



950 & 960 St. David Street North, Fergus Transportation Impact Study

Paradigm Transportation Solutions Limited

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Executive Summary

Content

Reid's Heritage Homes retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for proposed redevelopment of land with a mix of residential and retail uses located on St. David Street North (Highway 6) in Fergus, Ontario.

Development Concept

The proposed development is located at the municipal address of 950-960 St. David Street North (Highway 6) in Fergus Ontario. The mixed-use development consists of 13,500 square feet of retail uses at 950 St. David Street North and 112 townhouse units at 960 St. David Street North. The planned retail land use is the expansion of the existing 'New to You' second hand retail store. The operation of the second-hand retail store requires donations and hence, the warehouse is needed to accept and sort the donations.

Conclusions

The main conclusions of this study are as follows:

- ▶ **Existing Traffic Conditions:** all study intersections are without notable movements during the AM, PM and Saturday peak hours.
- ▶ **Development Generated Traffic:** The site is expected to generate a total of 93 AM peak hour trips, 165 PM peak hour trips, and 135 Saturday peak hour trips at completion of full build-out.
- ▶ **Background Traffic Operations:** All observed intersections are forecast to operate without any problem movements for all horizon years.
- ▶ **Total Traffic Operations:** All intersections are forecast to operate without any problem movements.
- ▶ **Mitigating Measures:** the results of left-turn lane warrant analysis are as follows:
 - the current storage length of the northbound left-turn lane on St. David Street at Sideroad 18 is forecast to be adequate;
 - The northbound left-turn movement on St. David Street at Sideroad 19 is forecast to warrant a left-turn lane with 40 metres of storage under 2035 background conditions. This



storage length increases an additional 10 metres (for a total of 50 metres) after the addition of the development traffic. This exceeds the current storage length of 20 metres. However, as this left-turn lane is back-to-back with the southbound left-turn lane at Gordon Street, it can not be extended any further. In addition, the 95th percentile queue forecasts do not exceed 3 metres; and

- No left-turn lane is forecast to be warranted at the intersection of St. David Street North and Site Driveway.
- ▶ **Parking Study:** It is forecast that the 53 parking spaces (1 space per 23.6 m²) proposed for the commercial site at 950 St. David Street will be adequate, as the thrift store building has warehousing space for donations and sorting which will not generate parking demand from shoppers. Therefore, the parking demand is expected to be less than that of a typical retail store. The Zoning By-law parking requirement for a retail store is 1 space per 20 m² and 1 space per 30 m² for “any commercial uses not otherwise specified”. As the proposed parking rate falls between these two uses, it is expected that the proposed parking will be adequate for this unique use as a thrift store.

Recommendations

No improvements to the road network are recommended for the approval of this development. It is also recommended that the proposed parking rate be approved for the commercial space on 950 St. David Street.



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1 Introduction

1.1 Overview

Reid's Heritage Homes retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for proposed redevelopment of land with a mix of residential and retail uses located on St. David Street North (Highway 6) in Fergus, Ontario.

Figure 1.1 illustrates the location of the development.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impacts resulting from the proposed development. The scope of the study, developed in consultation with the MTO staff via e-mail in April 2022, includes:

- ▶ Documentation of current traffic and site conditions in the vicinity of the development;
- ▶ Estimation of the background traffic growth in the area;
- ▶ Estimation of development site traffic;
- ▶ Assignment of the development traffic to the subject road network;
- ▶ Traffic forecasts for buildout year of full buildout (2025), five years from full buildout (2030), and ten years from full development (2035);
- ▶ Identification of any operational or safety concerns and any mitigation measures that may be required to improve operations;
- ▶ The study area intersections include:
 - St. David Street North (Highway 6) and Side Road 18;
 - St. David Street North (Highway 6) and Side Road 19;
 - St. David Street North (Highway 6) and Gordon Street; and
 - The site driveway on St David Street North.





Source: Township of Centre Wellington Map Centre



Site Map

2 Existing Conditions

This section documents current traffic conditions, operational deficiencies and constraints experienced by the public travelling at the intersections within the study area. The operational deficiencies and constraints identified at this stage will be fundamental to the process of defining the required remedial measures.

2.1 Existing Roads

The main roadways within the study area are described as follows:

- ▶ **St David Street North (Highway 6)** is a north-south two-lane provincial highway under the jurisdiction of Ministry of Transportation of Ontario (MTO) and has urban cross-section. Within the study area the highway has a posted speed limit of 60 km/h from the Sideroad 18 to Site Driveway, then turns 50 km/h from Site Driveway to Gordon Street;
- ▶ **Gordon Street** is an east-west two-lane local road with posted speed limit of 50 km/h;
- ▶ **Sideroad 19** is an east-west two-lane local road with posted speed limit of 50 km/h; and
- ▶ **Sideroad 18** is an east-west two-lane local road with posted speed limit of 50 km/h.

Figure 2.1 illustrates the existing lane configurations and traffic control at the study area intersections.

2.2 Transit Service

No transit services are available within the proximity of the subject site.

2.3 Active Transportation

Sidewalks are provided on both east and west side from Gordon Street to Sideroad 19.

No on-road cycling facilities are provided near the subject site.

A pedestrian connection is present between the subject property and the adjacent property to the south.

2.4 Traffic Volumes

The existing peak hour turning movement traffic volumes were collected by Paradigm. **Table 2.1** summarizes the traffic data.

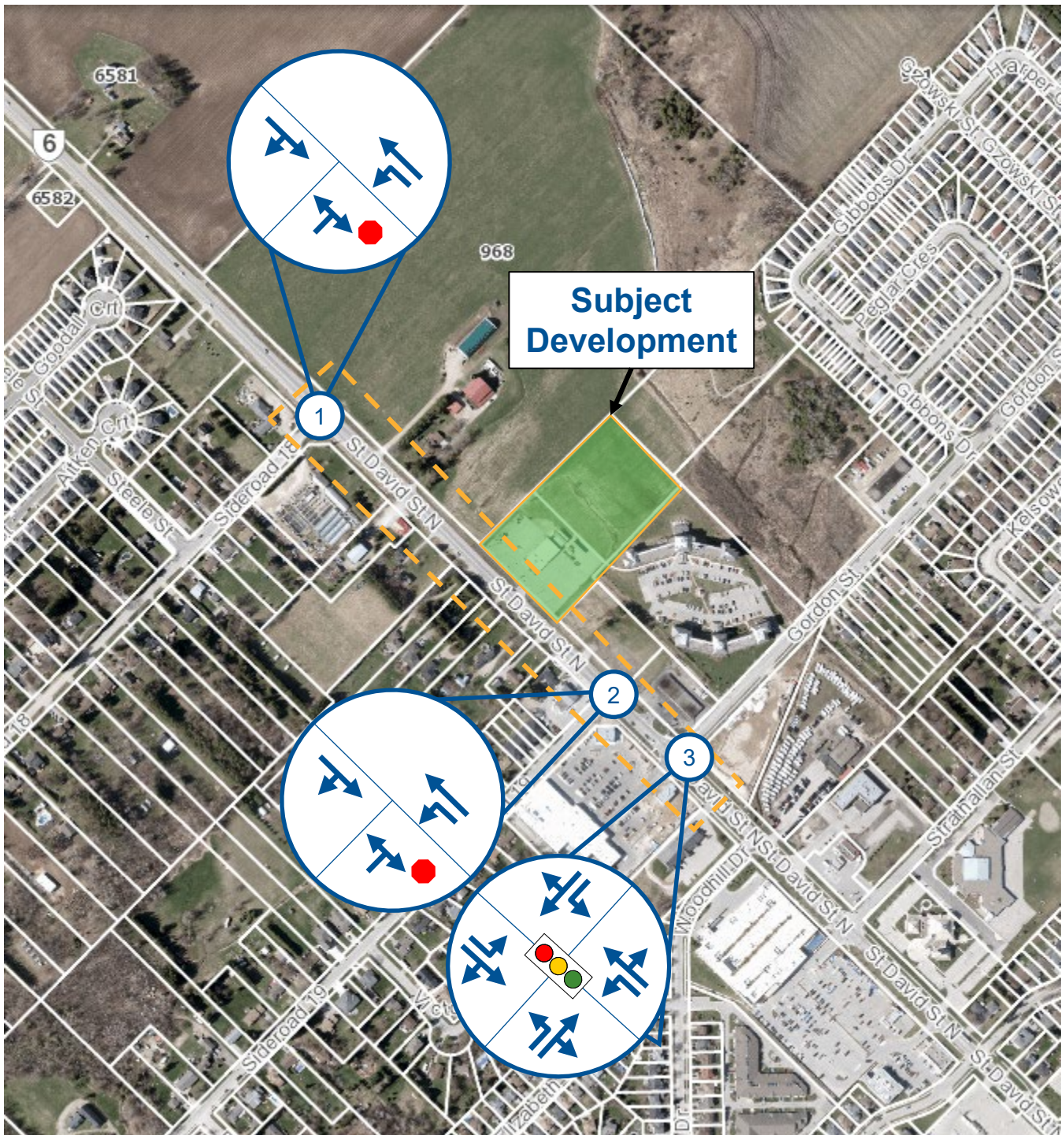


TABLE 2.1: DETAILS OF TMC COUNTS

Location	Date	Weekday/Saturday
St. David Street North / Sideroad 18	16 March 2021	Weekday 8-hour
St. David Street North / Sideroad 19	16 March 2021	Weekday 8-hour
St. David Street North / Gordon Street	07 April 2022	Weekday 8-hour
St. David Street North / Sideroad 18	30 April 2022	Saturday
St. David Street North / Sideroad 19	30 April 2022	Saturday
St. David Street North / Gordon Street	30 April 2022	Saturday

Appendix A contains the detailed traffic counts for the study area intersections.





Source: Township of Centre Wellington Map Centre

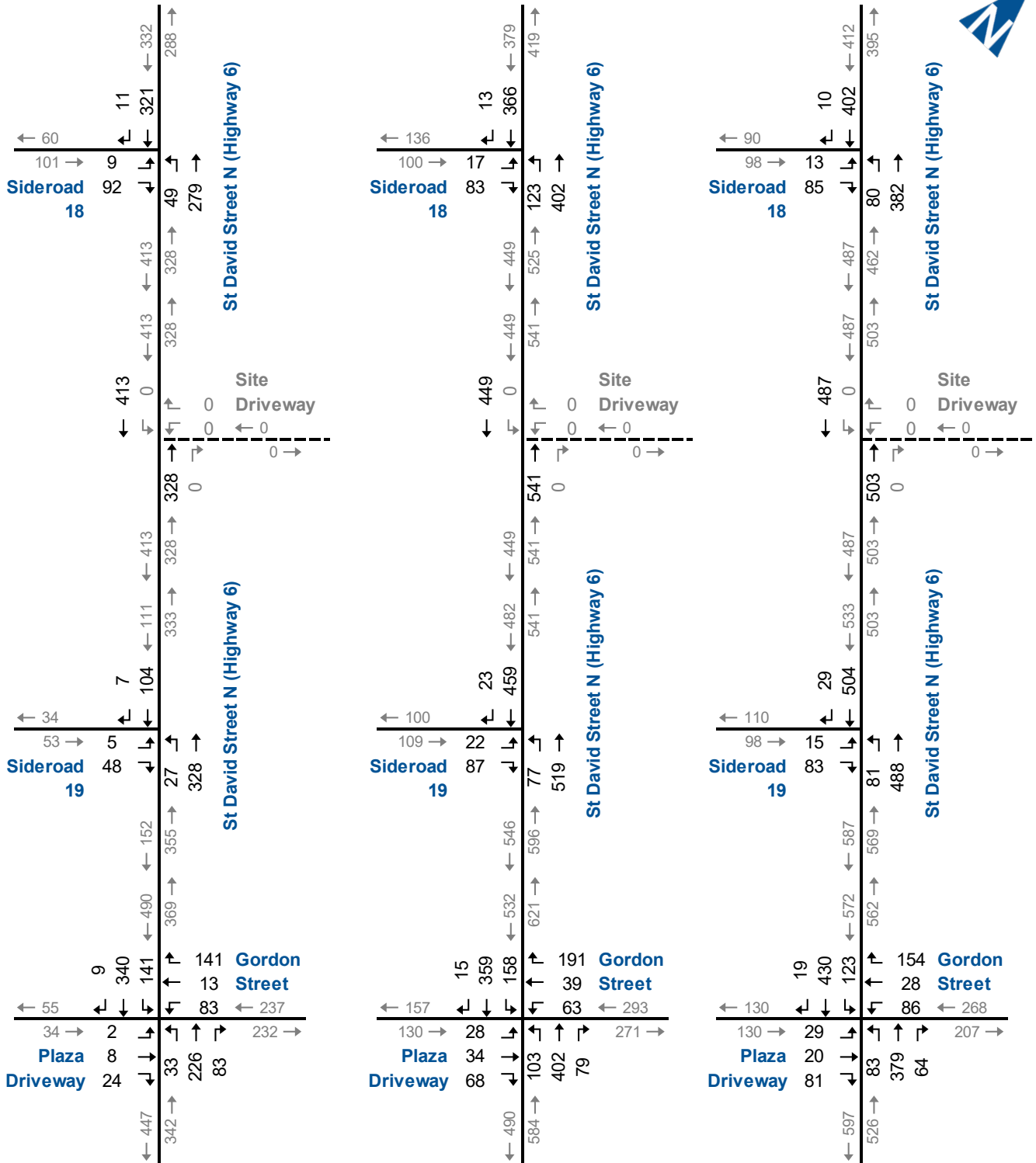


Existing Lane Configuration and Traffic Control

AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Existing Traffic Volumes Weekday AM, PM, SAT Peak Hours

2.5 Base Year 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 a number of 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 intersections in the study area were evaluated with the existing turning movement volumes using Synchro 11.

The intersection analysis considered two separate measures of performance:

- ▶ the volume to capacity ratio for each intersection; and
- ▶ the LOS for each turning movement (LOS is based on the average control delay per vehicle).

Table 2.2 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.

All intersections are operating without any problem movements.

Appendix B contains the detailed Synchro 11 reports.



TABLE 2.2: EXISTING TRAFFIC OPERATIONS SUMMARY

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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 12 0.18 5	> > >	B 12						A 8 0.05 1	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	A 10 0.07 2	> > >	A 10						A 8 0.02 1	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.01 2	B 15 0.14 9	> > >	B 16	D 39 0.50 27	B 12 0.50 17	> > >	C 21	A 4 0.05 4	B 12 0.39 50	> > >	B 11	A 4 0.23 13	A 10 0.35 55	> > >	A 8	B 12
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 16 0.25 8	> > >	C 16						A 9 0.12 3	A 0 0.00 0			A 2		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 20 0.34 11	> > >	C 20						A 9 0.09 2	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 38 0.32 12	B 17 0.40 18	> > >	C 21	D 38 0.43 22	B 15 0.64 25	> > >	C 20	A 4 0.17 10	B 14 0.55 85	> > >	B 12	A 5 0.32 14	B 11 0.40 62	> > >	A 9	B 14
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 14 0.23 7	> > >	B 14						A 9 0.08 2	A 0 0.00 0			A 2		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 18 0.29 9	> > >	C 18						A 9 0.10 2	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 32 0.24 12	B 13 0.36 16	> > >	B 17	D 39 0.52 28	B 13 0.53 21	> > >	C 21	A 4 0.15 9	B 14 0.51 79	> > >	B 12	A 5 0.24 12	B 13 0.47 79	> > >	B 11	B 14

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



3 Development Concept

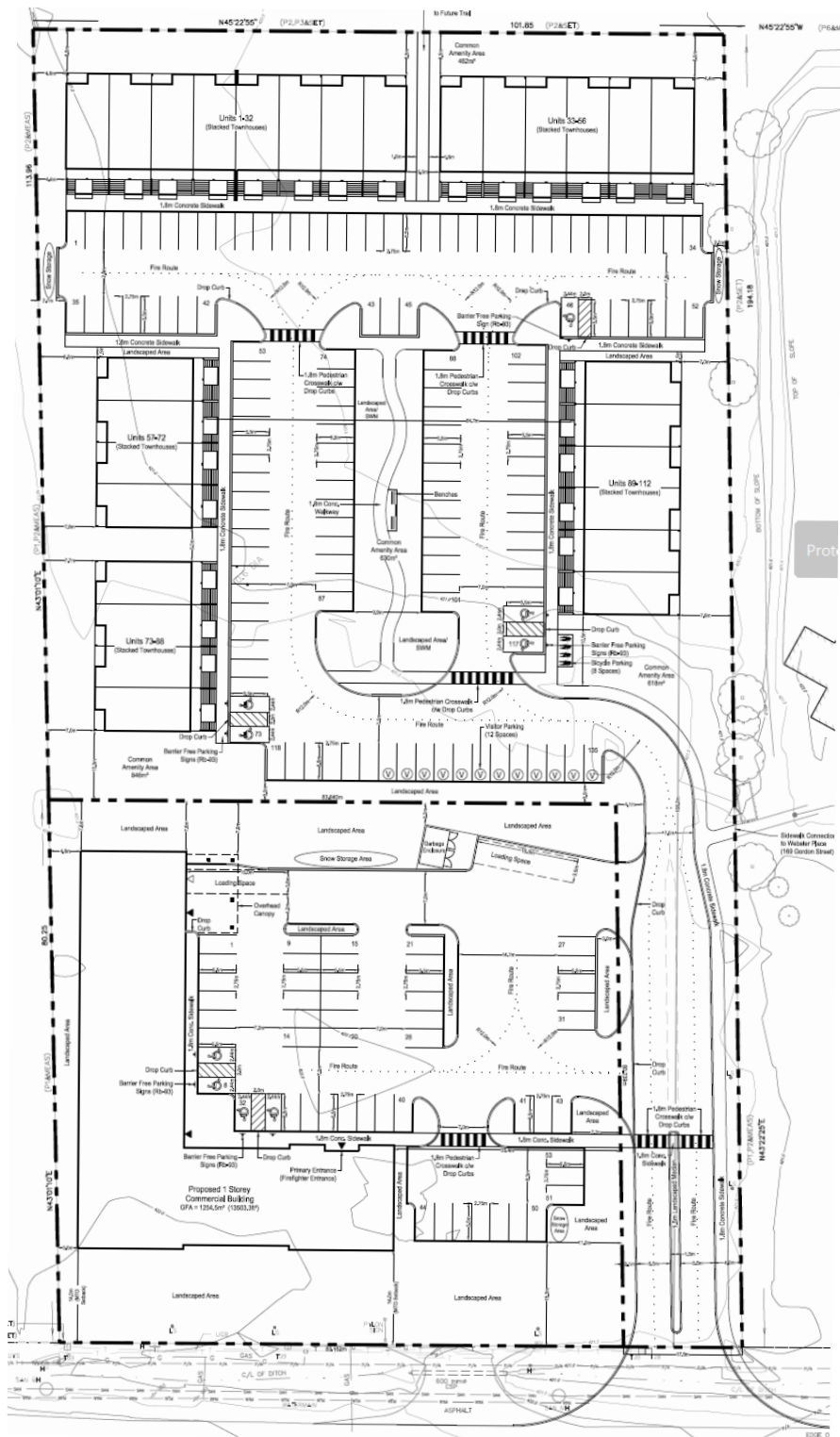
3.1 Development Description

The proposed development is located at the municipal address of 950 and 960 St. David Street North (Highway 6) in Fergus Ontario. The mixed-use development consists of 13,500 square feet of retail uses at 950 St. David Street North and 112 townhouse units at 960 St. David Street North. The planned retail land use is the expansion of the existing 'New to You' second hand retail store. The operation of the second-hand retail store requires donations and hence, the warehouse is needed to accept and sort the donations.

Vehicle access is proposed via a single driveway to St. David Street North.

The development site concept plan is shown in **Figure 3.1**.





St. David Street North



Development Concept Plan

3.2 Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual¹ provides rates and equations used to estimate the peak hour traffic volumes generated by the Land Use Codes (LUC) of this development. LUC 220, and LUC 822 were used in this study and are described as follows:

- ▶ **LUC 220 (Multifamily Housing- Low-Rise):** Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walk-up apartment, mansion apartment, and stacked townhouse; and
- ▶ **LUC 822 (Strip Retail Plaza):** A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The resulting trip generation, as shown in **Table 3.1** indicates that at completion of the full buildout, the site is expected to generate a total of 93 AM peak hour trips, 165 PM peak hour trips and 135 Saturday peak hour trips.

TABLE 3.1: TRIP GENERATION

Land Use	Units	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
Multifamily Housing (Low-rise) - LUC 220	112 Dwelling Unit	(1)	14	44	58	(2)	43	26	69	0.41	23	23	46
Strip Retail Plaza (<40k) - LUC 822	13.5 x1000 Sq. ft	(3)	21	14	35	(4)	32	64	96	6.57	45	44	89
Net Total Trips			35	58	93		75	90	165		68	67	135

$${}^1(T) = 0.21 (X) + 22.85 \quad {}^2(T) = 0.43 (X) + 20.55$$

$${}^3(\ln(T)) = 0.66 \ln(X) + 1.84 \quad {}^4(\ln(T)) = 0.71 \ln(X) + 2.72$$

3.3 Trip Distribution and Assignment

The estimated site generated trips were distributed and assigned to the road network based on the TTS Zone 8344 and existing driveway traffic count. The distribution is summarized in **Table 3.2**.

¹ Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, September 2021.



TABLE 3.2: TRIP DISTRIBUTION

Direction (To/From)	Residential	Commerical
North via St. David Street N	15%	20%
South Via St. David Street N	60%	80%
West via Plaza Driveway	5%	0%
West via Sidroad 19	5%	0%
East via Gordon Street	15%	0%
Total	100%	100%

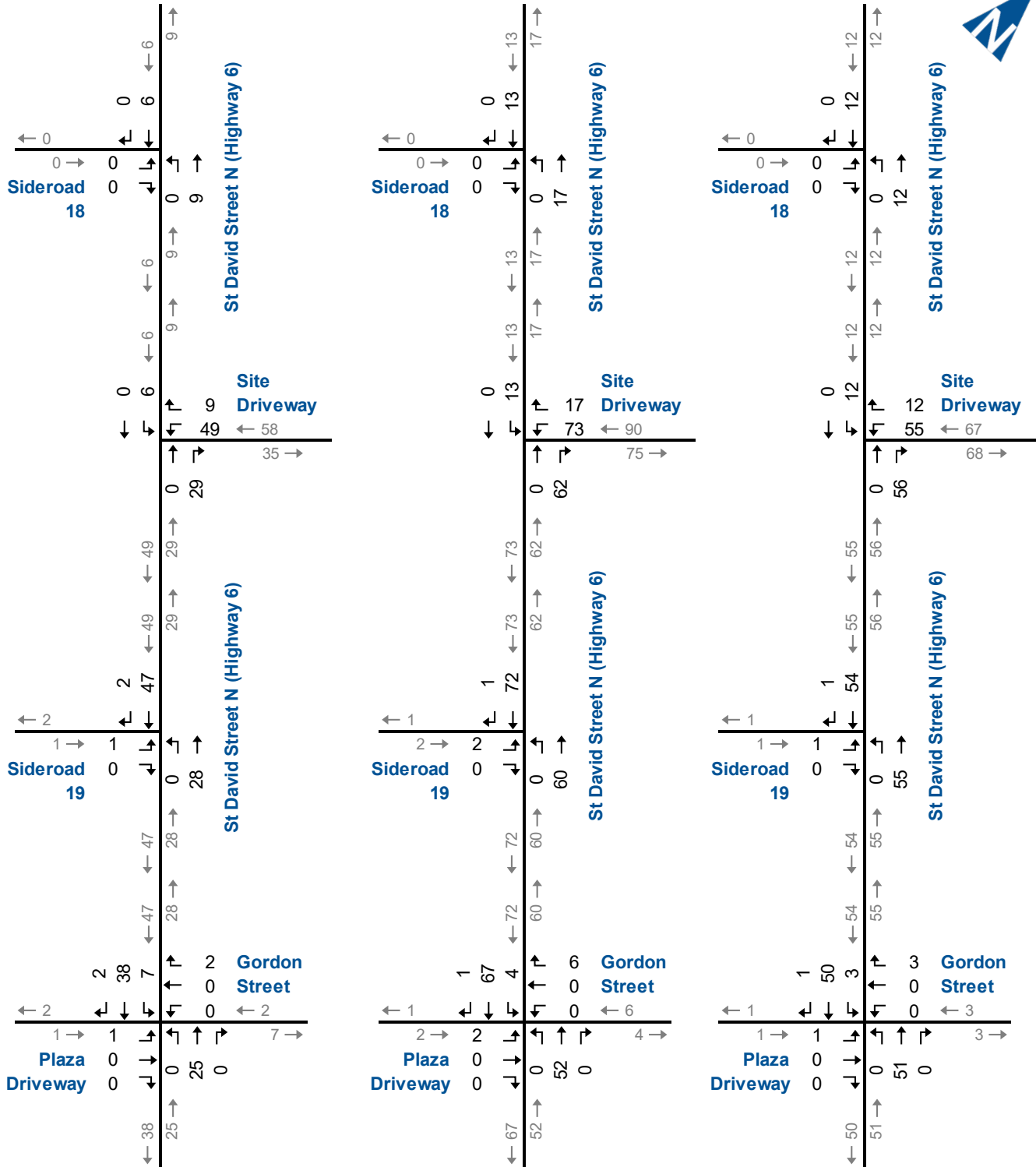
Figure 3.2 illustrate the site-generated trip assignment for the AM and PM peak hours.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Site Traffic Volumes
Full Build-out
Weekday AM, PM and SAT Peak Hours



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 and the full buildout (2025) horizon, five years from full buildout (2030) and ten years from full buildout (2035) horizon. 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 Background Traffic Forecasts

4.1.1 Background Growth

The non-site traffic increase is the generalized traffic growth in Fergus. In pre-study consultation, the MTO staff confirmed a growth rate of 1% per annum, which was applied to the existing traffic volumes to forecast horizon years.

4.1.2 Other Area Development

No other area development were identified by the MTO staff to include in background traffic forecasts.

4.2 Full Buildout (2025) Horizon

4.2.1 2025 Background Traffic Operations

Figure 4.1 illustrates the 2025 background traffic volumes, including traffic growth and other area development traffic volumes.

The 2025 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

Table 4.1 summarizes the results of the 2025 background traffic operations.

All intersections are forecast to operate without any problem movements.

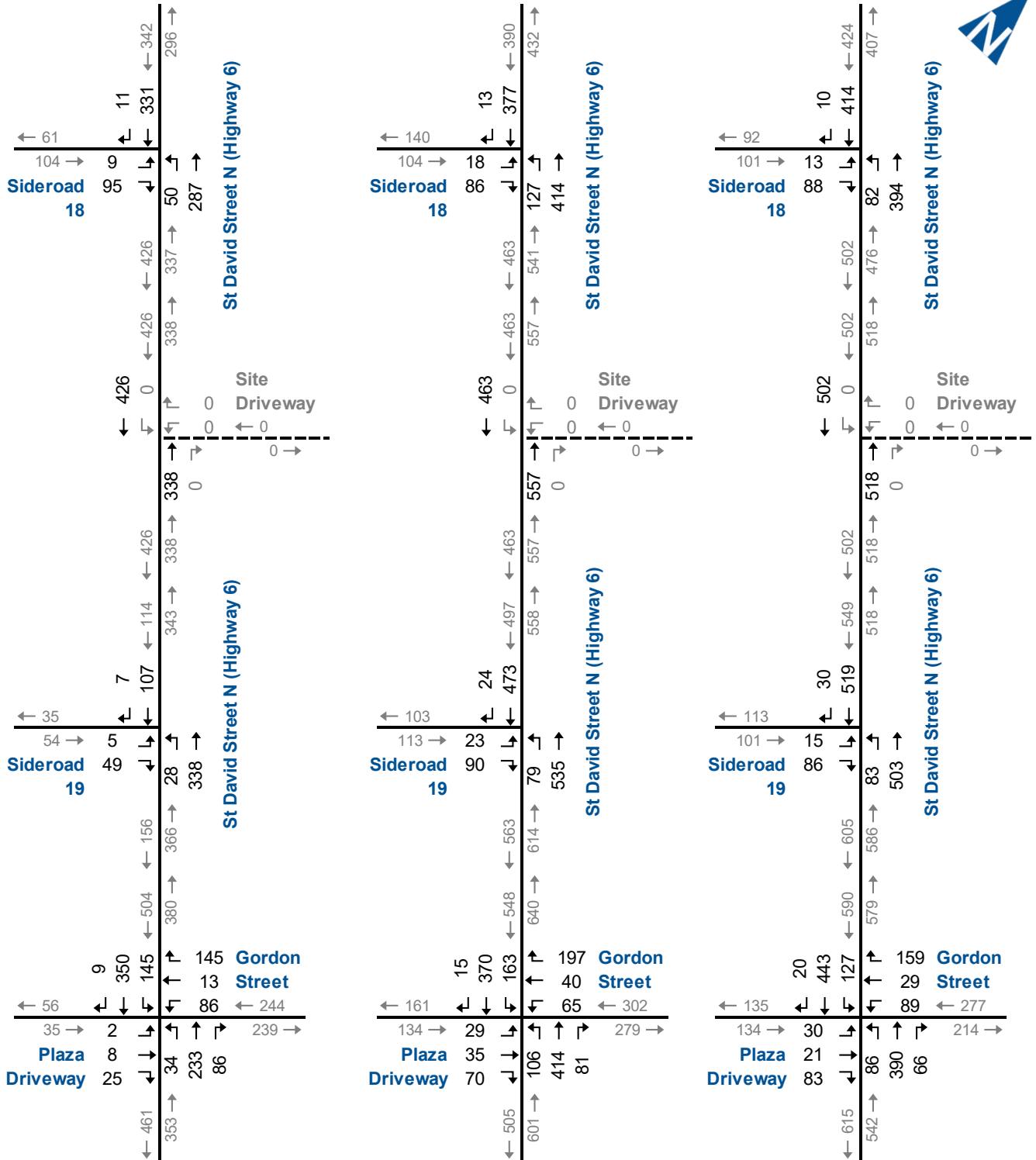
Appendix C contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



**Background 2025 Traffic Volumes
Weekday AM, PM and SAT Peak Hours**

Figure 4.1

TABLE 4.1: 2025 BACKGROUND TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 12 0.19 5	> > > >	B 12							A 8 0 0.05 2	A 0 0 0.00 0			A 1 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	A 10 0.07 2	> > > >	A 10							A 8 0 0.02 1	A 0 0 0.00 0			A 1 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.01 2	B 15 0.14 9	> > > >	B 16	D 39 0.51 28	B 12 0.50 18	> > > >	C 21	A 4 0 0.06 4	B 12 0.40 52	> > > >	B 11	A 5 0.24 14	B 10 0.36 57	> > > >	A 8	B 12	
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 16 0.27 8	> > > >	C 16							A 9 0 0.13 3	A 0 0 0.00 0			A 2 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 21 0.36 12	> > > >	C 21							A 9 0 0.09 2	A 0 0 0.00 0			A 1 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 38 0.34 12	B 16 0.41 19	> > > >	C 21	D 38 0.44 22	B 15 0.65 26	> > > >	C 20	A 4 0 0.17 10	B 14 0.56 89	> > > >	B 12	A 5 0.34 15	B 11 0.41 64	> > > >	A 10	B 14	
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 15 0.24 7	> > > >	B 15							A 9 0 0.09 2	A 0 0 0.00 0			A 2 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 19 0.31 10	> > > >	C 19							A 9 0 0.10 2	A 0 0 0.00 0			A 1 0 0.00 0		A 0 0 0.00 0	A 0 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 33 0.26 12	B 13 0.36 16	> > > >	B 17	D 40 0.53 28	B 13 0.54 21	> > > >	C 21	A 5 0 0.16 9	B 14 0.52 82	> > > >	B 13	A 5 0.25 13	B 13 0.49 83	> > > >	B 11	B 14	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.2.2 Total 2025 Traffic Volumes

Figure 4.2 illustrates the 2025 total traffic volumes including trips generated by the background trips.

The total traffic volumes are determined by summation of background traffic volumes and site generated traffic site.

The 2025 total traffic volumes have been analyzed using the same methodology as under existing condition and background condition.

Table 4.2 summarizes the results of the 2025 total traffic operations.

All intersections are forecast to operate without any problem movements.

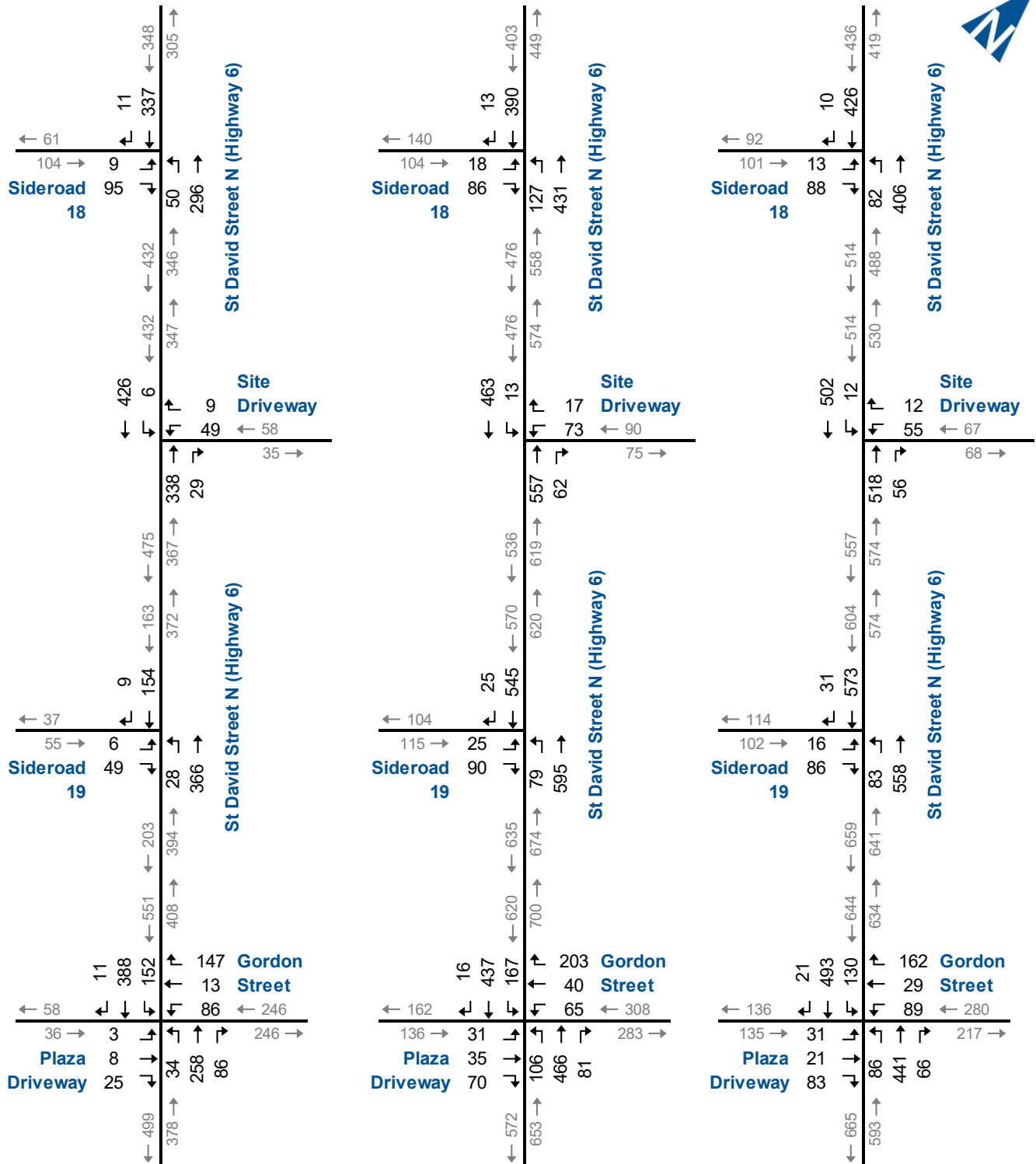
Appendix D contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Total 2025 Traffic Volumes Weekday AM, PM and SAT Peak Hours

TABLE 4.2: 2025 TOTAL TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 12 0.20 5	>	>	B 12					A 8 0.05 2	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0				
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	A 10 0.08 2	>	>	A 10					A 8 0.02 1	A 0 0.00 0		A 0		A 0 0.00 0	A 0 0.00 0				
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.02 2	B 15 0.14 9	>	>	B 16	D 39 0.51 28	B 12 0.50 18	>	>	C 21	A 4 0.06 4	B 12 0.43 58	>	B 12	A 5 0.26 15	B 10 0.41 65	>	A 9	B 12
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					C 18 0.20 5		>	>	C 18		A 0 0.00 0	A 0 0.00 0		A 0	A 8 0.01 0	A 0 0.00 0		A 0	
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 16 0.27 8	>	>	C 16					A 9 0.13 3	A 0 0.00 0		A 2		A 0 0.00 0	A 0 0.00 0		A 0		
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 24 0.40 14	>	>	C 24					A 9 0.09 2	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0		A 0		
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 39 0.35 13	B 16 0.41 19	>	>	C 22	D 38 0.44 22	B 15 0.65 26	>	>	B 20	A 4 0.18 10	B 15 0.59 96	>	B 13	A 6 0.36 15	B 12 0.45 72	>	B 10	B 14
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					C 25 0.23 6		>	>	C 25		A 0 0.00 0	A 0 0.00 0		A 0	A 9 0.01 0	A 0 0.00 0		A 0	
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 15 0.24 7	>	>	C 15					A 9 0.09 2	A 0 0.00 0		A 2		A 0 0.00 0	A 0 0.00 0		A 0		
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 22 0.36 12	>	>	C 22					A 10 0.10 3	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0		A 0		
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 33 0.27 13	B 13 0.36 16	>	>	B 18	D 40 0.53 28	B 13 0.54 22	>	>	C 21	A 5 0.18 9	B 15 0.58 95	>	B 14	A 5 0.28 13	B 14 0.54 95	>	B 12	B 15
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					D 30 0.34 11		>	>	D 30		A 0 0.00 0	A 0 0.00 0		A 0	A 9 0.01 0	A 0 0.00 0		A 0	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.3 Five Year from Full Buildout (2030) Horizon

4.3.1 2030 Background Traffic Operations

Figure 4.3 illustrates the 2030 background traffic volumes, including traffic growth and other area development traffic volumes.

