Traffic Impact Study

Proposed Lovesick Lake Trailer Park Extension

Forest Hill Road

Township of Selwyn, Peterborough County

ASURZA ENGINEERS

August 11, 2023

Proj. No 2026-16

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Project № 2026-16

August 11, 2023

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Reference: Proposed Lovesick Lake Trailer Park Extension
Traffic Impact Study
Project Nº 2026-16

Asurza Engineers Ltd. is pleased to submit the enclosed Traffic Impact Study for the proposed trailer park extension located at the north end of Forest Hill Road. The study and report were prepared on behalf of the proponent as part of the documentation required by the Township of Selwyn and the Ministry of Transportation.

Should you have any questions regarding this report, please do not hesitate to contact the undersigned.

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Executive Summary

Asurza Engineers Ltd. was retained to undertake a traffic impact study in order to review, assess, and determine any traffic impact the proposed trailer park extension may generate on the adjacent road network.

The subject site is located at the north end of Forest Hill Rd. The site is immediately south of Lovesick Lake and is intended for development to include 40 seasonal trailer sites.

Asurza Engineers performed video based traffic counts for the PM peak hour and the Saturday peak hour for intersections in the study area.

For the existing (2023) conditions, results show that the intersection's movements are currently operating very well with mostly LOS "A" for the peak hours.

For this study, the horizon years for analysis are 2025, 2030, and 2035 which are expected to coincide with the full build-out, five years after the build-out, and ten years after the build-out of the proposed development, respectively. An annual compounded growth rate of 2% was used to project future traffic.

Over time, with no changes to traffic controls and road geometry, and without the subject development in place, results show that the intersection's movements will continue operating very well throughout the study horizon with mostly minor increases to delays. By 2035, the most critical movement is the WB at Hwy 28 / 15th Ln, showing LOS "D", which is still acceptable for a minor approach.

According to the ITE (Institute of Transportation Engineers) trip generation rates, it is estimated that the proposed development will generate 12 trips during the afternoon peak hour, and 16 trips during the Saturday peak hour.

The new trips generated by the proposed development were added to the background volumes to identify the "Total Traffic Volumes," and the operations for these volumes were reviewed.

Throughout the study horizon, with no geometric changes and with the subject development in place, the resulting factors remain virtually the same for the PM and Saturday peak hours, due to the low number of trips generated.

Throughout the study horizon, with no geometric changes and with the subject development in place, the resulting factors remain virtually the same for the peak hours, due to the low number of trips generated.

The site entrance, which will form the east leg of the Forest Hill Rd / Spring Ln / Forest Hill Lodge entrance, will not require any upgrades as indicated by the operations results, showing LOS "A" for all movements.

From the traffic point of view and based on the results obtained from this traffic analysis, it is concluded that the development does not trigger any road geometric improvements; however, the suitability of Forest Hill Rd. has to be reviewed to conform with the geometry standards as set in Chapter 11 – Special Roads of the TAC Manual.

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1 Introduction

1.1 Overview

Asurza Engineers Ltd. was retained by the developer to undertake a traffic impact study for a proposed trailer park extension located at the north end of Forest Hill Road. The report was prepared for the review of the Township of Selwyn and the Ministry of Transportation, for approval to permit the proposed development.

1.2 Objectives

The purpose of this study is to determine any traffic impact the proposed development may generate on the adjacent roadways and intersections, as well as to identify the required improvements to maintain acceptable operational levels on the roadways within the study area. The general scope of this study includes the following key elements:

- Establish baseline traffic conditions for the study area.
- Estimate the traffic growth for future planning horizons.
- Estimate the additional traffic generated by the proposed development.
- Estimate the total future traffic and identify impacts within the study area.
- Identify any operational and/or geometric issues within the study area.
- Provide recommendations to address any deficiencies, if identified.

To achieve these objectives, the traffic study makes use of accepted methodologies and procedures including informational reports, publications from recognized institutions and agencies, recommended best practice manuals and municipal guidelines when available.

2 Existing Conditions

2.1 Study Area

Located within Peterborough County, the Township of Selwyn has a population of 18,653 residents and is the heart of central Ontario's cottage country. The location of the study area within Selwyn is shown in ***Exhibit 1***.

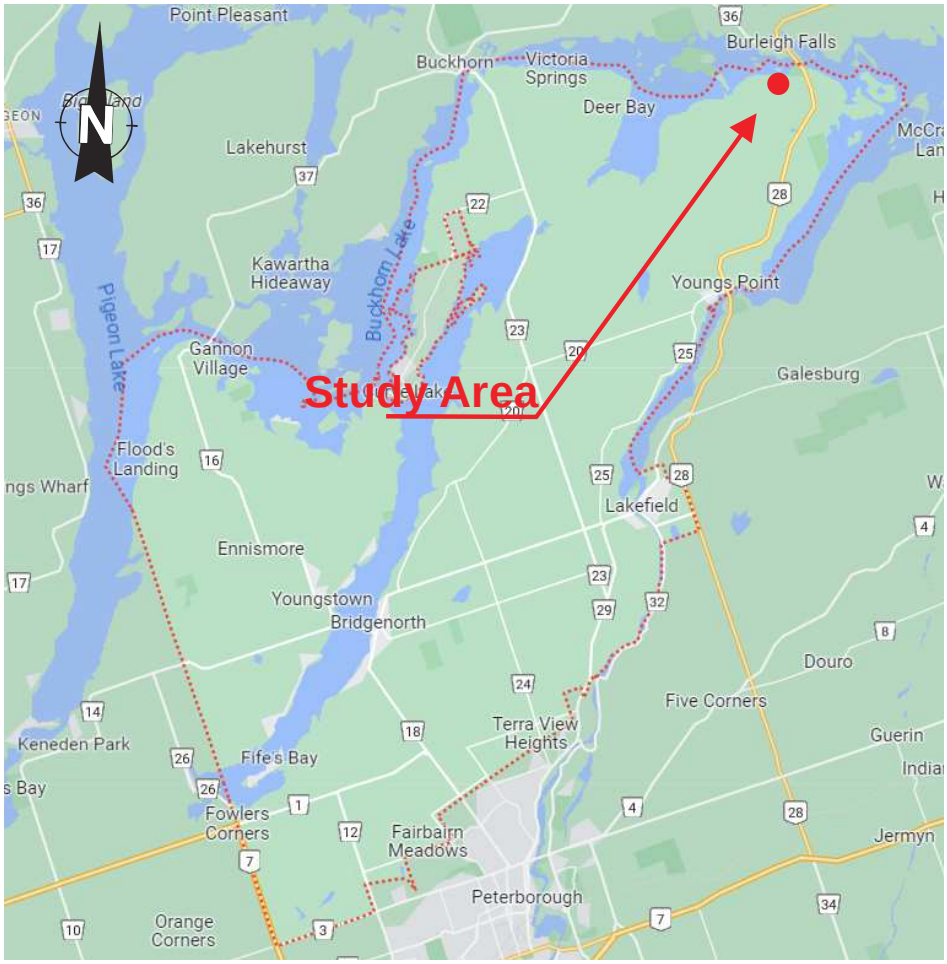


Exhibit 1: *Location of Study Area.*

2.2 The Site

The subject site, shown in ***Exhibit 2***, is located at the north end of Forest Hill Rd. The site is immediately south of Lovesick Lake, and surrounded by Forest Hill Lodge Cottage Rentals, and Spring Ln, a street used to access cottages. The site is intended for development to include 40 seasonal trailer sites.

Exhibit 2: *The Site.*

2.3 Roadway Network

The following roads are part of the study area:

Highway 28 is a two-lane north/south road (one lane per direction), featuring a rural cross-section with a granular shoulder and ditches for drainage. Hwy 28 has a posted speed limit of 80 km/h.

15th Line is a two-lane east/west road (one lane per direction), featuring a rural cross-section. 15th Ln has no posted speed limit, so the legislative limit of 50 km/h is adopted. 15th Ln forms a four leg, two-way stop controlled intersection with Hwy 28.

Forest Hill Road is a two-lane north/south road (one lane per direction), featuring a rural cross-section. This road is used to access the Forest Hill Lodge Cottage Rentals, and the homes on Spring Ln. Forest Hill Rd has no posted speed limit, so the legislative limit of 50 km/h is adopted. The south terminus of Forest Hill Rd forms a three leg, one-way stop controlled intersection with 15th Ln.

Spring Line is a two-lane cul-de-sac road (one lane per direction), featuring a rural cross-section. This road has numerous homes in close proximity to Lovesick Lake. Spring Ln has no posted speed limit, so the legislative limit of 50 km/h is adopted. The entrance to Spring Ln, as well as the entrance to Forest Hill Lodge, form a three way intersection at the north terminus of Forest Hill Rd. It is noted that these entrances do not feature stop signs.

2.4 Traffic Data

Asurza Engineers performed video based traffic counts for the PM peak hour and the Saturday peak hour on July 14, 2023, and July 15, 2023, respectively. See *Appendix B – Traffic Volumes and Projections*.

2.5 Existing Traffic Volumes

The existing lane configuration and peak hour traffic volumes for the adjacent roads and intersections are shown in ***Exhibits 3 to 5***:

