.4	6.4		11.1	8.2		12.6	7.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.5	5.8		19.4	6.4		11.1	8.2		12.6	7.1	
LOS	B	A		B	A		B	A		B	A	
Approach Delay (s/veh)		6.4			13.6			8.6			7.9	
Approach LOS		A			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay (s/veh): 8.6		Intersection LOS: A	
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 102: Highway 6 & Sideroad 18/Street B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	14	197	113	91	178	990	99	593
v/c Ratio	0.04	0.36	0.38	0.20	0.38	0.48	0.35	0.29
Control Delay (s/veh)	14.5	5.8	19.4	6.4	11.1	8.2	12.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	5.8	19.4	6.4	11.1	8.2	12.6	7.1
Queue Length 50th (m)	0.8	0.7	7.2	0.5	8.1	24.0	4.4	13.2
Queue Length 95th (m)	4.8	13.9	22.4	9.7	25.2	47.2	17.1	26.7
Internal Link Dist (m)		980.3		227.3		395.5		261.9
Turn Bay Length (m)	25.0		25.0		110.0		100.0	
Base Capacity (vph)	536	769	477	699	584	2544	352	2538
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.26	0.24	0.13	0.30	0.39	0.28	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Future Volume (vph)	13	11	170	104	8	75	164	760	151	91	529	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86		1.00	0.86		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1630		1770	1611		1784	3480		1770	3489	
Flt Permitted	0.70	1.00		0.63	1.00		0.43	1.00		0.26	1.00	
Satd. Flow (perm)	1326	1630		1181	1611		804	3480		484	3489	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	12	185	113	9	82	178	826	164	99	575	18
RTOR Reduction (vph)	0	149	0	0	66	0	0	25	0	0	3	0
Lane Group Flow (vph)	14	48	0	113	25	0	178	965	0	99	590	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	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)	9.1	9.1		9.1	9.1		25.3	25.3		25.3	25.3	
Effective Green, g (s)	9.1	9.1		9.1	9.1		25.3	25.3		25.3	25.3	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.55	0.55		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	260	319		231	315		438	1897		263	1902	
v/s Ratio Prot		0.03			0.02			c0.28			0.17	
v/s Ratio Perm	0.01			c0.10			0.22			0.20		
v/c Ratio	0.05	0.15		0.49	0.08		0.41	0.51		0.38	0.31	
Uniform Delay, d1	15.2	15.5		16.6	15.2		6.2	6.6		6.0	5.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2		1.6	0.1		0.6	0.2		0.9	0.1	
Delay (s)	15.2	15.7		18.2	15.3		6.8	6.9		6.9	5.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s/veh)		15.6			16.9			6.8			6.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	80	95	1097	797	77
Future Volume (vph)	42	80	95	1097	797	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.912				0.987	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1560	0	1583	3275	3416	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1560	0	1583	3275	3416	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	46	87	103	1192	866	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	103	1192	950	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.03	1.00	1.00	1.00	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	80	95	1097	797	77
Future Volume (Veh/h)	42	80	95	1097	797	77
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)	46	87	103	1192	866	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				98		
pX, platoon unblocked	0.81					
vC, conflicting volume	1710	475	950			
vC1, stage 1 conf vol	908					
vC2, stage 2 conf vol	802					
vCu, unblocked vol	1410	475	950			
tC, single (s)	6.8	7.1	4.4			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.4	2.3			
p0 queue free %	85	83	84			
cM capacity (veh/h)	297	515	649			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	133	103	596	596	577	373
Volume Left	46	103	0	0	0	0
Volume Right	87	0	0	0	0	84
cSH	411	649	1700	1700	1700	1700
Volume to Capacity	0.32	0.16	0.35	0.35	0.34	0.22
Queue Length 95th (m)	11.1	4.5	0.0	0.0	0.0	0.0
Control Delay (s/veh)	17.9	11.6	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s/veh)	17.9	0.9			0.0	
Approach LOS	C					