The 2030 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

Table 4.3 summarizes the results of the 2030 background traffic operations.

All intersections are forecast to operate without any problem movements.

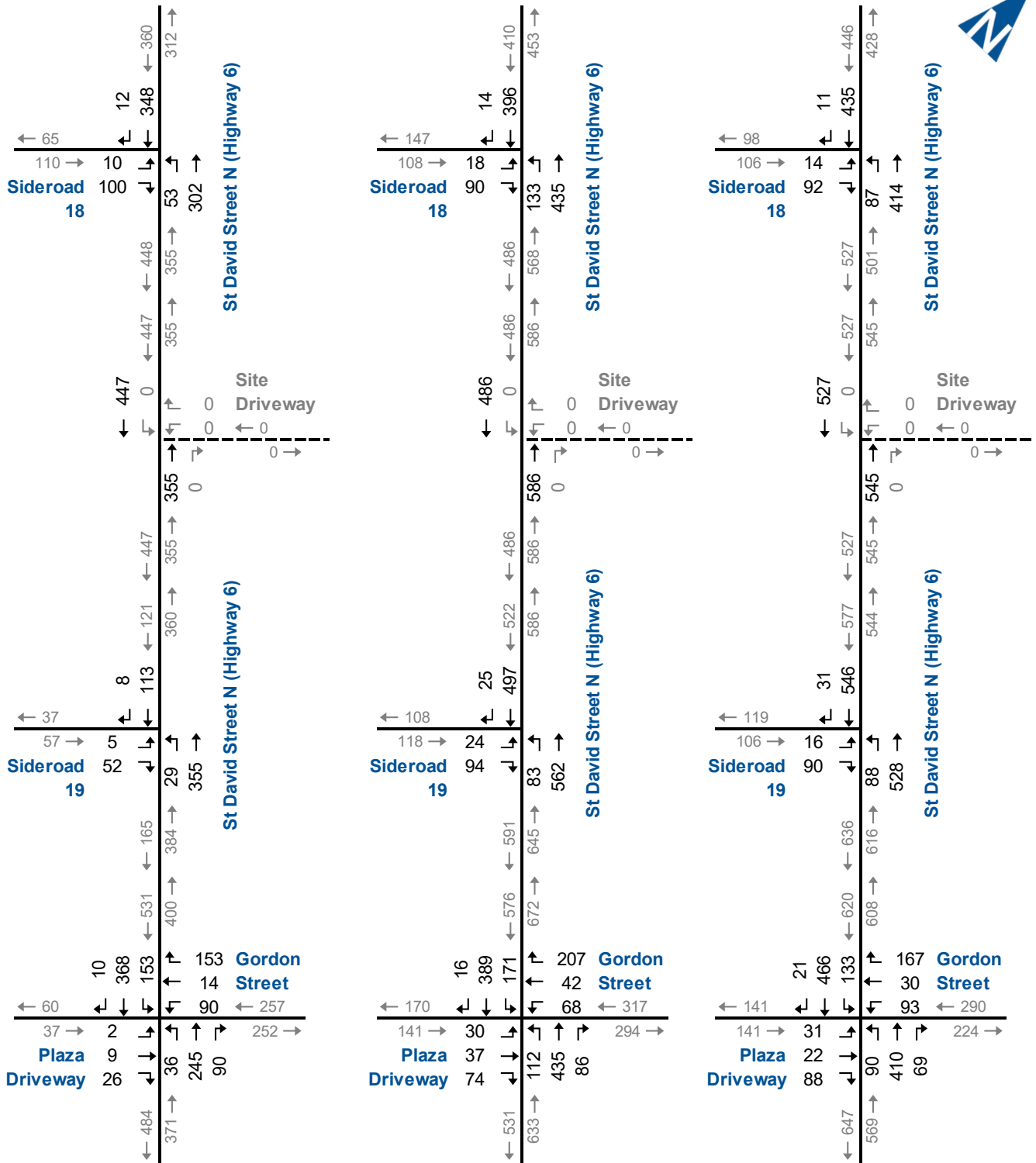
Appendix E contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Background 2030 Traffic Volumes Weekday AM, PM and SAT Peak Hours

TABLE 4.3: 2030 BACKGROUND TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 13 0.21 6	> > >	B 13							A 8 0.05 2	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	A 10 0.08 2	> > >	A 10							A 8 0.02 1	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.01 2	B 15 0.15 9	> > >	B 15	D 39 0.52 28	B 12 0.51 18	> > >	C 21	A 4 0.06 5	B 12 0.42 56	> > >	B 12	A 5 0.26 15	B 10 0.38 62	> > >	A 9	B 12
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 17 0.29 9	> > >	C 17							A 9 0.14 4	A 0 0.00 0		A 2		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 23 0.41 14	> > >	C 23							A 9 0.10 2	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 39 0.35 13	B 16 0.42 19	> > >	C 21	D 38 0.45 23	B 15 0.66 27	> > >	C 20	A 4 0.19 11	B 15 0.60 97	> > >	B 13	A 6 0.37 16	B 12 0.43 69	> > >	B 10	B 14
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 16 0.26 8	> > >	C 16							A 9 0.09 2	A 0 0.00 0		A 2		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	C 21 0.35 11	> > >	C 21							A 9 0.11 3	A 0 0.00 0		A 1		A 0 0.00 0	A 0 0.00 0	A 0
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 34 0.27 13	B 13 0.37 16	> > >	B 17	D 40 0.54 30	B 12 0.54 22	> > >	C 21	A 5 0.18 10	B 15 0.55 89	> > >	B 13	A 5 0.28 14	B 14 0.52 91	> > >	B 12	B 15

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.3.2 Total 2030 Traffic Volumes

Figure 4.4 illustrates the 2030 total traffic volumes including trips generated by the background trips.

The total traffic volumes are determined by summation of background traffic volumes, and site generated traffic site.

The 2030 total traffic volumes have been analyzed using the same methodology as under existing condition and background condition.

Table 4.4 summarizes the results of the 2030 total traffic operations.

All intersections are forecast to operate without any problem movements.

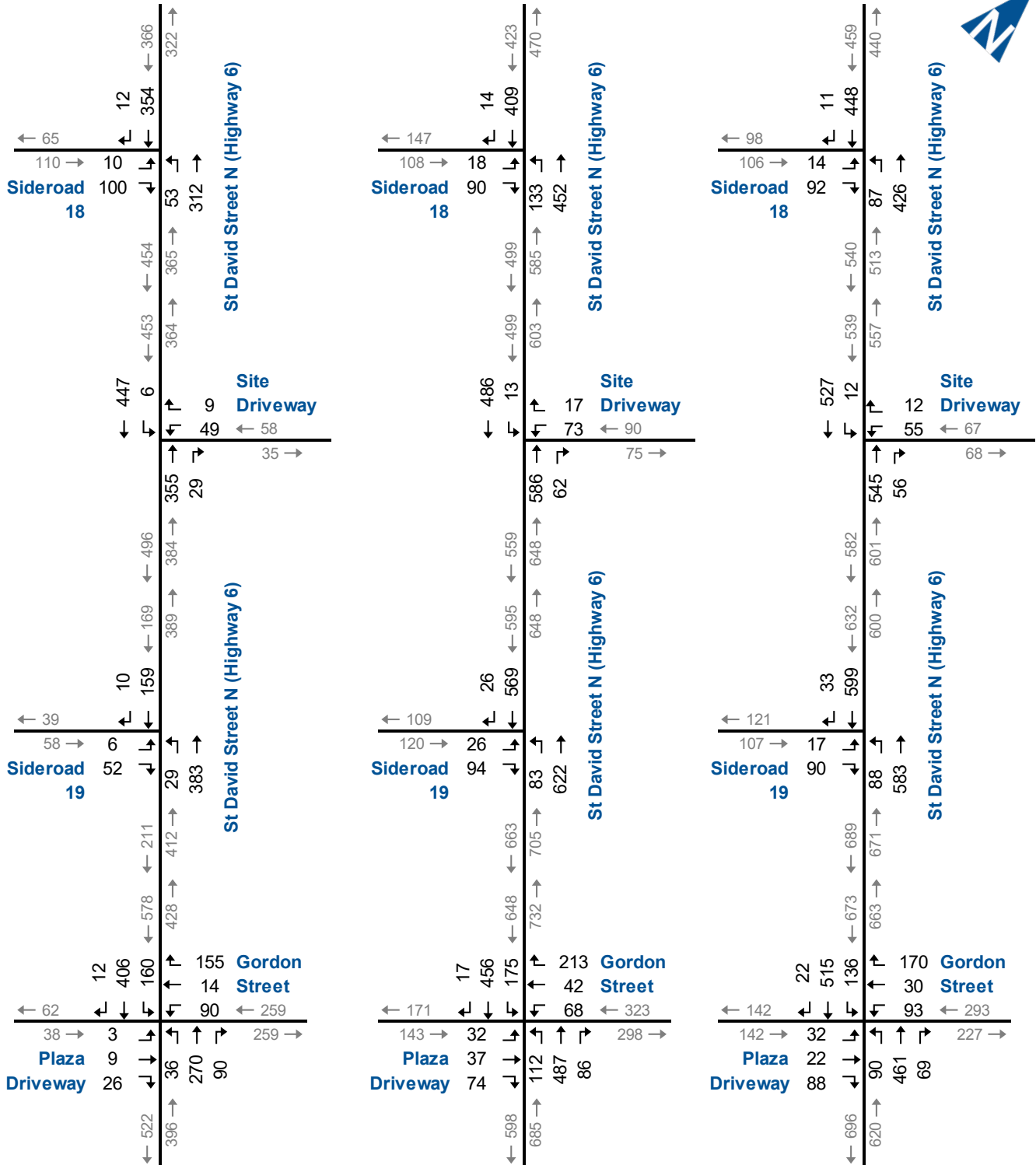
Appendix F contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Total 2030 Traffic Volumes Weekday AM, PM and SAT Peak Hours

TABLE 4.4: 2030 TOTAL TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 13 0.21 6	> > > >	> > > >	B 13						A 8 0.05 2	A 0 0.00 0	> > > >	A 1		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	B 10 0.09 2	> > > >	> > > >	B 10						A 8 0.02 1	A 0 0.00 0	> > > >	A 0		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.02 2	B 15 0.15 9	> > > >	B 16	D 39 0.52 28	B 12 0.51 18	> > > >	C 21	A 4 0.06 5	B 13 0.45 62	> > > >	B 12	A 5 0.28 16	B 11 0.43 70	> > > >	A 9	B 13
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					C 19 0.21 6		> > > >	C 19		A 0 0.00 0	A 0 0.00 0	> > > >	A 0		A 8 0.01 0	A 0 0.00 0	
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 18 0.30 10		> > > >	C 18						A 9 0.14 4	A 0 0.00 0	> > > >	A 2		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	D 31 0.50 20		> > > >	D 31						A 9 0.10 2	A 0 0.00 0	> > > >	A 1		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 40 0.37 14	B 16 0.42 19	> > > >	C 22	D 38 0.45 23	B 15 0.67 27	> > > >	C 20	A 4 0.21 11	B 17 0.66 112	> > > >	B 15	A 6 0.42 16	B 13 0.50 86	> > > >	B 11	B 15
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					E 40 0.51 20		> > > >	E 40		A 0 0.00 0	A 0 0.00 0	> > > >	A 0		A 9 0.02 1	A 0 0.00 0	
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 16 0.27 8		> > > >	C 16						A 9 0.09 2	A 0 0.00 0	> > > >	A 2		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	D 25 0.41 14		> > > >	D 25						A 10 0.12 3	A 0 0.00 0	> > > >	A 1		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 34 0.28 13	B 13 0.37 16	> > > >	B 17	D 40 0.54 30	B 12 0.55 22	> > > >	C 21	A 5 0.20 10	B 16 0.61 103	> > > >	B 14	A 6 0.31 14	B 15 0.57 104	> > > >	B 13	B 15
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					D 33 0.38 12		> > > >	D 33		A 0 0.00 0	A 0 0.00 0	> > > >	A 0		A 9 0.01 0	A 0 0.00 0	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.4 Ten Years from Full Buildout (2035) Horizon

4.4.1 2035 Background Traffic Operations

Figure 4.5 illustrates the 2035 background traffic volumes, including traffic growth and other area development traffic volumes.

The 2035 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

Table 4.5 summarizes the results of the 2035 background traffic operations.

All intersections are forecast to operate without any problem movements.

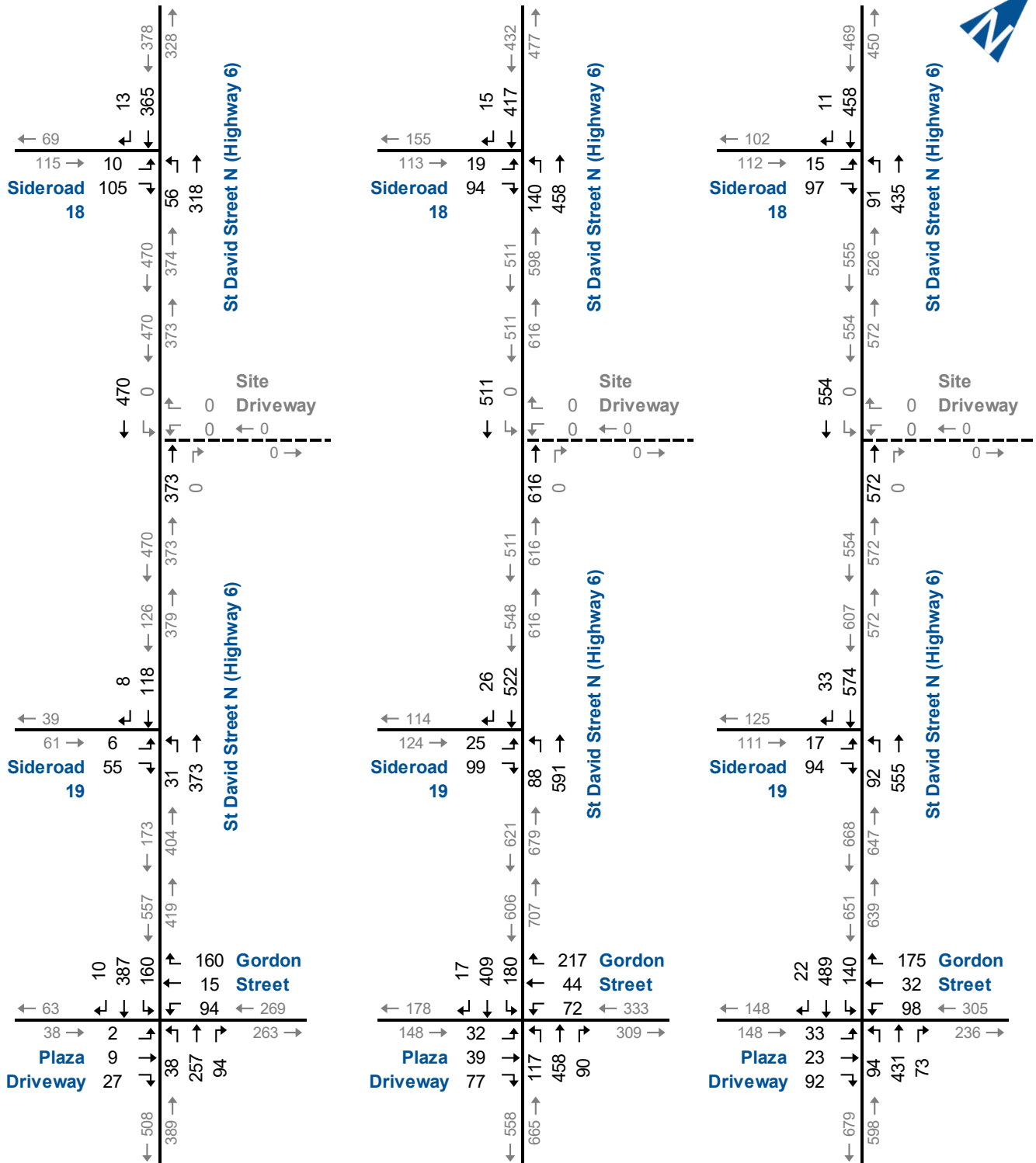
Appendix G contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Background 2035 Traffic Volumes Weekday AM, PM and SAT Peak Hours

TABLE 4.5: 2035 BACKGROUND TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 13 0.23 7	</> </> </> </>	> > > >	B 13						A 8 0.06 2	A 0 0.00 0	</> </> </> </>	A 1		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	B 10 0.09 2	</> </> </> </>	> > > >	B 10						A 8 0.03 1	A 0 0.00 0	</> </> </> </>	A 1		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.02 3	B 15 0.15 9	</> </> </> </>	> > > >	B 15	D 40 0.54 30	B 11 0.52 18	</> </> </> </>	> > > >	C 21	A 4 0.07 5	B 14 0.48 66	</> </> </> </>	B 13	A 5 0.30 17	B 11 0.45 75	</> </> </> </>	A 10	B 13
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q						C 20 0.22 6		</> </> </> </>	> > > >	C 20	A 0 0.00 0	A 0 0.00 0	</> </> </> </>	A 0	A 8 0.01 0	A 0 0.00 0		A 0	
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 19 0.34 11	</> </> </> </>	> > > >	C 19						A 9 0.15 4	A 0 0.00 0	</> </> </> </>	A 2		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	E 36 0.57 24	</> </> </> </>	> > > >	E 36						A 10 0.11 3	A 0 0.00 0	</> </> </> </>	A 1		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 42 0.40 14	B 16 0.43 20	</> </> </> </>	> > > >	C 22	D 39 0.47 24	B 15 0.68 28	</> </> </> </>	> > > >	C 20	A 5 0.24 12	B 18 0.69 122	</> </> </> </>	B 16	A 7 0.46 18	B 14 0.56 92	</> </> </> </>	B 12	B 16
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q						E 46 0.55 22		</> </> </> </>	> > > >	E 46	A 0 0.00 0	A 0 0.00 0	</> </> </> </>	A 0	A 9 0.02 1	A 0 0.00 0		A 0	
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 17 0.30 10	</> </> </> </>	> > > >	C 17						A 9 0.10 2	A 0 0.00 0	</> </> </> </>	A 2		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	D 29 0.46 17	</> </> </> </>	> > > >	D 29						A 10 0.12 3	A 0 0.00 0	</> </> </> </>	A 1		A 0 0.00 0	A 0 0.00 0	A 0		
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 35 0.32 14	B 12 0.38 17	</> </> </> </>	> > > >	B 18	D 40 0.56 31	B 12 0.56 23	</> </> </> </>	> > > >	C 21	A 5 0.22 10	B 17 0.64 112	</> </> </> </>	B 16	A 6 0.34 15	B 16 0.60 113	</> </> </> </>	B 14	B 16
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q						E 37 0.41 14		</> </> </> </>	> > > >	E 37	A 0 0.00 0	A 0 0.00 0	</> </> </> </>	A 0	A 9 0.01 0	A 0 0.00 0		A 0	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.4.2 Total 2035 Traffic Volumes

Figure 4.6 illustrates the 2035 total traffic volumes including trips generated by the background trips.

The total traffic volumes are determined by summation of background traffic volumes, and site generated traffic site.

The 2035 total traffic volumes have been analyzed using the same methodology as under existing condition and background condition.

Table 4.6 summarizes the results of the 2035 total traffic operations.

All intersections are forecast to operate without any problem movements.

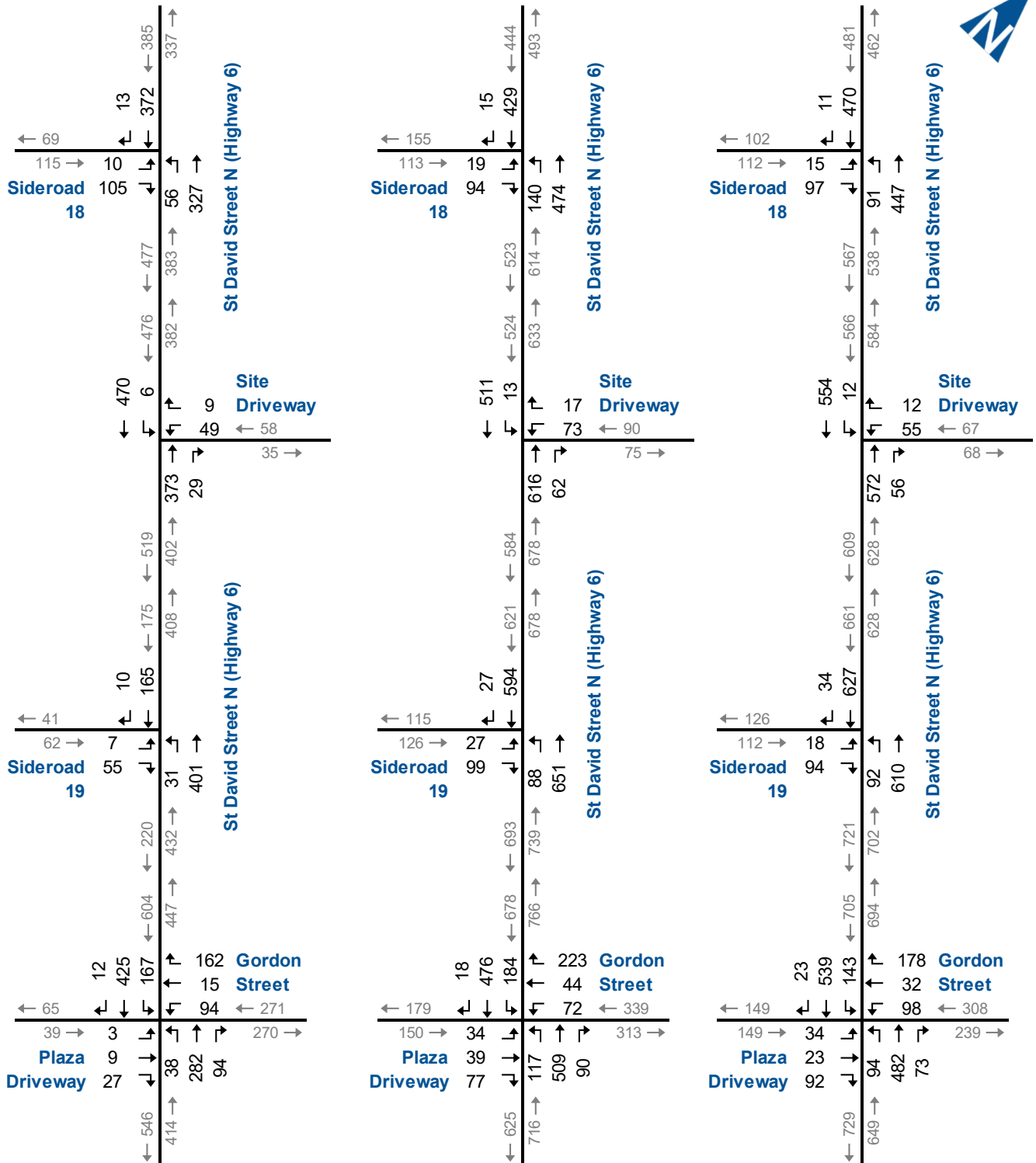
Appendix H contains the supporting detailed Synchro 11 reports.



AM PEAK HOUR

PM PEAK HOUR

SAT PEAK HOUR



Total 2035 Traffic Volumes Weekday AM, PM and SAT Peak Hours

TABLE 4.6: 2035 TOTAL TRAFFIC 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	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	B 13 0.23 7	> > > >	B 13							A 8 0.06 2	A 0 0.00 0			A 1 0.00 0		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	B 10 0.09 2	> > > >	B 10							A 8 0.03 1	A 0 0.00 0			A 1 0.00 0		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	C 27 0.02 3	B 15 0.15 9	> > > >	B 15	D 40 0.54 30	B 11 0.52 18	> > > >	C 21	A 4 0.07 5	B 14 0.48 66	> > > >	B 13	A 5 0.30 17	B 11 0.45 75	> > > >	A 10	B 13	
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					C 20 0.22 6		> > > >	C 20		A 0 0.00 0	A 0 0.00 0			A 0 0.01 0	A 0 0.00 0		A 0	
PM Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 20 0.35 11	> > > >	C 20							A 9 0.15 4	A 0 0.00 0			A 2		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	E 36 0.57 24	> > > >	E 36							A 10 0.11 3	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 42 0.40 14	B 16 0.43 20	> > > >	C 22	D 39 0.47 24	B 15 0.68 28	> > > >	C 20	A 5 0.24 12	B 18 0.69 122	> > > >	B 16	A 7 0.46 18	B 14 0.56 92	> > > >	B 12	B 16	
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					E 46 0.55 22		> > > >	E 46		A 0 0.00 0	A 0 0.00 0			A 0 0.02 1	A 0 0.00 0		A 0	
SAT Peak Hour	St. David Street North & Sideroad 18	TWSC	LOS Delay V/C Q	C 17 0.31 10	> > > >	C 17							A 9 0.10 2	A 0 0.00 0			A 2		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Sideroad 19	TWSC	LOS Delay V/C Q	D 29 0.46 17	> > > >	D 29							A 10 0.12 3	A 0 0.00 0			A 1		A 0 0.00 0	A 0 0.00 0	
	St. David Street North & Plaza Driveway/Gordon Street	TCS	LOS Delay V/C Q	D 35 0.32 14	B 12 0.38 17	> > > >	B 18	D 40 0.56 31	B 12 0.56 23	> > > >	C 21	A 5 0.22 10	B 17 0.64 112	> > > >	B 16	A 6 0.34 15	B 16 0.60 113	> > > >	B 14	B 16	
	St. David Street North & Site Driveway	TWSC	LOS Delay V/C Q					E 37 0.41 14		> > > >	E 37		A 0 0.00 0	A 0 0.00 0			A 0 0.01 0	A 0 0.00 0		A 0	

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
 Q - 95th Percentile Queue Length (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



5 Remedial Measures

The level of service conditions outlined in **Chapter 4** has not identified any areas of concern based on delay.

The following sections discuss the remedial measures necessary to accommodate the future build-out of the subject site.

5.1 Left-turn Lane Requirements

The need for designated left turning lanes at unsignalized intersections within the study area was assessed using MTO procedures detailed in the MTO Supplement to the TAC Geometric Design Guide².

The following intersections are considered for the left turn lane warrants:

- ▶ St. David Street North and Sideroad 18;
- ▶ St. David Street North and Sideroad 19; and
- ▶ St. David Street North and Site Driveway.

The design speed of 60 km/h was assumed with 10 km/h greater than the posted speed limit. Following left-turning movements for all horizon year for AM, PM and Saturday conditions have been assessed:

- ▶ Northbound left-turn at the intersection of St. David Street North and Sideroad 18, which currently has a left-turn lane with storage length of 100 metres;
- ▶ Northbound left-turn at the intersection of St. David Street North and Sideroad 19, which currently has a left-turn lane with storage length of 20 metres; and
- ▶ Southbound left-turn at the intersection of St. David Street North and Site Driveway.

Any left-turning percentages rounding to 0% when rounded to nearest 5% (i.e., less than 2.5%) was not assessed. The analysis, as shown in **Table 5.1**, indicates the followings:

- ▶ A northbound left-turn lane with 40 metres of storage length is forecast warranted on St. David Street North and Sideroad 18 during PM peak hour under 2035 horizon year regardless of the

² Ontario Ministry of Transportation. 2017. *Ministry of Transportation of Ontario Design Supplement for Transportation Association of Canada's Geometric Design Guide for Canadian Roads*. June 2017.



subject development. This is within the current left-turn storage length at this intersection;

- ▶ The northbound left-turn movement on St. David Street at Sideroad 19 is forecast to warrant a left-turn lane with 40 metres of storage under 2035 background conditions. This storage length increases an additional 10 metres (for a total of 50 metres) after the addition of the development traffic. The addition of development traffic is to the through movements only.

This exceeds the current storage length of 20 metres. However, as this left-turn lane is back-to-back with the southbound left-turn lane at Gordon Street, it can not be extended any further. It should also be noted that the 95th percentile queue length (as shown in Table 4.6) is not forecast to exceed 3 metres. Therefore, it is not recommended to extend this storage length.; and

- ▶ No southbound left-turn lane is forecast to be warranted at the intersection of St. David Street North and Site Driveway.

TABLE 5.1: LEFT-TURN STORAGE LENGTHS

Intersection	Study Period	Horizon Year	Storage Lane (m)	
			Background	Total
Sideroad 18	AM	2025	15	15
		2030	15	15
		2035	15	15
	PM	2025	30	30
		2030	30	30
		2035	40	40
	SAT	2025	25	25
		2030	25	25
		2035	25	25
Sideroad 19	AM	2025	Not Warranted	Not Warranted
		2030	Not Warranted	Not Warranted
		2035	Not Warranted	Not Warranted
	PM	2025	25	25
		2030	25	30
		2035	25	30
	SAT	2025	30	40
		2030	30	40
		2035	40	50

Figure 5.1A displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 18 for AM peak hour.



Figure 5.1B displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 18 for PM peak hour.

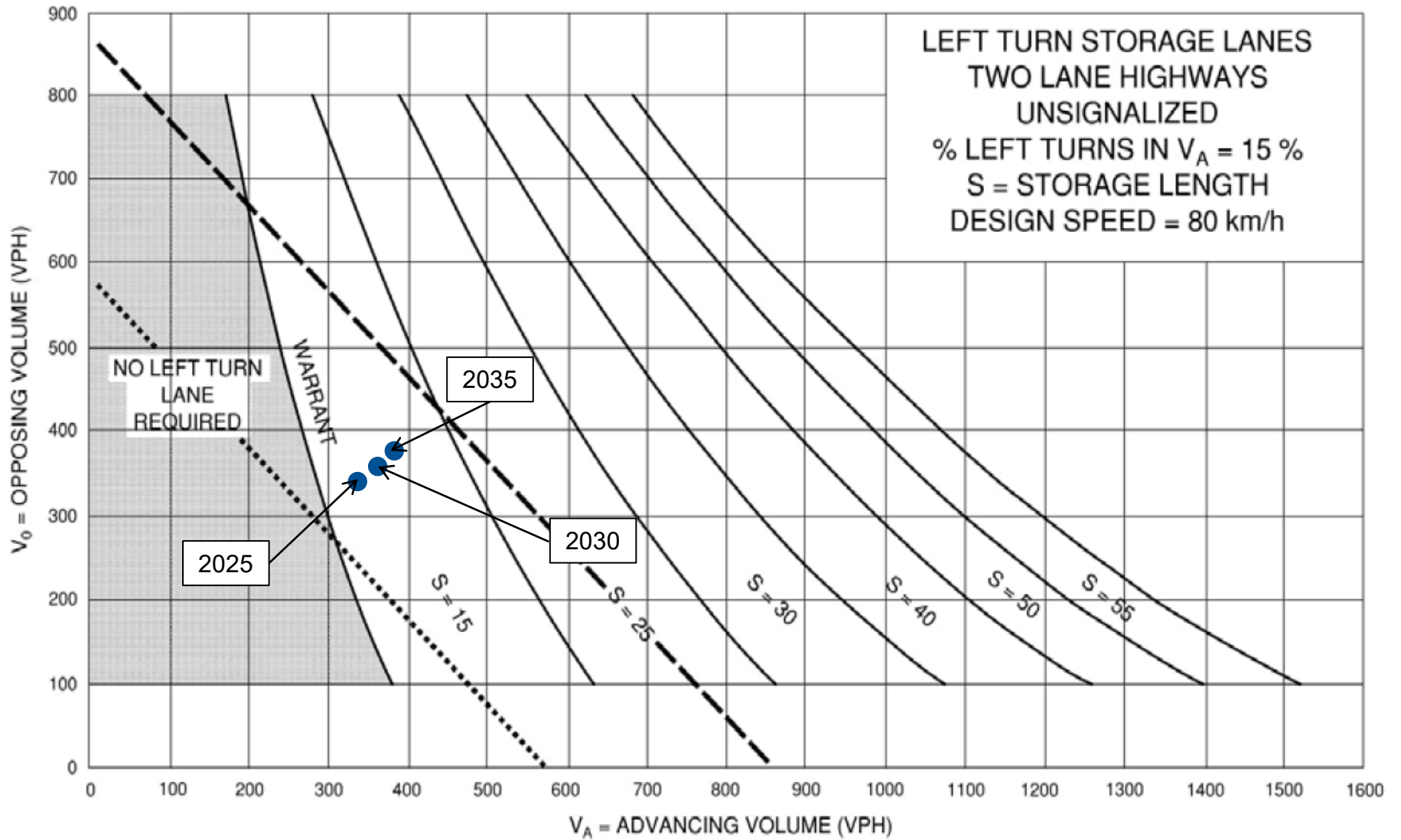
Figure 5.1C displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 18 for SAT peak hour.

Figure 5.2A displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 19 for AM peak hour.