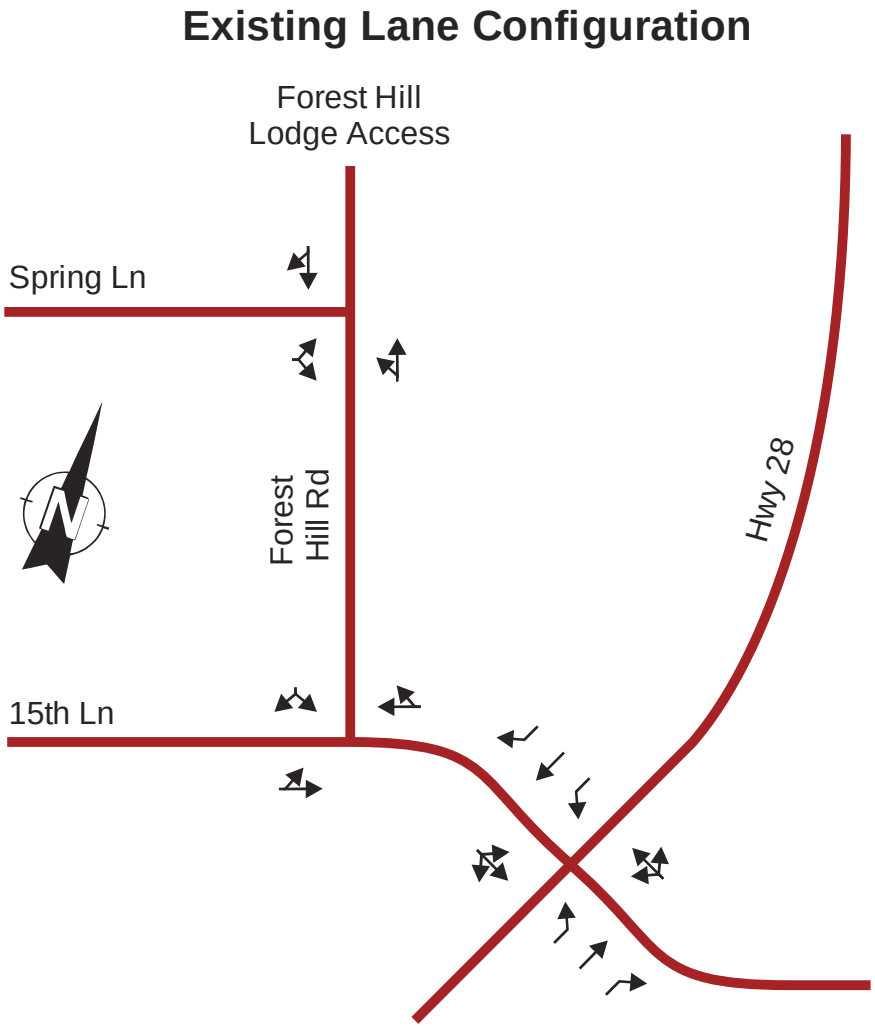


Exhibit 3: *Existing Lane Configuration.*

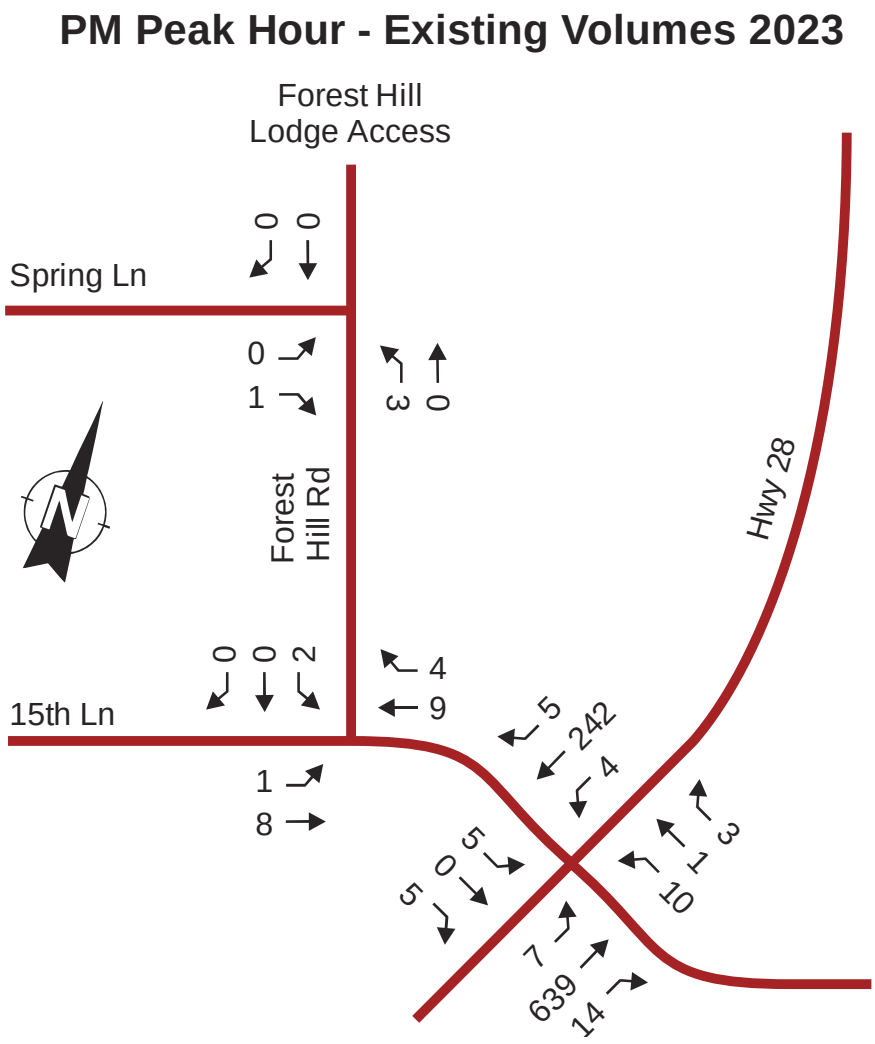


Exhibit 4: *Existing PM Peak Hour Volumes, 2023.*

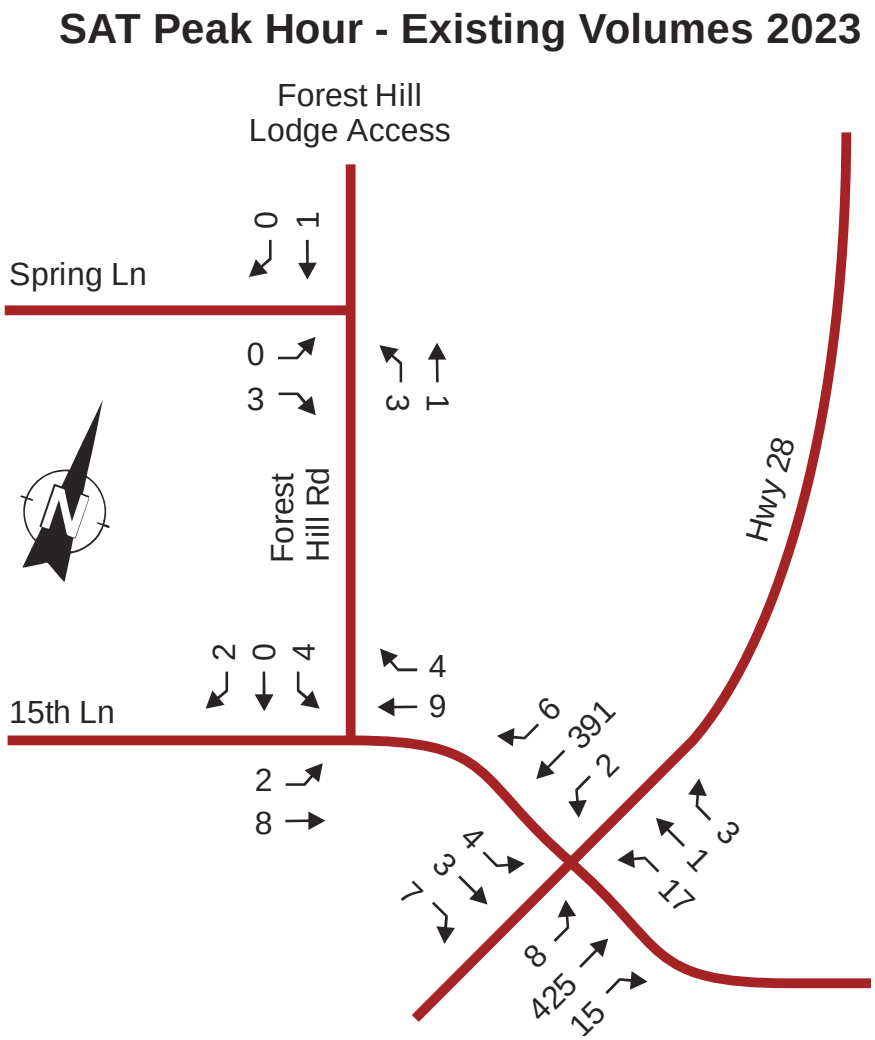


Exhibit 5: *Existing SAT Peak Hour Volumes, 2023.*

2.6 Existing Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow at intersections. The assigned LOS is determined by the delay caused by the control system experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles desiring to make a particular movement, compared to the estimated capacity for that movement.

Table 1 shows the LOS criteria for intersections, ranging from 'A' to 'F,' where 'A' represents ideal traffic and 'F' represents extreme congestion.

LOS	Signalized Control Delay (sec/veh)	Unsignalized Control Delay (sec/veh)
A	0 - 10	0 - 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Table 1: *Level of Service Definition.*

The intersection analysis considers the following:

- The volume to capacity (v/c) ratio for the intersection and for each movement.
- The average delay in seconds for each movement and overall delay of the intersection.
- The 95th percentile queue length for each movement.
- The level of service for each movement and overall level of service of the intersection.

The existing operations for the subject intersections were evaluated using the existing traffic volumes for the PM and Saturday peak hours, and the results are summarized below in ***Table 2***.

		Existing Volumes 2023							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.03	15.6	0.7	C	0.04	14.9	1.0	B
	WB	0.06	20.2	1.5	C	0.08	19.5	2.1	C
	NBL	0.01	7.8	0.1	A	0.01	8.2	0.2	A
	NBT	0.41	0.0	0.0	A	0.27	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.00	9.0	0.1	A	0.00	8.3	0.0	A
	SBT	0.15	0.0	0.0	A	0.25	0.0	0.0	A
	SBR	0.00	0.0	0.0	A	0.00	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.7	0.0	A	0.00	1.3	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.00	8.6	0.0	A	0.01	8.6	0.1	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	NB	0.00	0.0	0.0	A	0.00	5.4	0.0	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 2: *Existing Volumes Intersection Capacity, 2023.*

During typical peak hours, results show that the intersection's movements are currently operating very well with mostly LOS "A".

3 Background Traffic Volumes

3.1 Annual Growth Rate

In order to establish base conditions for comparison and evaluation of future scenarios, it is necessary to review the results of traffic operations over time.

To maintain a conservative estimate of future traffic, a growth rate of 2.0% per year will be implemented for the purposes of this study.

3.2 Background Traffic Volumes

The background traffic volumes were estimated by applying the growth rate to the existing traffic volumes. The growth rate is annually compounded.

For this study, the horizon years for analysis are 2025, 2030, and 2035 which are expected to coincide with the full build-out, five years after the build-out, and ten years after the build-out of the proposed development, respectively.

The background traffic volumes were estimated and are shown in the following ***Exhibits 6 to 11***:

PM Peak Hour - Background Volumes 2025

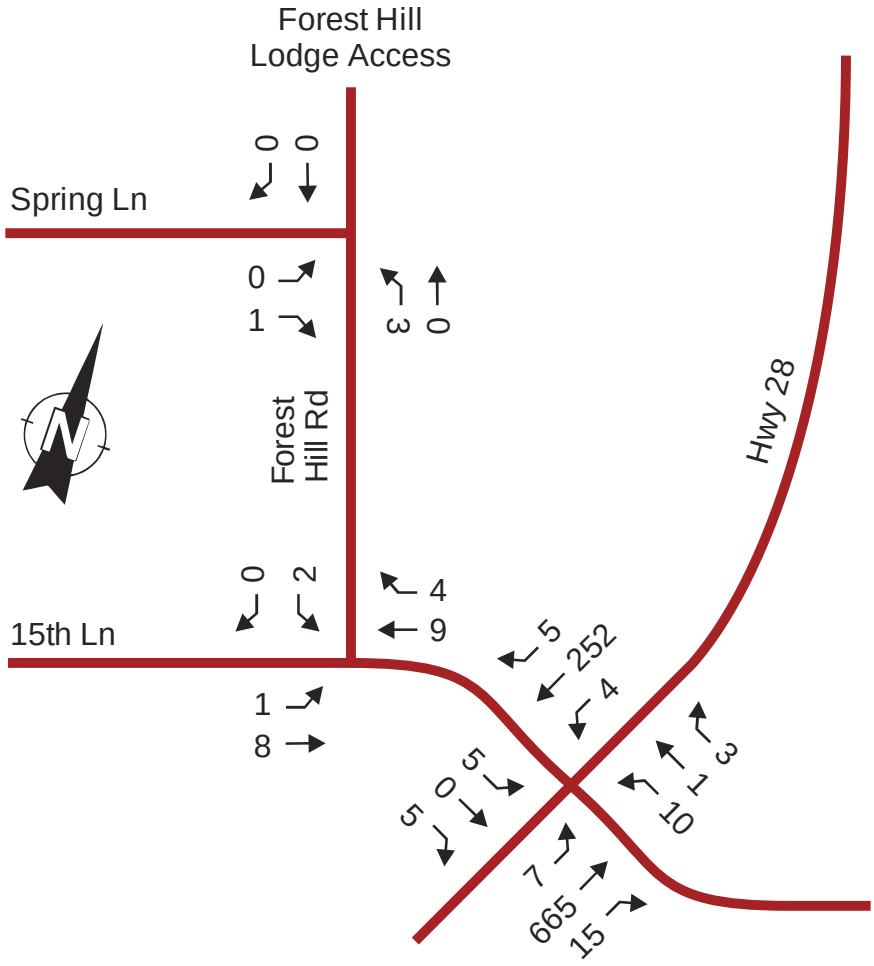


Exhibit 6: *Background PM Peak Hour Volumes, 2025.*

SAT Peak Hour - Background Volumes 2025

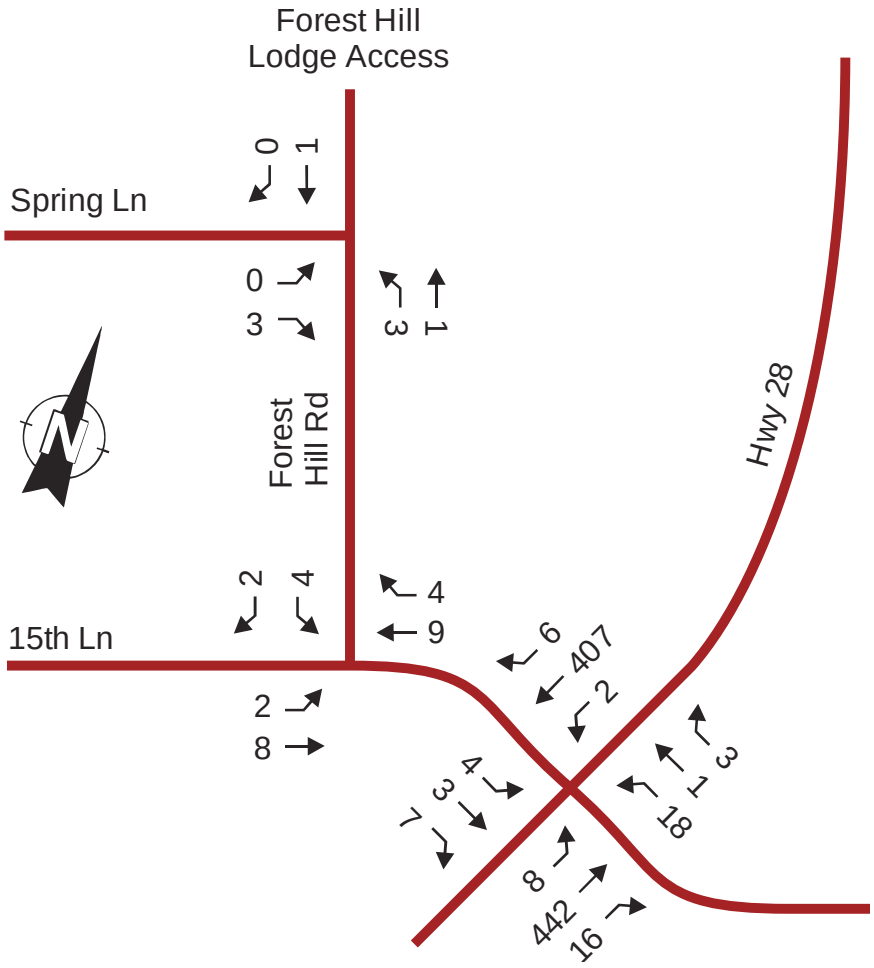


Exhibit 7: *Background SAT Peak Hour Volumes, 2025.*

PM Peak Hour - Background Volumes 2030

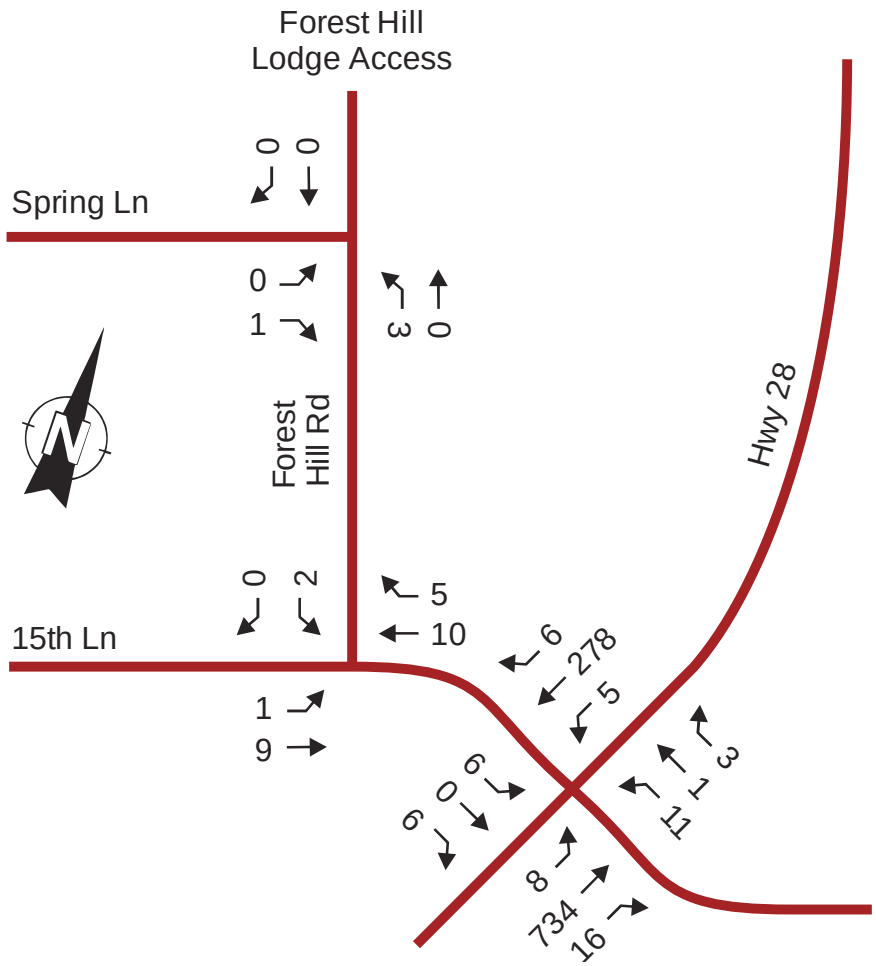


Exhibit 8: *Background PM Peak Hour Volumes, 2030.*

SAT Peak Hour - Background Volumes 2030

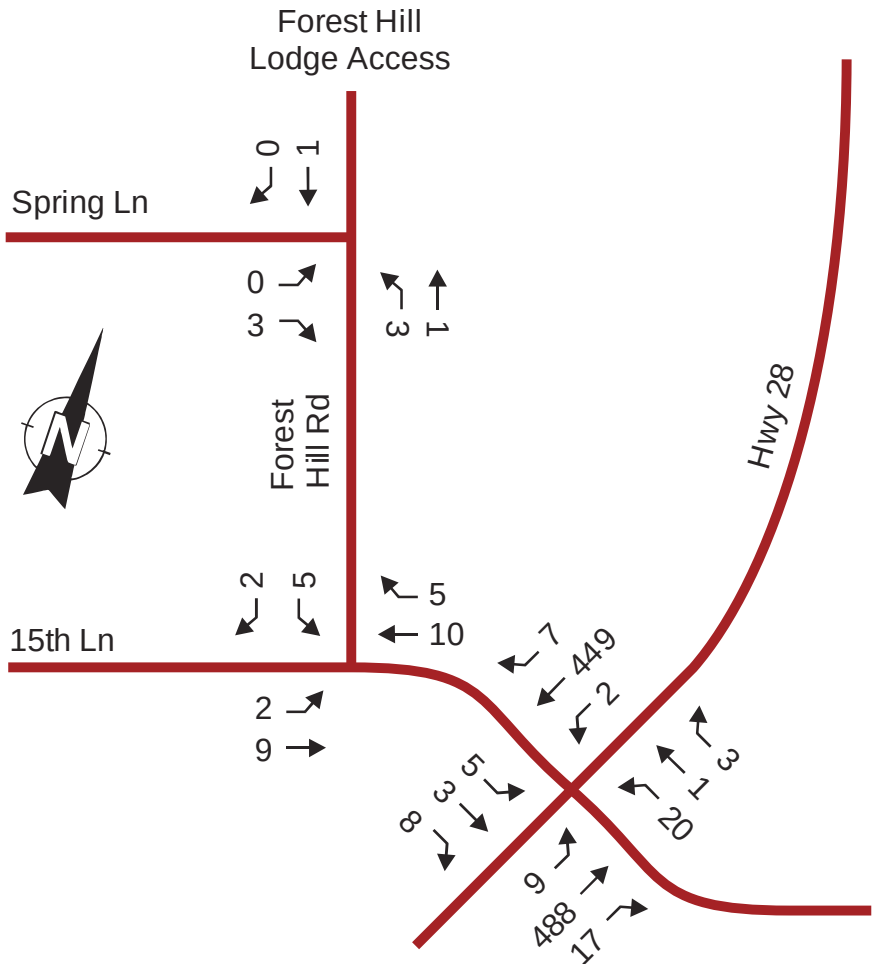


Exhibit 9: *Background SAT Peak Hour Volumes, 2030.*

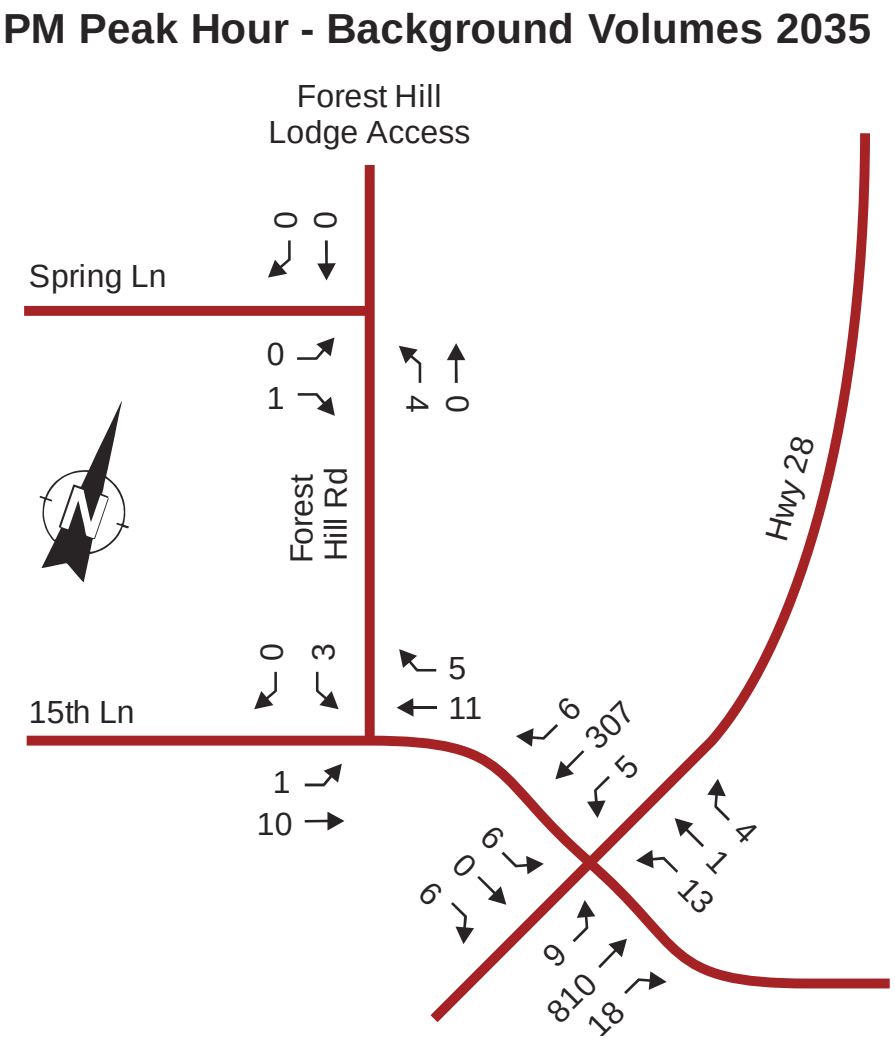


Exhibit 10: *Background PM Peak Hour Volumes, 2035.*

SAT Peak Hour - Background Volumes 2035

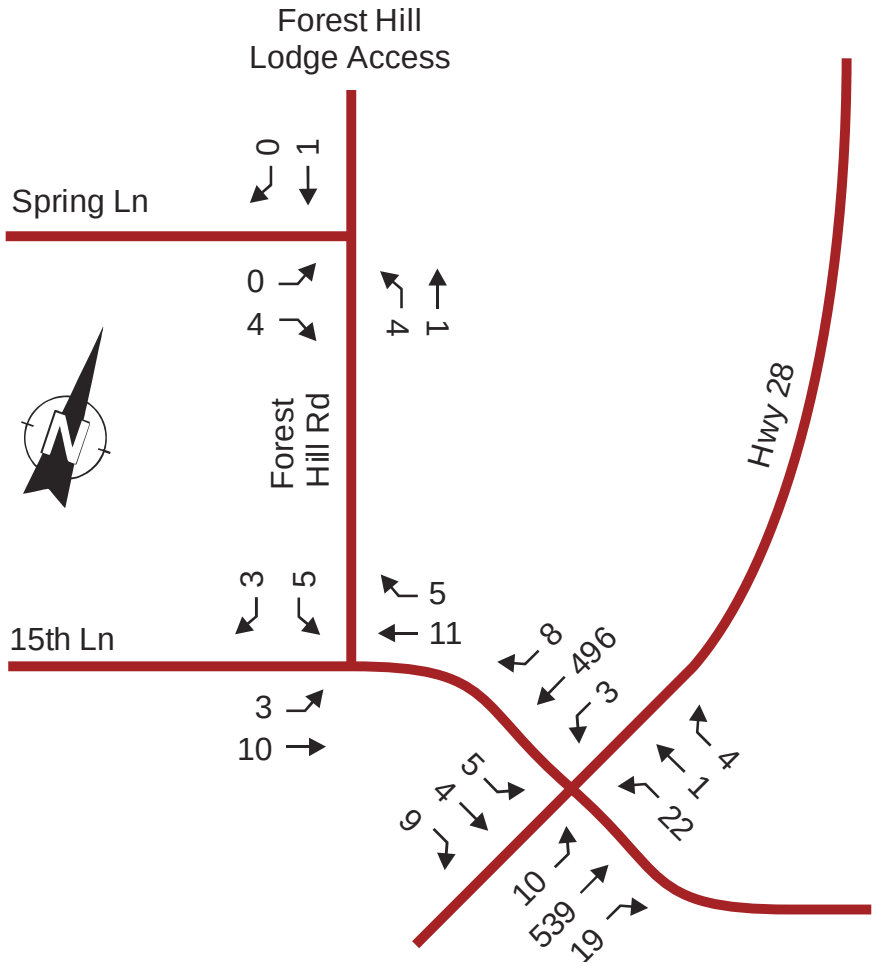


Exhibit 11: *Background SAT Peak Hour Volumes, 2035.*

3.3 Background Traffic Operations

The horizon year background traffic operations for the subject intersections were evaluated using the background traffic volumes for the PM and Saturday peak hours. The results are summarized below for the horizon years 2025, 2030, and 2035 in ***Tables 3 to 5***.

		Background Volumes 2025							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.03	16.2	0.7	C	0.04	15.4	1.0	C
	WB	0.06	21.2	1.6	C	0.09	20.7	2.5	C
	NBL	0.01	7.8	0.1	A	0.01	8.2	0.2	A
	NBT	0.43	0.0	0.0	A	0.28	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.00	9.1	0.1	A	0.00	8.3	0.0	A
	SBT	0.16	0.0	0.0	A	0.26	0.0	0.0	A
	SBR	0.00	0.0	0.0	A	0.00	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.7	0.0	A	0.00	1.3	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.00	8.6	0.0	A	0.01	8.6	0.1	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	NB	0.00	0.0	0.0	A	0.00	5.4	0.0	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 3: *Background Volumes Intersection Capacity, 2025.*

		Background Volumes 2030							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.05	18.2	1.2	C	0.05	16.9	1.3	C
	WB	0.08	24.6	2.1	C	0.12	23.9	3.2	C
	NBL	0.01	7.9	0.2	A	0.01	8.4	0.2	A
	NBT	0.47	0.0	0.0	A	0.31	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.01	9.4	0.1	A	0.00	8.5	0.0	A
	SBT	0.18	0.0	0.0	A	0.29	0.0	0.0	A
	SBR	0.00	0.0	0.0	A	0.00	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.7	0.0	A	0.00	1.2	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.00	8.6	0.0	A	0.01	8.6	0.2	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	NB	0.00	0.0	0.0	A	0.00	5.4	0.0	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 4: *Background Volumes Intersection Capacity, 2030.*

		Background Volumes 2035							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.06	20.6	1.5	C	0.07	18.9	1.8	C
	WB	0.11	28.9	3.0	D	0.16	28.3	4.4	D
	NBL	0.01	8.0	0.2	A	0.01	8.5	0.3	A
	NBT	0.52	0.0	0.0	A	0.34	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.01	9.7	0.2	A	0.00	8.7	0.1	A
	SBT	0.20	0.0	0.0	A	0.32	0.0	0.0	A
	SBR	0.00	0.0	0.0	A	0.00	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.6	0.0	A	0.00	1.6	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.00	8.6	0.1	A	0.01	8.6	0.2	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	NB	0.00	0.0	0.1	A	0.00	5.8	0.1	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 5: *Background Volumes Intersection Capacity, 2035.*

Over time, with no changes to traffic controls and road geometry, and without the subject development in place, results show that the intersection's movements will continue operating very well throughout the study horizon with mostly minor increases to delays. By 2035, the most critical movement is the WB at Hwy 28 / 15th Ln, showing LOS "D", which is still very acceptable for a minor approach.

4 Proposed Development Traffic Forecasting

4.1 Traffic Impact Study Methodology

The traffic impact analysis was completed in accordance with the methodologies published by the Transportation Research Board (TRB) and the Transportation Impact Analysis for Site Developments published by the Institute of Transportation Engineers (ITE).

The estimation of trips generated by the proposed development were derived from the Trip Generation Manual, 11th Edition, published by the Institute of Transportation Engineers.

4.2 Site Trip Generation

The land use which most closely describes the proposed development is Land Use 260 – Recreational Homes.

While Recreational Homes (Land Use 260) trip generation rates are slightly lower than Mobile Homes (Land Use 240), it better represents the future trips generation. According to the ITE, the Mobile Homes trip generation are based on mobile home parks settled within an urban and suburban environment which include permanent residents that have trip generation characteristics that can be more closely aligned with regular residential uses that can include regular peak hour work trips that the Recreational Homes does not. Recreational Homes are normally settled within a rural environment which is the case for this study.

The trip rates and the estimated number of trips generated by the proposed development are shown in ***Table 6***:

TRIP GENERATION RATES BY LAND USE								
ITE Code	ITE Land Use	Unit of Measure	PM Peak Hr. of Adj. Street			SAT Peak Hr. of Generator		
			Rate	In	Out	Rate	In	Out
260	Recreational Homes	Dwelling Units	0.29	46%	54%	0.39	48%	52%

TRIPS GENERATED BY PROPOSED DEVELOPMENT								
ITE Code	ITE Land Use	Total Units	PM Peak Hr. of Adj. Street			SAT Peak Hr. of Generator		
			Trips	In	Out	Trips	In	Out
260	Recreational Homes	40	12	6	6	16	8	8

Table 6: *Estimated Trips Generated by the Proposed Development.*

According to the ITE trip generation rates, it is estimated that the proposed development will generate a total of 12 trips during a Friday afternoon peak hour, and a total of 16 trips during the Saturday peak hour.

4.3 Trip Distribution/Assignment

The number of vehicles entering and exiting the site and which direction they take are distributed proportional to the existing directional traffic patterns. These proportions are shown in ***Exhibits 12 and 13***.

The distributed number of trips generated by the proposed development for the PM and Saturday peak hours are shown in ***Exhibits 14 and 15***.