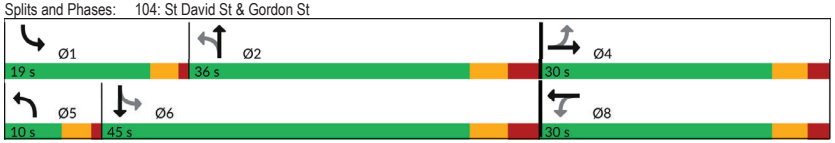
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Future Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.868			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1665	0	1736	1631	0	1805	3445	0	1736	3491	0
Flt Permitted	0.227			0.663			0.427			0.182		
Satd. Flow (perm)	431	1665	0	1201	1631	0	810	3445	0	332	3491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			343			27			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	504	142	737	134	343	579	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	572	0	142	871	0	343	596	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	30.0	30.0		30.0	30.0		10.0	36.0		19.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%		11.8%	42.4%		22.4%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0		6.0	29.0		15.0	38.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Don't Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.6	17.6		17.6	17.6		34.7	25.6		44.7	31.8	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.47	0.35		0.61	0.43	
v/c Ratio	0.36	0.31		0.46	0.88		0.31	0.71		0.78	0.39	
Control Delay (s/veh)	35.2	11.0		30.4	27.3		9.8	25.0		25.7	15.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	35.2	11.0		30.4	27.3		9.8	25.0		25.7	15.3	
LOS	D	B		C	C		A	C		C	B	
Approach Delay (s/veh)		15.9			27.9			22.9			19.1	
Approach LOS		B			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 73.2			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 22.4		Intersection LOS: C	
Intersection Capacity Utilization 95.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	572	142	871	343	596
v/c Ratio	0.36	0.31	0.46	0.88	0.31	0.71	0.78	0.39
Control Delay (s/veh)	35.2	11.0	30.4	27.3	9.8	25.0	25.7	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.2	11.0	30.4	27.3	9.8	25.0	25.7	15.3
Queue Length 50th (m)	4.9	5.6	17.9	35.6	8.7	61.6	25.3	32.1
Queue Length 95th (m)	14.3	19.7	34.8	#94.9	17.5	88.0	#68.7	47.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	147	637	411	784	472	1442	505	1896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.23	0.32	0.73	0.30	0.60	0.68	0.31

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)	34	41	94	121	63	464	131	678	123	316	533	16
Future Volume (vph)	34	41	94	121	63	464	131	678	123	316	533	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1667		1724	1631		1804	3445		1735	3490	
Flt Permitted	0.23	1.00		0.66	1.00		0.43	1.00		0.18	1.00	
Satd. Flow (perm)	432	1667		1204	1631		810	3445		333	3490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	504	142	737	134	343	579	17
RTOR Reduction (vph)	0	77	0	0	260	0	0	17	0	0	2	0
Lane Group Flow (vph)	37	70	0	132	312	0	142	854	0	343	594	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.6	17.6		17.6	17.6		31.6	25.6		41.9	31.9	
Effective Green, g (s)	17.6	17.6		17.6	17.6		31.6	25.6		41.9	31.9	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.44	0.35		0.58	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	104	404		292	395		435	1216		430	1535	
v/s Ratio Prot		0.04			c0.19		0.03	0.25		c0.14	0.17	
v/s Ratio Perm	0.09			0.11			0.12			c0.33		
v/c Ratio	0.36	0.17		0.45	0.79		0.33	0.70		0.80	0.39	
Uniform Delay, d1	22.8	21.7		23.3	25.7		12.5	20.2		11.3	13.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.2		1.1	10.3		0.2	2.3		9.3	0.3	
Delay (s)	24.8	21.9		24.5	36.0		12.7	22.5		20.5	14.0	
Level of Service	C	C		C	D		B	C		C	B	
Approach Delay (s/veh)		22.5			33.9			21.1			16.4	
Approach LOS		C			C			C			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	32	755	92	50	578
Future Volume (vph)	59	32	755	92	50	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	40.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				100.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.952		0.984			
Flt Protected	0.969				0.950	
Satd. Flow (prot)	1753	0	3490	0	1805	3539
Flt Permitted	0.969				0.950	
Satd. Flow (perm)	1753	0	3490	0	1805	3539
Link Speed (k/h)	50		80			80
Link Distance (m)	214.7		85.2			641.1
Travel Time (s)	15.5		3.8			28.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%
Adj. Flow (vph)	64	35	821	100	54	628
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	921	0	54	628
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	32	755	92	50	578
Future Volume (Veh/h)	59	32	755	92	50	578
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)	64	35	821	100	54	628
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			371			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1293	461			921	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1125	211			717	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	63	95			93	
cM capacity (veh/h)	172	729			813	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	99	547	374	54	314	314
Volume Left	64	0	0	54	0	0
Volume Right	35	0	100	0	0	0
cSH	235	1700	1700	813	1700	1700
Volume to Capacity	0.42	0.32	0.22	0.07	0.18	0.18
Queue Length 95th (m)	15.6	0.0	0.0	1.7	0.0	0.0
Control Delay (s/veh)	31.0	0.0	0.0	9.7	0.0	0.0
Lane LOS	D			A		
Approach Delay (s/veh)	31.0	0.0		0.8		
Approach LOS	D					

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		