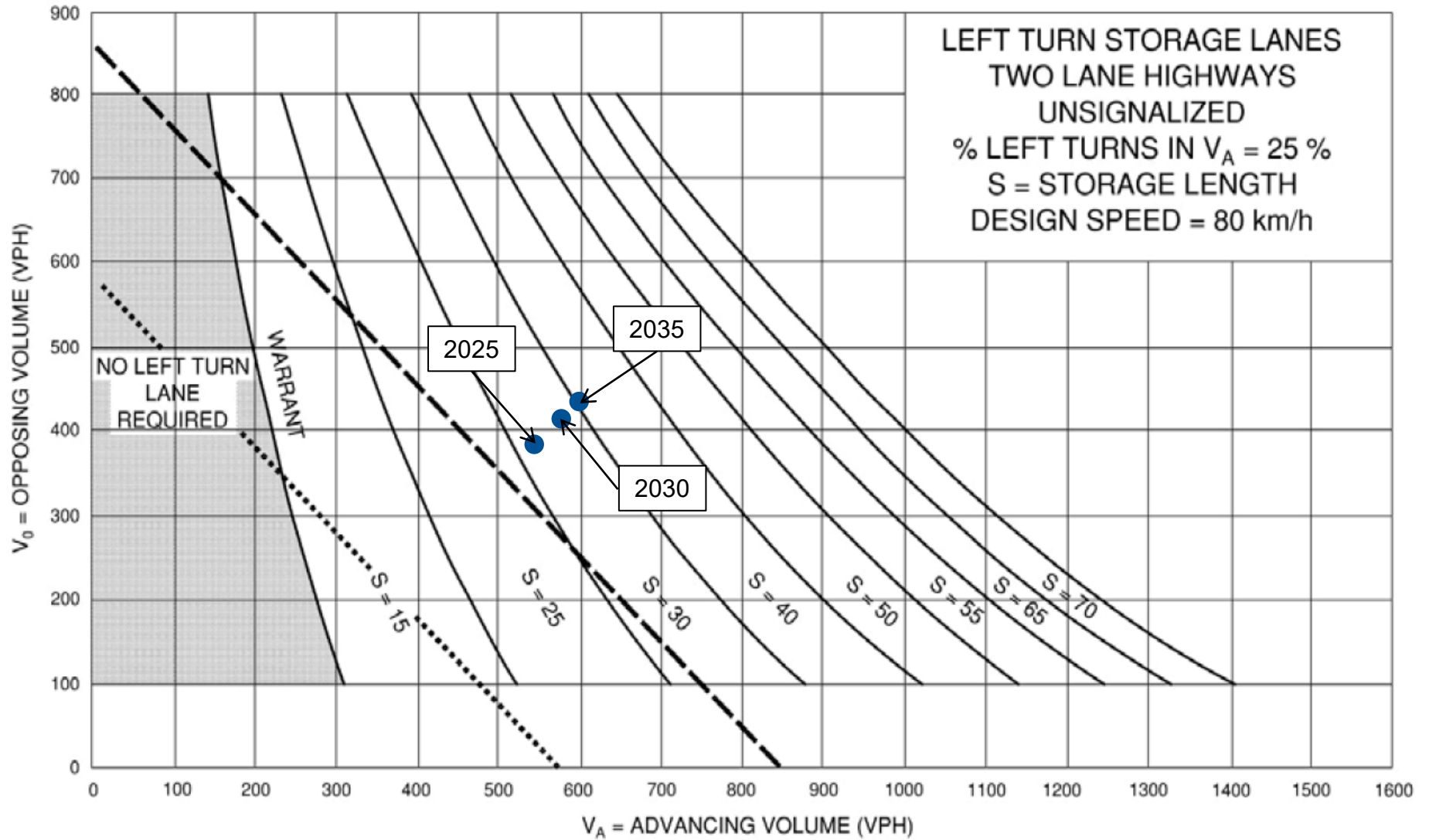
Figure 5.2B displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 19 for PM peak hour.

Figure 5.2C displays the left-turn lane warrant nomographs for the intersection of St. David Street North and Sideroad 19 for SAT peak hour.

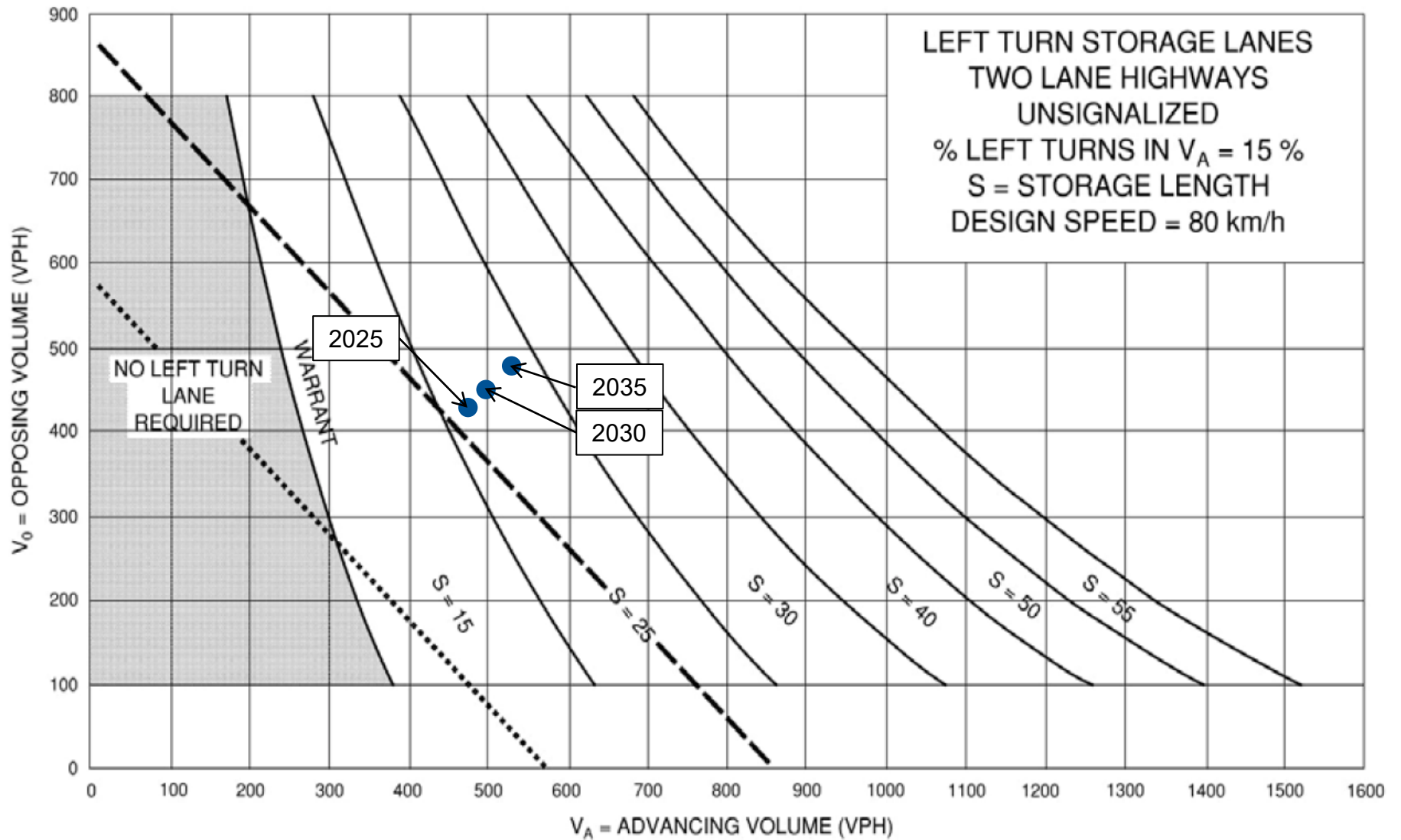




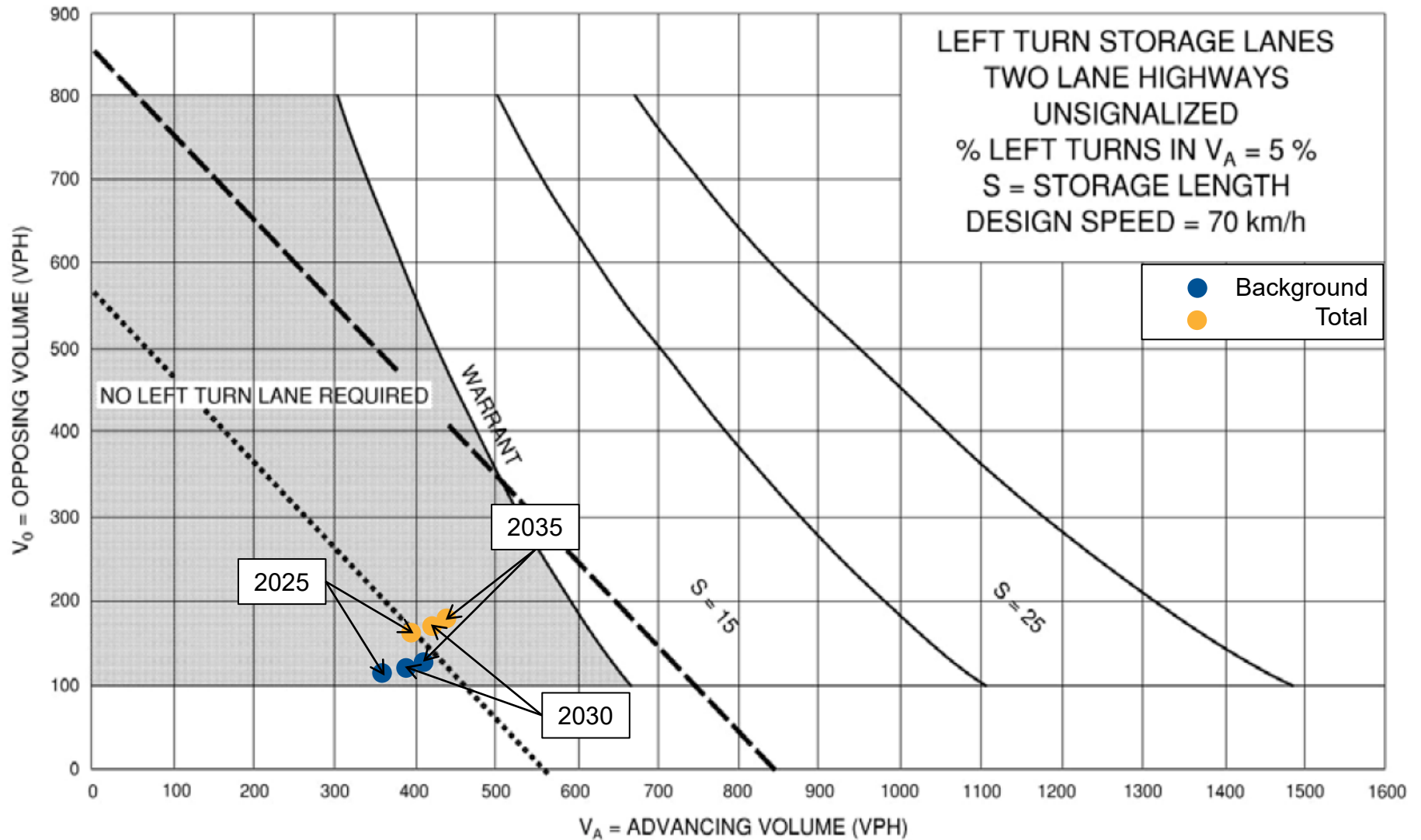
Left-turn Nomograph St. David Street North & Sideroad 18 AM Peak Hour



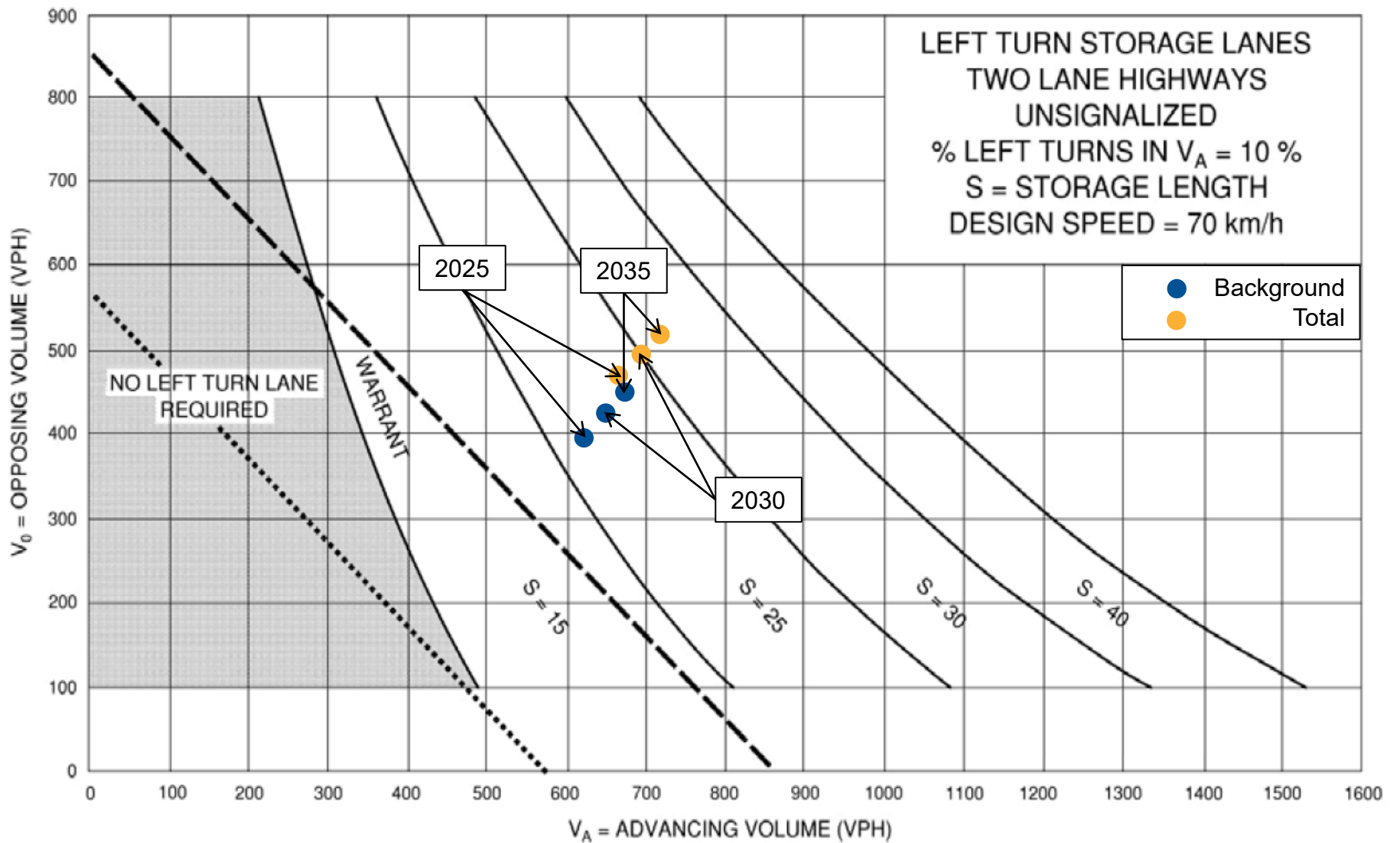
Left-turn Nomograph St. David Street North & Sideroad 18 PM Peak Hour



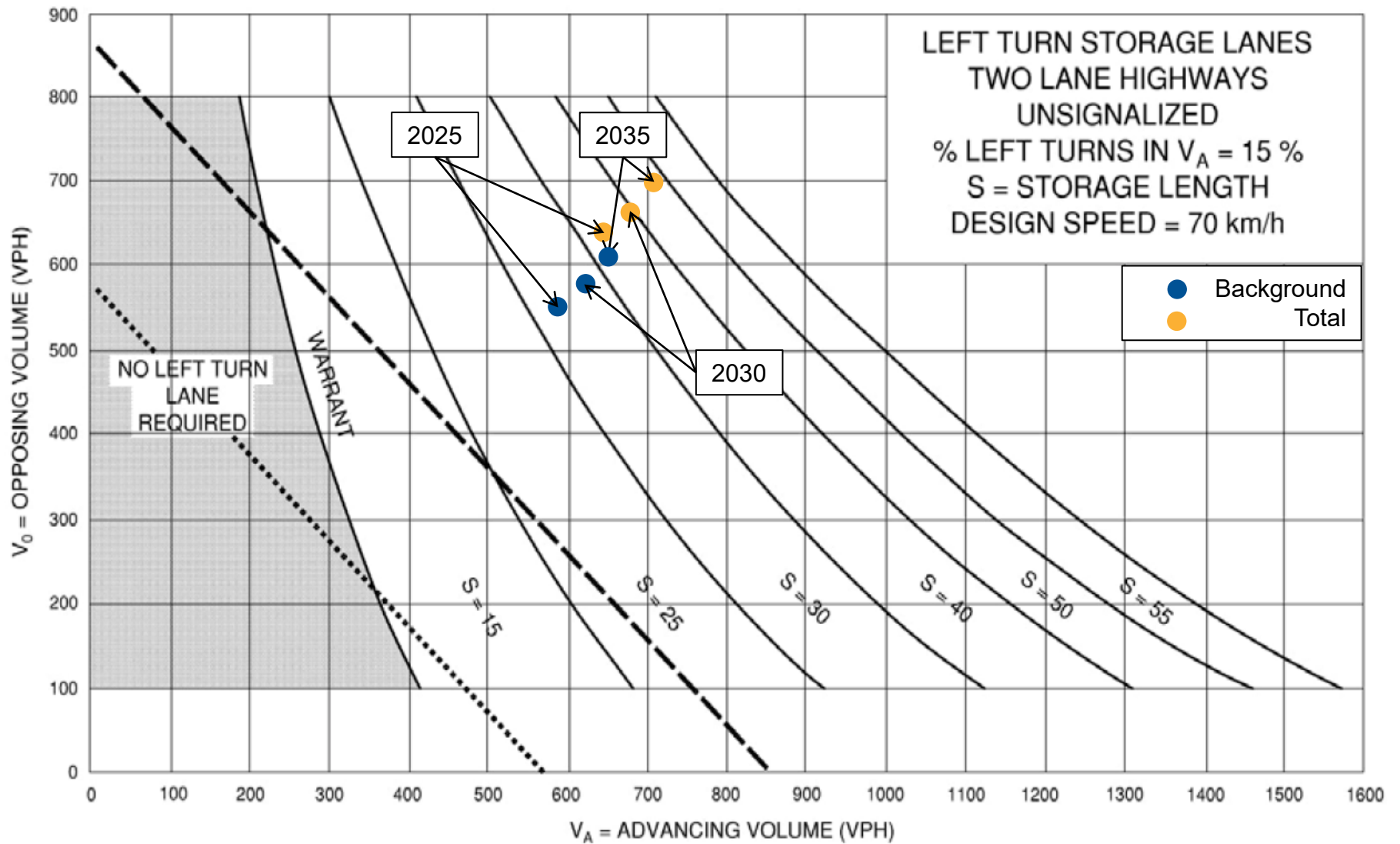
Left-turn Nomograph St. David Street North & Sideroad 18 Saturday Peak Hour



Left-turn Nomograph St. David Street North & Sideroad 19 AM Peak Hour



Left-turn Nomograph St. David Street North & Sideroad 19 PM Peak Hour



Left-turn Nomograph St. David Street North & Sideroad 19 Saturday Peak Hour

6 Parking Study for Commercial Area

6.1 Parking Supply

For the commercial development on the 950 St. David Street property, the proposed parking supply is proposed to consist of 53 off-street parking spaces. This equates supply rate of 1 space per 23.6 m² (254 ft²) GLA.

6.2 Parking Demand

6.2.1 Zoning By-Law

The Table 5A from the County of Wellington's Zoning By-Law³ contains the lists the requirements for different types of land uses. The table states under "retail store", 1 space per 20 m² (215 ft²) GLA requiring 63 parking spaces for a retail store of this area. With this rate, parking supplied is deficient by 10 spaces.

The subject development being a thrift store is different from a typical retail store since the operation of a thrift store requires a larger proportion of storage space, to receive donations, sort, and store which do not generate parking demand from shoppers. In fact, 52% (7018.6 ft²) of the store area is proposed to have thrift store specific usage. Therefore, it is expected that the site will attract less parking than that of a typical retail store and require fewer parking requirements.

From the ZBL Table 5A, "any commercial uses not otherwise specified" is only other possible fitting land use and it states a parking rate of 1 spacer per 30 m² (323 ft²) GLA. With this rate, 42 parking spaces are required and the subject site supply exceeds this by 11 spaces.

Figure 6.1 illustrates the specific usage of the commercial area.

³ Township of Centre Wellington Zoning By-law, County of Wellington, February 2019





950 St. David Street North Room Schedule

7 Conclusions and Recommendations

7.1 Conclusions

The main conclusions of this study are as follows:

- ▶ **Existing Traffic Conditions:** All study intersections are without notable movements during the AM, PM, and Saturday peak hours.
- ▶ **Development Generated Traffic:** The site is expected to generate a total of 93 AM peak hour trips, 165 PM peak hour trips, and 135 Saturday peak hour trips at completion of full build-out.
- ▶ **Background Traffic Operations:** All observed intersections are forecast to operate without any problem movements for all horizon years.
- ▶ **Total Traffic Operations:** All intersections are forecast to operate without any problem movements.
- ▶ **Mitigating Measures:** The results of left-turn lane warrant analysis are as follows:
 - the current storage length of the northbound left-turn lane on St. David Street at Sideroad 18 is forecast to be adequate;
 - The northbound left-turn movement on St. David Street at Sideroad 19 is forecast to warrant a left-turn lane with 40 metres of storage under 2035 background conditions. This storage length increases an additional 10 metres (for a total of 50 metres) after the addition of the development traffic. This exceeds the current storage length of 20 metres. However, as this left-turn lane is back-to-back with the southbound left-turn lane at Gordon Street, it can not be extended any further. In addition, the 95th percentile queue forecasts do not exceed 3 metres; and
 - No left-turn lane is forecast to be warranted at the intersection of St. David Street North and Site Driveway.
- ▶ **Parking Study:** It is forecast that the 53 parking spaces (1 space per 23.6 m²) proposed for the commercial site at 950 St. David Street will be adequate, as the thrift store building has warehousing space for donations and sorting which will not generate parking demand from shoppers. Therefore, the parking demand is expected to be less than that of a typical retail store. The Zoning By-law parking requirement for a retail store is 1 space per 20 m² and 1 space per 30 m² for “any commercial



uses not otherwise specified”. As the proposed parking rate falls between these two uses, it is expected that the proposed parking will be adequate for this unique use as a thrift store.

7.2 Recommendations

No improvements to the road network are recommended for the approval of this development. It is also recommended that the proposed parking rate be approved for the commercial space on 950 St. David Street.



Appendix A

Existing Turning Movement Count Data





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St David Street North & Sideroad
18
Site Code: 210066
Start Date: 03/16/2021
Page No: 1

Turning Movement Data

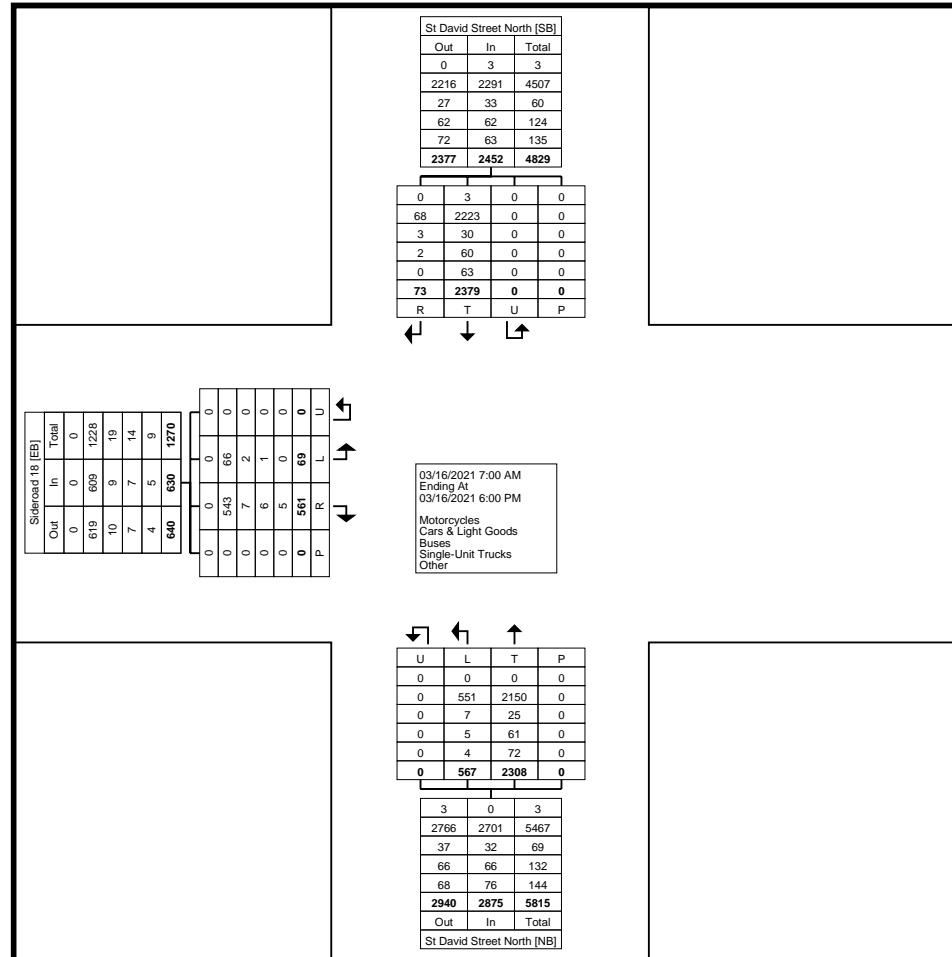
Start Time	Sideroad 18 Eastbound					St David Street North Northbound					St David Street North Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	15	0	0	16	3	48	0	0	51	60	2	0	0	62	129
7:15 AM	4	14	0	0	18	11	69	0	0	80	56	2	0	0	58	156
7:30 AM	1	21	0	0	22	10	87	0	0	97	91	5	0	0	96	215
7:45 AM	2	17	0	0	19	10	68	0	0	78	76	1	0	0	77	174
Hourly Total	8	67	0	0	75	34	272	0	0	306	283	10	0	0	293	674
8:00 AM	5	26	0	0	31	19	72	0	0	91	73	1	0	0	74	196
8:15 AM	1	28	0	0	29	10	52	0	0	62	81	4	0	0	85	176
8:30 AM	1	33	0	0	34	26	37	0	0	63	79	4	0	0	83	180
8:45 AM	1	17	0	0	18	17	49	0	0	66	89	3	0	0	92	176
Hourly Total	8	104	0	0	112	72	210	0	0	282	322	12	0	0	334	728
9:00 AM	0	21	0	0	21	23	49	0	0	72	67	1	0	0	68	161
9:15 AM	3	6	0	0	9	10	54	0	0	64	66	1	0	0	67	140
9:30 AM	0	9	0	0	9	4	62	0	0	66	65	0	0	0	65	140
9:45 AM	2	12	0	0	14	13	49	0	0	62	83	0	0	0	83	159
Hourly Total	5	48	0	0	53	50	214	0	0	264	281	2	0	0	283	600
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	0	11	0	0	11	19	61	0	0	80	48	2	0	0	50	141
12:15 PM	3	23	0	0	26	19	67	0	0	86	51	2	0	0	53	165
12:30 PM	0	18	0	0	18	11	62	0	0	73	77	0	0	0	77	168
12:45 PM	3	22	0	0	25	26	58	0	0	84	57	1	0	0	58	167
Hourly Total	6	74	0	0	80	75	248	0	0	323	233	5	0	0	238	641
1:00 PM	0	12	0	0	12	15	59	0	0	74	72	0	0	0	72	158
1:15 PM	1	12	0	0	13	3	65	0	0	68	55	3	0	0	58	139
1:30 PM	2	12	0	0	14	9	54	0	0	63	50	0	0	0	50	127
1:45 PM	1	11	0	0	12	17	49	0	0	66	72	3	0	0	75	153
Hourly Total	4	47	0	0	51	44	227	0	0	271	249	6	0	0	255	577
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	16	0	0	19	10	75	0	0	85	82	2	0	0	84	188
3:15 PM	1	16	0	0	17	20	86	0	0	106	85	3	0	0	88	211
3:30 PM	4	15	0	0	19	14	97	0	0	111	87	0	0	0	87	217
3:45 PM	3	21	0	0	24	29	87	0	0	116	106	6	0	0	112	252
Hourly Total	11	68	0	0	79	73	345	0	0	418	360	11	0	0	371	868
4:00 PM	2	15	0	0	17	28	118	0	0	146	98	3	0	0	101	264
4:15 PM	2	24	0	0	26	35	88	0	0	123	72	1	0	0	73	222
4:30 PM	10	23	0	0	33	31	109	0	0	140	90	3	0	0	93	266
4:45 PM	4	27	0	0	31	27	90	0	0	117	76	4	0	0	80	228



Paradigm Transportation Solutions Limited
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Cambridge, Ontario, Canada N1R 8J8
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Count Name: St David Street North & Sideroad
18
Site Code: 210066
Start Date: 03/16/2021
Page No: 3



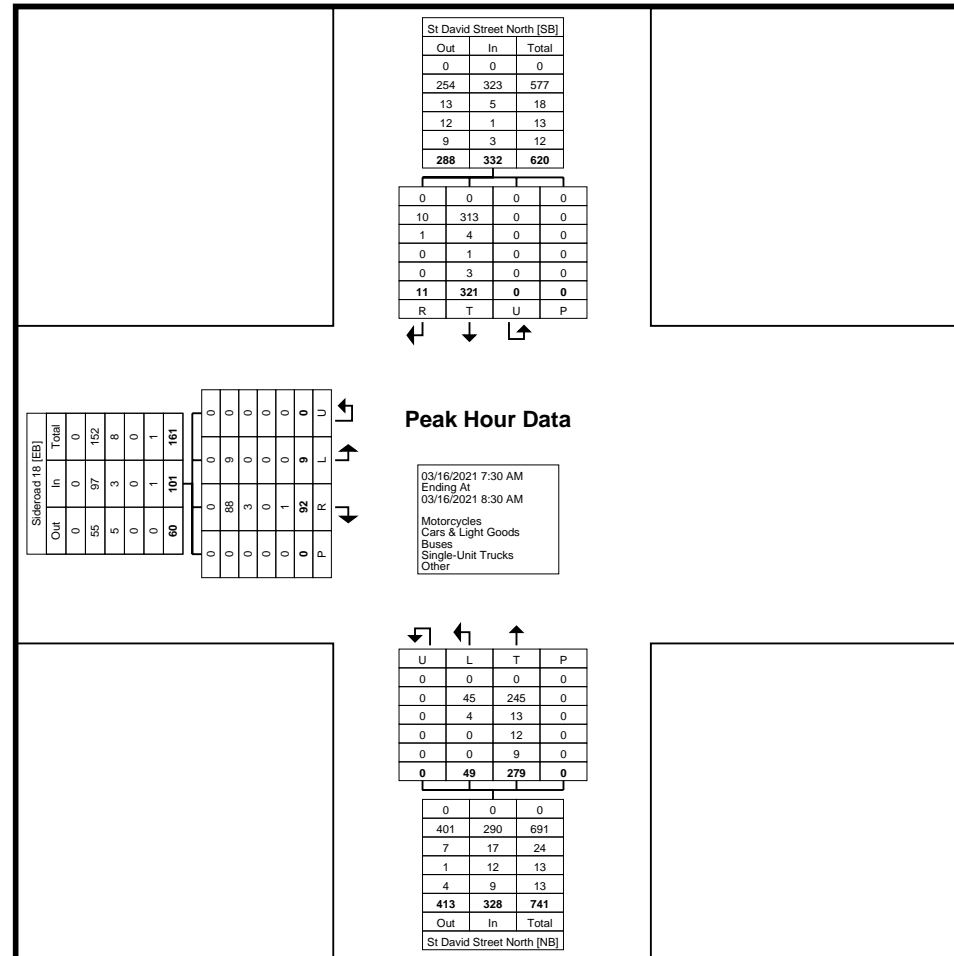
Turning Movement Data Plot



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Count Name: St David Street North & Sideroad
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Page No: 5



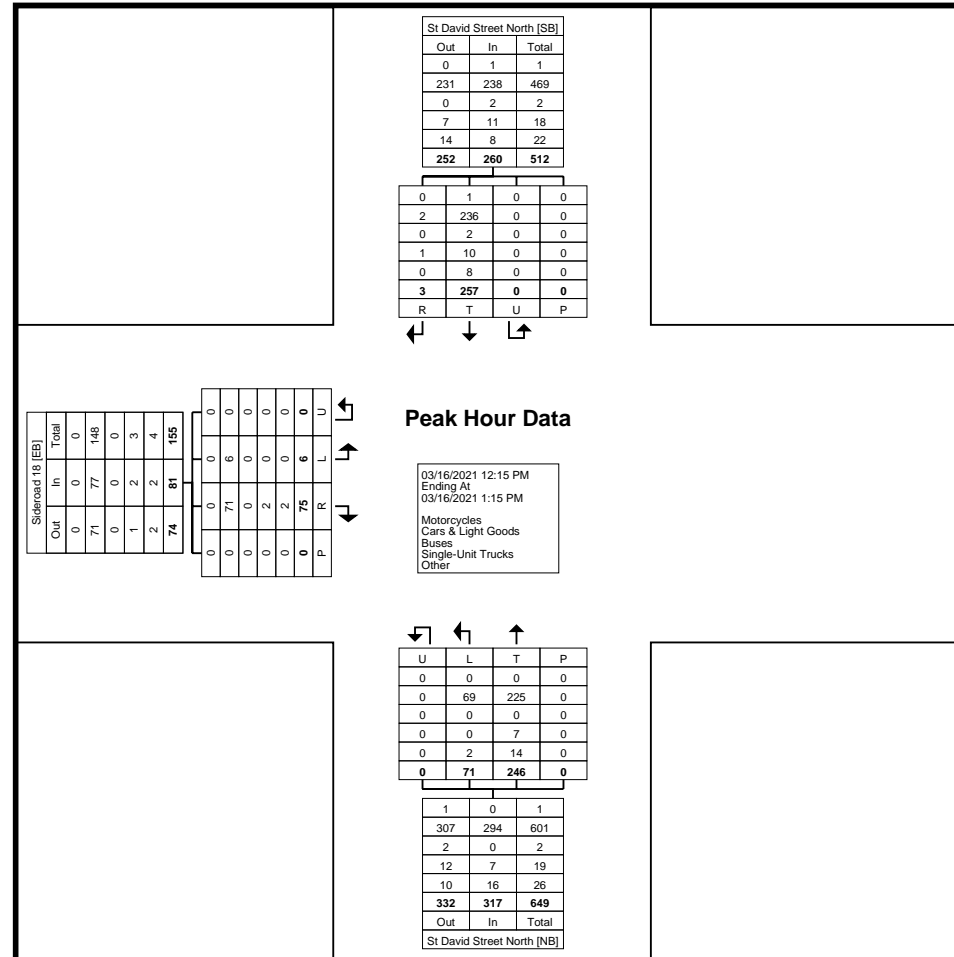
Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: St David Street North & Sideroad
18
Site Code: 210066
Start Date: 03/16/2021
Page No: 7



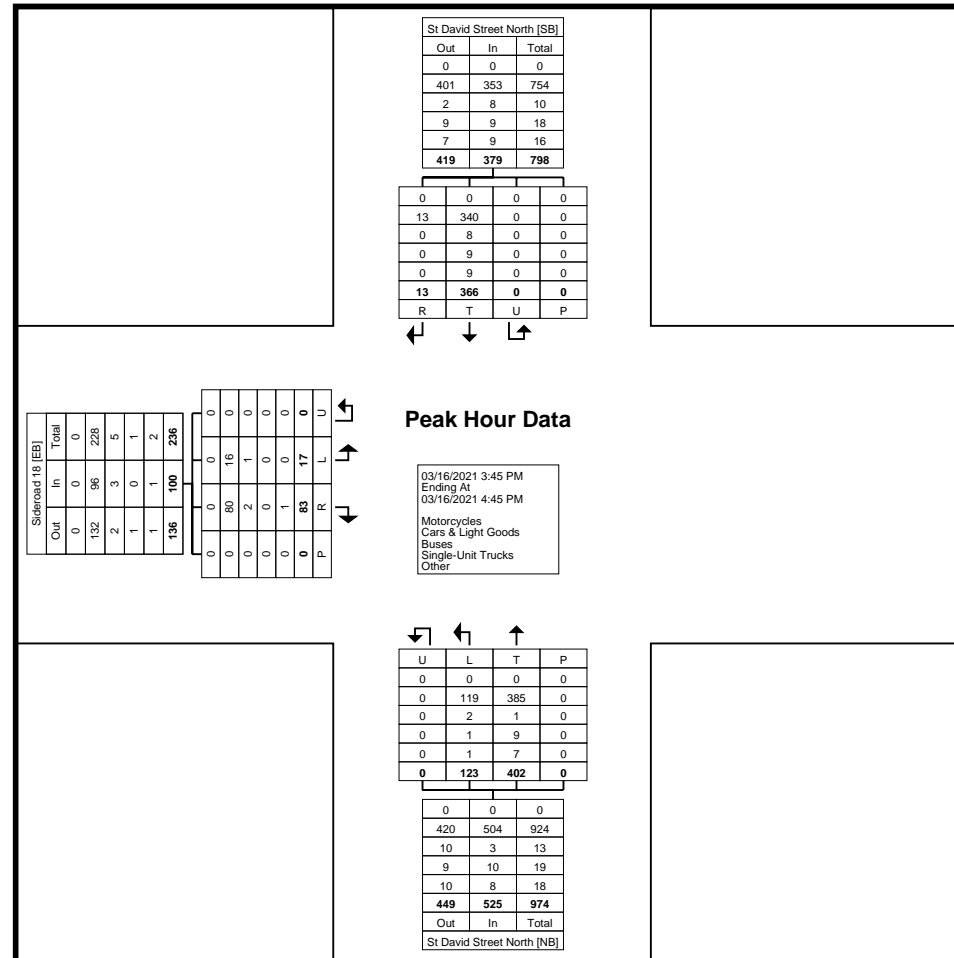
Turning Movement Peak Hour Data Plot (12:15 PM)