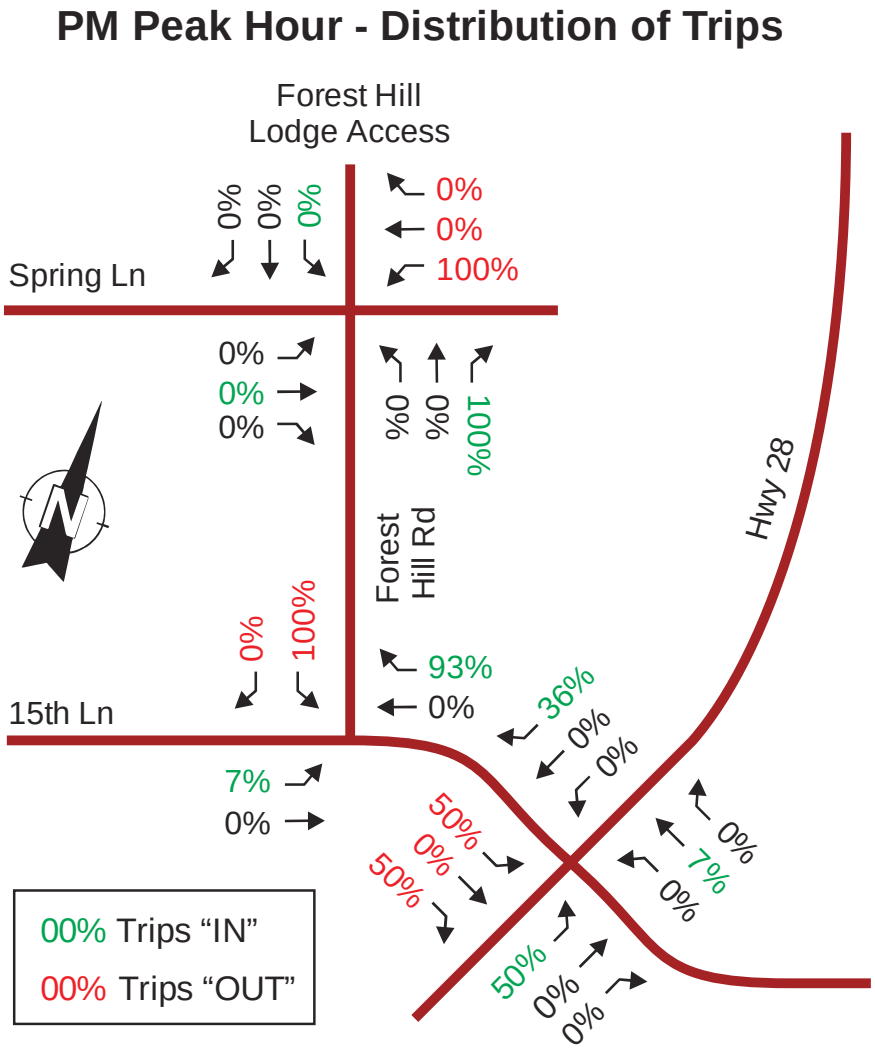


Exhibit 12: *PM Distribution of Trips, 2023.*

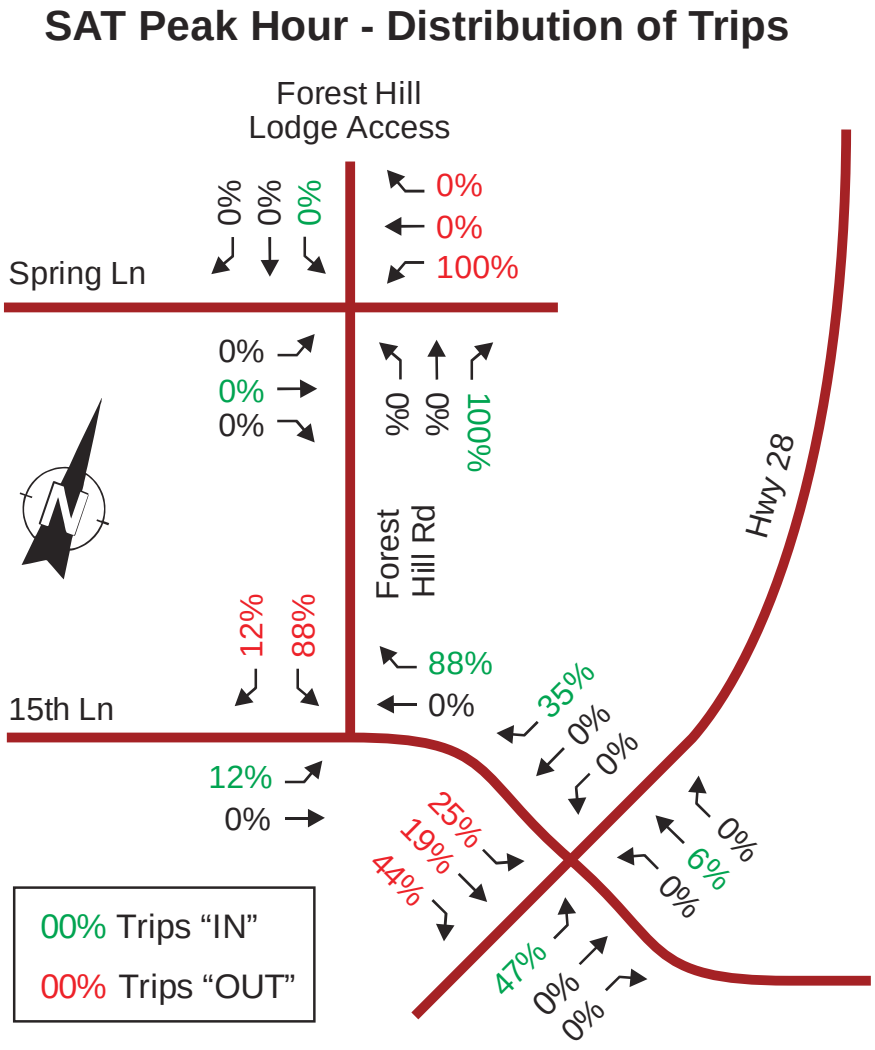


Exhibit 13: *SAT Distribution of Trips, 2023.*

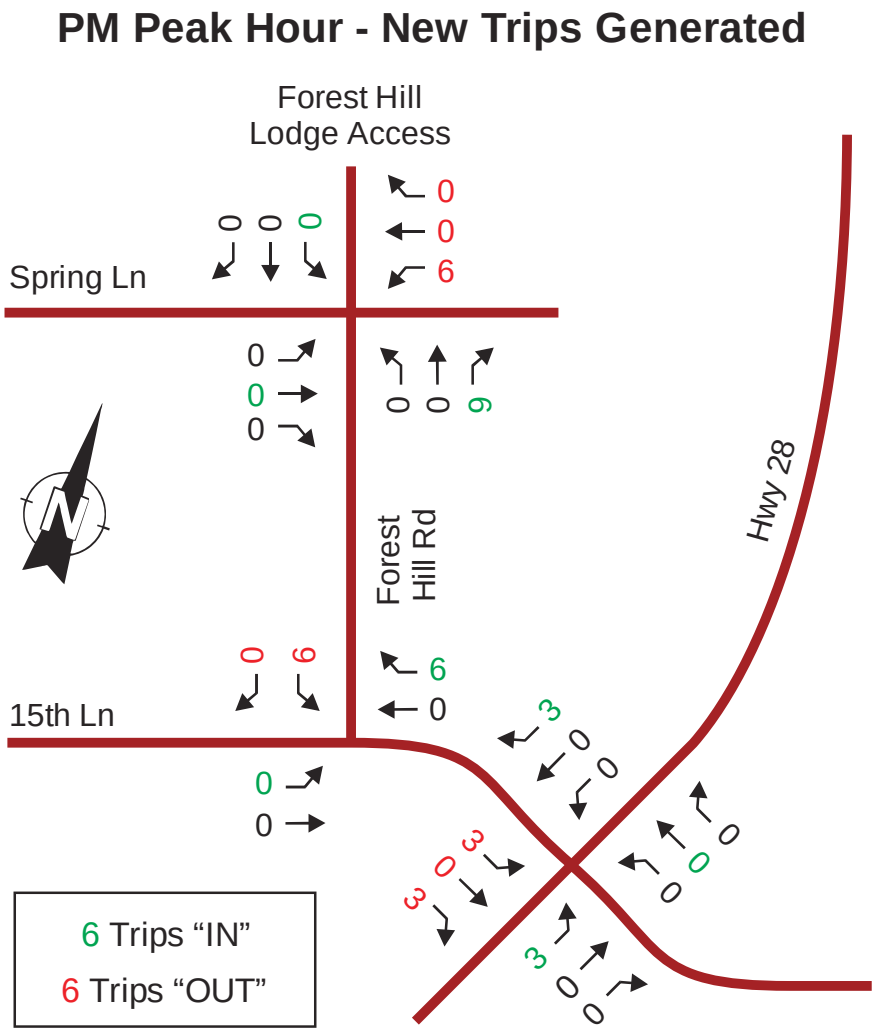


Exhibit 14: *PM New Trips Generated.*

SAT Peak Hour - New Trips Generated

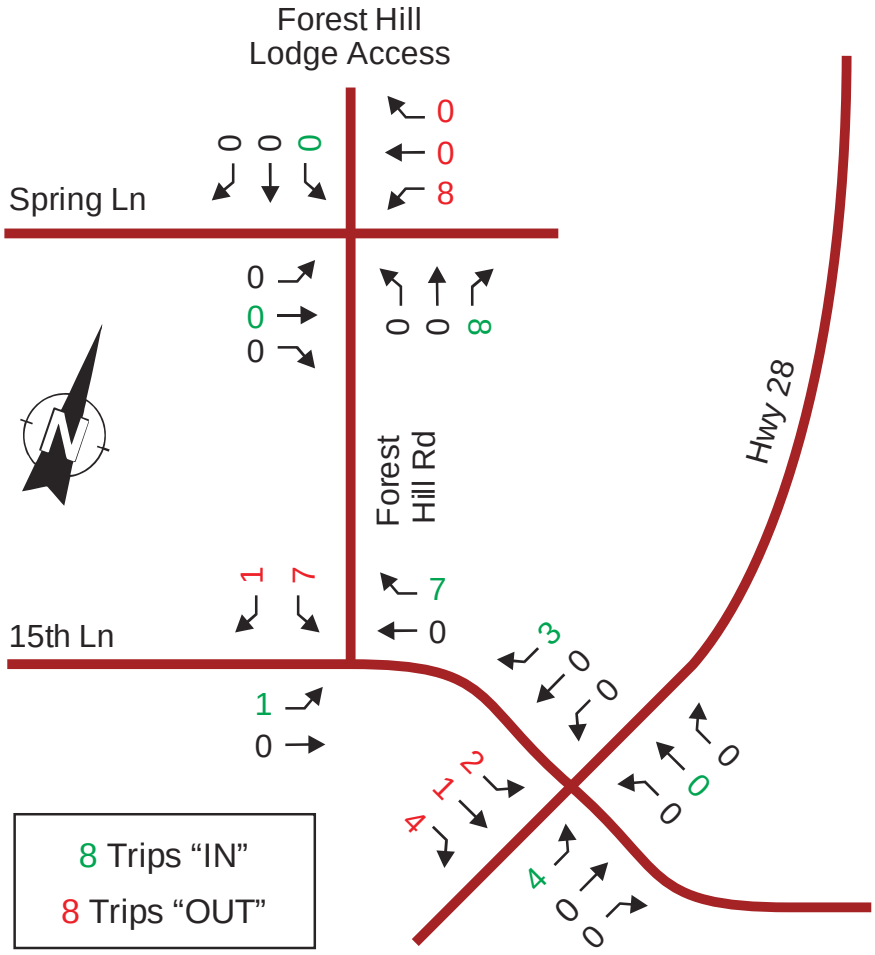


Exhibit 15: *SAT New Trips Generated.*

5 Future Traffic Operations

5.1 Future Total Traffic Volumes

The future total traffic volumes for the horizon years were obtained by adding the background volumes to the new volumes generated by the proposed development. The background traffic volumes and the total traffic volumes will be the basis for comparisons to identify any impacts for future years.

5.2 Scenarios

The analysis will review the intersection operations for the year 2025 (full build-out), the year 2030 (five years after the build-out) and the year 2035 (ten years after the build-out). Therefore, the scenarios to evaluate are the following:

- Total Traffic Volumes for the PM and Saturday Peak hours, Year 2025
- Total Traffic Volumes for the PM and Saturday Peak hours, Year 2030
- Total Traffic Volumes for the PM and Saturday Peak hours, Year 2035

5.3 Total Traffic Volumes for the Horizon Years

The total traffic volumes for the horizon years 2025, 2030, and 2035 are shown in ***Exhibits 16 to 21***:

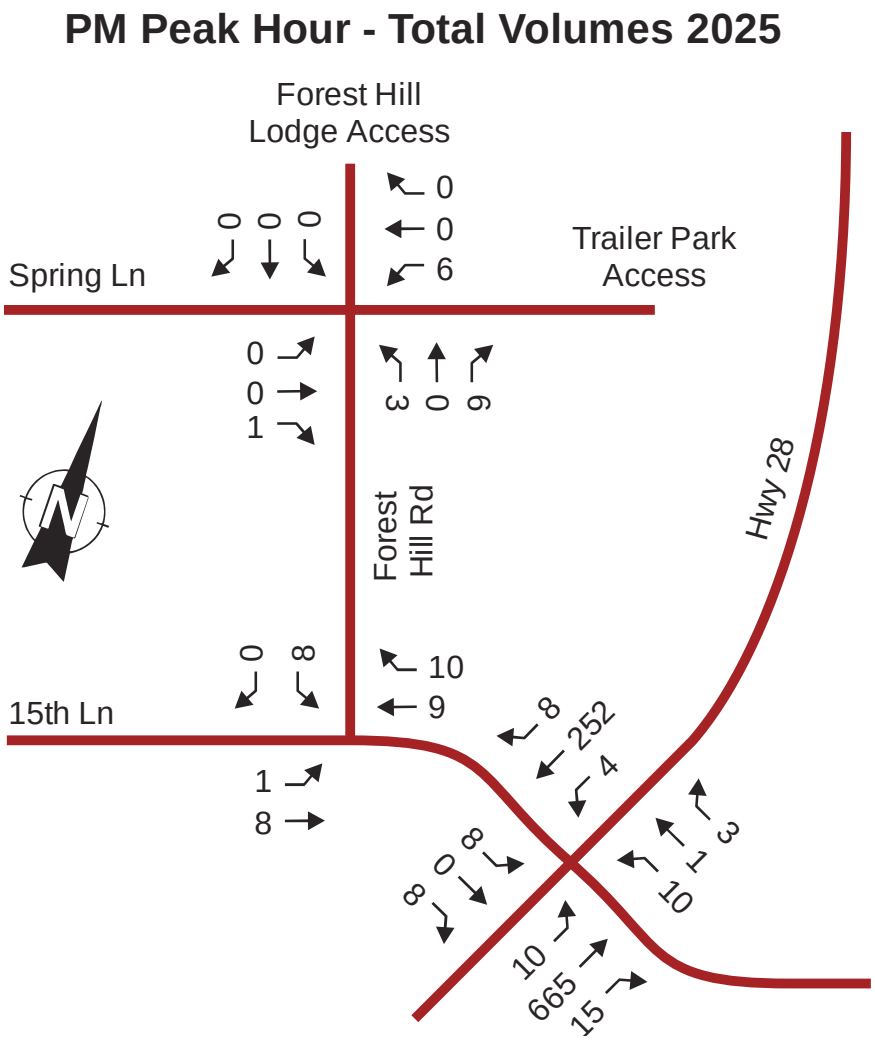


Exhibit 16: *Total PM Peak Hour Volumes, 2025.*

SAT Peak Hour - Total Volumes 2025

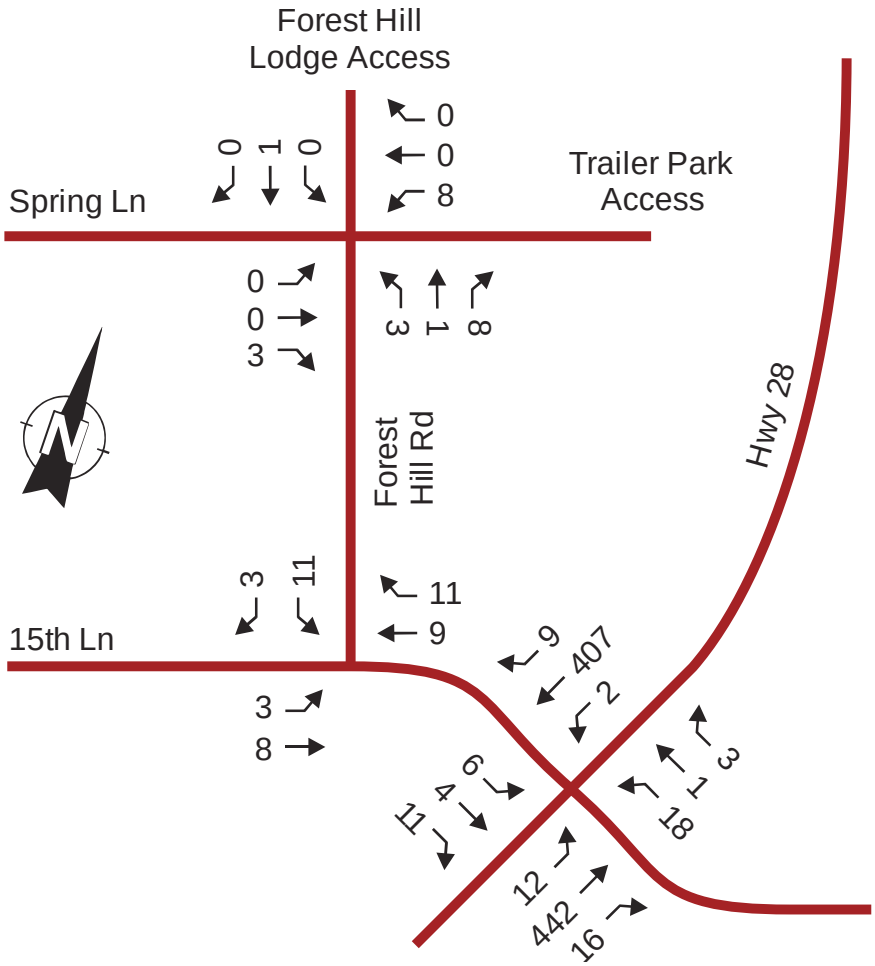


Exhibit 17: *Total SAT Peak Hour Volumes, 2025.*

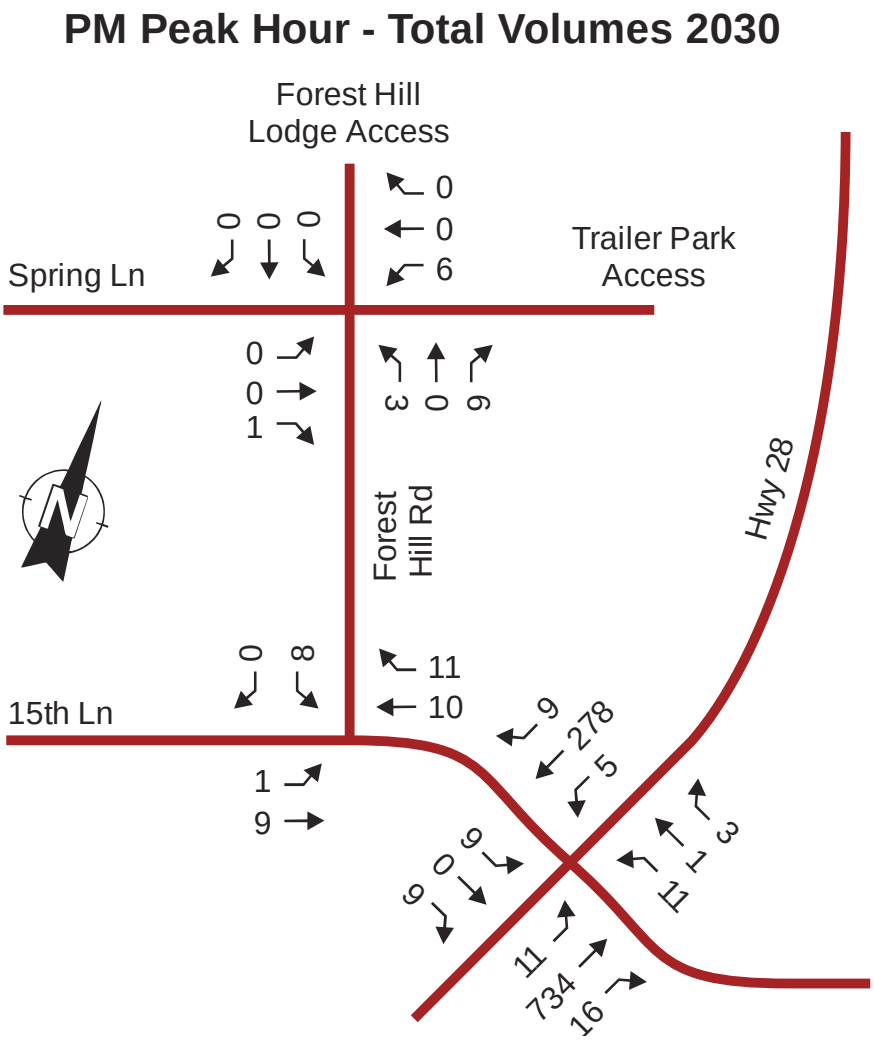


Exhibit 18: *Total PM Peak Hour Volumes, 2030.*

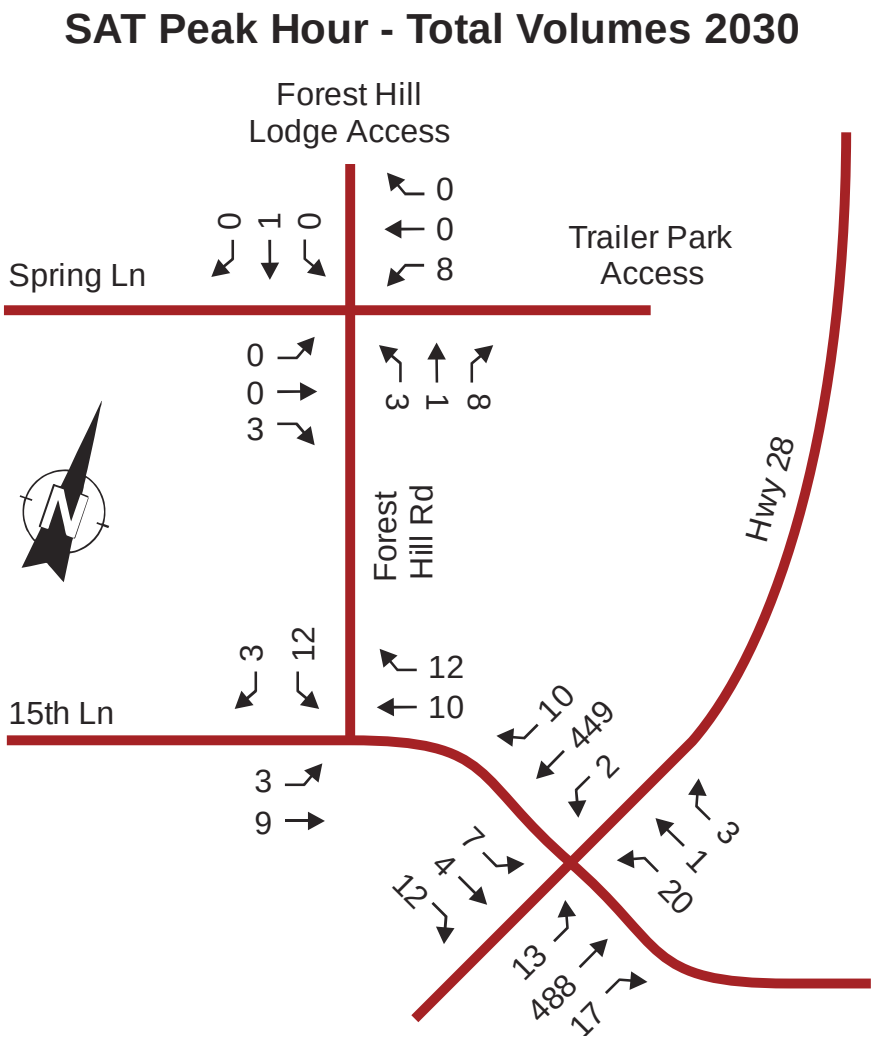


Exhibit 19: *Total SAT Peak Hour Volumes, 2030.*

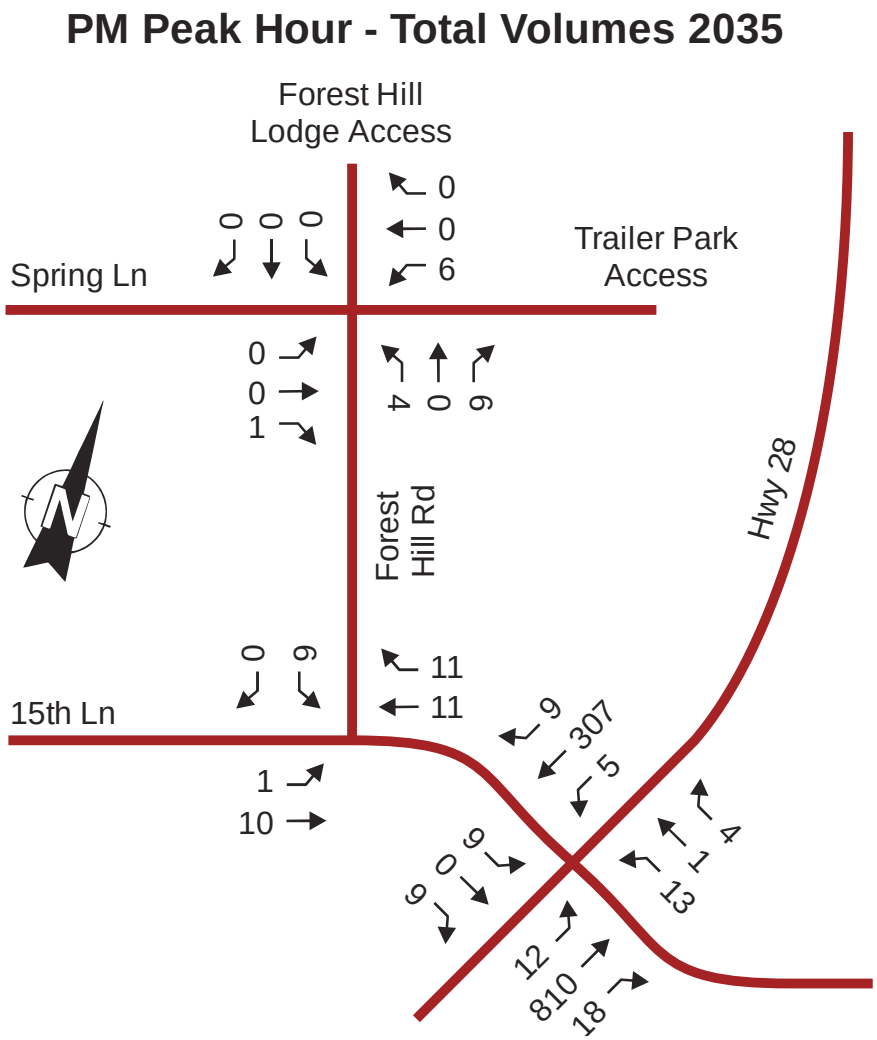


Exhibit 20: *Total PM Peak Hour Volumes, 2035.*

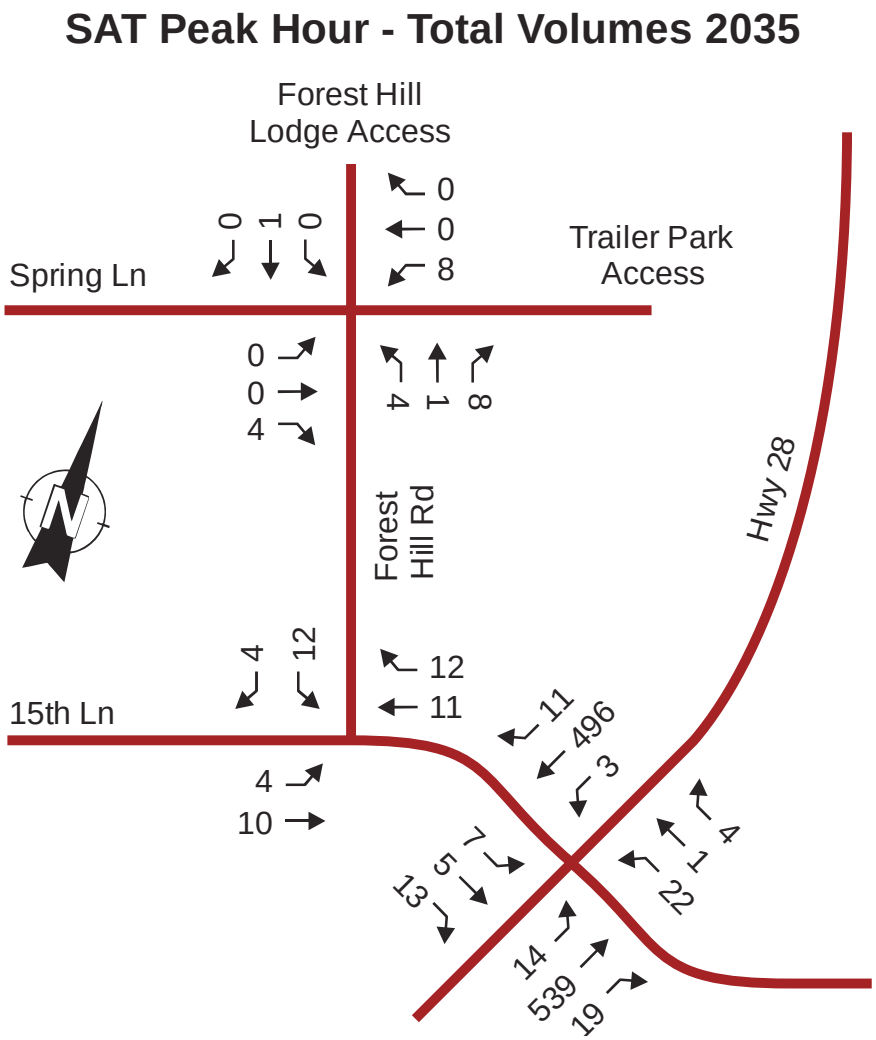


Exhibit 21: *Total SAT Peak Hour Volumes, 2035.*

5.4 Traffic Operations for Total Volumes

The traffic operations results including the new trips generated by the proposed development are shown on ***Tables 7 to 9*** for the horizon years 2025, 2030 and 2035.