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Count Name: St David Street North & Sideroad
18
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Turning Movement Peak Hour Data Plot (3:45 PM)



Paradigm Transportation Solutions Limited
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Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St David Street North &
Side Road 18 -Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 1

Turning Movement Data

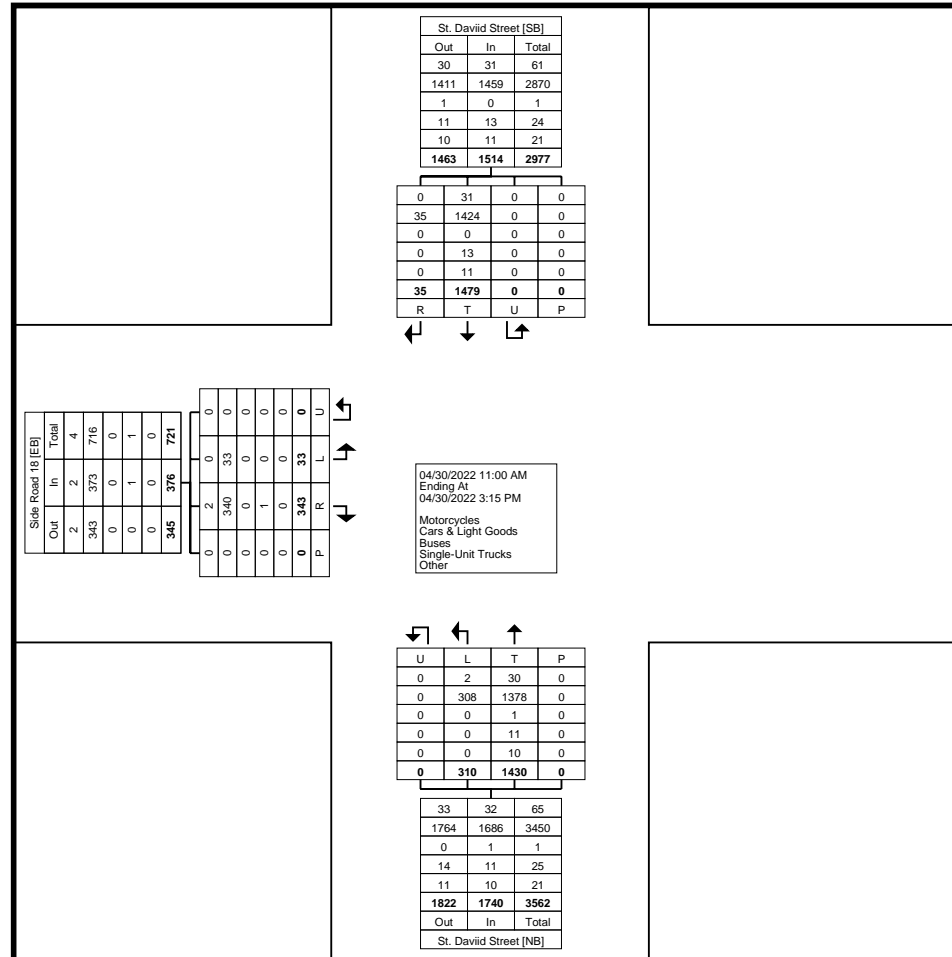
Start Time	Side Road 18 Eastbound					St. David Street Northbound					St. David Street Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	4	27	0	0	31	16	99	0	0	115	86	1	0	0	87	233
11:15 AM	2	15	0	0	17	21	85	0	0	106	102	3	0	0	105	228
11:30 AM	5	17	0	0	22	20	105	0	0	125	106	3	0	0	109	256
11:45 AM	2	26	0	0	28	23	93	0	0	116	108	3	0	0	111	255
Hourly Total	13	85	0	0	98	80	382	0	0	462	402	10	0	0	412	972
12:00 PM	2	22	0	0	24	24	77	0	0	101	94	1	0	0	95	220
12:15 PM	0	23	0	0	23	19	88	0	0	107	85	1	0	0	86	216
12:30 PM	3	22	0	0	25	18	107	0	0	125	91	2	0	0	93	243
12:45 PM	1	24	0	0	25	15	86	0	0	101	88	4	0	0	92	218
Hourly Total	6	91	0	0	97	76	358	0	0	434	358	8	0	0	366	897
1:00 PM	0	19	0	0	19	23	78	0	0	101	84	3	0	0	87	207
1:15 PM	4	27	0	0	31	20	108	0	0	128	83	3	0	0	86	245
1:30 PM	3	29	0	0	32	16	94	0	0	110	105	1	0	0	106	248
1:45 PM	2	31	0	0	33	19	93	0	0	112	91	4	0	0	95	240
Hourly Total	9	106	0	0	115	78	373	0	0	451	363	11	0	0	374	940
2:00 PM	2	11	0	0	13	20	91	0	0	111	77	1	0	0	78	202
2:15 PM	0	17	0	0	17	20	71	0	0	91	74	0	0	0	74	182
2:30 PM	2	14	0	0	16	14	69	0	0	83	118	1	0	0	119	218
2:45 PM	1	19	0	0	20	22	86	0	0	108	87	4	0	0	91	219
Hourly Total	5	61	0	0	66	76	317	0	0	393	356	6	0	0	362	821
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	33	343	0	0	376	310	1430	0	0	1740	1479	35	0	0	1514	3630
Approach %	8.8	91.2	0.0	-	-	17.8	82.2	0.0	-	-	97.7	2.3	0.0	-	-	-
Total %	0.9	9.4	0.0	-	10.4	8.5	39.4	0.0	-	47.9	40.7	1.0	0.0	-	41.7	-
Motorcycles	0	2	0	-	2	2	30	0	-	32	31	0	0	-	31	65
% Motorcycles	0.0	0.6	-	-	0.5	0.6	2.1	-	-	1.8	2.1	0.0	-	-	2.0	1.8
Cars & Light Goods	33	340	0	-	373	308	1378	0	-	1686	1424	35	0	-	1459	3518
% Cars & Light Goods	100.0	99.1	-	-	99.2	99.4	96.4	-	-	96.9	96.3	100.0	-	-	96.4	96.9
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	0	11	0	-	11	13	0	0	-	13	25
% Single-Unit Trucks	0.0	0.3	-	-	0.3	0.0	0.8	-	-	0.6	0.9	0.0	-	-	0.9	0.7
Articulated Trucks	0	0	0	-	0	0	10	0	-	10	11	0	0	-	11	21
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.6	0.7	0.0	-	-	0.7	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



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5A-150 Pinebush Rd

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Count Name: St David Street North &
Side Road 18 -Saturday
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Start Date: 04/30/2022
Page No: 3



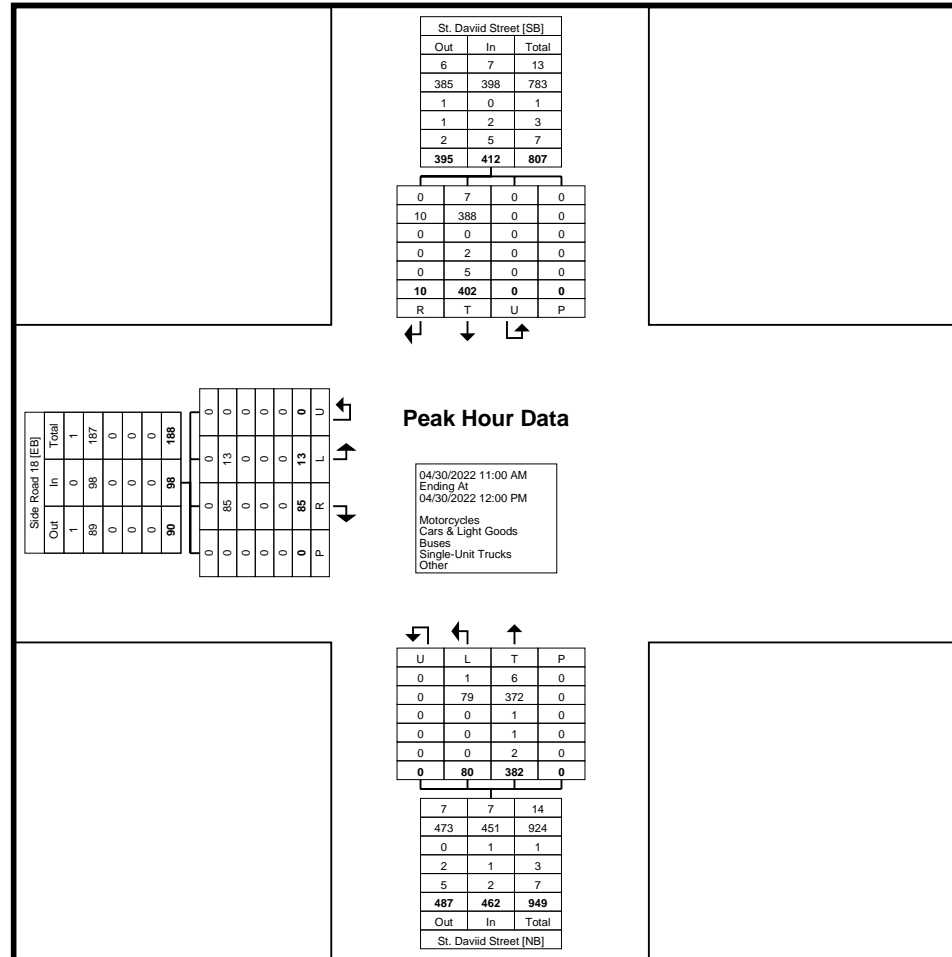
Turning Movement Data Plot



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Page No: 5



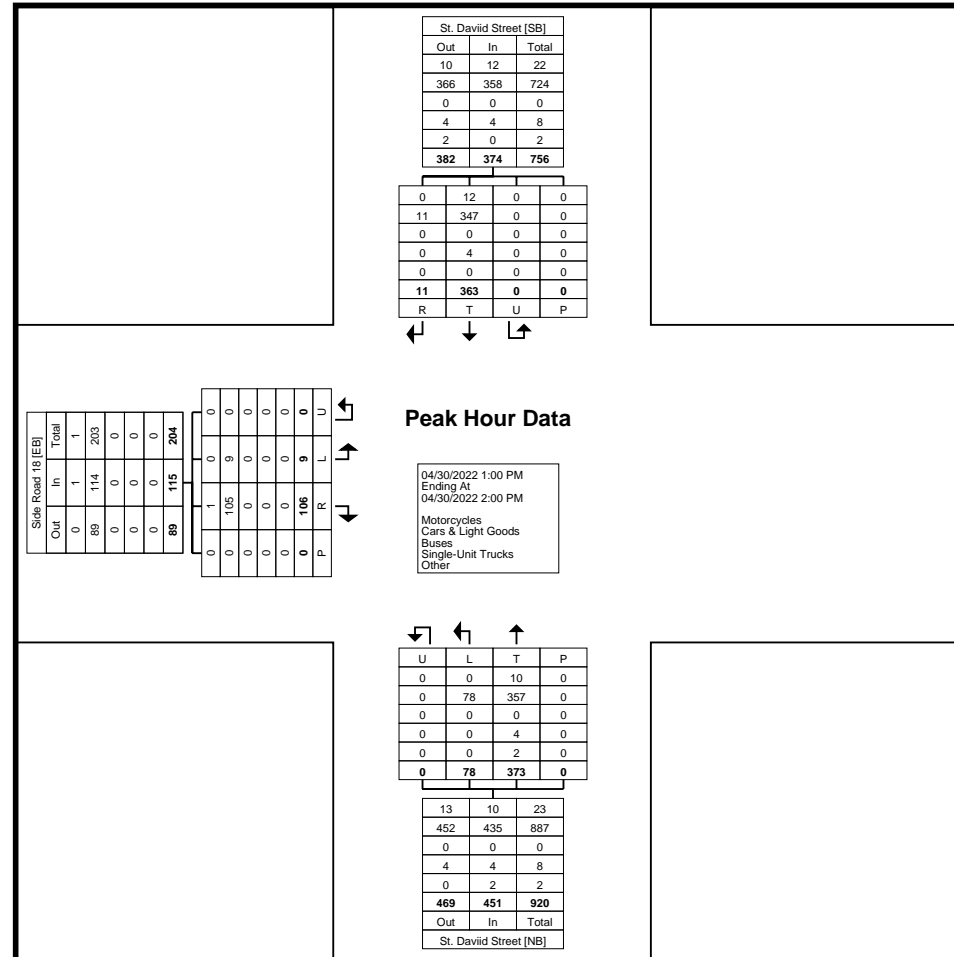
Turning Movement Peak Hour Data Plot (11:00 AM)



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Count Name: St David Street North &
Side Road 18 -Saturday
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Start Date: 04/30/2022
Page No: 7



Turning Movement Peak Hour Data Plot (1:00 PM)



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519-896-3163 ehong@ptsl.com

Count Name: St David Street North & Sideroad
19
Site Code: 210066
Start Date: 03/16/2021
Page No: 1

Turning Movement Data

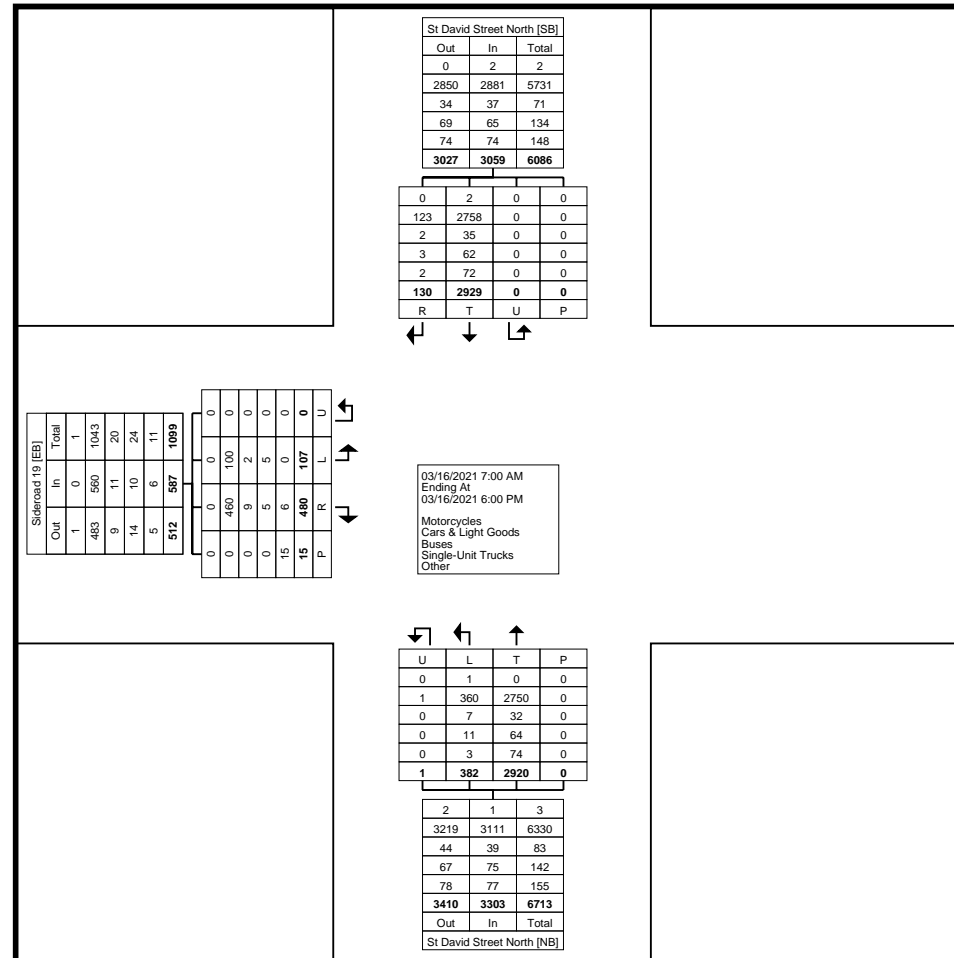
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	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	7	0	0	8	7	60	0	0	67	76	0	0	0	76	151
7:15 AM	0	10	0	0	10	4	75	0	0	79	67	0	0	0	67	156
7:30 AM	0	10	0	0	10	4	95	0	0	99	107	1	0	0	108	217
7:45 AM	0	11	0	2	11	6	78	0	0	84	90	2	0	0	92	187
Hourly Total	1	38	0	2	39	21	308	0	0	329	340	3	0	0	343	711
8:00 AM	1	15	0	0	16	7	92	1	0	100	97	5	0	0	102	218
8:15 AM	4	12	0	0	16	10	63	0	0	73	104	7	0	0	111	200
8:30 AM	1	13	0	0	14	5	65	0	0	70	114	3	0	0	117	201
8:45 AM	0	11	0	0	11	14	71	0	0	85	102	4	0	0	106	202
Hourly Total	6	51	0	0	57	36	291	1	0	328	417	19	0	0	436	821
9:00 AM	3	16	0	0	19	11	73	0	0	84	88	1	0	0	89	192
9:15 AM	1	9	0	0	10	4	66	0	0	70	74	0	0	0	74	154
9:30 AM	3	10	0	0	13	11	70	0	0	81	65	5	0	0	70	164
9:45 AM	1	11	0	0	12	7	64	0	0	71	88	6	0	0	94	177
Hourly Total	8	46	0	0	54	33	273	0	0	306	315	12	0	0	327	687
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	6	20	0	0	26	10	83	0	0	93	66	2	0	0	68	187
12:15 PM	4	12	0	0	16	14	91	0	0	105	76	5	0	0	81	202
12:30 PM	1	13	0	0	14	9	83	0	0	92	99	6	0	0	105	211
12:45 PM	1	11	0	1	12	12	91	0	0	103	88	4	0	0	92	207
Hourly Total	12	56	0	1	68	45	348	0	0	393	329	17	0	0	346	807
1:00 PM	4	12	0	0	16	13	78	0	0	91	83	5	0	0	88	195
1:15 PM	3	17	0	0	20	17	74	0	0	91	66	5	0	0	71	182
1:30 PM	4	18	0	0	22	10	69	0	0	79	70	4	0	0	74	175
1:45 PM	2	14	0	2	16	9	74	0	0	83	85	5	0	0	90	189
Hourly Total	13	61	0	2	74	49	295	0	0	344	304	19	0	0	323	741
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	8	19	0	0	27	15	87	0	0	102	99	5	0	0	104	233
3:15 PM	9	18	0	2	27	15	100	0	0	115	109	3	0	0	112	254
3:30 PM	2	20	0	0	22	16	116	0	0	132	102	4	0	0	106	260
3:45 PM	5	19	0	1	24	20	117	0	0	137	136	10	0	0	146	307
Hourly Total	24	76	0	3	100	66	420	0	0	486	446	22	0	0	468	1054
4:00 PM	4	23	0	1	27	22	146	0	0	168	115	4	0	0	119	314
4:15 PM	6	23	0	2	29	18	120	0	0	138	89	8	0	0	97	264
4:30 PM	7	22	0	1	29	17	136	0	0	153	119	1	0	0	120	302
4:45 PM	5	27	0	0	32	22	115	0	0	137	84	7	0	0	91	260



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Count Name: St David Street North & Sideroad
19
Site Code: 210066
Start Date: 03/16/2021
Page No: 3



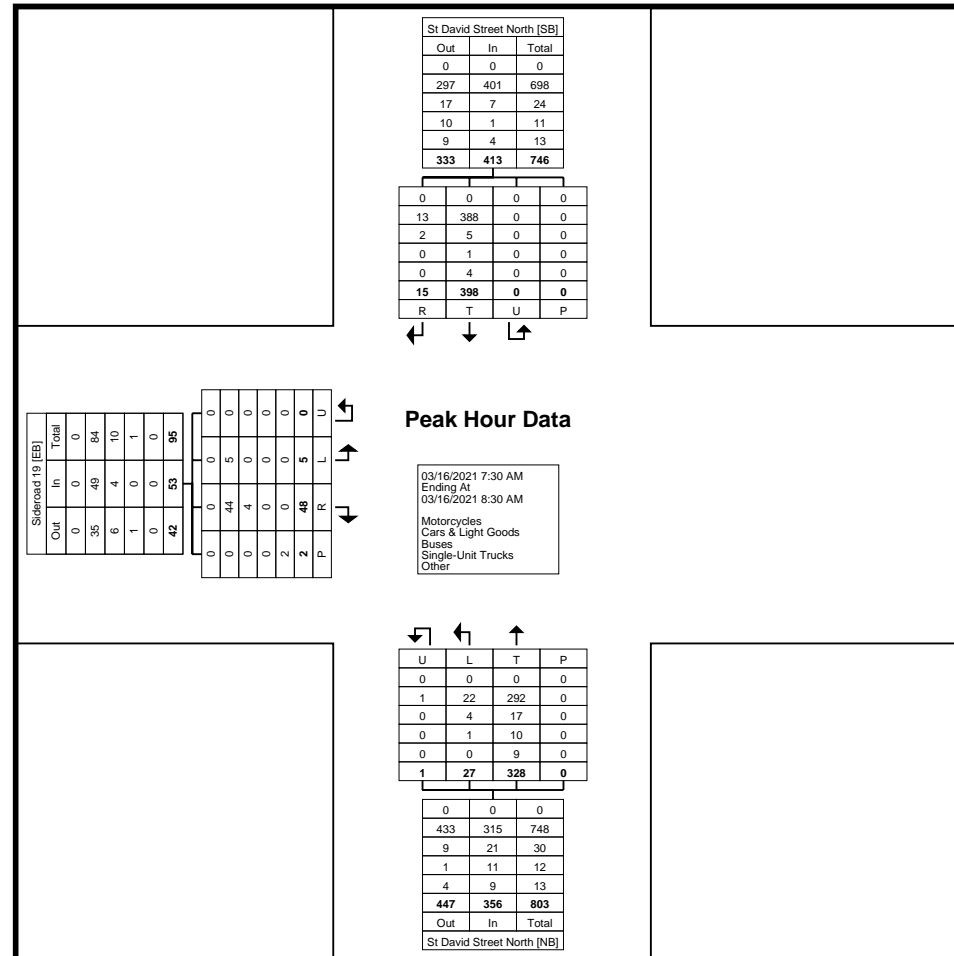
Turning Movement Data Plot



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Start Date: 03/16/2021
Page No: 5



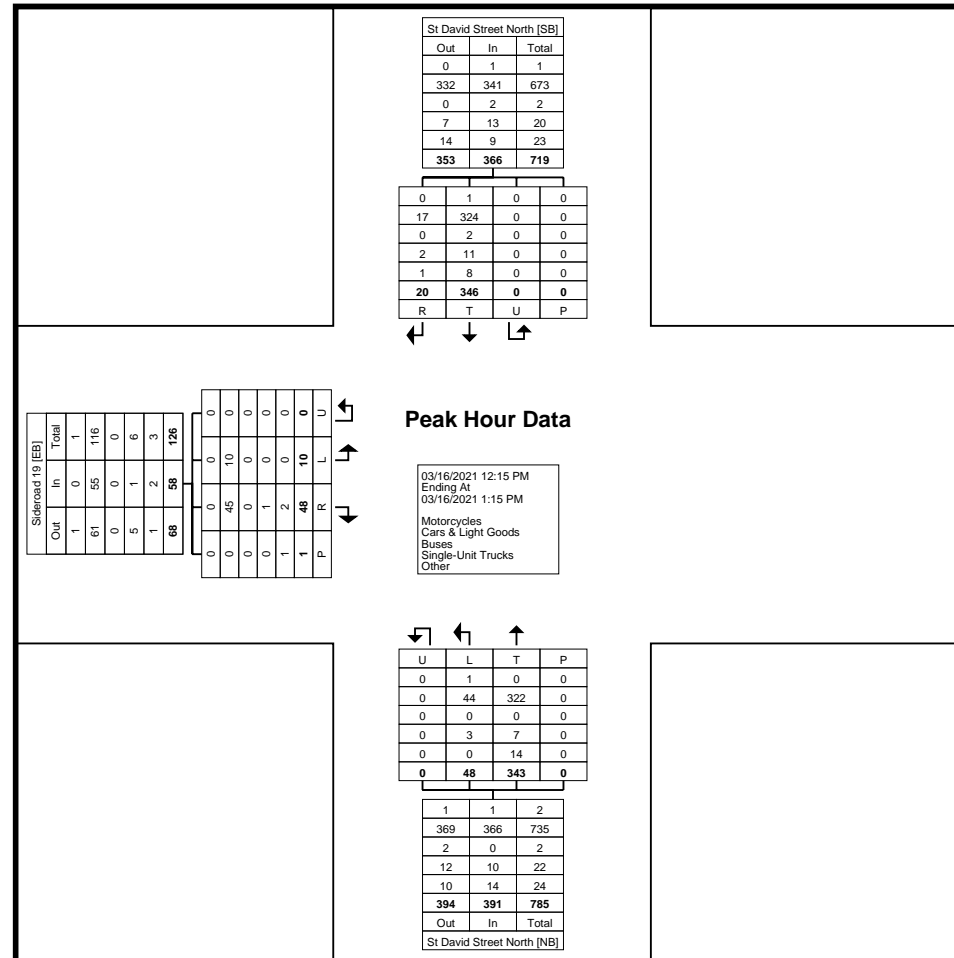
Turning Movement Peak Hour Data Plot (7:30 AM)



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5A-150 Pinebush Rd

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519-896-3163 ehong@ptsl.com

Count Name: St David Street North & Sideroad
19
Site Code: 210066
Start Date: 03/16/2021
Page No: 7



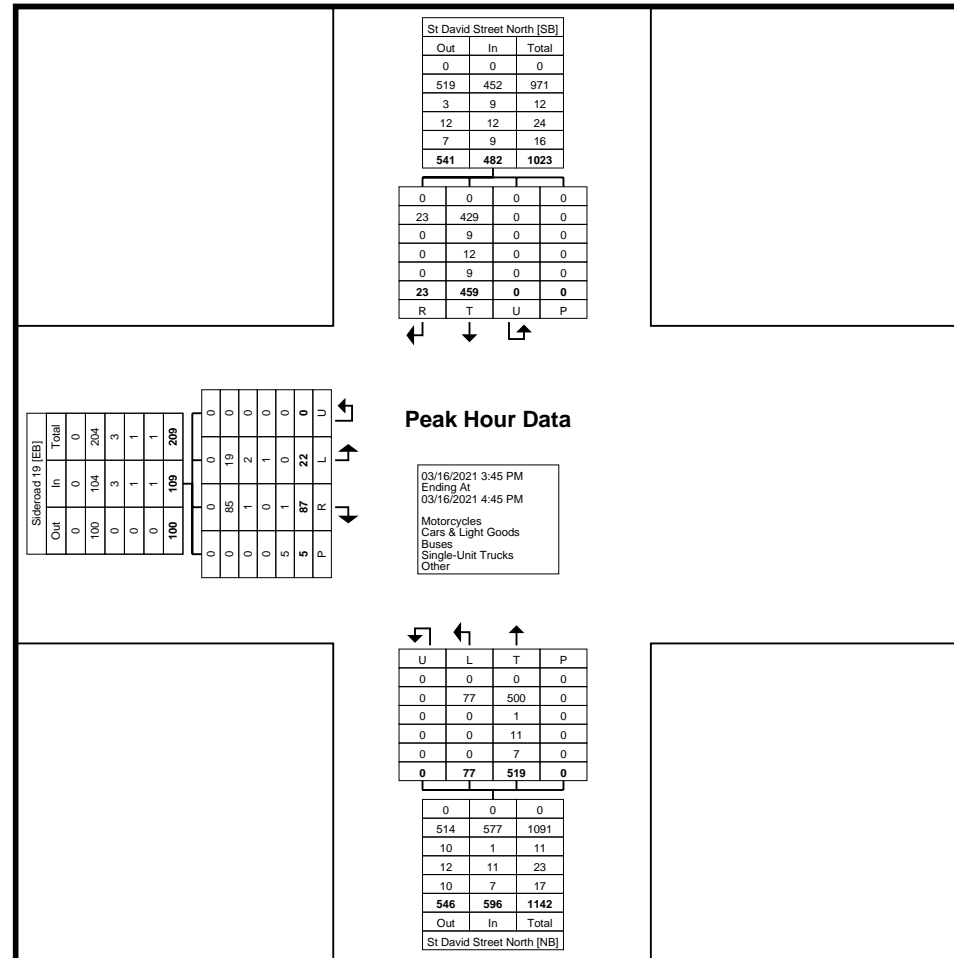
Turning Movement Peak Hour Data Plot (12:15 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St David Street North & Sideroad
19
Site Code: 210066
Start Date: 03/16/2021
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Turning Movement Peak Hour Data Plot (3:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St. David Street & Side Road 19 -
Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 1

Turning Movement Data

Start Time	Side Road 19 Eastbound					St. David Street Northbound					St. David Street Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	3	29	0	0	32	16	114	0	0	130	126	7	0	0	133	295
11:15 AM	0	20	0	1	20	17	115	0	0	132	124	5	0	0	129	281
11:30 AM	6	15	0	1	21	20	144	0	0	164	115	11	0	0	126	311
11:45 AM	6	19	0	0	25	28	115	0	0	143	139	6	0	0	145	313
Hourly Total	15	83	0	2	98	81	488	0	0	569	504	29	0	0	533	1200
12:00 PM	4	17	0	1	21	21	113	0	0	134	115	2	0	0	117	272
12:15 PM	3	23	0	0	26	16	105	0	0	121	111	6	0	0	117	264
12:30 PM	5	16	0	2	21	17	129	0	0	146	116	9	0	0	125	292
12:45 PM	3	10	0	5	13	25	106	0	0	131	131	4	0	2	135	279
Hourly Total	15	66	0	8	81	79	453	0	0	532	473	21	0	2	494	1107
1:00 PM	4	26	0	2	30	14	103	0	0	117	103	6	0	0	109	256
1:15 PM	5	21	0	0	26	13	140	0	0	153	112	9	0	0	121	300
1:30 PM	4	24	0	1	28	10	125	0	0	135	137	2	0	0	139	302
1:45 PM	3	15	0	1	18	13	110	0	0	123	119	7	0	0	126	267
Hourly Total	16	86	0	4	102	50	478	0	0	528	471	24	0	0	495	1125
2:00 PM	3	16	0	3	19	17	111	0	0	128	96	6	0	0	102	249
2:15 PM	10	12	0	0	22	15	94	0	0	109	104	4	0	1	108	239
2:30 PM	3	20	0	0	23	14	90	0	0	104	126	10	0	0	136	263
2:45 PM	3	23	0	0	26	17	112	0	0	129	112	5	0	0	117	272
Hourly Total	19	71	0	3	90	63	407	0	0	470	438	25	0	1	463	1023
Grand Total	65	306	0	17	371	273	1826	0	0	2099	1886	99	0	3	1985	4455
Approach %	17.5	82.5	0.0	-	-	13.0	87.0	0.0	-	-	95.0	5.0	0.0	-	-	-
Total %	1.5	6.9	0.0	-	8.3	6.1	41.0	0.0	-	47.1	42.3	2.2	0.0	-	44.6	-
Motorcycles	1	3	0	-	4	6	42	0	-	48	44	2	0	-	46	98
% Motorcycles	1.5	1.0	-	-	1.1	2.2	2.3	-	-	2.3	2.3	2.0	-	-	2.3	2.2
Cars & Light Goods	63	299	0	-	362	262	1760	0	-	2022	1816	95	0	-	1911	4295
% Cars & Light Goods	96.9	97.7	-	-	97.6	96.0	96.4	-	-	96.3	96.3	96.0	-	-	96.3	96.4
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	2	0	-	3	4	9	0	-	13	12	2	0	-	14	30
% Single-Unit Trucks	1.5	0.7	-	-	0.8	1.5	0.5	-	-	0.6	0.6	2.0	-	-	0.7	0.7
Articulated Trucks	0	2	0	-	2	1	9	0	-	10	11	0	0	-	11	23
% Articulated Trucks	0.0	0.7	-	-	0.5	0.4	0.5	-	-	0.5	0.6	0.0	-	-	0.6	0.5
Bicycles on Road	0	0	0	-	0	0	5	0	-	5	3	0	0	-	3	8
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.3	-	-	0.2	0.2	0.0	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-

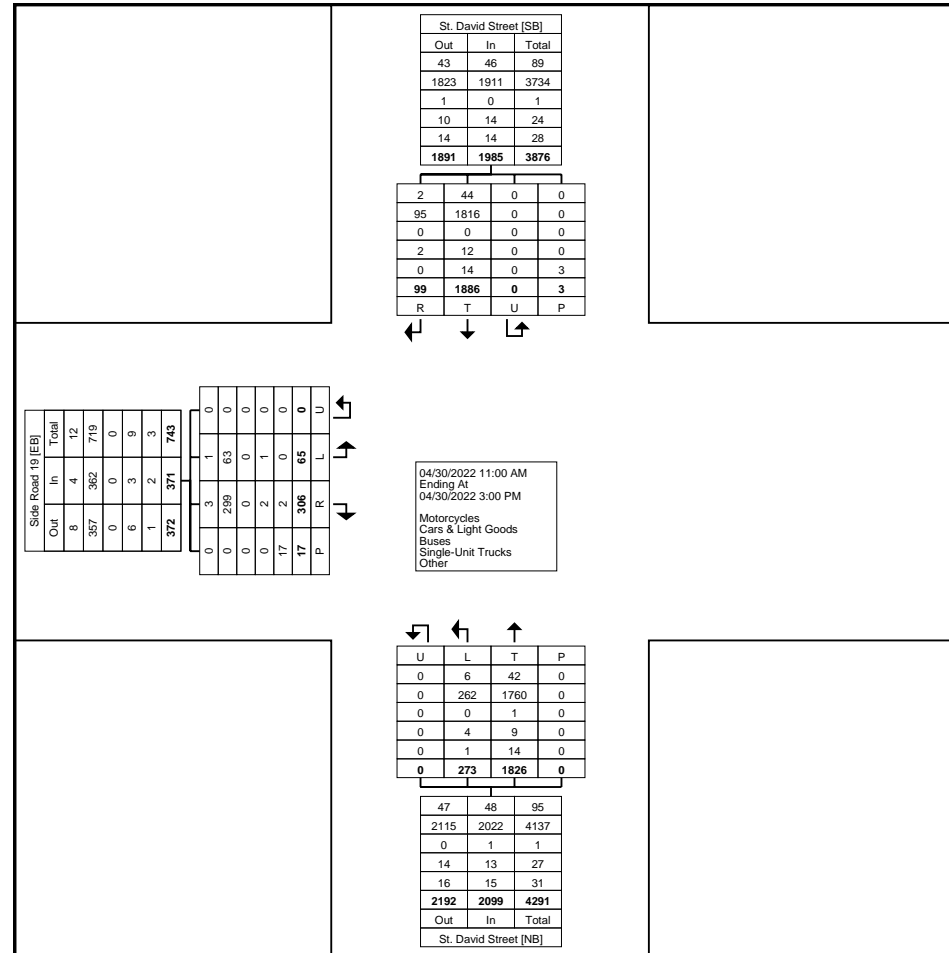
% Bicycles on Crosswalk	-	-	-	5.9	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	16	-	-	-	-	0	-	-	-	3	-	-
% Pedestrians	-	-	-	94.1	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: St. David Street & Side Road 19 -
Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 3



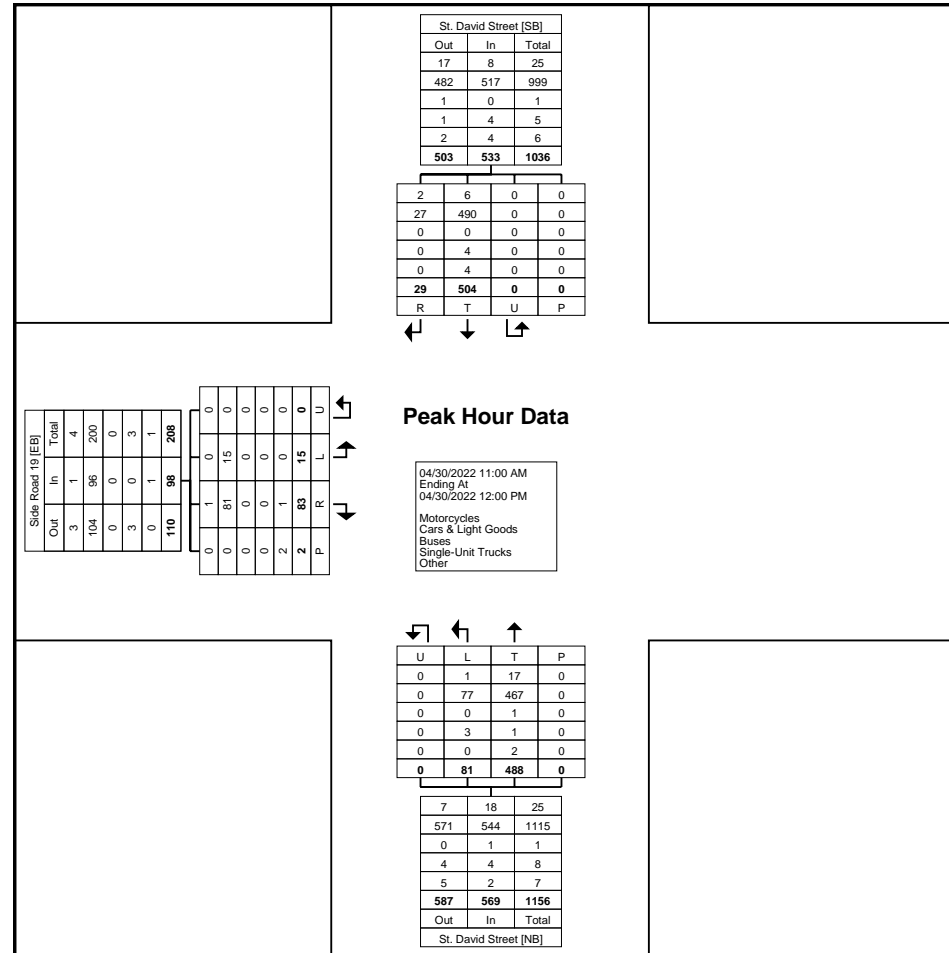
Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St. David Street & Side Road 19 -
Saturday
Site Code: 220086
Start Date: 04/30/2022
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Turning Movement Peak Hour Data Plot (11:00 AM)



Paradigm Transportation Solutions Limited
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Count Name: St. David Street & Side Road 19 -
Saturday
Site Code: 220086
Start Date: 04/30/2022
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Turning Movement Peak Hour Data (12:45 PM)

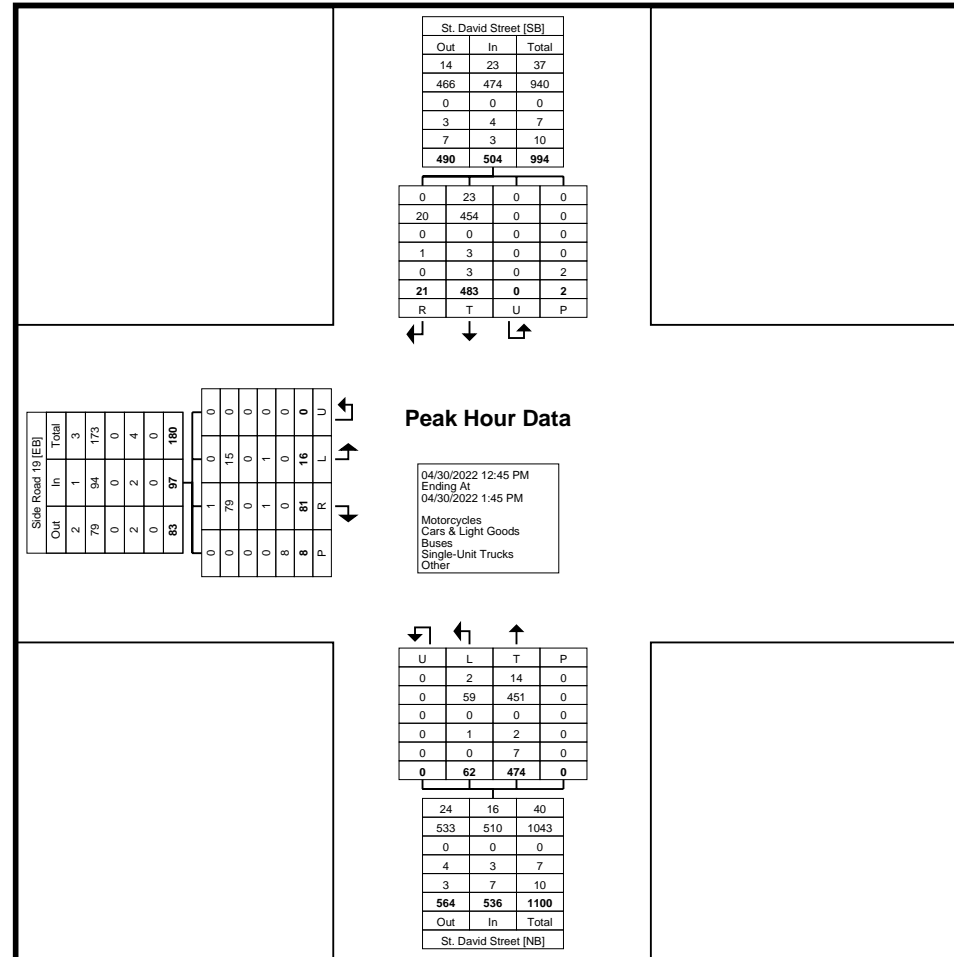
Start Time	Side Road 19 Eastbound					St. David Street Northbound					St. David Street Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
12:45 PM	3	10	0	5	13	25	106	0	0	131	131	4	0	2	135	279
1:00 PM	4	26	0	2	30	14	103	0	0	117	103	6	0	0	109	256
1:15 PM	5	21	0	0	26	13	140	0	0	153	112	9	0	0	121	300
1:30 PM	4	24	0	1	28	10	125	0	0	135	137	2	0	0	139	302
Total	16	81	0	8	97	62	474	0	0	536	483	21	0	2	504	1137
Approach %	16.5	83.5	0.0	-	-	11.6	88.4	0.0	-	-	95.8	4.2	0.0	-	-	-
Total %	1.4	7.1	0.0	-	8.5	5.5	41.7	0.0	-	47.1	42.5	1.8	0.0	-	44.3	-
PHF	0.800	0.779	0.000	-	0.808	0.620	0.846	0.000	-	0.876	0.881	0.583	0.000	-	0.906	0.941
Motorcycles	0	1	0	-	1	2	14	0	-	16	23	0	0	-	23	40
% Motorcycles	0.0	1.2	-	-	1.0	3.2	3.0	-	-	3.0	4.8	0.0	-	-	4.6	3.5
Cars & Light Goods	15	79	0	-	94	59	451	0	-	510	454	20	0	-	474	1078
% Cars & Light Goods	93.8	97.5	-	-	96.9	95.2	95.1	-	-	95.1	94.0	95.2	-	-	94.0	94.8
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	1	2	0	-	3	3	1	0	-	4	9
% Single-Unit Trucks	6.3	1.2	-	-	2.1	1.6	0.4	-	-	0.6	0.6	4.8	-	-	0.8	0.8
Articulated Trucks	0	0	0	-	0	0	4	0	-	4	0	0	0	-	0	4
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.8	-	-	0.7	0.0	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	0	-	0	0	3	0	-	3	3	0	0	-	3	6
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.6	0.6	0.0	-	-	0.6	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	8	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: St. David Street & Side Road 19 -
Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 7



Turning Movement Peak Hour Data Plot (12:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: St. David Street & Gordon Street
-Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 1

Turning Movement Data

Start Time	Plaza Driveway Eastbound						Gordan Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. 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	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	10	3	14	0	1	27	26	6	30	0	0	62	20	89	16	0	0	125	28	116	6	0	0	150	364
11:15 AM	3	6	23	0	1	32	15	10	39	0	0	64	16	93	19	0	0	128	30	106	6	0	0	142	366
11:30 AM	9	6	22	0	3	37	17	10	45	0	0	72	23	112	9	0	0	144	29	91	2	0	0	122	375
11:45 AM	7	5	22	0	1	34	28	2	40	0	0	70	24	85	20	0	0	129	36	117	5	0	1	158	391
Hourly Total	29	20	81	0	6	130	86	28	154	0	0	268	83	379	64	0	0	526	123	430	19	0	1	572	1496
12:00 PM	4	4	19	0	3	27	14	5	22	0	5	41	20	101	20	0	0	141	28	106	3	0	0	137	346
12:15 PM	9	5	17	0	1	31	15	3	5	0	1	23	23	89	23	0	0	135	20	107	6	0	0	133	322
12:30 PM	3	2	20	0	9	25	12	4	16	0	0	32	28	105	17	0	0	150	31	90	4	0	3	125	332
12:45 PM	4	10	23	0	10	37	23	6	13	0	3	42	28	97	17	0	0	142	27	103	10	0	1	140	361
Hourly Total	20	21	79	0	23	120	64	18	56	0	9	138	99	392	77	0	0	568	106	406	23	0	4	535	1361
1:00 PM	3	8	19	0	2	30	12	8	33	0	1	53	28	80	20	0	0	128	34	92	6	0	1	132	343
1:15 PM	3	13	17	0	2	33	14	5	34	0	2	53	38	117	11	0	0	166	27	90	9	0	4	126	378
1:30 PM	7	7	23	0	2	37	12	9	24	0	0	45	19	101	10	0	0	130	26	125	9	0	0	160	372
1:45 PM	1	7	25	0	3	33	13	9	34	0	1	56	33	90	17	0	0	140	31	95	4	0	0	130	359
Hourly Total	14	35	84	0	9	133	51	31	125	0	4	207	118	388	58	0	0	564	118	402	28	0	5	548	1452
2:00 PM	9	6	21	0	7	36	23	8	25	0	0	56	43	92	22	0	0	157	16	89	5	0	3	110	359
2:15 PM	8	9	31	0	1	48	22	8	19	0	2	49	38	75	8	0	0	121	19	87	11	0	2	117	335
2:30 PM	4	9	28	0	6	41	19	8	25	0	2	52	29	73	22	0	0	124	25	113	5	0	1	143	360
2:45 PM	9	12	23	0	9	44	18	6	22	0	5	46	29	97	14	0	0	140	25	101	7	0	2	133	363
Hourly Total	30	36	103	0	23	169	82	30	91	0	9	203	139	337	66	0	0	542	85	390	28	0	8	503	1417
Grand Total	93	112	347	0	61	552	283	107	426	0	22	816	439	1496	265	0	0	2200	432	1628	98	0	18	2158	5726
Approach %	16.8	20.3	62.9	0.0	-	-	34.7	13.1	52.2	0.0	-	-	20.0	68.0	12.0	0.0	-	-	20.0	75.4	4.5	0.0	-	-	-
Total %	1.6	2.0	6.1	0.0	-	9.6	4.9	1.9	7.4	0.0	-	14.3	7.7	26.1	4.6	0.0	-	38.4	7.5	28.4	1.7	0.0	-	37.7	-
Motorcycles	0	0	0	0	-	0	2	0	8	0	-	10	0	39	4	0	-	43	7	37	0	0	-	44	97
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.7	0.0	1.9	-	-	1.2	0.0	2.6	1.5	-	-	2.0	1.6	2.3	0.0	-	-	2.0	1.7
Cars & Light Goods	93	111	344	0	-	548	280	107	410	0	-	797	437	1435	261	0	-	2133	416	1574	98	0	-	2088	5566
% Cars & Light Goods	100.0	99.1	99.1	-	-	99.3	98.9	100.0	96.2	-	-	97.7	99.5	95.9	98.5	-	-	97.0	96.3	96.7	100.0	-	-	96.8	97.2
Buses	0	0	0	0	-	0	1	0	1	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	3
% Buses	0.0	0.0	0.0	-	-	0.0	0.4	0.0	0.2	-	-	0.2	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	3	0	-	3	0	0	4	0	-	4	1	8	0	0	-	9	6	6	0	0	-	12	28
% Single-Unit Trucks	0.0	0.0	0.9	-	-	0.5	0.0	0.0	0.9	-	-	0.5	0.2	0.5	0.0	-	-	0.4	1.4	0.4	0.0	-	-	0.6	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	1	11	0	0	-	12	3	10	0	0	-	13	26
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.2	-	-	0.1	0.2	0.7	0.0	-	-	0.5	0.7	0.6	0.0	-	-	0.6	0.5

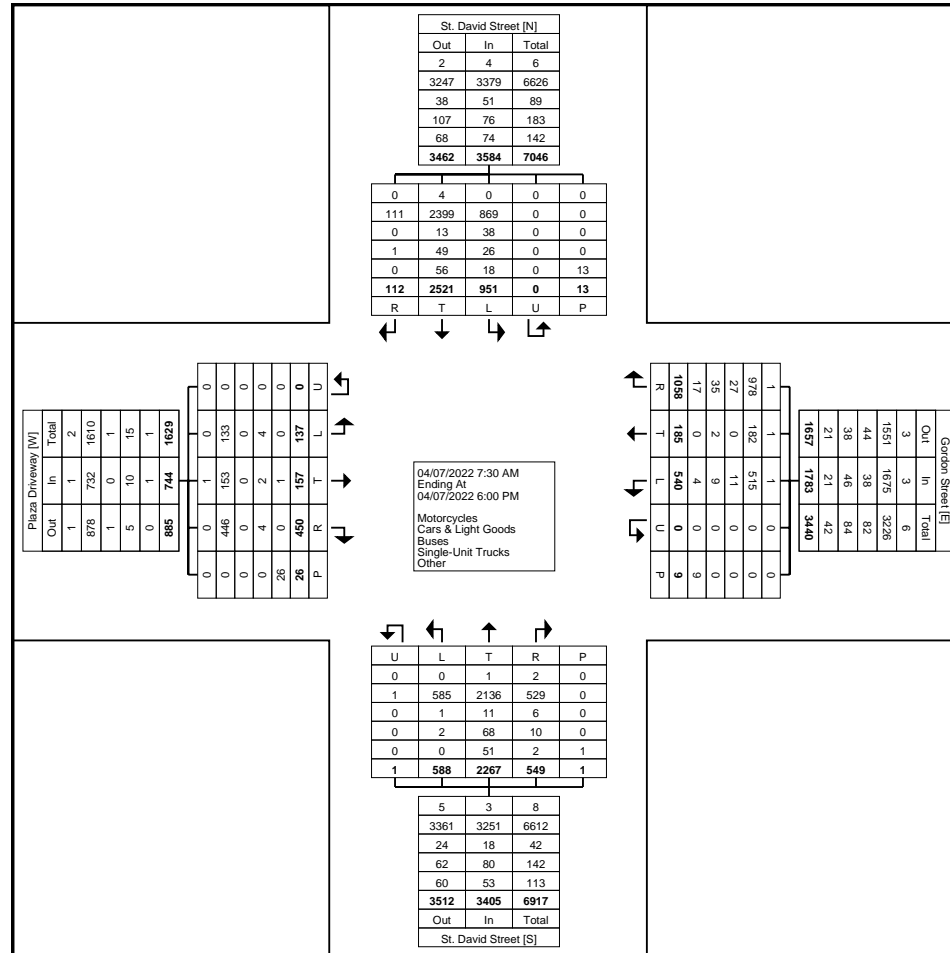
Bicycles on Road	0	1	0	0	-	1	0	0	2	0	-	2	0	2	0	0	-	2	0	1	0	0	-	1	6
% Bicycles on Road	0.0	0.9	0.0	-	-	0.2	0.0	0.0	0.5	-	-	0.2	0.0	0.1	0.0	-	-	0.1	0.0	0.1	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	3	-	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	9.8	-	-	-	-	13.6	-	-	-	-	-	-	-	-	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	-	55	-	-	-	-	19	-	-	-	-	-	-	0	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	90.2	-	-	-	-	86.4	-	-	-	-	-	-	-	-	-	-	-	-	83.3	-	-



Paradigm Transportation Solutions Limited
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Count Name: St David Street & Gordon Street
Site Code: 220086
Start Date: 04/07/2022
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: St David Street & Gordon Street
Site Code: 220086
Start Date: 04/07/2022
Page No: 4

Turning Movement Peak Hour Data (8:15 AM)

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. 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	Left	Thru	Right	U-Turn	Peds	App. Total	
8:15 AM	0	3	3	0	0	6	24	3	46	0	1	73	6	47	16	0	0	69	37	83	0	0	0	120	268
8:30 AM	0	1	6	0	3	7	19	3	29	0	0	51	6	55	18	0	0	79	38	93	3	0	0	134	271
8:45 AM	0	2	9	0	1	11	22	4	32	0	1	58	12	64	29	0	0	105	39	95	3	0	0	137	311
9:00 AM	2	2	6	0	2	10	18	3	34	0	0	55	9	60	20	1	0	90	27	69	3	0	0	99	254
Total	2	8	24	0	6	34	83	13	141	0	2	237	33	226	83	1	0	343	141	340	9	0	0	490	1104
Approach %	5.9	23.5	70.6	0.0	-	-	35.0	5.5	59.5	0.0	-	-	9.6	65.9	24.2	0.3	-	-	28.8	69.4	1.8	0.0	-	-	-
Total %	0.2	0.7	2.2	0.0	-	3.1	7.5	1.2	12.8	0.0	-	21.5	3.0	20.5	7.5	0.1	-	31.1	12.8	30.8	0.8	0.0	-	44.4	-
PHF	0.250	0.667	0.667	0.000	-	0.773	0.865	0.813	0.766	0.000	-	0.812	0.688	0.883	0.716	0.250	-	0.817	0.904	0.895	0.750	0.000	-	0.894	0.887
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	0.0
Cars & Light Goods	2	8	24	0	-	34	76	13	120	0	-	209	33	196	76	1	-	306	126	320	9	0	-	455	1004
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	91.6	100.0	85.1	-	-	88.2	100.0	86.7	91.6	100.0	-	89.2	89.4	94.1	100.0	-	-	92.9	90.9
Buses	0	0	0	0	-	0	4	0	10	0	-	14	0	4	4	0	-	8	11	6	0	0	-	17	39
% Buses	0.0	0.0	0.0	-	-	0.0	4.8	0.0	7.1	-	-	5.9	0.0	1.8	4.8	0.0	-	2.3	7.8	1.8	0.0	-	-	3.5	3.5
Single-Unit Trucks	0	0	0	0	-	0	3	0	7	0	-	10	0	15	3	0	-	18	1	9	0	0	-	10	38
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	3.6	0.0	5.0	-	-	4.2	0.0	6.6	3.6	0.0	-	5.2	0.7	2.6	0.0	-	-	2.0	3.4
Articulated Trucks	0	0	0	0	-	0	0	0	4	0	-	4	0	11	0	0	-	11	3	5	0	0	-	8	23
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.8	-	-	1.7	0.0	4.9	0.0	0.0	-	3.2	2.1	1.5	0.0	-	-	1.6	2.1
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	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: St David Street & Gordon Street
Site Code: 220086
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Turning Movement Peak Hour Data (12:00 PM)

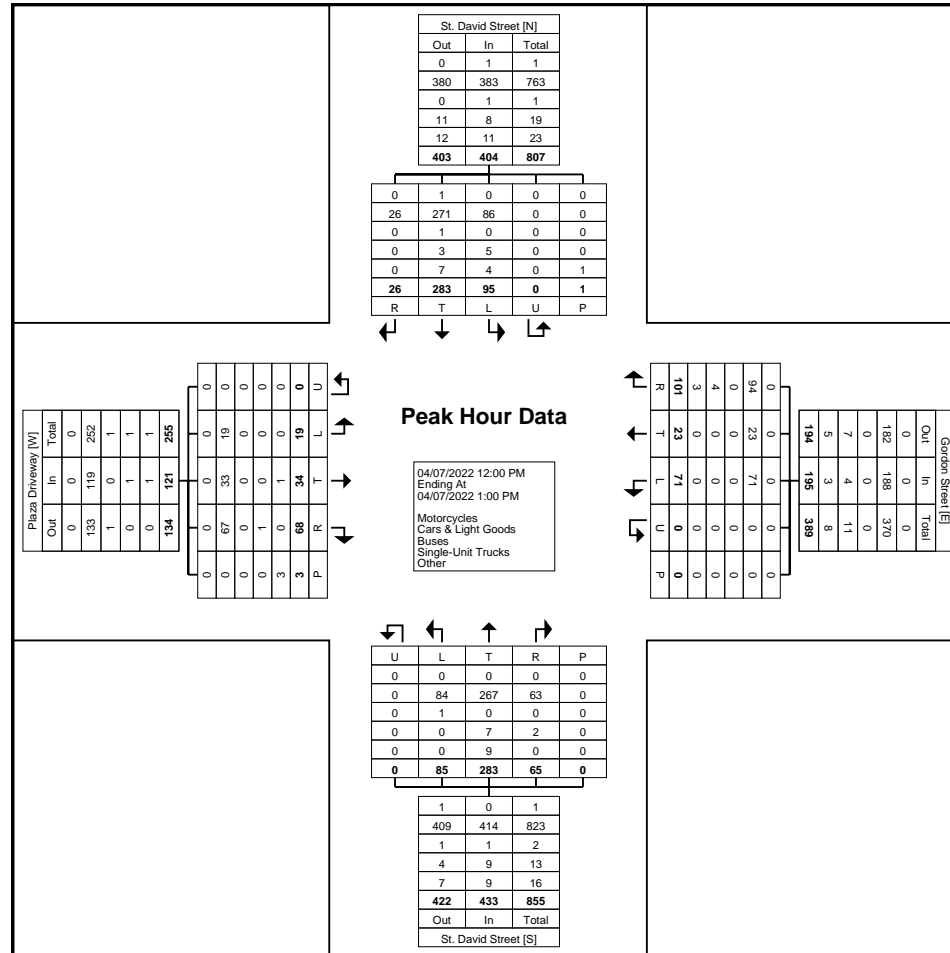
Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	5	13	14	0	2	32	14	6	31	0	0	51	20	83	14	0	0	117	18	55	6	0	0	79	279
12:15 PM	5	4	16	0	0	25	14	3	19	0	0	36	20	58	15	0	0	93	25	77	7	0	1	109	263
12:30 PM	7	7	22	0	0	36	28	10	21	0	0	59	22	70	14	0	0	106	30	60	4	0	0	94	295
12:45 PM	2	10	16	0	1	28	15	4	30	0	0	49	23	72	22	0	0	117	22	91	9	0	0	122	316
Total	19	34	68	0	3	121	71	23	101	0	0	195	85	283	65	0	0	433	95	283	26	0	1	404	1153
Approach %	15.7	28.1	56.2	0.0	-	-	36.4	11.8	51.8	0.0	-	-	19.6	65.4	15.0	0.0	-	-	23.5	70.0	6.4	0.0	-	-	-
Total %	1.6	2.9	5.9	0.0	-	10.5	6.2	2.0	8.8	0.0	-	16.9	7.4	24.5	5.6	0.0	-	37.6	8.2	24.5	2.3	0.0	-	35.0	-
PHF	0.679	0.654	0.773	0.000	-	0.840	0.634	0.575	0.815	0.000	-	0.826	0.924	0.852	0.739	0.000	-	0.925	0.792	0.777	0.722	0.000	-	0.828	0.912
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	0.4	0.0	-	-	0.2	0.1
Cars & Light Goods	19	33	67	0	-	119	71	23	94	0	-	188	84	267	63	0	-	414	86	271	26	0	-	383	1104
% Cars & Light Goods	100.0	97.1	98.5	-	-	98.3	100.0	100.0	93.1	-	-	96.4	98.8	94.3	96.9	-	-	95.6	90.5	95.8	100.0	-	-	94.8	95.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	1	0	0	-	1	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.0	-	-	0.2	0.0	0.4	0.0	-	-	0.2	0.2
Single-Unit Trucks	0	0	1	0	-	1	0	0	4	0	-	4	0	7	2	0	-	9	5	3	0	0	-	8	22
% Single-Unit Trucks	0.0	0.0	1.5	-	-	0.8	0.0	0.0	4.0	-	-	2.1	0.0	2.5	3.1	-	-	2.1	5.3	1.1	0.0	-	-	2.0	1.9
Articulated Trucks	0	1	0	0	-	1	0	0	3	0	-	3	0	9	0	0	-	9	3	7	0	0	-	10	23
% Articulated Trucks	0.0	2.9	0.0	-	-	0.8	0.0	0.0	3.0	-	-	1.5	0.0	3.2	0.0	-	-	2.1	3.2	2.5	0.0	-	-	2.5	2.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% 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	1.1	0.0	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: St David Street & Gordon Street
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Turning Movement Peak Hour Data Plot (12:00 PM)



Paradigm Transportation Solutions Limited
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Cambridge, Ontario, Canada N1R 8J8
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Count Name: St David Street & Gordon Street
Site Code: 220086
Start Date: 04/07/2022
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Turning Movement Peak Hour Data (4:30 PM)

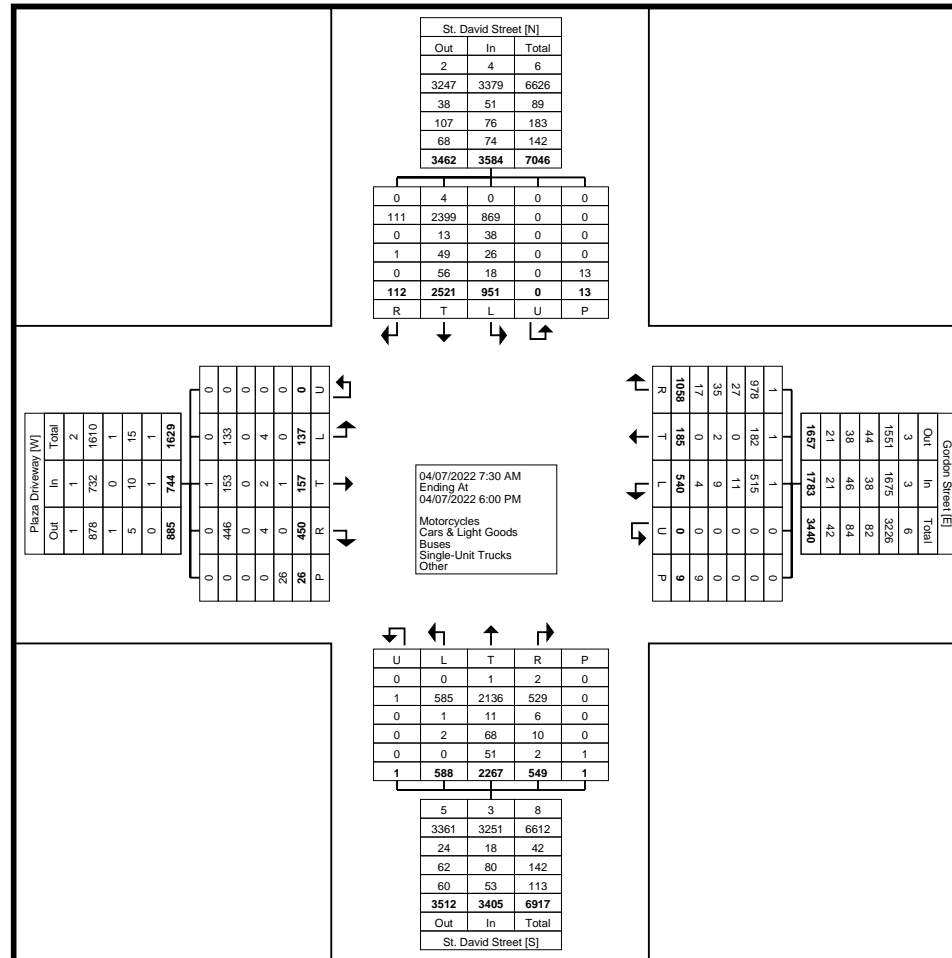
Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:30 PM	5	10	14	0	0	29	13	11	58	0	1	82	17	103	20	0	0	140	38	88	5	0	2	131	382
4:45 PM	6	3	18	0	0	27	22	8	52	0	0	82	31	112	27	0	0	170	46	93	4	0	0	143	422
5:00 PM	7	13	15	0	0	35	19	15	43	0	0	77	35	101	18	0	0	154	40	86	1	0	1	127	393
5:15 PM	10	8	21	0	0	39	9	5	38	0	0	52	20	86	14	0	0	120	34	92	5	0	0	131	342
Total	28	34	68	0	0	130	63	39	191	0	1	293	103	402	79	0	0	584	158	359	15	0	3	532	1539
Approach %	21.5	26.2	52.3	0.0	-	-	21.5	13.3	65.2	0.0	-	-	17.6	68.8	13.5	0.0	-	-	29.7	67.5	2.8	0.0	-	-	-
Total %	1.8	2.2	4.4	0.0	-	8.4	4.1	2.5	12.4	0.0	-	19.0	6.7	26.1	5.1	0.0	-	37.9	10.3	23.3	1.0	0.0	-	34.6	-
PHF	0.700	0.654	0.810	0.000	-	0.833	0.716	0.650	0.823	0.000	-	0.893	0.736	0.897	0.731	0.000	-	0.859	0.859	0.965	0.750	0.000	-	0.930	0.912
Motorcycles	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.5	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	27	34	67	0	-	128	63	39	188	0	-	290	102	394	79	0	-	575	147	350	14	0	-	511	1504
% Cars & Light Goods	96.4	100.0	98.5	-	-	98.5	100.0	100.0	98.4	-	-	99.0	99.0	98.0	100.0	-	-	98.5	93.0	97.5	93.3	-	-	96.1	97.7
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	6	0	0	0	-	6	7
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.5	-	-	0.3	0.0	0.0	0.0	-	-	0.0	3.8	0.0	0.0	-	-	1.1	0.5
Single-Unit Trucks	1	0	1	0	-	2	0	0	1	0	-	1	1	6	0	0	-	7	4	6	1	0	-	11	21
% Single-Unit Trucks	3.6	0.0	1.5	-	-	1.5	0.0	0.0	0.5	-	-	0.3	1.0	1.5	0.0	-	-	1.2	2.5	1.7	6.7	-	-	2.1	1.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	1	3	0	0	-	4	6
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.3	0.6	0.8	0.0	-	-	0.8	0.4
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	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	33.3	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	66.7	-	-



Paradigm Transportation Solutions Limited
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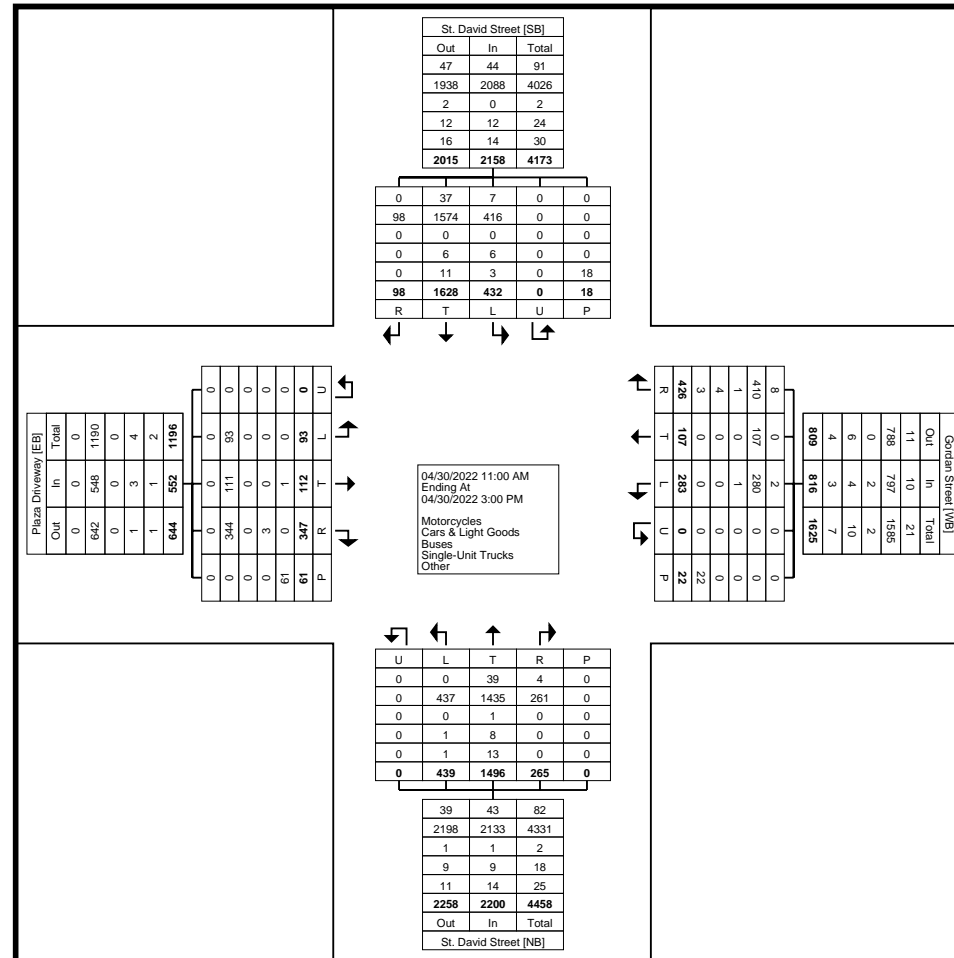
Turning Movement Peak Hour Data Plot (4:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St David Street & Gordon Street
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Turning Movement Data Plot