		Total Volumes 2025							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.05	16.6	1.4	C	0.06	15.9	1.7	C
	WB	0.06	21.5	1.6	C	0.10	21.2	2.6	C
	NBL	0.01	7.8	0.2	A	0.01	8.3	0.3	A
	NBT	0.43	0.0	0.0	A	0.28	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.00	9.1	0.1	A	0.00	8.3	0.0	A
	SBT	0.16	0.0	0.0	A	0.26	0.0	0.0	A
	SBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.7	0.0	A	0.00	1.8	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.01	8.7	0.2	A	0.01	8.6	0.4	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	WB	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB	0.00	2.2	0.0	A	0.00	1.7	0.0	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 7: *Total Volumes Intersection Capacity, 2025.*

		Total Volumes 2030							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.07	18.6	1.8	C	0.08	17.5	2.1	C
	WB	0.08	25.0	2.1	D	0.12	24.6	3.3	C
	NBL	0.01	7.9	0.2	A	0.01	8.4	0.3	A
	NBT	0.47	0.0	0.0	A	0.31	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.01	9.4	0.1	A	0.00	8.5	0.0	A
	SBT	0.18	0.0	0.0	A	0.29	0.0	0.0	A
	SBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.7	0.0	A	0.00	1.7	0.0	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.01	8.7	0.2	A	0.02	8.7	0.4	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	WB	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB	0.00	2.2	0.0	A	0.00	1.7	0.0	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 8: *Total Volumes Intersection Capacity, 2030.*

		Total Volumes 2035							
		PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 28 / 15th Ln	EB	0.08	21.2	2.1	C	0.10	19.8	2.6	C
	WB	0.11	29.4	3.0	D	0.16	29.2	4.6	D
	NBL	0.01	8.0	0.3	A	0.01	8.6	0.4	A
	NBT	0.52	0.0	0.0	A	0.34	0.0	0.0	A
	NBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SBL	0.01	9.7	0.2	A	0.00	8.7	0.1	A
	SBT	0.20	0.0	0.0	A	0.32	0.0	0.0	A
	SBR	0.01	0.0	0.0	A	0.01	0.0	0.0	A
15th Ln / Forest Hill Rd	EB	0.00	0.6	0.0	A	0.00	1.9	0.1	A
	WB	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB	0.01	8.7	0.2	A	0.02	8.7	0.4	A
Forest Hill Rd / Spring Ln / Trailer Park Entrance	EB	0.00	8.3	0.0	A	0.00	8.3	0.1	A
	WB	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB	0.00	2.6	0.1	A	0.00	2.1	0.1	A
	SB	0.00	0.0	0.0	A	0.00	0.0	0.0	A

Table 9: *Total Volumes Intersection Capacity, 2035.*

Throughout the study horizon, with no geometric changes and with the subject development in place, the resulting factors remain virtually the same for the peak hours, due to the low number of trips generated.

The site entrance, which will form the east leg of the Forest Hill Rd / Spring Ln / Forest Hill Lodge entrance, shows good operations with level of service “A”.

6 Forest Hill Road Conditions

A site visit was undertaken on July 15, 2023; it was observed that Forest Hill Rd. has a narrow roadway platform. The existing road width varies at different locations; however, the average road width is approximately 5.0 m; the width of shoulders is not consistent and at some sections the shoulders are not present.

Since the roadway is considered a low volume roadway with less than 400 vehicles Average Dily Traffic (ADT), Forest Hills should comply with the geometric standards as set in Chapter 11 – Special Roads of the Geometric Design Guide for Canadian Roads, commonly known as the “TAC Manual”.

According to the TAC Manual, low-volume roads typically permit a lower design standard than similar high-volume roads. This may be seen as compromising safety for the sake of economy, but this is not the case. Crash risk on any facility is comprised of probability and exposure to crash, while lower design standard may increase the probability of a crash on a low-volumes road, the lower traffic volumes reduces exposure to the hazards present, resulting in an overall risk of loss that is comparable to higher volume roads.

Moreover, with careful selection of the design elements of a low-volume road, it should be immediately obvious to road users that the facility they are to traverse is a lower standard facility. Thus, driver expectancy will guide drivers to select an appropriate speed and path for the road ahead, and provide an acceptable level of safety.

It is suggested that the road geometry of Forest Hill be reviewed to comply with the geometric standards as set in Chapter 11 – Special Roads of the TAC Manual.

7 Conclusions/Recommendations

As previously mentioned, this report details the traffic impacts of the proposed trailer park extension at the north of Forest Hill Rd, in the Township of Selwyn.

For the existing (2023) conditions, results show that the intersection's movements are currently operating very well with mostly LOS "A" for the peak hours.

For this study, the horizon years for analysis are 2025, 2030, and 2035 which are expected to coincide with the full build-out, five years after the build-out, and ten years after the build-out of the proposed development, respectively. An annual compounded growth rate of 2% was used to project future traffic.

Over time, with no changes to traffic controls and road geometry, and without the subject development in place, results show that the intersection's movements will continue operating very well throughout the study horizon with mostly minor increases to delays. By 2035, the most critical movement is the WB at Hwy 28 / 15th Ln, showing LOS "D", which is still very acceptable for a minor approach.

According to the ITE (Institute of Transportation Engineers) trip generation rates, it is estimated that the proposed development will generate 12 trips during the afternoon peak hour, and 16 trips during the Saturday peak hour.

The new trips generated by the proposed development were added to the background volumes to identify the "Total Traffic Volumes," and the operations for these volumes were reviewed.

Throughout the study horizon, with no geometric changes and with the subject development in place, the resulting factors remain virtually the same

for the PM and Saturday peak hours, due to the low number of trips generated.

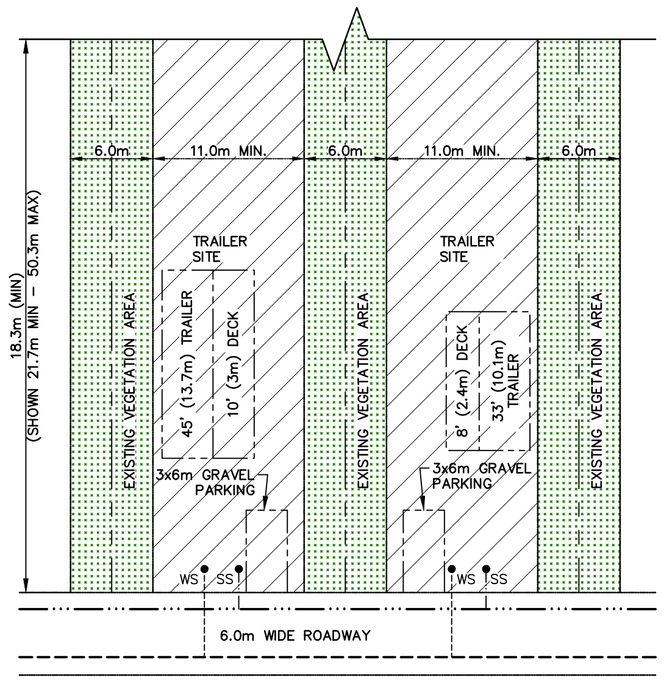
Throughout the study horizon, with no geometric changes and with the subject development in place, the resulting factors remain virtually the same for the peak hours, due to the low number of trips generated.

The site entrance, which will form the east leg of the Forest Hill Rd / Spring Ln / Forest Hill Lodge entrance, shows good traffic operations results with LOS “A” for all movements.

From the traffic point of view and based on the results obtained from this traffic analysis, it is concluded that the development does not trigger any road geometric improvements; however, the suitability of Forest Hill Rd. has to be reviewed to conform with the geometry standards as set in Chapter 11 – Special Roads of the TAC Manual.

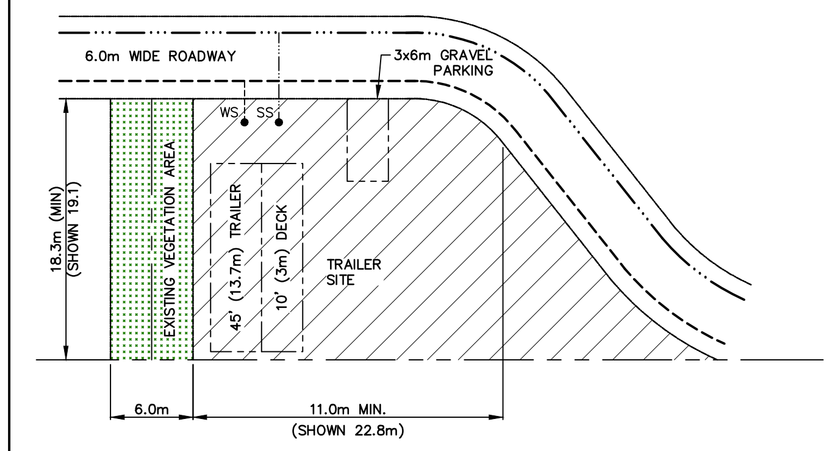
Appendix A

Draft Site Plan



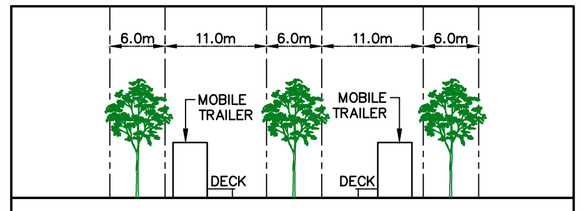
TYPICAL LOT AREAS		
LOT SUMMARY	DIMENSIONS	AREA
MINIMUM LOT BY ZONING	11m x 18.3m	201.3m²
MINIMUM LOT PROVIDED	13.2m x 21.7m	286.4m²
MAXIMUM LOT PROVIDED	13.3m x 50.3m	668.99m²

TYPICAL FRONT LOT – PLAN

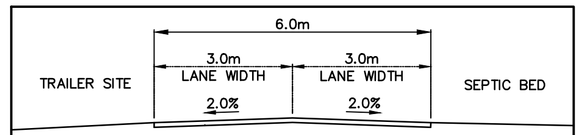


LOT AREA		
LOT SUMMARY	DIMENSIONS	AREA
MINIMUM LOT BY ZONING	11m x 18.3m	201.3m²
LOT PROVIDED	19.1m x 22.8m	533m²

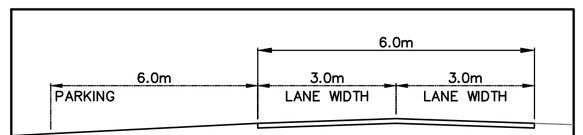
TYPICAL REAR LOT (40) – PLAN



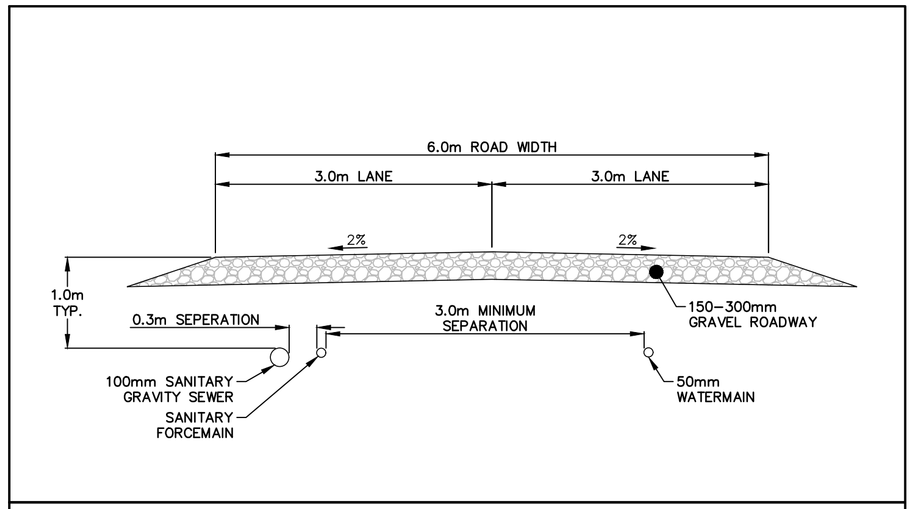
TYPICAL LOT – SECTION



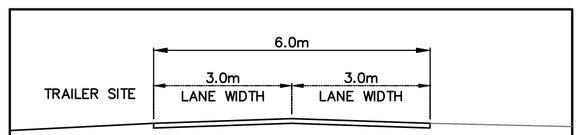
SECTION A–A



SECTION B–B

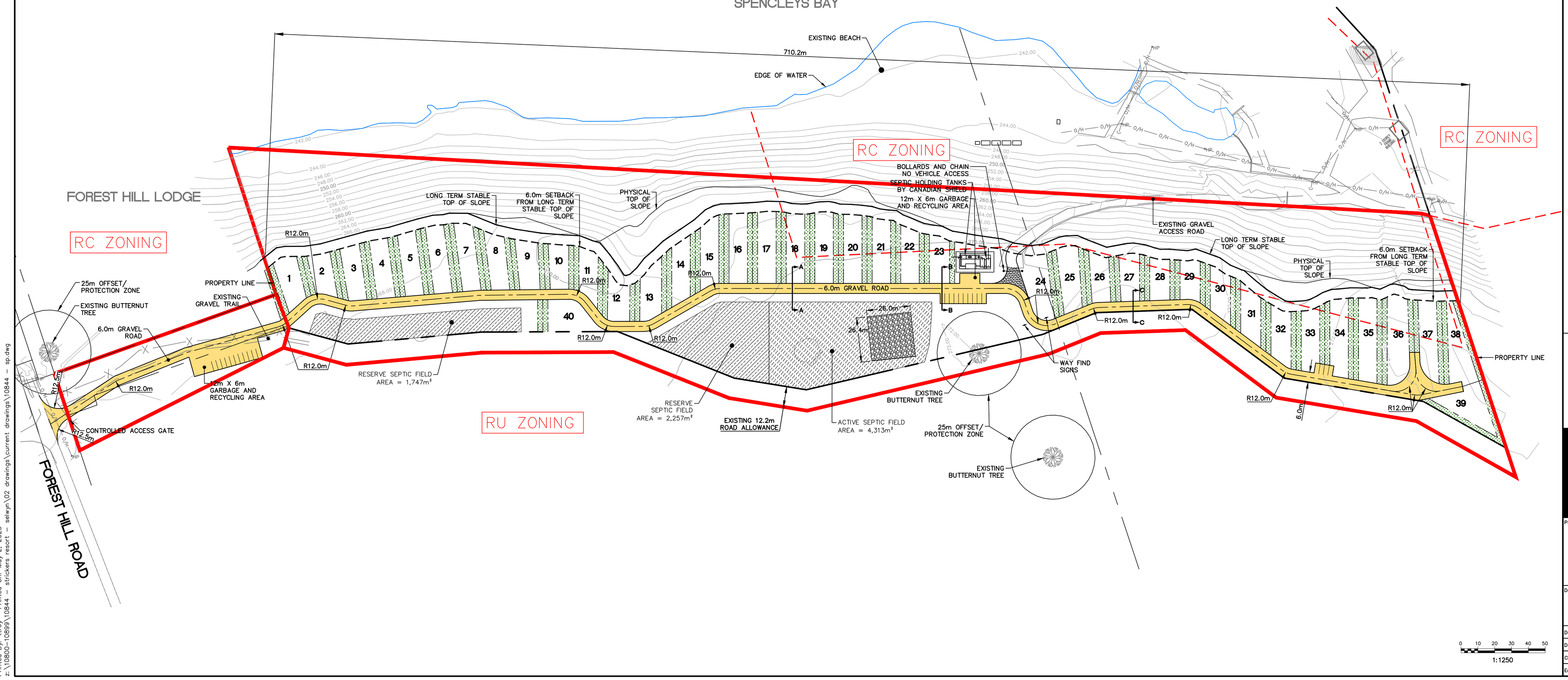


TYPICAL ROAD CROSS SECTION



SECTION C–C

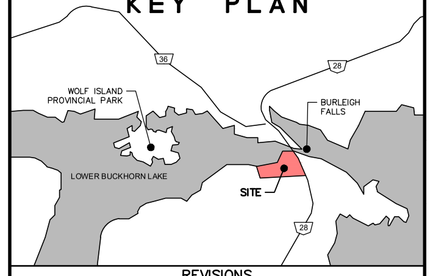
SPENCLEYS BAY



0 10 20 30 40 50
1:1250

TRUE NORTH

KEY PLAN



REVISIONS

No.	Description	Date
1	ISSUED TO MECP	04/26/23

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

- PROPOSED GRAVEL ROAD
- PROPOSED ACTIVE SEPTIC FIELD
- PROPOSED RESERVE SEPTIC FIELD
- SERVICE ACCESS ROAD
- EXISTING VEGETATION AREAS
- PR. ROAD CL
- PR EDGE OF ROAD
- EX R.O.W/PROPERTY BOUNDARY
- PR. LOT LINE
- LONG TERM STABLE EDGE OF SLOPE
- 6.0m SETBACK FROM LONG TERM STABLE EDGE OF SLOPE
- TOP OF SLOPE
- ZONING BOUNDARIES
- OTHER ZONING BOUNDARIES