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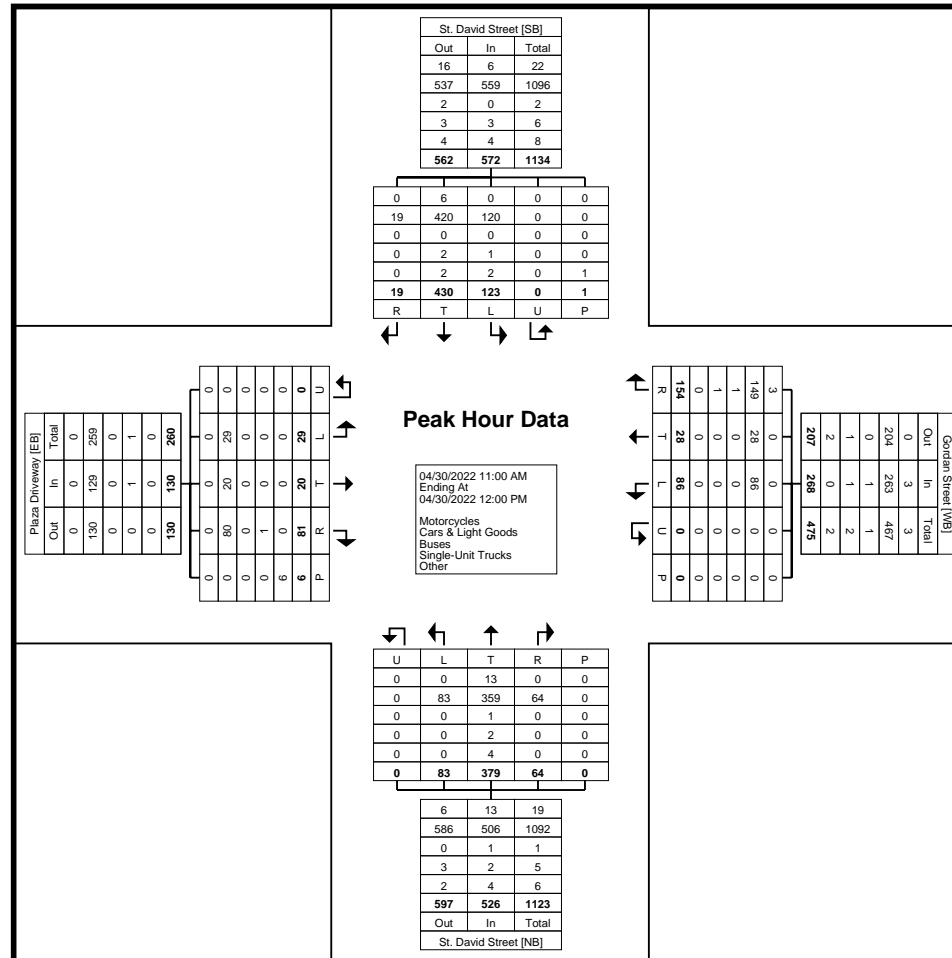
Count Name: St David Street & Gordon Street
-Saturday
Site Code: 220086
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Turning Movement Peak Hour Data (11:00 AM)

Start Time	Plaza Driveway Eastbound						Gordan Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. 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	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	10	3	14	0	1	27	26	6	30	0	0	62	20	89	16	0	0	125	28	116	6	0	0	150	364
11:15 AM	3	6	23	0	1	32	15	10	39	0	0	64	16	93	19	0	0	128	30	106	6	0	0	142	366
11:30 AM	9	6	22	0	3	37	17	10	45	0	0	72	23	112	9	0	0	144	29	91	2	0	0	122	375
11:45 AM	7	5	22	0	1	34	28	2	40	0	0	70	24	85	20	0	0	129	36	117	5	0	1	158	391
Total	29	20	81	0	6	130	86	28	154	0	0	268	83	379	64	0	0	526	123	430	19	0	1	572	1496
Approach %	22.3	15.4	62.3	0.0	-	-	32.1	10.4	57.5	0.0	-	-	15.8	72.1	12.2	0.0	-	-	21.5	75.2	3.3	0.0	-	-	-
Total %	1.9	1.3	5.4	0.0	-	8.7	5.7	1.9	10.3	0.0	-	17.9	5.5	25.3	4.3	0.0	-	35.2	8.2	28.7	1.3	0.0	-	38.2	-
PHF	0.725	0.833	0.880	0.000	-	0.878	0.768	0.700	0.856	0.000	-	0.931	0.865	0.846	0.800	0.000	-	0.913	0.854	0.919	0.792	0.000	-	0.905	0.957
Motorcycles	0	0	0	0	-	0	0	0	3	0	-	3	0	13	0	0	-	13	0	6	0	0	-	6	22
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.9	-	-	1.1	0.0	3.4	0.0	-	-	2.5	0.0	1.4	0.0	-	-	1.0	1.5
Cars & Light Goods	29	20	80	0	-	129	86	28	149	0	-	263	83	359	64	0	-	506	120	420	19	0	-	559	1457
% Cars & Light Goods	100.0	100.0	98.8	-	-	99.2	100.0	100.0	96.8	-	-	98.1	100.0	94.7	100.0	-	-	96.2	97.6	97.7	100.0	-	-	97.7	97.4
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.6	-	-	0.4	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	1	0	-	1	0	0	1	0	-	1	0	2	0	0	-	2	1	2	0	0	-	3	7
% Single-Unit Trucks	0.0	0.0	1.2	-	-	0.8	0.0	0.0	0.6	-	-	0.4	0.0	0.5	0.0	-	-	0.4	0.8	0.5	0.0	-	-	0.5	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2	2	0	0	-	4	6
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	1.6	0.5	0.0	-	-	0.7	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Count Name: St David Street & Gordon Street
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Turning Movement Peak Hour Data Plot (11:00 AM)



Paradigm Transportation Solutions Limited
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Turning Movement Peak Hour Data (1:15 PM)

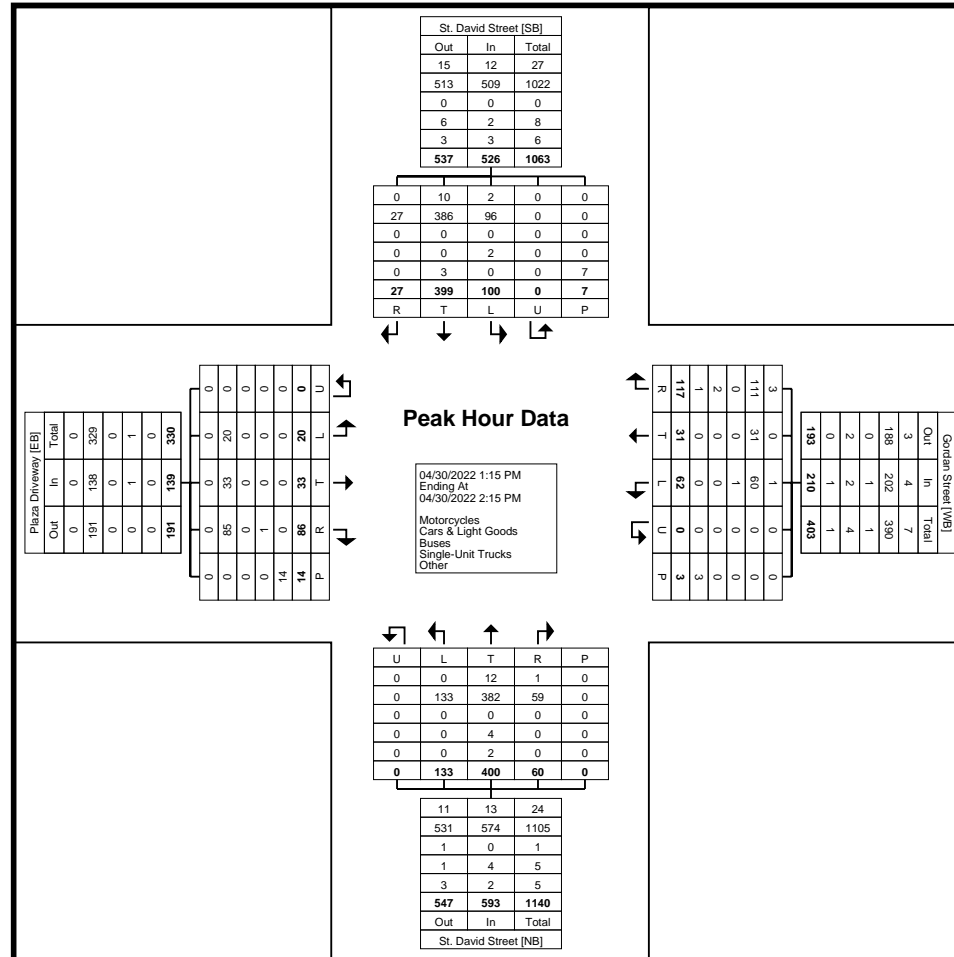
Start Time	Plaza Driveway Eastbound						Gordan Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
1:15 PM	3	13	17	0	2	33	14	5	34	0	2	53	38	117	11	0	0	166	27	90	9	0	4	126	378
1:30 PM	7	7	23	0	2	37	12	9	24	0	0	45	19	101	10	0	0	130	26	125	9	0	0	160	372
1:45 PM	1	7	25	0	3	33	13	9	34	0	1	56	33	90	17	0	0	140	31	95	4	0	0	130	359
2:00 PM	9	6	21	0	7	36	23	8	25	0	0	56	43	92	22	0	0	157	16	89	5	0	3	110	359
Total	20	33	86	0	14	139	62	31	117	0	3	210	133	400	60	0	0	593	100	399	27	0	7	526	1468
Approach %	14.4	23.7	61.9	0.0	-	-	29.5	14.8	55.7	0.0	-	-	22.4	67.5	10.1	0.0	-	-	19.0	75.9	5.1	0.0	-	-	-
Total %	1.4	2.2	5.9	0.0	-	9.5	4.2	2.1	8.0	0.0	-	14.3	9.1	27.2	4.1	0.0	-	40.4	6.8	27.2	1.8	0.0	-	35.8	-
PHF	0.556	0.635	0.860	0.000	-	0.939	0.674	0.861	0.860	0.000	-	0.938	0.773	0.855	0.682	0.000	-	0.893	0.806	0.798	0.750	0.000	-	0.822	0.971
Motorcycles	0	0	0	0	-	0	1	0	3	0	-	4	0	12	1	0	-	13	2	10	0	0	-	12	29
% Motorcycles	0.0	0.0	0.0	-	-	0.0	1.6	0.0	2.6	-	-	1.9	0.0	3.0	1.7	-	-	2.2	2.0	2.5	0.0	-	-	2.3	2.0
Cars & Light Goods	20	33	85	0	-	138	60	31	111	0	-	202	133	382	59	0	-	574	96	386	27	0	-	509	1423
% Cars & Light Goods	100.0	100.0	98.8	-	-	99.3	96.8	100.0	94.9	-	-	96.2	100.0	95.5	98.3	-	-	96.8	96.0	96.7	100.0	-	-	96.8	96.9
Buses	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	1.6	0.0	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	1	0	-	1	0	0	2	0	-	2	0	4	0	0	-	4	2	0	0	0	-	2	9
% Single-Unit Trucks	0.0	0.0	1.2	-	-	0.7	0.0	0.0	1.7	-	-	1.0	0.0	1.0	0.0	-	-	0.7	2.0	0.0	0.0	-	-	0.4	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	2	0	0	-	2	0	2	0	0	-	2	5
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.9	-	-	0.5	0.0	0.5	0.0	-	-	0.3	0.0	0.5	0.0	-	-	0.4	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% 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	0.3	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	14.3	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	42.9	-	-
Pedestrians	-	-	-	-	12	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	85.7	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	57.1	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 ehong@ptsl.com

Count Name: St David Street & Gordon Street
-Saturday
Site Code: 220086
Start Date: 04/30/2022
Page No: 7



Turning Movement Peak Hour Data Plot (1:15 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts.com

Count Name: St David Street & Gordon Street
Site Code: 220086
Start Date: 04/07/2022
Page No: 1

Turning Movement Data

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						St. David Street Northbound						St. David Street Southbound						Int. 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	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	1	1	2	0	0	4	10	2	33	0	0	45	7	63	16	0	0	86	44	71	2	0	0	117	252
7:45 AM	4	1	4	0	0	9	10	1	38	0	0	49	5	57	20	0	0	82	49	79	1	0	0	129	269
Hourly Total	5	2	6	0	0	13	20	3	71	0	0	94	12	120	36	0	0	168	93	150	3	0	0	246	521
8:00 AM	1	1	5	0	1	7	17	1	38	0	0	56	3	56	10	0	0	69	47	64	0	0	0	111	243
8:15 AM	0	3	3	0	0	6	24	3	46	0	1	73	6	47	16	0	0	69	37	83	0	0	0	120	268
8:30 AM	0	1	6	0	3	7	19	3	29	0	0	51	6	55	18	0	0	79	38	93	3	0	0	134	271
8:45 AM	0	2	9	0	1	11	22	4	32	0	1	58	12	64	29	0	0	105	39	95	3	0	0	137	311
Hourly Total	1	7	23	0	5	31	82	11	145	0	2	238	27	222	73	0	0	322	161	335	6	0	0	502	1093
9:00 AM	2	2	6	0	2	10	18	3	34	0	0	55	9	60	20	1	0	90	27	69	3	0	0	99	254
9:15 AM	3	1	15	0	0	19	14	1	19	0	0	34	21	44	15	0	0	80	20	79	2	0	0	101	234
9:30 AM	2	1	8	0	0	11	13	6	17	0	0	36	12	55	13	0	0	80	17	59	4	0	0	80	207
9:45 AM	3	2	11	0	0	16	12	6	20	0	0	38	20	47	10	0	0	77	18	76	3	0	0	97	228
Hourly Total	10	6	40	0	2	56	57	16	90	0	0	163	62	206	58	1	0	327	82	283	12	0	0	377	923
10:00 AM	4	0	13	0	2	17	15	4	18	0	0	37	9	58	13	0	0	80	20	86	1	0	0	107	241
10:15 AM	4	2	18	0	3	24	17	1	23	0	0	41	23	70	17	0	0	110	24	77	3	0	0	104	279
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	8	2	31	0	5	41	32	5	41	0	0	78	32	128	30	0	0	190	44	163	4	0	0	211	520
12:00 PM	5	13	14	0	2	32	14	6	31	0	0	51	20	83	14	0	0	117	18	55	6	0	0	79	279
12:15 PM	5	4	16	0	0	25	14	3	19	0	0	36	20	58	15	0	0	93	25	77	7	0	1	109	263
12:30 PM	7	7	22	0	0	36	28	10	21	0	0	59	22	70	14	0	0	106	30	60	4	0	0	94	295
12:45 PM	2	10	16	0	1	28	15	4	30	0	0	49	23	72	22	0	0	117	22	91	9	0	0	122	316
Hourly Total	19	34	68	0	3	121	71	23	101	0	0	195	85	283	65	0	0	433	95	283	26	0	1	404	1153
1:00 PM	7	2	17	0	1	26	16	5	24	0	1	45	8	61	30	0	0	99	17	69	4	0	2	90	260
1:15 PM	5	6	9	0	2	20	23	4	13	0	0	40	21	47	15	0	0	83	19	75	3	0	0	97	240
1:30 PM	3	3	17	0	0	23	13	7	17	0	0	37	24	69	18	0	0	111	20	93	3	0	0	116	287
1:45 PM	3	4	18	0	1	25	18	6	37	0	2	61	25	66	6	0	0	97	23	86	5	0	0	114	297
Hourly Total	18	15	61	0	4	94	70	22	91	0	3	183	78	243	69	0	0	390	79	323	15	0	2	417	1084
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	6	8	17	0	3	31	18	10	41	0	0	69	19	63	21	0	0	103	25	73	3	0	4	101	304
3:15 PM	8	5	20	0	2	33	19	6	36	0	0	61	28	91	15	0	0	134	21	77	6	0	1	104	332
3:30 PM	2	7	14	0	0	23	16	11	47	0	0	74	22	91	21	0	0	134	25	90	5	0	0	120	351
3:45 PM	7	5	18	0	1	30	20	7	43	0	0	70	28	75	15	0	0	118	44	92	4	0	1	140	358
Hourly Total	23	25	69	0	6	117	73	34	167	0	0	274	97	320	72	0	0	489	115	332	18	0	6	465	1345
4:00 PM	6	8	25	0	0	39	12	6	51	0	0	69	26	93	18	0	0	137	30	75	2	0	0	107	352
4:15 PM	5	8	17	0	0	30	22	2	41	0	0	65	22	86	19	0	0	127	32	82	4	0	0	118	340

4:30 PM	5	10	14	0	0	29	13	11	58	0	1	82	17	103	20	0	0	140	38	88	5	0	2	131	382
4:45 PM	6	3	18	0	0	27	22	8	52	0	0	82	31	112	27	0	0	170	46	93	4	0	0	143	422
Hourly Total	22	29	74	0	0	125	69	27	202	0	1	298	96	394	84	0	0	574	146	338	15	0	2	499	1496
5:00 PM	7	13	15	0	0	35	19	15	43	0	0	77	35	101	18	0	0	154	40	86	1	0	1	127	393
5:15 PM	10	8	21	0	0	39	9	5	38	0	0	52	20	86	14	0	0	120	34	92	5	0	0	131	342
5:30 PM	8	11	22	0	0	41	22	14	35	0	2	71	21	87	18	0	0	126	28	75	3	0	0	106	344
5:45 PM	6	5	20	0	1	31	16	10	34	0	1	60	23	77	12	0	1	112	34	61	4	0	1	99	302
Hourly Total	31	37	78	0	1	146	66	44	150	0	3	260	99	351	62	0	1	512	136	314	13	0	2	463	1381
Grand Total	137	157	450	0	26	744	540	185	1058	0	9	1783	588	2267	549	1	1	3405	951	2521	112	0	13	3584	9516
Approach %	18.4	21.1	60.5	0.0	-	-	30.3	10.4	59.3	0.0	-	-	17.3	66.6	16.1	0.0	-	-	26.5	70.3	3.1	0.0	-	-	-
Total %	1.4	1.6	4.7	0.0	-	7.8	5.7	1.9	11.1	0.0	-	18.7	6.2	23.8	5.8	0.0	-	35.8	10.0	26.5	1.2	0.0	-	37.7	-
Motorcycles	0	1	0	0	-	1	1	1	1	0	-	3	0	1	2	0	-	3	0	4	0	0	-	4	11
% Motorcycles	0.0	0.6	0.0	-	-	0.1	0.2	0.5	0.1	-	-	0.2	0.0	0.0	0.4	0.0	-	0.1	0.0	0.2	0.0	-	-	0.1	0.1
Cars & Light Goods	133	153	446	0	-	732	515	182	978	0	-	1675	585	2136	529	1	-	3251	869	2399	111	0	-	3379	9037
% Cars & Light Goods	97.1	97.5	99.1	-	-	98.4	95.4	98.4	92.4	-	-	93.9	99.5	94.2	96.4	100.0	-	95.5	91.4	95.2	99.1	-	-	94.3	95.0
Buses	0	0	0	0	-	0	11	0	27	0	-	38	1	11	6	0	-	18	38	13	0	0	-	51	107
% Buses	0.0	0.0	0.0	-	-	0.0	2.0	0.0	2.6	-	-	2.1	0.2	0.5	1.1	0.0	-	0.5	4.0	0.5	0.0	-	-	1.4	1.1
Single-Unit Trucks	4	2	4	0	-	10	9	2	35	0	-	46	2	68	10	0	-	80	26	49	1	0	-	76	212
% Single-Unit Trucks	2.9	1.3	0.9	-	-	1.3	1.7	1.1	3.3	-	-	2.6	0.3	3.0	1.8	0.0	-	2.3	2.7	1.9	0.9	-	-	2.1	2.2
Articulated Trucks	0	1	0	0	-	1	4	0	17	0	-	21	0	51	2	0	-	53	17	56	0	0	-	73	148
% Articulated Trucks	0.0	0.6	0.0	-	-	0.1	0.7	0.0	1.6	-	-	1.2	0.0	2.2	0.4	0.0	-	1.6	1.8	2.2	0.0	-	-	2.0	1.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% 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	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-	-	-	-	0.0	-	-	-	-	-	23.1	-	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-	-	-	-	100.0	-	-	-	-	-	76.9	-	-

Appendix B

Existing Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	9	92	49	279	321	11
Future Volume (vph)	9	92	49	279	321	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.877				0.995	
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1645	0	1805	1827	1872	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1645	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	10	105	56	317	365	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	56	317	378	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing AM

Intersection

Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	9	92	49	279	321	11
Future Vol, veh/h	9	92	49	279	321	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	10	105	56	317	365	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	801	372	378
Stage 1	372	-	-
Stage 2	429	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	356	676	1192
Stage 1	702	-	-
Stage 2	661	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	339	676	1192
Mov Cap-2 Maneuver	339	-	-
Stage 1	669	-	-
Stage 2	661	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1192	-	621	-
HCM Lane V/C Ratio	0.047	-	0.185	-
HCM Control Delay (s)	8.2	-	12.1	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	5	48	27	328	104	7
Future Volume (vph)	5	48	27	328	104	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.878				0.991	
Fit Protected	0.995		0.950			
Satd. Flow (prot)	1660	0	1736	1792	1799	0
Fit Permitted	0.995		0.950			
Satd. Flow (perm)	1660	0	1736	1792	1799	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	6	55	31	373	118	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	31	373	126	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing AM

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	48	27	328	104	7
Future Vol, veh/h	5	48	27	328	104	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	6	55	31	373	118	8

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	557	122	126
Stage 1	122	-	-
Stage 2	435	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	495	935	1448
Stage 1	908	-	-
Stage 2	657	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	485	935	1448
Mov Cap-2 Maneuver	485	-	-
Stage 1	889	-	-
Stage 2	657	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1448	-	860	-
HCM Lane V/C Ratio	0.021	-	0.07	-
HCM Control Delay (s)	7.5	-	9.5	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing AM

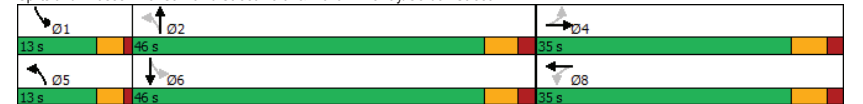
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	8	24	83	13	141	33	226	83	141	340	9
Future Volume (vph)	2	8	24	83	13	141	33	226	83	141	340	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%			0%			0%		
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit	0.887			0.863			0.960			0.996		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1685	0	1736	1528	0	1805	1660	0	1752	1821	0
Fit Permitted	0.583			0.734			0.528			0.477		
Satd. Flow (perm)	1108	1685	0	1341	1528	0	1003	1660	0	880	1821	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	27		160		24		2					
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	102.5			102.3			314.9			88.4		
Travel Time (s)	7.4			7.4			22.7			6.4		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%			0%			0%			0%		
Adj. Flow (vph)	2	9	27	94	15	160	38	257	94	160	386	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	36	0	94	175	0	38	351	0	160	396	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4			8			5			2		
Permitted Phases	4			8			2			6		
Detector Phase	4			4			8			8		
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead						Lag					
Lead-Lag Optimize?	Yes						Yes					
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.5	10.5		10.5	10.5		48.1	40.1		52.5	45.7	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.65	0.54		0.71	0.62	
v/c Ratio	0.01	0.14		0.50	0.50		0.05	0.39		0.23	0.35	
Control Delay	27.0	15.2		38.8	11.8		4.0	11.5		4.4	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.0	15.2		38.8	11.8		4.0	11.5		4.4	9.8	
LOS	C	B		D	B		A	B		A	A	
Approach Delay	15.8			21.2			10.8			8.3		
Approach LOS	B			C			B			A		
Queue Length 50th (m)	0.3	1.2		12.9	1.9		1.3	25.4		5.7	29.6	
Queue Length 95th (m)	2.1	8.6		26.7	17.4		4.2	50.0		13.3	54.6	
Internal Link Dist (m)	78.5			78.3			290.9			64.4		
Turn Bay Length (m)							35.0					
Base Capacity (vph)	434	677		525	696		789	909		733	1122	
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	0.05		0.18	0.25		0.05	0.39		0.22	0.35	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	74.2
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	12.1
Intersection LOS:	B
Intersection Capacity Utilization:	49.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	17	83	123	402	366	13
Future Volume (vph)	17	83	123	402	366	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.888				0.995	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1674	0	1770	1827	1803	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1674	0	1770	1827	1803	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	19	94	140	457	416	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	140	457	431	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing PM

Intersection

Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	17	83	123	402	366	13
Future Vol, veh/h	17	83	123	402	366	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	19	94	140	457	416	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1161	424	431
Stage 1	424	-	-
Stage 2	737	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	218	634	1129
Stage 1	664	-	-
Stage 2	477	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	191	634	1129
Mov Cap-2 Maneuver	191	-	-
Stage 1	582	-	-
Stage 2	477	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1129	-	455	-
HCM Lane V/C Ratio	0.124	-	0.25	-
HCM Control Delay (s)	8.6	-	15.5	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	22	87	77	519	459	23
Future Volume (vph)	22	87	77	519	459	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.892				0.994	
Fit Protected	0.990		0.950			
Satd. Flow (prot)	1648	0	1805	1845	1797	0
Fit Permitted	0.990		0.950			
Satd. Flow (perm)	1648	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	25	99	88	590	522	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	124	0	88	590	548	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing PM

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	22	87	77	519	459	23
Future Vol, veh/h	22	87	77	519	459	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	25	99	88	590	522	26

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1301	535	548
Stage 1	535	-	-
Stage 2	766	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	175	547	1032
Stage 1	581	-	-
Stage 2	454	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	160	547	1032
Mov Cap-2 Maneuver	160	-	-
Stage 1	532	-	-
Stage 2	454	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	368	-
HCM Lane V/C Ratio	0.085	-	0.337	-
HCM Control Delay (s)	8.8	-	19.7	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.5	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing PM

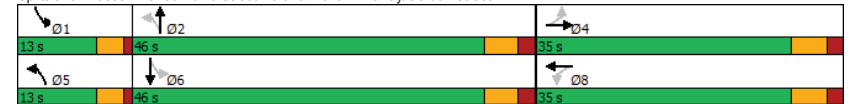
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	
Traffic Volume (vph)	28	34	68	63	39	191	103	402	79	158	359	15
Future Volume (vph)	28	34	68	63	39	191	103	402	79	158	359	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.975			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1822	0	1752	1831	0
Fit Permitted	0.417			0.682			0.491			0.349		
Satd. Flow (perm)	762	1699	0	1283	1657	0	924	1822	0	644	1831	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		77			217			13			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	32	39	77	72	44	217	117	457	90	180	408	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	116	0	72	261	0	117	547	0	180	425	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	9.6	9.6		9.6	9.6		49.1	40.1		51.2	42.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.67	0.55		0.70	0.58	
v/c Ratio	0.32	0.40		0.43	0.64		0.17	0.55		0.32	0.40	
Control Delay	37.8	16.7		37.5	15.3		4.1	13.9		5.1	11.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.8	16.7		37.5	15.3		4.1	13.9		5.1	11.2	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.2			20.1			12.2			9.4	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	4.3	5.1		9.8	5.8		3.8	45.9		6.0	32.2	
Queue Length 95th (m)	12.4	18.5		21.6	25.4		9.8	84.8		14.3	61.5	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	301	719		508	787		749	1001		591	1070	
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	0.11	0.16		0.14	0.33		0.16	0.55		0.30	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	73.4
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	13.5
Intersection LOS:	B
Intersection Capacity Utilization:	70.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	13	85	80	382	402	10
Future Volume (vph)	13	85	80	382	402	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.883				0.997	
Fit Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1858	0
Fit Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	15	97	91	434	457	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	91	434	468	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.2%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
Existing SAT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Intersection						
Int Delay, s/veh	2.2					
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	13	85	80	382	402	10
Future Vol, veh/h	13	85	80	382	402	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	15	97	91	434	457	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1079	463	468
Stage 1	463	-	-
Stage 2	616	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	244	603	1104
Stage 1	638	-	-
Stage 2	543	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	224	603	1104
Mov Cap-2 Maneuver	224	-	-
Stage 1	586	-	-
Stage 2	543	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1104	-	492	-
HCM Lane V/C Ratio	0.082	-	0.226	-
HCM Control Delay (s)	8.6	-	14.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	15	83	81	488	504	29
Future Volume (vph)	15	83	81	488	504	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.886			0.993		
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	17	94	92	555	573	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	92	555	606	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
Existing SAT

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	15	83	81	488	504	29
Future Vol, veh/h	15	83	81	488	504	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	17	94	92	555	573	33

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1329	590	606
Stage 1	590	-	-
Stage 2	739	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	173	511	962
Stage 1	558	-	-
Stage 2	476	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	156	511	962
Mov Cap-2 Maneuver	156	-	-
Stage 1	504	-	-
Stage 2	476	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	962	-	379	-
HCM Lane V/C Ratio	0.096	-	0.294	-
HCM Control Delay (s)	9.1	-	18.4	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing SAT

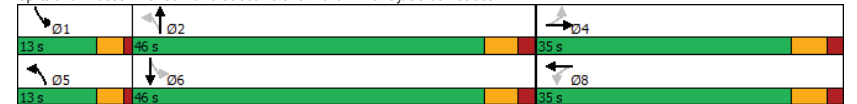
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	29	20	81	86	28	154	83	379	64	123	430	19
Future Volume (vph)	29	20	81	86	28	154	83	379	64	123	430	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.880			0.873			0.978			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1805	1645	0	1805	1842	0	1770	1871	0
Fit Permitted	0.492			0.683			0.417			0.377		
Satd. Flow (perm)	935	1659	0	1298	1645	0	792	1842	0	702	1871	0
Right Turn on Red		Yes			Yes			Yes				Yes
Satd. Flow (RTOR)		92			175			11				3
Link Speed (k/h)		50			50			50				50
Link Distance (m)		102.5			102.3			314.9				88.4
Travel Time (s)		7.4			7.4			22.7				6.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	33	23	92	98	32	175	94	431	73	140	489	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	115	0	98	207	0	94	504	0	140	511	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.9	10.9		10.9	10.9		48.9	40.1		50.8	42.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street Existing SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.66	0.54		0.68	0.58	
v/c Ratio	0.24	0.36		0.52	0.53		0.15	0.51		0.24	0.47	
Control Delay	32.4	12.9		39.3	12.7		4.5	13.7		4.9	12.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.4	12.9		39.3	12.7		4.5	13.7		4.9	12.7	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		17.3			21.2			12.3			11.0	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	4.4	3.0		13.5	4.2		3.3	42.4		5.0	42.9	
Queue Length 95th (m)	12.1	15.9		27.6	21.0		8.7	78.7		12.3	78.8	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	365	704		507	749		667	998		618	1077	
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	0.09	0.16		0.19	0.28		0.14	0.51		0.23	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	74.4
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	13.8
Intersection LOS:	B
Intersection Capacity Utilization:	63.3%
ICU Level of Service:	B
Analysis Period (min):	15

Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Appendix C

2025 Background Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	9	95	50	287	331	11
Future Volume (vph)	9	95	50	287	331	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.876				0.995	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1643	0	1805	1827	1872	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1643	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	10	108	57	326	376	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	57	326	389	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background AM

Intersection

Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	9	95	50	287	331	11
Future Vol, veh/h	9	95	50	287	331	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	10	108	57	326	376	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	823	383	389
Stage 1	383	-	-
Stage 2	440	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	346	667	1181
Stage 1	694	-	-
Stage 2	653	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	329	667	1181
Mov Cap-2 Maneuver	329	-	-
Stage 1	661	-	-
Stage 2	653	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1181	-	613	-
HCM Lane V/C Ratio	0.048	-	0.193	-
HCM Control Delay (s)	8.2	-	12.3	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	5	49	28	338	107	7
Future Volume (vph)	5	49	28	338	107	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.878				0.992	
Fit Protected	0.995		0.950			
Satd. Flow (prot)	1660	0	1736	1792	1800	0
Fit Permitted	0.995		0.950			
Satd. Flow (perm)	1660	0	1736	1792	1800	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	6	56	32	384	122	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	32	384	130	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.8%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background AM

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	5	49	28	338	107	7
Future Vol, veh/h	5	49	28	338	107	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	6	56	32	384	122	8

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	574	126	130
Stage 1	126	-	-
Stage 2	448	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	484	930	1443
Stage 1	905	-	-
Stage 2	648	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	473	930	1443
Mov Cap-2 Maneuver	473	-	-
Stage 1	885	-	-
Stage 2	648	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1443	-	854	-
HCM Lane V/C Ratio	0.022	-	0.072	-
HCM Control Delay (s)	7.6	-	9.5	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	8	25	86	13	145	34	233	86	145	350	9
Future Volume (vph)	2	8	25	86	13	145	34	233	86	145	350	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.886			0.862			0.960			0.996	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1683	0	1736	1526	0	1805	1661	0	1752	1821	0
Fit Permitted	0.568			0.733			0.523			0.465		
Satd. Flow (perm)	1079	1683	0	1339	1526	0	994	1661	0	858	1821	0
Right Turn on Red			Yes		Yes			Yes			Yes	
Satd. Flow (RTOR)		28			165			25			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	9	28	98	15	165	39	265	98	165	398	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	37	0	98	180	0	39	363	0	165	408	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.8	10.8		10.8	10.8		48.1	40.1		52.6	45.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.65	0.54		0.71	0.61	
v/c Ratio	0.01	0.14		0.51	0.50		0.06	0.40		0.24	0.36	
Control Delay	27.0	14.9		39.0	11.6		4.1	11.8		4.6	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.0	14.9		39.0	11.6		4.1	11.8		4.6	10.1	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		15.5			21.3			11.1			8.5	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.3	1.2		13.5	2.0		1.3	26.9		6.0	31.0	
Queue Length 95th (m)	2.1	8.7		27.7	17.6		4.4	52.3		13.9	57.3	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	421	674		522	696		780	905		718	1119	
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	0.05		0.19	0.26		0.05	0.40		0.23	0.36	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 74.5												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 12.3						Intersection LOS: B						
Intersection Capacity Utilization 50.3%						ICU Level of Service A						
Analysis Period (min) 15												
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø4										
13 s	46 s	35 s										
Ø5	Ø6	Ø8										
13 s	46 s	35 s										

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	18	86	127	414	377	13
Future Volume (vph)	18	86	127	414	377	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.888				0.995	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1674	0	1770	1827	1803	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1674	0	1770	1827	1803	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	20	98	144	470	428	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	144	470	443	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.0%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background PM

Intersection

Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	18	86	127	414	377	13
Future Vol, veh/h	18	86	127	414	377	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	20	98	144	470	428	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1194	436	443
Stage 1	436	-	-
Stage 2	758	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	208	625	1117
Stage 1	656	-	-
Stage 2	466	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	181	625	1117
Mov Cap-2 Maneuver	181	-	-
Stage 1	571	-	-
Stage 2	466	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1117	-	439	-
HCM Lane V/C Ratio	0.129	-	0.269	-
HCM Control Delay (s)	8.7	-	16.2	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1.1	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	23	90	79	535	473	24
Future Volume (vph)	23	90	79	535	473	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.892				0.994	
Fit Protected	0.990		0.950			
Satd. Flow (prot)	1648	0	1805	1845	1797	0
Fit Permitted	0.990		0.950			
Satd. Flow (perm)	1648	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	26	102	90	608	538	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	90	608	565	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background PM

Intersection

Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	23	90	79	535	473	24
Future Vol, veh/h	23	90	79	535	473	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	26	102	90	608	538	27

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1340	552	565
Stage 1	552	-	-
Stage 2	788	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	166	535	1017
Stage 1	571	-	-
Stage 2	443	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	151	535	1017
Mov Cap-2 Maneuver	151	-	-
Stage 1	521	-	-
Stage 2	443	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.9	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1017	-	353	-
HCM Lane V/C Ratio	0.088	-	0.364	-
HCM Control Delay (s)	8.9	-	20.9	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.6	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	29	35	70	65	40	197	106	414	81	163	370	15
Future Volume (vph)	29	35	70	65	40	197	106	414	81	163	370	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.975			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1822	0	1752	1831	0
Fit Permitted	0.408			0.680			0.481			0.336		
Satd. Flow (perm)	745	1699	0	1279	1657	0	905	1822	0	620	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			224			13				3
Link Speed (k/h)		50			50			50				50
Link Distance (m)		102.5			102.3			314.9				88.4
Travel Time (s)		7.4			7.4			22.7				6.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	33	40	80	74	45	224	120	470	92	185	420	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	120	0	74	269	0	120	562	0	185	437	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	9.8	9.8		9.8	9.8		49.1	40.1		51.3	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.67	0.54		0.70	0.58	
v/c Ratio	0.34	0.41		0.44	0.65		0.17	0.56		0.34	0.41	
Control Delay	38.5	16.5		37.7	15.2		4.1	14.3		5.3	11.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.5	16.5		37.7	15.2		4.1	14.3		5.3	11.4	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.3			20.1			12.5			9.6	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	4.4	5.3		10.1	6.0		3.9	48.1		6.3	33.6	
Queue Length 95th (m)	12.4	18.8		22.1	25.7		10.1	88.7		14.9	64.1	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	294	719		505	790		736	998		576	1068	
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	0.11	0.17		0.15	0.34		0.16	0.56		0.32	0.41	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 73.6												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.65												
Intersection Signal Delay: 13.7						Intersection LOS: B						
Intersection Capacity Utilization 71.7%						ICU Level of Service C						
Analysis Period (min) 15												
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s		35 s	13 s	46 s		35 s					

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	13	88	82	394	414	10
Future Volume (vph)	13	88	82	394	414	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.883				0.997	
Fit Protected	0.994		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1858	0
Fit Permitted	0.994		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	15	100	93	448	470	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	93	448	481	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.1%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Background SAT

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	13	88	82	394	414	10
Future Vol, veh/h	13	88	82	394	414	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	15	100	93	448	470	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1110	476	481
Stage 1	476	-	-
Stage 2	634	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	234	593	1092
Stage 1	629	-	-
Stage 2	532	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	214	593	1092
Mov Cap-2 Maneuver	214	-	-
Stage 1	576	-	-
Stage 2	532	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1092	-	483	-
HCM Lane V/C Ratio	0.085	-	0.238	-
HCM Control Delay (s)	8.6	-	14.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	15	86	83	503	519	30
Future Volume (vph)	15	86	83	503	519	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	17	98	94	572	590	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	94	572	624	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Background SAT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Intersection						
Int Delay, s/veh	2.2					
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	15	86	83	503	519	30
Future Vol, veh/h	15	86	83	503	519	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	17	98	94	572	590	34

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1367	607	624
Stage 1	607	-	-
Stage 2	760	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	164	500	948
Stage 1	548	-	-
Stage 2	465	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	148	500	948
Mov Cap-2 Maneuver	148	-	-
Stage 1	494	-	-
Stage 2	465	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	1.3	0
HCM LOS	C		

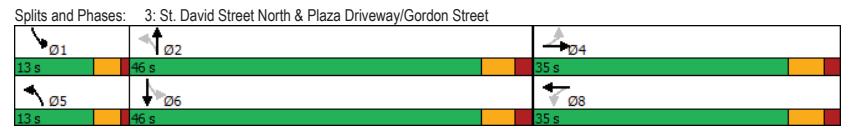
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	948	-	369	-
HCM Lane V/C Ratio	0.099	-	0.311	-
HCM Control Delay (s)	9.2	-	19.1	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.3	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic arrows for each lane group]											
Traffic Volume (vph)	30	21	83	89	29	159	86	390	66	127	443	20
Future Volume (vph)	30	21	83	89	29	159	86	390	66	127	443	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%											
Storage Length (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0
Storage Lanes	1	0	1	0	1	0	1	0	1	0	1	0
Taper Length (m)	7.5	7.5		7.5		7.5		7.5		7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00											
Fit	0.881			0.873			0.978			0.993		
Fit Protected	0.950	0.950		0.950		0.950		0.950		0.950		0.950
Satd. Flow (prot)	1805	1661	0	1805	1645	0	1805	1842	0	1770	1869	0
Fit Permitted	0.473	0.681		0.404		0.365		0.365		0.365		0.365
Satd. Flow (perm)	899	1661	0	1294	1645	0	768	1842	0	680	1869	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	94			181			11			3		
Link Speed (k/h)	50											
Link Distance (m)	102.5			102.3			314.9			88.4		
Travel Time (s)	7.4			7.4			22.7			6.4		
Confl. Peds. (#/hr)	0											
Confl. Bikes (#/hr)	0											
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	0											
Mid-Block Traffic (%)	0%			0%			0%			0%		
Adj. Flow (vph)	34	24	94	101	33	181	98	443	75	144	503	23
Shared Lane Traffic (%)	0											
Lane Group Flow (vph)	34	118	0	101	214	0	98	518	0	144	526	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4			8			5			2		
Permitted Phases	4			8			2			6		
Detector Phase	4			4			8			8		
Switch Phase	0											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	9.5	37.0	9.5	37.0	9.5	37.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	13.0	46.0	13.0	46.0	13.0	46.0
Total Split (%)	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	13.8%	48.9%	13.8%	48.9%	13.8%	48.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Lead/Lag	0											
Lead-Lag Optimize?	Yes											
Recall Mode	None	None	None	None	None	None	Max	None	None	None	Max	None
Act Effct Green (s)	11.1	11.1	11.1	11.1	11.1	11.1	49.0	40.2	50.9	42.8	50.9	42.8

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Background SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.66	0.54	0.68	0.57	0.68	0.57
v/c Ratio	0.26	0.36	0.53	0.54	0.16	0.52	0.25	0.49	0.25	0.49	0.25	0.49
Control Delay	32.9	12.9	39.6	12.6	4.6	14.1	5.0	13.1	5.0	13.1	5.0	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	12.9	39.6	12.6	4.6	14.1	5.0	13.1	5.0	13.1	5.0	13.1
LOS	C	B	D	B	A	B	A	B	A	B	A	B
Approach Delay	17.3			21.2			12.6			11.4		
Approach LOS	B			C			B			B		
Queue Length 50th (m)	4.5	3.1	14.0	4.3	3.5	44.6	5.3	45.3	5.3	45.3	5.3	45.3
Queue Length 95th (m)	12.5	16.2	28.5	21.3	9.1	82.3	12.7	82.8	12.7	82.8	12.7	82.8
Internal Link Dist (m)	78.5			78.3			290.9			64.4		
Turn Bay Length (m)	35.0											
Base Capacity (vph)	350	704	504	751	651	995	604	1072	604	1072	604	1072
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.20	0.28	0.15	0.52	0.24	0.49	0.24	0.49	0.24	0.49



Appendix D

2025 Total Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	9	95	50	296	337	11
Future Volume (vph)	9	95	50	296	337	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.876			0.996		
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1643	0	1805	1827	1874	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1643	0	1805	1827	1874	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	10	108	57	336	383	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	57	336	396	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.1%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	9	95	50	296	337	11
Future Vol, veh/h	9	95	50	296	337	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	10	108	57	336	383	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	840	390	396
Stage 1	390	-	-
Stage 2	450	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	338	661	1174
Stage 1	689	-	-
Stage 2	647	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	321	661	1174
Mov Cap-2 Maneuver	321	-	-
Stage 1	655	-	-
Stage 2	647	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1174	-	605	-
HCM Lane V/C Ratio	0.048	-	0.195	-
HCM Control Delay (s)	8.2	-	12.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	6	49	28	366	154	9
Future Volume (vph)	6	49	28	366	154	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.880			0.993		
Fit Protected	0.994		0.950			
Satd. Flow (prot)	1662	0	1736	1792	1801	0
Fit Permitted	0.994		0.950			
Satd. Flow (perm)	1662	0	1736	1792	1801	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	7	56	32	416	175	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	32	416	185	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Intersection

Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	6	49	28	366	154	9
Future Vol, veh/h	6	49	28	366	154	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	7	56	32	416	175	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	660	180	185
Stage 1	180	-	-
Stage 2	480	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	431	868	1378
Stage 1	856	-	-
Stage 2	627	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	421	868	1378
Mov Cap-2 Maneuver	421	-	-
Stage 1	836	-	-
Stage 2	627	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1378	-	778	-
HCM Lane V/C Ratio	0.023	-	0.08	-
HCM Control Delay (s)	7.7	-	10	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-

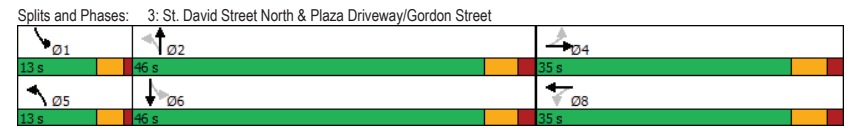
Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations with arrows]											
Traffic Volume (vph)	3	8	25	86	13	147	34	258	86	152	388	11
Future Volume (vph)	3	8	25	86	13	147	34	258	86	152	388	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%											
Storage Length (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0
Storage Lanes	1	0	1	0	1	0	1	0	1	0	1	0
Taper Length (m)	7.5	7.5		7.5		7.5		7.5		7.5		7.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00											
Fit	0.886			0.862			0.962			0.996		
Fit Protected	0.950	0.950		0.950		0.950		0.950		0.950		0.950
Satd. Flow (prot)	1805	1683	0	1736	1526	0	1805	1662	0	1752	1822	0
Fit Permitted	0.562	0.733		0.498		0.443		0.443		0.443		0.443
Satd. Flow (perm)	1068	1683	0	1339	1526	0	946	1662	0	817	1822	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	28		167		22		2		2		2	
Link Speed (k/h)	50											
Link Distance (m)	102.5			102.3			314.9			88.4		
Travel Time (s)	7.4			7.4			22.7			6.4		
Confl. Peds. (#/hr)	0											
Confl. Bikes (#/hr)	0											
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	0											
Mid-Block Traffic (%)	0%			0%			0%			0%		
Adj. Flow (vph)	3	9	28	98	15	167	39	293	98	173	441	13
Shared Lane Traffic (%)	0											
Lane Group Flow (vph)	3	37	0	98	182	0	39	391	0	173	454	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	NA	NA
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8		2		6		6		6	
Detector Phase	4		4		8		8		5		2	
Switch Phase	0											
Minimum Initial (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	29.0	29.0	29.0	29.0	9.5	37.0	9.5	37.0	9.5	37.0	9.5	37.0
Total Split (s)	35.0	35.0	35.0	35.0	13.0	46.0	13.0	46.0	13.0	46.0	13.0	46.0
Total Split (%)	37.2%	37.2%	37.2%	37.2%	13.8%	48.9%	13.8%	48.9%	13.8%	48.9%	13.8%	48.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Lead/Lag	Lead Lag											
Lead-Lag Optimize?	Yes Yes Yes Yes											
Recall Mode	None	None	None	None	None	Max	None	Max	None	Max	None	Max
Act Effct Green (s)	10.8	10.8	10.8	10.8	48.2	40.1	52.7	45.9	52.7	45.9	52.7	45.9

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.65	0.54	0.71	0.62	0.06	0.43	0.26	0.41
v/c Ratio	0.02	0.14	0.51	0.50	0.06	0.43	0.26	0.41	0.06	0.43	0.26	0.41
Control Delay	27.0	14.9	39.1	11.6	4.1	12.5	4.7	10.5	4.1	12.5	4.7	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	14.9	39.1	11.6	4.1	12.5	4.7	10.5	4.1	12.5	4.7	10.5
LOS	C	B	D	B	A	B	A	B	C	B	A	B
Approach Delay	15.8			21.2			11.7			8.9		
Approach LOS	B			C			B			A		
Queue Length 50th (m)	0.4	1.2	13.6	2.0	1.3	30.2	6.3	35.7	2.5	8.7	27.7	17.5
Queue Length 95th (m)	2.5	8.7	27.7	17.5	4.4	58.0	14.6	65.1	78.5	78.3	290.9	64.4
Internal Link Dist (m)	78.5			78.3			290.9			64.4		
Turn Bay Length (m)	35.0											
Base Capacity (vph)	416	673	522	697	753	904	694	1120	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.19	0.26	0.05	0.43	0.25	0.41	0.01	0.05	0.19	0.26

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	74.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization:	52.0%
ICU Level of Service A	
Analysis Period (min):	15



Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	49	9	338	29	6	426
Future Volume (vph)	49	9	338	29	6	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.980		0.989			
Fit Protected	0.959					0.999
Satd. Flow (prot)	1786	0	1706	0	0	1880
Fit Permitted	0.959					0.999
Satd. Flow (perm)	1786	0	1706	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.7			312.1
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	11%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	56	10	384	33	7	484
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	417	0	0	491
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.2%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total AM

Intersection

Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	49	9	338	29	6	426
Future Vol, veh/h	49	9	338	29	6	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	11	0	0	1
Mvmt Flow	56	10	384	33	7	484

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	899	401	0
Stage 1	401	-	-
Stage 2	498	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	312	653	1153
Stage 1	681	-	-
Stage 2	615	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	310	653	1153
Mov Cap-2 Maneuver	310	-	-
Stage 1	681	-	-
Stage 2	610	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	338	1153
HCM Lane V/C Ratio	-	-	0.195	0.006
HCM Control Delay (s)	-	-	18.2	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	18	86	127	423	384	13
Future Volume (vph)	18	86	127	423	384	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.888				0.996	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1674	0	1770	1827	1805	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1674	0	1770	1827	1805	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	20	98	144	481	436	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	144	481	451	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.3%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Intersection

Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	18	86	127	423	384	13
Future Vol, veh/h	18	86	127	423	384	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	20	98	144	481	436	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1213	444	451
Stage 1	444	-	-
Stage 2	769	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	203	618	1109
Stage 1	651	-	-
Stage 2	461	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	177	618	1109
Mov Cap-2 Maneuver	177	-	-
Stage 1	566	-	-
Stage 2	461	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1109	-	432	-
HCM Lane V/C Ratio	0.13	-	0.274	-
HCM Control Delay (s)	8.7	-	16.4	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1.1	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	24	90	79	565	509	25
Future Volume (vph)	24	90	79	565	509	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.893				0.994	
Fit Protected	0.990		0.950			
Satd. Flow (prot)	1649	0	1805	1845	1797	0
Fit Permitted	0.990		0.950			
Satd. Flow (perm)	1649	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	27	102	90	642	578	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	90	642	606	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	24	90	79	565	509	25
Future Vol, veh/h	24	90	79	565	509	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	27	102	90	642	578	28

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1414	592	606
Stage 1	592	-	-
Stage 2	822	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	149	508	982
Stage 1	547	-	-
Stage 2	427	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	135	508	982
Mov Cap-2 Maneuver	135	-	-
Stage 1	497	-	-
Stage 2	427	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.6	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	982	-	321	-
HCM Lane V/C Ratio	0.091	-	0.404	-
HCM Control Delay (s)	9	-	23.6	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.9	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	30	35	70	65	40	200	106	440	81	165	404	16	
Future Volume (vph)	30	35	70	65	40	200	106	440	81	165	404	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	
Grade (%)	0%			0%			0%			0%			
Storage Length (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	
Storage Lanes	1	0	1	0	0	1	0	1	0	1	0	0	
Taper Length (m)	7.5	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.900			0.875			0.977			0.994			
Fit Protected	0.950	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1825	0	1752	1831	0	
Fit Permitted	0.408	0.680			0.449			0.314			0.408		
Satd. Flow (perm)	745	1699	0	1279	1657	0	845	1825	0	579	1831	0	
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes		
Satd. Flow (RTOR)	80			227			12			3			
Link Speed (k/h)	50			50			50			50			
Link Distance (m)	102.5			102.3			314.9			88.4			
Travel Time (s)	7.4			7.4			22.7			6.4			
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)	0%			0%			0%			0%			
Adj. Flow (vph)	34	40	80	74	45	227	120	500	92	188	459	18	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	34	120	0	74	272	0	120	592	0	188	477	0	
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	NA	NA	
Protected Phases	4			8			5			2			
Permitted Phases	4			8			2			6			
Detector Phase	4			4			8			8			
Switch Phase													
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	9.5	37.0	9.5	37.0	9.5	37.0	9.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	13.0	46.0	13.0	46.0	13.0	46.0	13.0	
Total Split (%)	37.2%	37.2%	37.2%	37.2%	37.2%	13.8%	48.9%	13.8%	48.9%	13.8%	48.9%	13.8%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0	4.0	
Lead/Lag	Lead			Lag			Lead			Lag			
Lead-Lag Optimize?	Yes			Yes			Yes			Yes			
Recall Mode	None	None	None	None	None	None	Max	None	Max	None	Max	None	
Act Effct Green (s)	9.8	9.8	9.8	9.8	9.8	49.2	40.1	51.3	42.9	51.3	42.9	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.67	0.54	0.70	0.58	0.35	0.41	0.44	0.65
v/c Ratio	0.35	0.41	0.44	0.65	0.18	0.59	0.36	0.45	0.18	0.59	0.36	0.45
Control Delay	38.9	16.5	37.7	15.3	4.2	15.0	5.5	11.9	38.9	16.5	37.7	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	16.5	37.7	15.3	4.2	15.0	5.5	11.9	38.9	16.5	37.7	15.3
LOS	D	B	D	B	A	B	A	B	D	B	D	B
Approach Delay	21.5			20.0			13.2			10.1		
Approach LOS	C			C			B			B		
Queue Length 50th (m)	4.6	5.3	10.1	6.0	3.9	52.2	6.4	37.7	12.7	18.8	22.1	25.9
Queue Length 95th (m)	12.7	18.8	22.1	25.9	10.1	95.9	15.1	71.7	78.5	78.3	290.9	64.4
Internal Link Dist (m)	78.5			78.3			290.9			64.4		
Turn Bay Length (m)	294			719			505			791		
Base Capacity (vph)	294	719	505	791	702	999	552	1068	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.17	0.15	0.34	0.17	0.59	0.34	0.45	0.12	0.17	0.15	0.34
Intersection Summary												
Area Type:	Other											
Cycle Length:	94											
Actuated Cycle Length:	73.7											
Natural Cycle:	80											
Control Type:	Semi Act-Uncoord											
Maximum v/c Ratio:	0.65											
Intersection Signal Delay:	14.0						Intersection LOS: B					
Intersection Capacity Utilization:	73.3%						ICU Level of Service D					
Analysis Period (min):	15											
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s	35 s	13 s	46 s	35 s	13 s	46 s					

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	37	9	557	31	7	463
Future Volume (vph)	37	9	557	31	7	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr	0.974		0.993			
Fit Protected	0.961					0.999
Satd. Flow (prot)	1778	0	1852	0	0	1826
Fit Permitted	0.961					0.999
Satd. Flow (perm)	1778	0	1852	0	0	1826
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		114.7			311.2
Travel Time (s)	4.9		8.3			22.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	42	10	633	35	8	526
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	668	0	0	534
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.2%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total PM

Intersection

Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	37	9	557	31	7	463
Future Vol, veh/h	37	9	557	31	7	463
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	4
Mvmt Flow	42	10	633	35	8	526

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	1193	651	0
Stage 1	651	-	-
Stage 2	542	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	208	472	-
Stage 1	523	-	-
Stage 2	587	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	206	472	-
Mov Cap-2 Maneuver	206	-	-
Stage 1	523	-	-
Stage 2	580	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	25	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	931
HCM Lane V/C Ratio	-	-	0.225	0.009
HCM Control Delay (s)	-	-	25	8.9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	13	88	82	406	426	10
Future Volume (vph)	13	88	82	406	426	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.883				0.997	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1858	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	15	100	93	461	484	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	93	461	495	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	13	88	82	406	426	10
Future Vol, veh/h	13	88	82	406	426	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	15	100	93	461	484	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1137	490	495
Stage 1	490	-	-
Stage 2	647	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	225	582	1079
Stage 1	620	-	-
Stage 2	525	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	206	582	1079
Mov Cap-2 Maneuver	206	-	-
Stage 1	567	-	-
Stage 2	525	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1079	-	471	-
HCM Lane V/C Ratio	0.086	-	0.244	-
HCM Control Delay (s)	8.7	-	15.1	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	16	86	83	558	573	31
Future Volume (vph)	16	86	83	558	573	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.886				0.993	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	18	98	94	634	651	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	94	634	686	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.8%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	16	86	83	558	573	31
Future Vol, veh/h	16	86	83	558	573	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	18	98	94	634	651	35

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1491	669	686
Stage 1	669	-	-
Stage 2	822	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	138	461	898
Stage 1	513	-	-
Stage 2	435	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	124	461	898
Mov Cap-2 Maneuver	124	-	-
Stage 1	459	-	-
Stage 2	435	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.3	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	898	-	323	-
HCM Lane V/C Ratio	0.105	-	0.359	-
HCM Control Delay (s)	9.5	-	22.3	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1.6	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	31	21	83	89	29	162	86	441	66	130	493	21
Future Volume (vph)	31	21	83	89	29	162	86	441	66	130	493	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr		0.881			0.873			0.980			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1661	0	1805	1645	0	1805	1846	0	1770	1871	0
Fit Permitted	0.464			0.681			0.359			0.322		
Satd. Flow (perm)	882	1661	0	1294	1645	0	682	1846	0	600	1871	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		94			184			10			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	35	24	94	101	33	184	98	501	75	148	560	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	118	0	101	217	0	98	576	0	148	584	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.1	11.1		11.1	11.1		48.9	40.1		50.9	42.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2025 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.65	0.54		0.68	0.57	
v/c Ratio	0.27	0.36		0.53	0.54		0.18	0.58		0.28	0.54	
Control Delay	33.4	12.9		39.6	12.6		4.7	15.3		5.3	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.4	12.9		39.6	12.6		4.7	15.3		5.3	14.0	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		17.6			21.2			13.7			12.3	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	4.7	3.1		14.0	4.3		3.5	52.2		5.5	52.5	
Queue Length 95th (m)	12.8	16.2		28.5	21.5		9.1	95.3		13.0	95.3	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	343	704		504	753		602	996		558	1073	
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	0.17		0.20	0.29		0.16	0.58		0.27	0.54	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 74.7												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.58												
Intersection Signal Delay: 14.7												
Intersection LOS: B												
Intersection Capacity Utilization 67.6%												
ICU Level of Service C												
Analysis Period (min) 15												
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø4	Ø5	Ø6	Ø8							
13 s	46 s	35 s	13 s	46 s	35 s							

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	55	12	518	56	12	502
Future Volume (vph)	55	12	518	56	12	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.975		0.987			
Flt Protected	0.961					0.999
Satd. Flow (prot)	1780	0	1859	0	0	1880
Flt Permitted	0.961					0.999
Satd. Flow (perm)	1780	0	1859	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.3			312.5
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	63	14	589	64	14	570
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	653	0	0	584
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2025 Total SAT

Intersection

Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	55	12	518	56	12	502
Future Vol, veh/h	55	12	518	56	12	502
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	63	14	589	64	14	570

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1219	621	0 0 653 0
Stage 1	621	-	- - - -
Stage 2	598	-	- - - -
Critical Hdwy	6.4	6.2	- - 4.1 -
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	- - 2.2 -
Pot Cap-1 Maneuver	201	491	- - 943 -
Stage 1	540	-	- - - -
Stage 2	553	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	197	491	- - 943 -
Mov Cap-2 Maneuver	197	-	- - - -
Stage 1	540	-	- - - -
Stage 2	541	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	29.6	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 221	943	-
HCM Lane V/C Ratio	-	- 0.345	0.014	-
HCM Control Delay (s)	-	- 29.6	8.9	0
HCM Lane LOS	-	- D	A	A
HCM 95th %tile Q(veh)	-	- 1.5	0	-

Appendix E

2030 Background Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	10	100	53	302	348	12
Future Volume (vph)	10	100	53	302	348	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.877				0.995	
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1645	0	1805	1827	1872	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1645	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	11	114	60	343	395	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	60	343	409	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Intersection						
Int Delay, s/veh	2.2					
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	10	100	53	302	348	12
Future Vol, veh/h	10	100	53	302	348	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	11	114	60	343	395	14

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	865	402	409
Stage 1	402	-	-
Stage 2	463	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	327	650	1161
Stage 1	680	-	-
Stage 2	638	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	310	650	1161
Mov Cap-2 Maneuver	310	-	-
Stage 1	645	-	-
Stage 2	638	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1161	-	591	-
HCM Lane V/C Ratio	0.052	-	0.212	-
HCM Control Delay (s)	8.3	-	12.7	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	5	52	29	355	113	8
Future Volume (vph)	5	52	29	355	113	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.877				0.991	
Fit Protected	0.995		0.950			
Satd. Flow (prot)	1658	0	1736	1792	1799	0
Fit Permitted	0.995		0.950			
Satd. Flow (perm)	1658	0	1736	1792	1799	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	6	59	33	403	128	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	33	403	137	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background AM

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	52	29	355	113	8
Future Vol, veh/h	5	52	29	355	113	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	6	59	33	403	128	9

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	602	133	137
Stage 1	133	-	-
Stage 2	469	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	466	922	1435
Stage 1	898	-	-
Stage 2	634	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	455	922	1435
Mov Cap-2 Maneuver	455	-	-
Stage 1	877	-	-
Stage 2	634	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1435	-	846	-
HCM Lane V/C Ratio	0.023	-	0.077	-
HCM Control Delay (s)	7.6	-	9.6	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	9	26	90	14	153	36	245	90	153	368	10
Future Volume (vph)	2	9	26	90	14	153	36	245	90	153	368	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr		0.887			0.863			0.960			0.996	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1685	0	1736	1528	0	1805	1660	0	1752	1821	0
Fit Permitted	0.538			0.731			0.513			0.451		
Satd. Flow (perm)	1022	1685	0	1335	1528	0	975	1660	0	832	1821	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		30			174			24			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	10	30	102	16	174	41	278	102	174	418	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	40	0	102	190	0	41	380	0	174	429	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.0	11.0		11.0	11.0		48.2	40.2		52.8	45.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.64	0.54		0.70	0.61	
v/c Ratio	0.01	0.15		0.52	0.51		0.06	0.42		0.26	0.38	
Control Delay	27.0	14.7		39.4	11.5		4.2	12.4		4.8	10.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.0	14.7		39.4	11.5		4.2	12.4		4.8	10.4	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		15.3			21.3			11.6			8.8	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.3	1.3		14.2	2.1		1.4	29.2		6.5	33.6	
Queue Length 95th (m)	2.0	9.0		28.5	18.0		4.6	56.4		15.0	61.8	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	397	673		518	700		766	900		700	1115	
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	0.06		0.20	0.27		0.05	0.42		0.25	0.38	
Intersection Summary												
Area Type:	Other											
Cycle Length:	94											
Actuated Cycle Length:	74.9											
Natural Cycle:	80											
Control Type:	Semi Act-Uncoord											
Maximum v/c Ratio:	0.52											
Intersection Signal Delay:	12.5						Intersection LOS: B					
Intersection Capacity Utilization:	51.8%						ICU Level of Service A					
Analysis Period (min):	15											
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s		35 s	13 s	46 s		35 s					

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	18	90	133	435	396	14
Future Volume (vph)	18	90	133	435	396	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.887				0.995	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1672	0	1770	1827	1803	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1672	0	1770	1827	1803	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	20	102	151	494	450	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	0	151	494	466	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.6%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background PM

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	18	90	133	435	396	14
Future Vol, veh/h	18	90	133	435	396	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	20	102	151	494	450	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1254	458	466
Stage 1	458	-	-
Stage 2	796	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	192	607	1095
Stage 1	641	-	-
Stage 2	448	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	166	607	1095
Mov Cap-2 Maneuver	166	-	-
Stage 1	553	-	-
Stage 2	448	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1095	-	421	-
HCM Lane V/C Ratio	0.138	-	0.292	-
HCM Control Delay (s)	8.8	-	17	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	1.2	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	24	94	83	562	497	25
Future Volume (vph)	24	94	83	562	497	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.892				0.994	
Fit Protected	0.990		0.950			
Satd. Flow (prot)	1648	0	1805	1845	1797	0
Fit Permitted	0.990		0.950			
Satd. Flow (perm)	1648	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	27	107	94	639	565	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	0	94	639	593	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background PM

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	24	94	83	562	497	25
Future Vol, veh/h	24	94	83	562	497	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	27	107	94	639	565	28

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1406	579	593
Stage 1	579	-	-
Stage 2	827	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	151	517	993
Stage 1	555	-	-
Stage 2	424	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	137	517	993
Mov Cap-2 Maneuver	137	-	-
Stage 1	502	-	-
Stage 2	424	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	993	-	331	-	-
HCM Lane V/C Ratio	0.095	-	0.405	-	-
HCM Control Delay (s)	9	-	23.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.9	-	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background PM

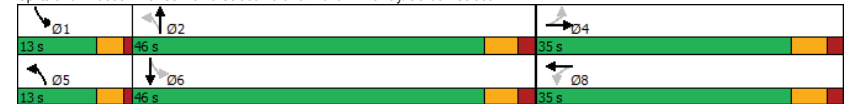
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	37	74	68	42	207	112	435	86	171	389	16
Future Volume (vph)	30	37	74	68	42	207	112	435	86	171	389	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.975			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1822	0	1752	1831	0
Fit Permitted	0.400			0.676			0.461			0.313		
Satd. Flow (perm)	731	1699	0	1272	1657	0	867	1822	0	577	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		84			235			13				3
Link Speed (k/h)		50			50			50				50
Link Distance (m)		102.5			102.3			314.9				88.4
Travel Time (s)		7.4			7.4			22.7				6.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	34	42	84	77	48	235	127	494	98	194	442	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	126	0	77	283	0	127	592	0	194	460	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		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.0	10.0		10.0	10.0		49.2	40.1		51.3	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.67	0.54		0.69	0.58	
v/c Ratio	0.35	0.42		0.45	0.66		0.19	0.60		0.37	0.43	
Control Delay	38.9	16.4		38.1	15.4		4.3	15.2		5.7	11.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.9	16.4		38.1	15.4		4.3	15.2		5.7	11.9	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.2			20.3			13.3			10.1	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	4.6	5.5		10.6	6.4		4.2	52.7		6.7	36.3	
Queue Length 95th (m)	12.8	19.4		22.8	26.7		10.8	96.8		15.9	69.4	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	287	719		500	794		712	994		549	1064	
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	0.12	0.18		0.15	0.36		0.18	0.60		0.35	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	73.9
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	14.2
Intersection LOS:	B
Intersection Capacity Utilization:	74.2%
ICU Level of Service:	D
Analysis Period (min):	15

Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	14	92	87	414	435	11
Future Volume (vph)	14	92	87	414	435	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.883				0.997	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1858	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	16	105	99	470	494	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	99	470	507	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Background SAT

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	14	92	87	414	435	11
Future Vol, veh/h	14	92	87	414	435	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	16	105	99	470	494	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1169	501	507
Stage 1	501	-	-
Stage 2	668	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	215	574	1068
Stage 1	613	-	-
Stage 2	513	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	195	574	1068
Mov Cap-2 Maneuver	195	-	-
Stage 1	556	-	-
Stage 2	513	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1068	-	457	-
HCM Lane V/C Ratio	0.093	-	0.264	-
HCM Control Delay (s)	8.7	-	15.7	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	16	90	88	528	546	31
Future Volume (vph)	16	90	88	528	546	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	18	102	100	600	620	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	100	600	655	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.9%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Background SAT

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	16	90	88	528	546	31
Future Vol, veh/h	16	90	88	528	546	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	18	102	100	600	620	35

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1438	638	655
Stage 1	638	-	-
Stage 2	800	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	148	480	923
Stage 1	530	-	-
Stage 2	446	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	132	480	923
Mov Cap-2 Maneuver	132	-	-
Stage 1	473	-	-
Stage 2	446	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	923	-	343	-
HCM Lane V/C Ratio	0.108	-	0.351	-
HCM Control Delay (s)	9.4	-	21.1	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1.5	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	31	22	88	93	30	167	90	410	69	133	466	21
Future Volume (vph)	31	22	88	93	30	167	90	410	69	133	466	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.880			0.873			0.978			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1805	1645	0	1805	1842	0	1770	1871	0
Fit Permitted	0.448			0.677			0.379			0.343		
Satd. Flow (perm)	851	1659	0	1286	1645	0	720	1842	0	639	1871	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		100			190			11			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	35	25	100	106	34	190	102	466	78	151	530	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	125	0	106	224	0	102	544	0	151	554	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.5	11.5		11.5	11.5		49.1	40.2		51.0	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Background SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.65	0.53		0.68	0.57	
v/c Ratio	0.27	0.37		0.54	0.54		0.18	0.55		0.28	0.52	
Control Delay	33.5	12.6		40.0	12.4		4.8	14.9		5.4	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.5	12.6		40.0	12.4		4.8	14.9		5.4	13.8	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		17.1			21.2			13.3			12.0	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	4.7	3.2		14.8	4.5		3.7	48.5		5.7	49.2	
Queue Length 95th (m)	12.7	16.5		29.6	21.9		9.8	89.1		13.6	90.7	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	329	703		497	753		620	989		577	1067	
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	0.11	0.18		0.21	0.30		0.16	0.55		0.26	0.52	

Intersections Summary

Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	75.2
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	14.6
Intersection LOS:	B
Intersection Capacity Utilization:	66.7%
ICU Level of Service:	C
Analysis Period (min):	15



Appendix F

2030 Total Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	10	100	53	312	354	12
Future Volume (vph)	10	100	53	312	354	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.877			0.995		
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1645	0	1805	1827	1872	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1645	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	11	114	60	355	402	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	60	355	416	0
Sign Control	Stop			Free	Free	

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	10	100	53	312	354	12
Future Vol, veh/h	10	100	53	312	354	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	11	114	60	355	402	14

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	884	409	416
Stage 1	409	-	-
Stage 2	475	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	318	645	1154
Stage 1	675	-	-
Stage 2	630	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	301	645	1154
Mov Cap-2 Maneuver	301	-	-
Stage 1	640	-	-
Stage 2	630	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1154	-	584	-
HCM Lane V/C Ratio	0.052	-	0.214	-
HCM Control Delay (s)	8.3	-	12.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	6	52	29	383	159	10
Future Volume (vph)	6	52	29	383	159	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.879				0.992	
Fit Protected	0.995		0.950			
Satd. Flow (prot)	1662	0	1736	1792	1800	0
Fit Permitted	0.995		0.950			
Satd. Flow (perm)	1662	0	1736	1792	1800	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	7	59	33	435	181	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	33	435	192	0
Sign Control	Stop			Free	Free	

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

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	6	52	29	383	159	10
Future Vol, veh/h	6	52	29	383	159	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	7	59	33	435	181	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	688	187	192
Stage 1	187	-	-
Stage 2	501	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	415	860	1370
Stage 1	850	-	-
Stage 2	613	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	405	860	1370
Mov Cap-2 Maneuver	405	-	-
Stage 1	830	-	-
Stage 2	613	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1370	-	770	-	-
HCM Lane V/C Ratio	0.024	-	0.086	-	-
HCM Control Delay (s)	7.7	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

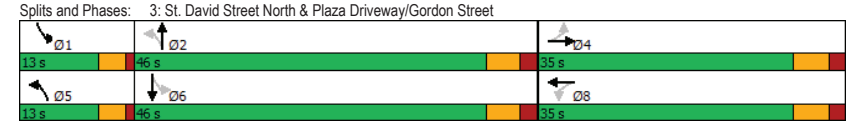
Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	9	26	90	14	155	36	270	90	160	406	12
Future Volume (vph)	3	9	26	90	14	155	36	270	90	160	406	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr		0.887			0.862			0.963			0.996	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1685	0	1736	1526	0	1805	1663	0	1752	1822	0
Fit Permitted	0.531			0.731			0.481			0.428		
Satd. Flow (perm)	1009	1685	0	1335	1526	0	914	1663	0	790	1822	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		30			176			22			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	10	30	102	16	176	41	307	102	182	461	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	40	0	102	192	0	41	409	0	182	475	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.0	11.0		11.0	11.0		48.2	40.1		52.9	45.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.64	0.53		0.71	0.61	
v/c Ratio	0.02	0.15		0.52	0.51		0.06	0.45		0.28	0.43	
Control Delay	27.0	14.8		39.4	11.5		4.2	13.0		4.9	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.0	14.8		39.4	11.5		4.2	13.0		4.9	10.9	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		15.6			21.2			12.2			9.3	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.4	1.3		14.2	2.1		1.4	32.6		6.8	38.3	
Queue Length 95th (m)	2.5	9.0		28.5	18.2		4.6	62.0		15.5	70.1	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	391	672		517	699		731	900		675	1116	
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	0.06		0.20	0.27		0.06	0.45		0.27	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	75
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	12.8
Intersection LOS:	B
Intersection Capacity Utilization:	53.5%
ICU Level of Service:	A
Analysis Period (min):	15



Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	49	9	355	29	6	447
Future Volume (vph)	49	9	355	29	6	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.980		0.990			
Fit Protected	0.959					0.999
Satd. Flow (prot)	1786	0	1707	0	0	1880
Fit Permitted	0.959					0.999
Satd. Flow (perm)	1786	0	1707	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.7			312.1
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	11%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	56	10	403	33	7	508
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	436	0	0	515
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.3%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Intersection						
Int Delay, s/veh	1.3					
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	49	9	355	29	6	447
Future Vol, veh/h	49	9	355	29	6	447
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	11	0	0	1
Mvmt Flow	56	10	403	33	7	508