WILLS

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Canada K9J 0B9

P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

LOVESICK LAKE TRAILER PARK

BURLEIGH FALLS, ONTARIO

Drawing Title

OVERALL SITE PLAN

Drawn By: SER	SCALE: Horz. 1:1250 Vert. –		
Designed By: SER	Plot Date: May 2, 2023		
Checked By: JDF	Project No.: 19–10844	Sht. No.:	
Engineer: –––	Dwg File No.: 10844 – SP	1	

Appendix B

Traffic Volumes and Projections

Turning Movement Count (Afternoon)

rsection Location: Hwy 28 / 15th Ln
City: Township of Selwyn
N/S Street: Hwy 28
E/W Street: 15th Ln

Period Time: 4:00 pm to 6:00 pm
Date: 2023-07-14
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15												
3:15 - 3:30												
3:30 - 3:45												
3:45 - 4:00												
4:00 - 4:15	0	0	0	0	1	0	2	0	138	1	4	0
4:15 - 4:30	0	0	0	0	1	0	1	0	147	0	1	0
4:30 - 4:45	2	0	0	0	0	0	1	0	152	0	4	0
4:45 - 5:00	1	0	0	0	0	0	2	0	157	1	6	0
5:00 - 5:15	0	0	0	0	0	0	1	0	128	0	5	0
5:15 - 5:30	2	0	0	0	2	0	3	0	170	2	2	0
5:30 - 5:45	0	0	0	0	2	0	2	0	176	0	4	0
5:45 - 6:00	3	0	0	0	1	0	1	0	162	1	3	0
Peak Hour Volume	5	0	0	0	5	0	7	0	636	3	14	0
rcentage Cars & Tru	100.0%	0.0%	######	######	100.0%	0.0%	100.0%	0.0%	99.5%	0.5%	100.0%	0.0%

Total Vehicles	5	0	5	7	639	14

WBL		WBT		WBR		SBL		SBT		SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
2	0	0	0	0	0	0	0	82	4	1	0
4	0	0	0	0	0	0	0	59	1	1	0
2	0	0	0	0	0	0	0	58	2	0	0
2	0	0	0	0	0	0	0	55	1	0	0
1	0	0	0	1	0	2	0	62	2	1	0
7	0	0	0	1	0	0	0	56	1	1	0
0	0	1	0	0	0	1	0	57	0	2	0
2	0	0	0	1	0	1	0	63	1	1	0
10	0	1	0	3	0	4	0	238	4	5	0
100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	98.3%	1.7%	100.0%	0.0%

10	1	3	4	242	5

Turning Movement Count (Afternoon)

rsection Location: 15th Ln / Forest Hill Rd
City: Township of Selwyn
N/S Street: Forest Hill Rd
E/W Street: 15th Ln

Period Time: 5:00 pm to 6:00 pm
Date: 2023-07-14
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15												
3:15 - 3:30												
3:30 - 3:45												
3:45 - 4:00												
4:00 - 4:15												
4:15 - 4:30												
4:30 - 4:45												
4:45 - 5:00												
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0
5:15 - 5:30	0	0	4	0	0	0	0	0	0	0	0	0
5:30 - 5:45	0	0	1	0	0	0	0	0	0	0	0	0
5:45 - 6:00	1	0	3	0	0	0	0	0	0	0	0	0
Peak Hour Volume	1	0	8	0	0	0	0	0	0	0	0	0
rcentage Cars & Tru	100.0%	0.0%	100.0%	0.0%	######	######	######	######	######	######	######	######

Total Vehicles	1	8	0	0	0	0

WBL		WBT		WBR		SBL		SBT		SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
0	0	2	0	0	0	0	0	0	0	0	0
0	0	0	0	4	0	1	0	0	0	0	0
0	0	4	0	0	0	1	0	0	0	0	0
0	0	3	0	0	0	0	0	0	0	0	0
0	0	9	0	4	0	2	0	0	0	0	0
######	######	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	######	######	######	######

0	9	4	2	0	0

Turning Movement Count (Afternoon)

rsection Location: Forest Hill Rd / Spring Ln
City: Township of Selwyn
N/S Street: Forest Hill Rd
E/W Street: Spring Ln

Period Time: 5:00 pm to 6:00 pm
Date: 2023-07-14
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15												
3:15 - 3:30												
3:30 - 3:45												
3:45 - 4:00												
4:00 - 4:15												
4:15 - 4:30												
4:30 - 4:45												
4:45 - 5:00												
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0
5:15 - 5:30	0	0	0	0	1	0	3	0	0	0	0	0
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume	0	0	0	0	1	0	3	0	0	0	0	0
rcentage Cars & Tru	######	######	######	######	100.0%	0.0%	100.0%	0.0%	######	######	######	######

Total Vehicles	0	0	1	3	0	0

 WBL		 WBT		 WBR		 SBL		 SBT		 SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######

0	0	0	0	0	0

Turning Movement Count (Saturday)

rsection Location: Hwy 28 / 15th Ln
City: Township of Selwyn
N/S Street: Hwy 28
E/W Street: 15th Ln

Period Time: 11:00 am to 1:30 pm
Date: 2023-07-15
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
11:00 - 11:15	0	0	0	0	0	0	3	0	120	0	4	0
11:15 - 11:30	0	0	0	0	0	0	1	0	145	0	2	0
11:30 - 11:45	0	0	0	0	3	0	0	0	91	0	3	0
11:45 - 12:00	0	0	1	0	1	0	3	0	94	1	4	0
12:00 - 12:15	0	0	0	0	0	0	1	0	99	0	3	0
12:15 - 12:30	3	0	0	0	0	0	0	0	104	0	0	0
12:30 - 12:45	0	0	0	0	3	0	3	0	90	1	2	0
12:45 - 1:00	3	0	2	0	1	0	3	0	104	1	5	0
1:00 - 1:15	0	0	0	0	1	0	0	0	119	0	3	0
1:15 - 1:30	1	0	1	0	2	0	2	0	110	0	5	0
1:30 - 1:45												
1:45 - 2:00												
Peak Hour Volume	4	0	3	0	7	0	8	0	423	2	15	0
rcentage Cars & Tru	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	99.5%	0.5%	100.0%	0.0%

Total Vehicles	4	3	7	8	425	15

WBL		WBT		WBR		SBL		SBT		SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
4	0	0	0	2	0	0	0	76	1	0	0
1	0	1	0	2	0	1	0	100	0	2	0
8	0	0	0	0	0	0	0	88	0	0	0
4	0	0	0	1	0	0	0	87	0	1	0
2	0	0	0	1	0	1	0	75	1	0	0
4	0	0	0	0	0	0	0	80	1	1	0
4	0	1	0	2	0	0	0	93	0	2	0
4	0	0	0	0	0	1	0	96	0	1	0
8	0	0	0	0	0	1	0	107	0	0	0
1	0	0	0	1	0	0	0	95	0	3	0
17	0	1	0	3	0	2	0	391	0	6	0
100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%

17	1	3	2	391	6

Turning Movement Count (Sunday)

rsection Location: 15th Ln / Forest Hill Rd
City: Township of Selwyn
N/S Street: Forest Hill Rd
E/W Street: 15th Ln

Period Time: 12:30 pm to 1:30 pm
Date: 2023-07-15
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
11:00 - 11:15												
11:15 - 11:30												
11:30 - 11:45												
11:45 - 12:00												
12:00 - 12:15												
12:15 - 12:30												
12:30 - 12:45	1	0	2	0	0	0	0	0	0	0	0	0
12:45 - 1:00	1	0	5	0	0	0	0	0	0	0	0	0
1:00 - 1:15	0	0	0	0	0	0	0	0	0	0	0	0
1:15 - 1:30	0	0	1	0	0	0	0	0	0	0	0	0
1:30 - 1:45												
1:45 - 2:00												
Peak Hour Volume	2	0	8	0	0	0	0	0	0	0	0	0
rcentage Cars & Tru	100.0%	0.0%	100.0%	0.0%	######	######	######	######	######	######	######	######

Total Vehicles	2	8	0	0	0	0

WBL		WBT		WBR		SBL		SBT		SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
0	0	5	0	1	0	1	0	0	0	1	0
0	0	2	0	2	0	1	0	0	0	1	0
0	0	0	0	0	0	1	0	0	0	0	0
0	0	2	0	1	0	1	0	0	0	0	0
0	0	9	0	4	0	4	0	0	0	2	0
######	######	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	######	######	100.0%	0.0%

0	9	4	4	0	2

Turning Movement Count (Sunday)

rsection Location: Forest Hill Rd / Spring Ln
City: Township of Selwyn
N/S Street: Forest Hill Rd
E/W Street: Spring Ln

Period Time: 12:30 pm to 1:30 pm
Date: 2023-07-15
Controlled: Two Way Stop
Project: 2026-16

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
11:00 - 11:15												
11:15 - 11:30												
11:30 - 11:45												
11:45 - 12:00												
12:00 - 12:15												
12:15 - 12:30												
12:30 - 12:45	0	0	0	0	1	0	0	0	1	0	0	0
12:45 - 1:00	0	0	0	0	0	0	1	0	0	0	0	0
1:00 - 1:15	0	0	0	0	2	0	1	0	0	0	0	0
1:15 - 1:30	0	0	0	0	0	0	1	0	0	0	0	0
1:30 - 1:45												
1:45 - 2:00												
Peak Hour Volume	0	0	0	0	3	0	3	0	1	0	0	0
rcentage Cars & Tru	######	######	######	######	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	######	######

Total Vehicles	0	0	3	3	1	0

WBL		WBT		WBR		SBL		SBT		SBR	
Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	0	0	0
#######	#######	#######	#######	#######	#######	#######	#######	100.0%	0.0%	#######	#######

0	0	0	0	1	0

Hwy 28 / 15th Ln		Eastbound			Northbound			Westbound			Southbound			Volume Type
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
2023	PM	5	0	5	7	639	14	10	1	3	4	242	5	Registered Volumes
2023	SAT	4	3	7	8	425	15	17	1	3	2	391	6	
Annual Growth Rate 2.00%														
2023	PM	5	0	5	7	639	14	10	1	3	4	242	5	Existing Volumes
2023	SAT	4	3	7	8	425	15	17	1	3	2	391	6	
Annual Growth Rate 2.00%														
2025	PM	5	0	5	7	665	15	10	1	3	4	252	5	Background Volumes
2025	SAT	4	3	7	8	442	16	18	1	3	2	407	6	
2025	PM	3	0	3	3	0	0	0	0	0	0	0	3	Site Generated Trips
2025	SAT	2	1	4	4	0	0	0	0	0	0	0	3	
2025	PM	8	0	8	10	665	15	10	1	3	4	252	8	Total Volumes
2025	SAT	6	4	11	12	442	16	18	1	3	2	407	9	
Annual Growth Rate 2.00%														
2030	PM	6	0	6	8	734	16	11	1	3	5	278	6	Background Volumes
2030	SAT	5	3	8	9	488	17	20	1	3	2	449	7	
2025	PM	3	0	3	3	0	0	0	0	0	0	0	3	Site Generated Trips
2025	SAT	2	1	4	4	0	0	0	0	0	0	0	3	
2030	PM	9	0	9	11	734	16	11	1	3	5	278	9	Total Volumes
2030	SAT	7	4	12	13	488	17	20	1	3	2	449	10	
Annual Growth Rate 2.00%														
2035	PM	6	0	6	9	810	18	13	1	4	5	307	6	Background Volumes
2035	SAT	5	4	9	10	539	19	22	1	4	3	496	8	
2025	PM	3	0	3	3	0	0	0	0	0	0	0	3	Site Generated Trips
2025	SAT	2	1	4	4	0	0	0	0	0	0	0	3	
2035	PM	9	0	9	12	810	18	13	1	4	5	307	9	Total Volumes
2035	SAT	7	5	13	14	539	19	22	1	4	3	496	11	