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	942	420	0
Stage 1	420	-	-
Stage 2	522	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	294	638	-
Stage 1	667	-	-
Stage 2	599	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	291	638	-
Mov Cap-2 Maneuver	291	-	-
Stage 1	667	-	-
Stage 2	594	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.3	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	318	1134
HCM Lane V/C Ratio	-	-	0.207	0.006
HCM Control Delay (s)	-	-	19.3	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	18	90	133	452	409	14
Future Volume (vph)	18	90	133	452	409	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.887				0.996	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1672	0	1770	1827	1805	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1672	0	1770	1827	1805	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	20	102	151	514	465	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	0	151	514	481	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Intersection

Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	18	90	133	452	409	14
Future Vol, veh/h	18	90	133	452	409	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	20	102	151	514	465	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1289	473	481
Stage 1	473	-	-
Stage 2	816	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	182	595	1082
Stage 1	631	-	-
Stage 2	438	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	157	595	1082
Mov Cap-2 Maneuver	157	-	-
Stage 1	543	-	-
Stage 2	438	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1082	-	406	-
HCM Lane V/C Ratio	0.14	-	0.302	-
HCM Control Delay (s)	8.9	-	17.7	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	1.3	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	26	94	83	622	569	26
Future Volume (vph)	26	94	83	622	569	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.895				0.994	
Fit Protected	0.989		0.950			
Satd. Flow (prot)	1651	0	1805	1845	1797	0
Fit Permitted	0.989		0.950			
Satd. Flow (perm)	1651	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	30	107	94	707	647	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	94	707	677	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Intersection

Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	26	94	83	622	569	26
Future Vol, veh/h	26	94	83	622	569	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	30	107	94	707	647	30

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1557	662	677
Stage 1	662	-	-
Stage 2	895	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	122	464	924
Stage 1	507	-	-
Stage 2	394	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	110	464	924
Mov Cap-2 Maneuver	110	-	-
Stage 1	455	-	-
Stage 2	394	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.7	1.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	924	-	273	-	-
HCM Lane V/C Ratio	0.102	-	0.5	-	-
HCM Control Delay (s)	9.3	-	30.7	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.6	-	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	32	37	74	68	42	213	112	487	86	175	456	17
Future Volume (vph)	32	37	74	68	42	213	112	487	86	175	456	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.977			0.995	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1825	0	1752	1833	0
Fit Permitted	0.400			0.676			0.402			0.269		
Satd. Flow (perm)	731	1699	0	1272	1657	0	756	1825	0	496	1833	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		84			242			12			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	42	84	77	48	242	127	553	98	199	518	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	126	0	77	290	0	127	651	0	199	537	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		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.0	10.0		10.0	10.0		49.3	40.1		51.6	43.0	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.67	0.54		0.70	0.58	
v/c Ratio	0.37	0.42		0.45	0.67		0.21	0.66		0.42	0.50	
Control Delay	39.9	16.4		38.1	15.4		4.5	16.8		6.4	13.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.9	16.4		38.1	15.4		4.5	16.8		6.4	13.1	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.6			20.1			14.8			11.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	4.9	5.6		10.6	6.4		4.2	61.7		6.9	45.1	
Queue Length 95th (m)	13.5	19.3		22.8	27.0		10.9	112.4		16.5	86.0	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	286	717		499	797		647	993		501	1065	
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	0.13	0.18		0.15	0.36		0.20	0.66		0.40	0.50	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 74.1												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.67												
Intersection Signal Delay: 15.0						Intersection LOS: B						
Intersection Capacity Utilization 77.6%						ICU Level of Service D						
Analysis Period (min) 15												
Splits and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s		35 s	13 s	46 s		35 s					

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	73	17	586	62	13	486
Future Volume (vph)	73	17	586	62	13	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.975		0.987			
Flt Protected	0.961					0.999
Satd. Flow (prot)	1780	0	1842	0	0	1827
Flt Permitted	0.961					0.999
Satd. Flow (perm)	1780	0	1842	0	0	1827
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		114.7			311.2
Travel Time (s)	4.9		8.3			22.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	83	19	666	70	15	552
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	0	736	0	0	567
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.8%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total PM

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	73	17	586	62	13	486
Future Vol, veh/h	73	17	586	62	13	486
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	4
Mvmt Flow	83	19	666	70	15	552

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1283	701	0
Stage 1	701	-	-
Stage 2	582	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	184	442	-
Stage 1	496	-	-
Stage 2	563	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	179	442	-
Mov Cap-2 Maneuver	179	-	-
Stage 1	496	-	-
Stage 2	549	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.8	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	202	879
HCM Lane V/C Ratio	-	-	0.506	0.017
HCM Control Delay (s)	-	-	39.8	9.2
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	2.6	0.1

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	14	92	87	426	448	11
Future Volume (vph)	14	92	87	426	448	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.883				0.997	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1858	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	16	105	99	484	509	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	99	484	522	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	14	92	87	426	448	11
Future Vol, veh/h	14	92	87	426	448	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	16	105	99	484	509	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1198	516	522
Stage 1	516	-	-
Stage 2	682	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	207	563	1055
Stage 1	603	-	-
Stage 2	506	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	188	563	1055
Mov Cap-2 Maneuver	188	-	-
Stage 1	546	-	-
Stage 2	506	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	446	-
HCM Lane V/C Ratio	0.094	-	0.27	-
HCM Control Delay (s)	8.8	-	16	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.1	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	17	90	88	583	599	33
Future Volume (vph)	17	90	88	583	599	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.886				0.993	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	19	102	100	663	681	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	100	663	719	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.9%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Intersection

Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	17	90	88	583	599	33
Future Vol, veh/h	17	90	88	583	599	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	19	102	100	663	681	38

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1563	700	719
Stage 1	700	-	-
Stage 2	863	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	124	443	873
Stage 1	496	-	-
Stage 2	416	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	110	443	873
Mov Cap-2 Maneuver	110	-	-
Stage 1	439	-	-
Stage 2	416	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	1.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	873	-	299	-	-
HCM Lane V/C Ratio	0.115	-	0.407	-	-
HCM Control Delay (s)	9.7	-	25.1	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.4	-	1.9	-	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	32	22	88	93	30	170	90	461	69	136	515	22
Future Volume (vph)	32	22	88	93	30	170	90	461	69	136	515	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.880			0.872			0.981			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1805	1643	0	1805	1848	0	1770	1871	0
Fit Permitted	0.439			0.677			0.336			0.301		
Satd. Flow (perm)	834	1659	0	1286	1643	0	638	1848	0	561	1871	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		100			193			10			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	25	100	106	34	193	102	524	78	155	585	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	125	0	106	227	0	102	602	0	155	610	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		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.5	11.5		11.5	11.5		49.1	40.1		51.1	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2030 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.65	0.53		0.68	0.57	
v/c Ratio	0.28	0.37		0.54	0.55		0.20	0.61		0.31	0.57	
Control Delay	34.0	12.6		40.0	12.4		5.0	16.2		5.7	14.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.0	12.6		40.0	12.4		5.0	16.2		5.7	14.8	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		17.4			21.2			14.5			13.0	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	4.8	3.2		14.8	4.4		3.7	56.4		5.9	56.7	
Queue Length 95th (m)	13.1	16.5		29.6	21.8		9.8	102.9		14.0	103.7	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	322	703		497	754		574	991		532	1067	
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	0.11	0.18		0.21	0.30		0.18	0.61		0.29	0.57	
Intersection Summary												
Area Type:	Other											
Cycle Length:	94											
Actuated Cycle Length:	75.2											
Natural Cycle:	80											
Control Type:	Semi Act-Uncoord											
Maximum v/c Ratio:	0.61											
Intersection Signal Delay:	15.3						Intersection LOS: B					
Intersection Capacity Utilization:	69.7%						ICU Level of Service C					
Analysis Period (min):	15											
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	↔	Ø2	↔	Ø4	↔	Ø5	↔	Ø6	↔	Ø8	↔	
13 s		46 s		35 s		13 s		46 s		35 s		

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	55	12	545	56	12	527
Future Volume (vph)	55	12	545	56	12	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr	0.975		0.987			
Fit Protected	0.961					0.999
Satd. Flow (prot)	1780	0	1858	0	0	1880
Fit Permitted	0.961					0.999
Satd. Flow (perm)	1780	0	1858	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.3			312.5
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	63	14	619	64	14	599
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	683	0	0	613
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2030 Total SAT

Intersection

Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	55	12	545	56	12	527
Future Vol, veh/h	55	12	545	56	12	527
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	63	14	619	64	14	599

Major/Minor

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1278	651	0
Stage 1	651	-	-
Stage 2	627	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	185	472	919
Stage 1	523	-	-
Stage 2	536	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	181	472	919
Mov Cap-2 Maneuver	181	-	-
Stage 1	523	-	-
Stage 2	524	-	-

Approach

Approach	WB	NB	SB
HCM Control Delay, s	33	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	203	919
HCM Lane V/C Ratio	-	-	0.375	0.015
HCM Control Delay (s)	-	-	33	9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.6	0

Appendix G

2035 Background Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	10	105	56	318	365	13
Future Volume (vph)	10	105	56	318	365	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.876				0.995	
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1643	0	1805	1827	1872	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1643	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	11	119	64	361	415	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	0	64	361	430	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Intersection						
Int Delay, s/veh	2.3					
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	10	105	56	318	365	13
Future Vol, veh/h	10	105	56	318	365	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	11	119	64	361	415	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	912	423	430
Stage 1	423	-	-
Stage 2	489	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	307	633	1140
Stage 1	665	-	-
Stage 2	621	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	290	633	1140
Mov Cap-2 Maneuver	290	-	-
Stage 1	628	-	-
Stage 2	621	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1140	-	574	-
HCM Lane V/C Ratio	0.056	-	0.228	-
HCM Control Delay (s)	8.3	-	13.1	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	6	55	31	373	118	8
Future Volume (vph)	6	55	31	373	118	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.878				0.992	
Fit Protected	0.995		0.950			
Satd. Flow (prot)	1660	0	1736	1792	1800	0
Fit Permitted	0.995		0.950			
Satd. Flow (perm)	1660	0	1736	1792	1800	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	7	63	35	424	134	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	35	424	143	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.0%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background AM

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	6	55	31	373	118	8
Future Vol, veh/h	6	55	31	373	118	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	7	63	35	424	134	9

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	633	139	143
Stage 1	139	-	-
Stage 2	494	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	447	915	1427
Stage 1	893	-	-
Stage 2	617	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	436	915	1427
Mov Cap-2 Maneuver	436	-	-
Stage 1	871	-	-
Stage 2	617	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1427	-	826	-
HCM Lane V/C Ratio	0.025	-	0.084	-
HCM Control Delay (s)	7.6	-	9.8	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Traffic Volume (vph)	2	9	27	94	15	160	38	257	94	160	387	10
Future Volume (vph)	2	9	27	94	15	160	38	257	94	160	387	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%											
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit	0.887			0.863			0.960			0.996		
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1685	0	1736	1528	0	1805	1660	0	1752	1821	0
Fit Permitted	0.512			0.730			0.499			0.435		
Satd. Flow (perm)	973	1685	0	1334	1528	0	948	1660	0	802	1821	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	31			182			24			2		
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	102.5			102.3			314.9			88.4		
Travel Time (s)	7.4			7.4			22.7			6.4		
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%			0%			0%			0%		
Adj. Flow (vph)	2	10	31	107	17	182	43	292	107	182	440	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	41	0	107	199	0	43	399	0	182	451	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4			8			5			2		
Permitted Phases	4			8			2			6		
Detector Phase	4			4			5			2		
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead						Lag					
Lead-Lag Optimize?	Yes						Yes					
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.3	11.3		11.3	11.3		48.2	40.2		52.9	46.0	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.64	0.53		0.70	0.61	
v/c Ratio	0.01	0.15		0.54	0.52		0.06	0.45		0.28	0.41	
Control Delay	26.5	14.5		39.8	11.4		4.3	12.9		5.0	10.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.5	14.5		39.8	11.4		4.3	12.9		5.0	10.8	
LOS	C	B		D	B		A	B		A	B	
Approach Delay	15.1			21.3			12.1			9.2		
Approach LOS	B			C			B			A		
Queue Length 50th (m)	0.3	1.3		15.0	2.2		1.5	31.6		6.9	36.3	
Queue Length 95th (m)	2.0	9.2		29.8	18.5		4.9	60.6		15.9	66.6	
Internal Link Dist (m)	78.5			78.3			290.9			64.4		
Turn Bay Length (m)	35.0											
Base Capacity (vph)	376	670		515	702		747	896		680	1112	
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	0.06		0.21	0.28		0.06	0.45		0.27	0.41	
Intersection Summary												
Area Type:	Other											
Cycle Length:	94											
Actuated Cycle Length:	75.3											
Natural Cycle:	80											
Control Type:	Semi Act-Uncoord											
Maximum v/c Ratio:	0.54											
Intersection Signal Delay:	12.9						Intersection LOS: B					
Intersection Capacity Utilization:	53.3%						ICU Level of Service A					
Analysis Period (min):	15											
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
[Signal Timing Diagram showing phases Ø1-Ø8 with durations of 13s, 46s, and 35s]												

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	19	94	140	458	417	15
Future Volume (vph)	19	94	140	458	417	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.888				0.995	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1674	0	1770	1827	1803	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1674	0	1770	1827	1803	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	22	107	159	520	474	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	159	520	491	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background PM

Intersection

Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	19	94	140	458	417	15
Future Vol, veh/h	19	94	140	458	417	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	22	107	159	520	474	17

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1321	483	491
Stage 1	483	-	-
Stage 2	838	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	174	588	1072
Stage 1	625	-	-
Stage 2	428	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	148	588	1072
Mov Cap-2 Maneuver	148	-	-
Stage 1	533	-	-
Stage 2	428	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1072	-	392	-
HCM Lane V/C Ratio	0.148	-	0.328	-
HCM Control Delay (s)	8.9	-	18.6	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	1.4	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	25	99	88	591	522	26
Future Volume (vph)	25	99	88	591	522	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.892				0.993	
Fit Protected	0.990		0.950			
Satd. Flow (prot)	1648	0	1805	1845	1795	0
Fit Permitted	0.990		0.950			
Satd. Flow (perm)	1648	0	1805	1845	1795	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	28	113	100	672	593	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	0	100	672	623	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Intersection						
Int Delay, s/veh	3					
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	25	99	88	591	522	26
Future Vol, veh/h	25	99	88	591	522	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	28	113	100	672	593	30

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1480	608	623
Stage 1	608	-	-
Stage 2	872	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	136	498	968
Stage 1	538	-	-
Stage 2	404	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	122	498	968
Mov Cap-2 Maneuver	122	-	-
Stage 1	483	-	-
Stage 2	404	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.3	1.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	968	-	307	-
HCM Lane V/C Ratio	0.103	-	0.459	-
HCM Control Delay (s)	9.1	-	26.3	-
HCM Lane LOS	A	-	D	-
HCM 95th %tile Q(veh)	0.3	-	2.3	-

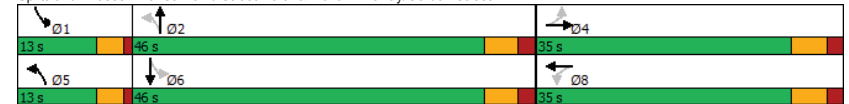
Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	32	39	77	72	44	217	117	458	90	180	409	17
Future Volume (vph)	32	39	77	72	44	217	117	458	90	180	409	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.975			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1822	0	1752	1831	0
Fit Permitted	0.388			0.673			0.419			0.295		
Satd. Flow (perm)	709	1699	0	1266	1657	0	788	1822	0	544	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			247			13				3
Link Speed (k/h)		50			50			50				50
Link Distance (m)		102.5			102.3			314.9				88.4
Travel Time (s)		7.4			7.4			22.7				6.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	36	44	88	82	50	247	133	520	102	205	465	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	132	0	82	297	0	133	622	0	205	484	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.3	10.3		10.3	10.3		49.4	40.1		50.7	40.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.66	0.54		0.68	0.55	
v/c Ratio	0.37	0.43		0.47	0.67		0.21	0.63		0.41	0.48	
Control Delay	40.0	16.3		38.6	15.3		4.6	16.2		6.3	13.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.0	16.3		38.6	15.3		4.6	16.2		6.3	13.2	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.3			20.3			14.1			11.1	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	4.9	5.9		11.3	6.7		4.5	57.7		7.3	39.5	
Queue Length 95th (m)	13.5	19.9		23.9	27.6		11.6	105.4		17.2	75.5	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	277	718		495	798		663	989		525	1005	
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	0.13	0.18		0.17	0.37		0.20	0.63		0.39	0.48	
Intersection Summary												
Area Type:	Other											
Cycle Length:	94											
Actuated Cycle Length:	74.4											
Natural Cycle:	80											
Control Type:	Semi Act-Uncoord											
Maximum v/c Ratio:	0.67											
Intersection Signal Delay:	14.9						Intersection LOS: B					
Intersection Capacity Utilization:	76.9%						ICU Level of Service D					
Analysis Period (min):	15											

Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	15	97	91	435	458	11
Future Volume (vph)	15	97	91	435	458	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.883				0.997	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1858	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	17	110	103	494	520	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	103	494	533	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Background SAT

Intersection

Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	15	97	91	435	458	11
Future Vol, veh/h	15	97	91	435	458	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	17	110	103	494	520	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1227	527	533
Stage 1	527	-	-
Stage 2	700	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	199	555	1045
Stage 1	596	-	-
Stage 2	496	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	179	555	1045
Mov Cap-2 Maneuver	179	-	-
Stage 1	537	-	-
Stage 2	496	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1045	-	433	-
HCM Lane V/C Ratio	0.099	-	0.294	-
HCM Control Delay (s)	8.8	-	16.7	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	17	94	92	555	574	33
Future Volume (vph)	17	94	92	555	574	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	19	107	105	631	652	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	0	105	631	690	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Background SAT

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	17	94	92	555	574	33
Future Vol, veh/h	17	94	92	555	574	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	19	107	105	631	652	38

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1512	671	690
Stage 1	671	-	-
Stage 2	841	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	134	460	895
Stage 1	512	-	-
Stage 2	426	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	118	460	895
Mov Cap-2 Maneuver	118	-	-
Stage 1	452	-	-
Stage 2	426	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.5	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	895	-	319	-
HCM Lane V/C Ratio	0.117	-	0.395	-
HCM Control Delay (s)	9.6	-	23.5	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	1.8	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background SAT

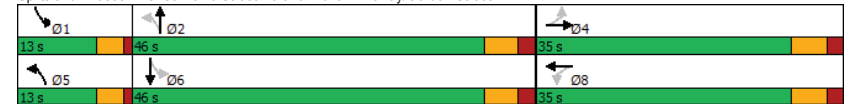
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	33	23	92	98	32	175	94	431	73	140	489	22
Future Volume (vph)	33	23	92	98	32	175	94	431	73	140	489	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.880			0.873			0.978			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1805	1645	0	1805	1842	0	1770	1871	0
Fit Permitted	0.422			0.673			0.357			0.318		
Satd. Flow (perm)	802	1659	0	1279	1645	0	678	1842	0	592	1871	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		105			199			11			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	26	105	111	36	199	107	490	83	159	556	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	131	0	111	235	0	107	573	0	159	581	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.9	11.9		11.9	11.9		49.1	40.1		51.1	42.8	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Background SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.65	0.53		0.68	0.57	
v/c Ratio	0.30	0.38		0.56	0.55		0.20	0.58		0.31	0.55	
Control Delay	34.7	12.3		40.4	12.3		5.1	15.8		5.8	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.7	12.3		40.4	12.3		5.1	15.8		5.8	14.6	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		17.4			21.3			14.1			12.7	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.1	3.4		15.6	4.7		4.0	53.3		6.2	53.6	
Queue Length 95th (m)	13.6	16.8		30.7	22.4		10.4	97.4		14.7	98.8	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	308	703		492	755		593	982		547	1061	
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	0.12	0.19		0.23	0.31		0.18	0.58		0.29	0.55	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	75.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	15.2
Intersection LOS:	B
Intersection Capacity Utilization:	69.0%
ICU Level of Service:	C
Analysis Period (min):	15

Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Appendix H

2035 Total Traffic Operations Reports



Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	10	105	56	327	372	13
Future Volume (vph)	10	105	56	327	372	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	100.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.876				0.995	
Fit Protected	0.996		0.950			
Satd. Flow (prot)	1643	0	1805	1827	1872	0
Fit Permitted	0.996		0.950			
Satd. Flow (perm)	1643	0	1805	1827	1872	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.1	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	11	119	64	372	423	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	0	64	372	438	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	10	105	56	327	372	13
Future Vol, veh/h	10	105	56	327	372	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	1	0	4	1	0
Mvmt Flow	11	119	64	372	423	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	931	431	438
Stage 1	431	-	-
Stage 2	500	-	-
Critical Hdwy	6.4	6.21	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	2.2
Pot Cap-1 Maneuver	299	626	1133
Stage 1	660	-	-
Stage 2	613	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	282	626	1133
Mov Cap-2 Maneuver	282	-	-
Stage 1	623	-	-
Stage 2	613	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1133	-	566	-
HCM Lane V/C Ratio	0.056	-	0.231	-
HCM Control Delay (s)	8.4	-	13.3	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	7	55	31	401	165	10
Future Volume (vph)	7	55	31	401	165	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.880			0.993		
Fit Protected	0.994		0.950			
Satd. Flow (prot)	1662	0	1736	1792	1802	0
Fit Permitted	0.994		0.950			
Satd. Flow (perm)	1662	0	1736	1792	1802	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.7	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	8	63	35	456	188	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	35	456	199	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Intersection

Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	7	55	31	401	165	10
Future Vol, veh/h	7	55	31	401	165	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	6	5	0
Mvmt Flow	8	63	35	456	188	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	720	194	199
Stage 1	194	-	-
Stage 2	526	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	398	853	1361
Stage 1	844	-	-
Stage 2	597	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	388	853	1361
Mov Cap-2 Maneuver	388	-	-
Stage 1	822	-	-
Stage 2	597	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1361	-	751	-	-
HCM Lane V/C Ratio	0.026	-	0.094	-	-
HCM Control Delay (s)	7.7	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	9	27	94	15	162	38	282	94	167	425	12
Future Volume (vph)	3	9	27	94	15	162	38	282	94	167	425	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.887			0.863			0.962			0.996	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1685	0	1736	1528	0	1805	1662	0	1752	1822	0
Fit Permitted	0.505			0.730			0.463			0.413		
Satd. Flow (perm)	960	1685	0	1334	1528	0	880	1662	0	762	1822	0
Right Turn on Red			Yes		Yes			Yes			Yes	
Satd. Flow (RTOR)		31			184			22			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	12%	4%	3%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	10	31	107	17	184	43	320	107	190	483	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	41	0	107	201	0	43	427	0	190	497	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8			5		2		1
Permitted Phases	4							2				6
Detector Phase	4	4			8			5		2		1
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.3	11.3		11.3	11.3		48.2	40.1		53.0	46.0	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.64	0.53		0.70	0.61	
v/c Ratio	0.02	0.15		0.54	0.52		0.07	0.48		0.30	0.45	
Control Delay	27.0	14.6		39.8	11.4		4.3	13.6		5.2	11.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.0	14.6		39.8	11.4		4.3	13.6		5.2	11.4	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		15.4			21.2			12.7			9.7	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.4	1.3		15.0	2.2		1.5	35.1		7.2	41.3	
Queue Length 95th (m)	2.6	9.2		29.8	18.5		4.9	66.4		16.6	75.4	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	370	669		514	702		708	895		656	1113	
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	0.06		0.21	0.29		0.06	0.48		0.29	0.45	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 75.4												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.54												
Intersection Signal Delay: 13.1						Intersection LOS: B						
Intersection Capacity Utilization 55.0%						ICU Level of Service B						
Analysis Period (min) 15												
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s		35 s	13 s	46 s		35 s					

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	49	9	373	29	6	470
Future Volume (vph)	49	9	373	29	6	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.980		0.990			
Flt Protected	0.959					0.999
Satd. Flow (prot)	1786	0	1707	0	0	1880
Flt Permitted	0.959					0.999
Satd. Flow (perm)	1786	0	1707	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.7			312.1
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	11%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	56	10	424	33	7	534
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	457	0	0	541
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.5%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total AM

Intersection

Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	49	9	373	29	6	470
Future Vol, veh/h	49	9	373	29	6	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	11	0	0	1
Mvmt Flow	56	10	424	33	7	534

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	989	441	0
Stage 1	441	-	-
Stage 2	548	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	276	621	-
Stage 1	653	-	-
Stage 2	583	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	274	621	-
Mov Cap-2 Maneuver	274	-	-
Stage 1	653	-	-
Stage 2	578	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.3	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	300	1114
HCM Lane V/C Ratio	-	-	0.22	0.006
HCM Control Delay (s)	-	-	20.3	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	19	94	140	474	429	15
Future Volume (vph)	19	94	140	474	429	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fit	0.888				0.995	
Fit Protected	0.992		0.950			
Satd. Flow (prot)	1674	0	1770	1827	1803	0
Fit Permitted	0.992		0.950			
Satd. Flow (perm)	1674	0	1770	1827	1803	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			311.2	91.5	
Travel Time (s)	9.4			22.4	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	4%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	22	107	159	539	488	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	159	539	505	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Intersection

Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	19	94	140	474	429	15
Future Vol, veh/h	19	94	140	474	429	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	4	5	0
Mvmt Flow	22	107	159	539	488	17

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1354	497	505
Stage 1	497	-	-
Stage 2	857	-	-
Critical Hdwy	6.4	6.2	4.12
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.218
Pot Cap-1 Maneuver	167	577	1060
Stage 1	615	-	-
Stage 2	419	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	142	577	1060
Mov Cap-2 Maneuver	142	-	-
Stage 1	523	-	-
Stage 2	419	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.2	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1060	-	381	-
HCM Lane V/C Ratio	0.15	-	0.337	-
HCM Control Delay (s)	9	-	19.2	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.5	-	1.5	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	27	99	88	651	594	27
Future Volume (vph)	27	99	88	651	594	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.894				0.994	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1649	0	1805	1845	1797	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1649	0	1805	1845	1797	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	114.7	
Travel Time (s)	8.1			6.4	8.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	0%	3%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	31	113	100	740	675	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	100	740	706	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.4%
ICU Level of Service B	
Analysis Period (min)	15

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	27	99	88	651	594	27
Future Vol, veh/h	27	99	88	651	594	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	1	0	3	5	7
Mvmt Flow	31	113	100	740	675	31

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1631	691	706
Stage 1	691	-	-
Stage 2	940	-	-
Critical Hdwy	6.45	6.21	4.1
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.309	2.2
Pot Cap-1 Maneuver	110	446	902
Stage 1	492	-	-
Stage 2	375	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	98	446	902
Mov Cap-2 Maneuver	98	-	-
Stage 1	437	-	-
Stage 2	375	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36.3	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	902	-	253	-
HCM Lane V/C Ratio	0.111	-	0.566	-
HCM Control Delay (s)	9.5	-	36.3	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	0.4	-	3.2	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total PM

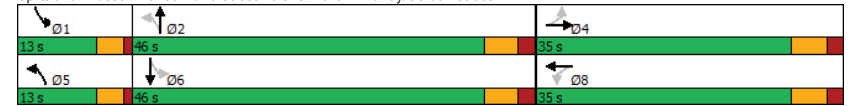
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	34	39	77	72	44	223	117	509	90	184	476	18
Future Volume (vph)	34	39	77	72	44	223	117	509	90	184	476	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fit		0.900			0.875			0.977			0.995	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1699	0	1787	1657	0	1787	1825	0	1752	1833	0
Fit Permitted	0.388			0.673			0.364			0.246		
Satd. Flow (perm)	709	1699	0	1266	1657	0	685	1825	0	454	1833	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			253			12				2
Link Speed (k/h)		50			50			50				50
Link Distance (m)		102.5			102.3			314.9				88.4
Travel Time (s)		7.4			7.4			22.7				6.4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	1%	1%	2%	0%	1%	2%	0%	3%	3%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	39	44	88	82	50	253	133	578	102	209	541	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	132	0	82	303	0	133	680	0	209	561	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	10.3	10.3		10.3	10.3		49.3	40.1		51.6	41.2	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.66	0.54		0.69	0.55	
v/c Ratio	0.40	0.43		0.47	0.68		0.24	0.69		0.46	0.56	
Control Delay	41.7	16.3		38.8	15.3		4.8	18.1		7.2	14.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.7	16.3		38.8	15.3		4.8	18.1		7.2	14.5	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		22.1			20.3			16.0			12.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	5.4	5.9		11.5	6.8		4.5	68.5		7.5	48.7	
Queue Length 95th (m)	14.4	19.9		23.9	27.8		11.6	121.6		17.6	92.3	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	275	714		492	798		601	983		473	1010	
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	0.14	0.18		0.17	0.38		0.22	0.69		0.44	0.56	

Intersection Summary	
Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	74.8
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	16.0
Intersection LOS:	B
Intersection Capacity Utilization:	80.2%
ICU Level of Service:	D
Analysis Period (min):	15

Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street



Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	73	17	616	62	13	511
Future Volume (vph)	73	17	616	62	13	511
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr	0.975		0.988			
Fit Protected	0.961					0.999
Satd. Flow (prot)	1780	0	1844	0	0	1827
Fit Permitted	0.961					0.999
Satd. Flow (perm)	1780	0	1844	0	0	1827
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		114.7			311.2
Travel Time (s)	4.9		8.3			22.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	83	19	700	70	15	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	0	770	0	0	596
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.1%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total PM

Intersection

Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	73	17	616	62	13	511
Future Vol, veh/h	73	17	616	62	13	511
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	4
Mvmt Flow	83	19	700	70	15	581

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1346	735	0
Stage 1	735	-	-
Stage 2	611	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	169	423	854
Stage 1	478	-	-
Stage 2	546	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	165	423	854
Mov Cap-2 Maneuver	165	-	-
Stage 1	478	-	-
Stage 2	532	-	-

Approach	WB	NB	SB
HCM Control Delay, s	45.7	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	186	854
HCM Lane V/C Ratio	-	-	0.55	0.017
HCM Control Delay (s)	-	-	45.7	9.3
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	2.9	0.1

Lanes, Volumes, Timings
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	15	97	91	447	470	11
Future Volume (vph)	15	97	91	447	470	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	150.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.883				0.997	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1858	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1858	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	130.5			312.5	91.5	
Travel Time (s)	9.4			22.5	6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	17	110	103	508	534	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	103	508	547	0
Sign Control	Stop			Free	Free	

Intersection Summary

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

HCM 6th TWSC
1: St. David Street North & Sideroad 18

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Intersection

Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	15	97	91	447	470	11
Future Vol, veh/h	15	97	91	447	470	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	17	110	103	508	534	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1255	541	547
Stage 1	541	-	-
Stage 2	714	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	191	545	1033
Stage 1	588	-	-
Stage 2	489	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	172	545	1033
Mov Cap-2 Maneuver	172	-	-
Stage 1	529	-	-
Stage 2	489	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1033	- 422	-	-
HCM Lane V/C Ratio	0.1	- 0.302	-	-
HCM Control Delay (s)	8.9	- 17.2	-	-
HCM Lane LOS	A	- C	-	-
HCM 95th %tile Q(veh)	0.3	- 1.3	-	-

Lanes, Volumes, Timings
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (vph)	18	94	92	610	627	34
Future Volume (vph)	18	94	92	610	627	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	30.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt	0.886				0.993	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1670	0	1736	1881	1845	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1670	0	1736	1881	1845	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	112.6			88.4	113.3	
Travel Time (s)	8.1			6.4	8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	20	107	105	693	713	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	105	693	752	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.0%
Analysis Period (min)	15
	ICU Level of Service B

HCM 6th TWSC
2: St. David Street North & Sideroad 19

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	18	94	92	610	627	34
Future Vol, veh/h	18	94	92	610	627	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	30	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	4	1	2	7
Mvmt Flow	20	107	105	693	713	39

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1636	733	752
Stage 1	733	-	-
Stage 2	903	-	-
Critical Hdwy	6.4	6.2	4.14
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.236
Pot Cap-1 Maneuver	112	424	849
Stage 1	479	-	-
Stage 2	399	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	98	424	849
Mov Cap-2 Maneuver	98	-	-
Stage 1	420	-	-
Stage 2	399	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.7	1.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	849	-	276	-
HCM Lane V/C Ratio	0.123	-	0.461	-
HCM Control Delay (s)	9.8	-	28.7	-
HCM Lane LOS	A	-	D	-
HCM 95th %tile Q(veh)	0.4	-	2.3	-

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	34	23	92	98	32	178	94	482	73	143	539	23
Future Volume (vph)	34	23	92	98	32	178	94	482	73	143	539	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr		0.880			0.873			0.980			0.994	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1805	1645	0	1805	1846	0	1770	1871	0
Fit Permitted	0.413			0.673			0.313			0.276		
Satd. Flow (perm)	785	1659	0	1279	1645	0	595	1846	0	514	1871	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		105			202			10			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		102.5			102.3			314.9			88.4	
Travel Time (s)		7.4			7.4			22.7			6.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	26	105	111	36	202	107	548	83	163	613	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	131	0	111	238	0	107	631	0	163	639	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4			8		5	2		1	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)	29.0	29.0		29.0	29.0		9.5	37.0		9.5	37.0	
Total Split (s)	35.0	35.0		35.0	35.0		13.0	46.0		13.0	46.0	
Total Split (%)	37.2%	37.2%		37.2%	37.2%		13.8%	48.9%		13.8%	48.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	11.9	11.9		11.9	11.9		49.1	40.2		51.2	42.9	

Lanes, Volumes, Timings (220086) 950 & 960 St. David Street N TIS
 3: St. David Street North & Plaza Driveway/Gordon Street 2035 Total SAT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.65	0.53		0.68	0.57	
v/c Ratio	0.32	0.38		0.56	0.56		0.22	0.64		0.34	0.60	
Control Delay	35.4	12.4		40.5	12.3		5.3	17.3		6.3	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.4	12.4		40.5	12.3		5.3	17.3		6.3	15.8	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		17.6			21.2			15.5			13.8	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.3	3.4		15.6	4.7		4.0	61.8		6.4	61.8	
Queue Length 95th (m)	14.0	16.8		30.7	22.6		10.4	112.2		15.1	113.3	
Internal Link Dist (m)		78.5			78.3			290.9			64.4	
Turn Bay Length (m)											35.0	
Base Capacity (vph)	301	702		491	756		546	984		502	1062	
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	0.13	0.19		0.23	0.31		0.20	0.64		0.32	0.60	
Intersection Summary												
Area Type: Other												
Cycle Length: 94												
Actuated Cycle Length: 75.7												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.64												
Intersection Signal Delay: 16.0												
Intersection LOS: B												
Intersection Capacity Utilization 72.1%												
ICU Level of Service C												
Analysis Period (min) 15												
Split and Phases: 3: St. David Street North & Plaza Driveway/Gordon Street												
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8					
13 s	46 s		35 s	13 s	46 s		35 s					

Lanes, Volumes, Timings
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Volume (vph)	55	12	572	56	12	554
Future Volume (vph)	55	12	572	56	12	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr	0.975		0.988			
Fit Protected	0.961					0.999
Satd. Flow (prot)	1780	0	1860	0	0	1880
Fit Permitted	0.961					0.999
Satd. Flow (perm)	1780	0	1860	0	0	1880
Link Speed (k/h)	50		50			50
Link Distance (m)	67.9		113.3			312.5
Travel Time (s)	4.9		8.2			22.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	63	14	650	64	14	630
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	714	0	0	644
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.2%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
4: St. David Street North & Site Driveway

(220086) 950 & 960 St. David Street N TIS
2035 Total SAT

Intersection

Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	55	12	572	56	12	554
Future Vol, veh/h	55	12	572	56	12	554
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	63	14	650	64	14	630

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	1340	682	0
Stage 1	682	-	-
Stage 2	658	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	170	453	-
Stage 1	506	-	-
Stage 2	519	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	166	453	-
Mov Cap-2 Maneuver	166	-	-
Stage 1	506	-	-
Stage 2	507	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	36.9	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	187	895
HCM Lane V/C Ratio	-	-	0.407	0.015
HCM Control Delay (s)	-	-	36.9	9.1
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	1.8	0