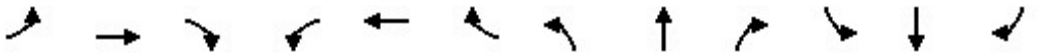
15th Ln / Forest Hill Rd		Eastbound			Northbound			Westbound			Southbound			Volume Type
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
2023	PM	1	8	0	0	0	0	0	9	4	2	0	0	Registered Volumes
2023	SAT	2	8	0	0	0	0	0	9	4	4	0	2	
Annual Growth Rate 2.00%														
2023	PM	1	8	0	0	0	0	0	9	4	2	0	0	Existing Volumes
2023	SAT	2	8	0	0	0	0	0	9	4	4	0	2	
Annual Growth Rate 2.00%														
2025	PM	1	8	0	0	0	0	0	9	4	2	0	0	Background Volumes
2025	SAT	2	8	0	0	0	0	0	9	4	4	0	2	
2025	PM	0	0	0	0	0	0	0	0	6	6	0	0	Site Generated Trips
2025	SAT	1	0	0	0	0	0	0	0	7	7	0	1	
2025	PM	1	8	0	0	0	0	0	9	10	8	0	0	Total Volumes
2025	SAT	3	8	0	0	0	0	0	9	11	11	0	3	
Annual Growth Rate 2.00%														
2030	PM	1	9	0	0	0	0	0	10	5	2	0	0	Background Volumes
2030	SAT	2	9	0	0	0	0	0	10	5	5	0	2	
2025	PM	0	0	0	0	0	0	0	0	6	6	0	0	Site Generated Trips
2025	SAT	1	0	0	0	0	0	0	0	7	7	0	1	
2030	PM	1	9	0	0	0	0	0	10	11	8	0	0	Total Volumes
2030	SAT	3	9	0	0	0	0	0	10	12	12	0	3	
Annual Growth Rate 2.00%														
2035	PM	1	10	0	0	0	0	0	11	5	3	0	0	Background Volumes
2035	SAT	3	10	0	0	0	0	0	11	5	5	0	3	
2025	PM	0	0	0	0	0	0	0	0	6	6	0	0	Site Generated Trips
2025	SAT	1	0	0	0	0	0	0	0	7	7	0	1	
2035	PM	1	10	0	0	0	0	0	11	11	9	0	0	Total Volumes
2035	SAT	4	10	0	0	0	0	0	11	12	12	0	4	

Forest Hill Rd / Spring Ln / Site Entrance		Eastbound			Northbound			Westbound			Southbound			Volume Type
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
2023	PM	0	0	1	3	0	0	0	0	0	0	0	0	Registered Volumes
2023	SAT	0	0	3	3	1	0	0	0	0	0	1	0	
Annual Growth Rate 2.00%														
2023	PM	0	0	1	3	0	0	0	0	0	0	0	0	Existing Volumes
2023	SAT	0	0	3	3	1	0	0	0	0	0	1	0	
Annual Growth Rate 2.00%														
2025	PM	0	0	1	3	0	0	0	0	0	0	0	0	Background Volumes
2025	SAT	0	0	3	3	1	0	0	0	0	0	1	0	
2025	PM	0	0	0	0	0	6	6	0	0	0	0	0	Site Generated Trips
2025	SAT	0	0	0	0	0	8	8	0	0	0	0	0	
2025	PM	0	0	1	3	0	6	6	0	0	0	0	0	Total Volumes
2025	SAT	0	0	3	3	1	8	8	0	0	0	1	0	
Annual Growth Rate 2.00%														
2030	PM	0	0	1	3	0	0	0	0	0	0	0	0	Background Volumes
2030	SAT	0	0	3	3	1	0	0	0	0	0	1	0	
2025	PM	0	0	0	0	0	6	6	0	0	0	0	0	Site Generated Trips
2025	SAT	0	0	0	0	0	8	8	0	0	0	0	0	
2030	PM	0	0	1	3	0	6	6	0	0	0	0	0	Total Volumes
2030	SAT	0	0	3	3	1	8	8	0	0	0	1	0	
Annual Growth Rate 2.00%														
2035	PM	0	0	1	4	0	0	0	0	0	0	0	0	Background Volumes
2035	SAT	0	0	4	4	1	0	0	0	0	0	1	0	
2025	PM	0	0	0	0	0	6	6	0	0	0	0	0	Site Generated Trips
2025	SAT	0	0	0	0	0	8	8	0	0	0	0	0	
2035	PM	0	0	1	4	0	6	6	0	0	0	0	0	Total Volumes
2035	SAT	0	0	4	4	1	8	8	0	0	0	1	0	

Appendix C

Synchro Reports

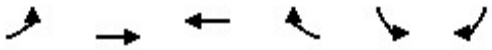
Existing Volumes 2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	10	1	3	7	639	14	4	242	5
Future Volume (Veh/h)	5	0	5	10	1	3	7	639	14	4	242	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	11	1	3	8	695	15	4	263	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	986	997	263	987	987	695	268			710		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	986	997	263	987	987	695	268			710		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	95	100	99	99			100		
cM capacity (veh/h)	225	243	781	225	247	446	1307			899		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	10	15	8	695	15	4	263	5
Volume Left	5	11	8	0	0	4	0	0
Volume Right	5	3	0	0	15	0	0	5
cSH	349	251	1307	1700	1700	899	1700	1700
Volume to Capacity	0.03	0.06	0.01	0.41	0.01	0.00	0.15	0.00
Queue Length 95th (m)	0.7	1.5	0.1	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	15.6	20.2	7.8	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	15.6	20.2	0.1			0.1		
Approach LOS	C	C						

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	43.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	9	4	2	0
Future Volume (Veh/h)	1	8	9	4	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	10	4	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				23	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				23	12
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				998	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	10	14	2
Volume Left	1	0	2
Volume Right	0	4	0
cSH	1617	1700	998
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	3	0	0	0
Future Volume (Veh/h)	0	1	3	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	3	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	6	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1019	1091	1636			

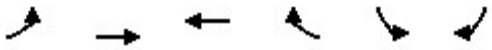
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	3	0
Volume Left	0	3	0
Volume Right	1	0	0
cSH	1091	1636	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	8.3	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	7.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	3	7	17	1	3	8	425	15	2	391	6
Future Volume (Veh/h)	4	3	7	17	1	3	8	425	15	2	391	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	3	8	18	1	3	9	462	16	2	425	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	912	925	425	918	916	462	432			478		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912	925	425	918	916	462	432			478		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	93	100	100	99			100		
cM capacity (veh/h)	253	268	634	247	272	604	1138			1095		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	15	22	9	462	16	2	425	7
Volume Left	4	18	9	0	0	2	0	0
Volume Right	8	3	0	0	16	0	0	7
cSH	378	270	1138	1700	1700	1095	1700	1700
Volume to Capacity	0.04	0.08	0.01	0.27	0.01	0.00	0.25	0.00
Queue Length 95th (m)	1.0	2.1	0.2	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.9	19.5	8.2	0.0	0.0	8.3	0.0	0.0
Lane LOS	B	C	A			A		
Approach Delay (s)	14.9	19.5	0.2			0.0		
Approach LOS	B	C						

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	32.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	8	9	4	4	2
Future Volume (Veh/h)	2	8	9	4	4	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	10	4	4	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				25	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				25	12
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				995	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	14	6
Volume Left	2	0	4
Volume Right	0	4	2
cSH	1617	1700	1020
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	1.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	1.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	3	3	1	1	0
Future Volume (Veh/h)	0	3	3	1	1	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	3	1	1	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	8	1	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	1	1			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1016	1090	1635			

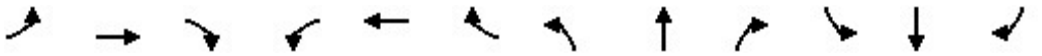
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	4	1
Volume Left	0	3	0
Volume Right	3	0	0
cSH	1090	1635	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	8.3	5.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	5.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

Synchro Reports

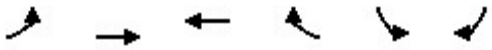
Background Volumes 2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	10	1	3	7	665	15	4	252	5
Future Volume (Veh/h)	5	0	5	10	1	3	7	665	15	4	252	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	11	1	3	8	723	16	4	274	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1024	1037	274	1026	1026	723	279			739		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1024	1037	274	1026	1026	723	279			739		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	95	100	99	99			100		
cM capacity (veh/h)	211	231	770	212	234	430	1295			876		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	10	15	8	723	16	4	274	5
Volume Left	5	11	8	0	0	4	0	0
Volume Right	5	3	0	0	16	0	0	5
cSH	332	237	1295	1700	1700	876	1700	1700
Volume to Capacity	0.03	0.06	0.01	0.43	0.01	0.00	0.16	0.00
Queue Length 95th (m)	0.7	1.6	0.1	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	16.2	21.2	7.8	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	16.2	21.2	0.1			0.1		
Approach LOS	C	C						

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	9	4	2	0
Future Volume (Veh/h)	1	8	9	4	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	10	4	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				23	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				23	12
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				998	1074

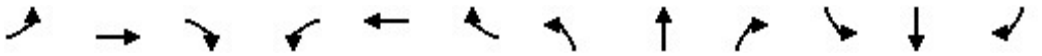
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	10	14	2
Volume Left	1	0	2
Volume Right	0	4	0
cSH	1617	1700	998
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	3	0	0	0
Future Volume (Veh/h)	0	1	3	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	3	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	6	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1019	1091	1636			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	3	0
Volume Left	0	3	0
Volume Right	1	0	0
cSH	1091	1636	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	8.3	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	7.2	0.0
Approach LOS	A		

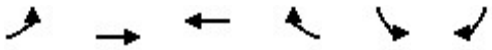
Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	3	7	18	1	3	8	442	16	2	407	6
Future Volume (Veh/h)	4	3	7	18	1	3	8	442	16	2	407	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	3	8	20	1	3	9	480	17	2	442	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	948	961	442	954	951	480	449			497		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	948	961	442	954	951	480	449			497		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	91	100	99	99			100		
cM capacity (veh/h)	239	256	620	234	259	590	1122			1077		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	15	24	9	480	17	2	442	7
Volume Left	4	20	9	0	0	2	0	0
Volume Right	8	3	0	0	17	0	0	7
cSH	363	254	1122	1700	1700	1077	1700	1700
Volume to Capacity	0.04	0.09	0.01	0.28	0.01	0.00	0.26	0.00
Queue Length 95th (m)	1.0	2.5	0.2	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.4	20.7	8.2	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	15.4	20.7	0.1			0.0		
Approach LOS	C	C						

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	33.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	8	9	4	4	2
Future Volume (Veh/h)	2	8	9	4	4	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	10	4	4	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				25	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				25	12
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1617				995	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	14	6
Volume Left	2	0	4
Volume Right	0	4	2
cSH	1617	1700	1020
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	1.3	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	1.3	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	3	3	1	1	0
Future Volume (Veh/h)	0	3	3	1	1	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	3	1	1	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	8	1	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	1	1			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1016	1090	1635			

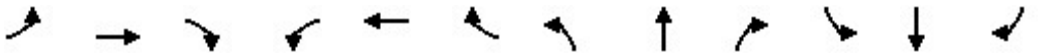
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	4	1
Volume Left	0	3	0
Volume Right	3	0	0
cSH	1090	1635	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	8.3	5.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	5.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

Synchro Reports

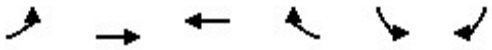
Background Volumes 2030



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	6	11	1	3	8	734	16	5	278	6
Future Volume (Veh/h)	6	0	6	11	1	3	8	734	16	5	278	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	7	12	1	3	9	798	17	5	302	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1132	1145	302	1135	1135	798	309			815		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1132	1145	302	1135	1135	798	309			815		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	93	100	99	99			99		
cM capacity (veh/h)	178	199	742	178	201	389	1263			821		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	14	16	9	798	17	5	302	7
Volume Left	7	12	9	0	0	5	0	0
Volume Right	7	3	0	0	17	0	0	7
cSH	287	199	1263	1700	1700	821	1700	1700
Volume to Capacity	0.05	0.08	0.01	0.47	0.01	0.01	0.18	0.00
Queue Length 95th (m)	1.2	2.1	0.2	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	18.2	24.6	7.9	0.0	0.0	9.4	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	18.2	24.6	0.1			0.1		
Approach LOS	C	C						

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	48.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	9	10	5	2	0
Future Volume (Veh/h)	1	9	10	5	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	10	11	5	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	16				26	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				26	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1615				995	1072

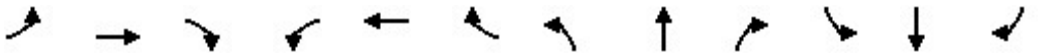
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	2
Volume Left	1	0	2
Volume Right	0	5	0
cSH	1615	1700	995
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.7	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	3	0	0	0
Future Volume (Veh/h)	0	1	3	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	3	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	6	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1019	1091	1636			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	3	0
Volume Left	0	3	0
Volume Right	1	0	0
cSH	1091	1636	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	8.3	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	7.2	0.0
Approach LOS	A		

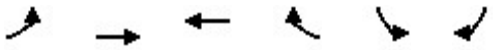
Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	8	20	1	3	9	488	17	2	449	7
Future Volume (Veh/h)	5	3	8	20	1	3	9	488	17	2	449	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	3	9	22	1	3	10	530	18	2	488	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1046	1060	488	1052	1050	530	496			548		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1046	1060	488	1052	1050	530	496			548		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	98	89	100	99	99			100		
cM capacity (veh/h)	205	223	584	199	226	553	1078			1032		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	17	26	10	530	18	2	488	8
Volume Left	5	22	10	0	0	2	0	0
Volume Right	9	3	0	0	18	0	0	8
cSH	319	216	1078	1700	1700	1032	1700	1700
Volume to Capacity	0.05	0.12	0.01	0.31	0.01	0.00	0.29	0.00
Queue Length 95th (m)	1.3	3.2	0.2	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	16.9	23.9	8.4	0.0	0.0	8.5	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	16.9	23.9	0.2			0.0		
Approach LOS	C	C						

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	35.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	9	10	5	5	2
Future Volume (Veh/h)	2	9	10	5	5	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	10	11	5	5	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	16				28	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				28	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1615				991	1072

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	16	7
Volume Left	2	0	5
Volume Right	0	5	2
cSH	1615	1700	1013
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	1.2	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	1.2	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	3	3	1	1	0
Future Volume (Veh/h)	0	3	3	1	1	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	3	1	1	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	8	1	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	1	1			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1016	1090	1635			

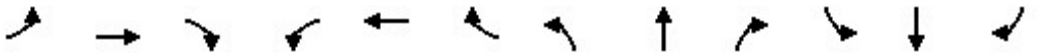
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	4	1
Volume Left	0	3	0
Volume Right	3	0	0
cSH	1090	1635	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	8.3	5.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	5.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F

Synchro Reports

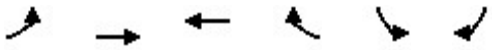
Background Volumes 2035



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	6	13	1	4	9	810	18	5	307	6
Future Volume (Veh/h)	6	0	6	13	1	4	9	810	18	5	307	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	7	14	1	4	10	880	20	5	334	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1248	1264	334	1251	1251	880	341			900		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1248	1264	334	1251	1251	880	341			900		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	91	99	99	99			99		
cM capacity (veh/h)	147	168	712	148	172	349	1229			763		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	14	19	10	880	20	5	334	7
Volume Left	7	14	10	0	0	5	0	0
Volume Right	7	4	0	0	20	0	0	7
cSH	244	169	1229	1700	1700	763	1700	1700
Volume to Capacity	0.06	0.11	0.01	0.52	0.01	0.01	0.20	0.00
Queue Length 95th (m)	1.5	3.0	0.2	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	20.6	28.9	8.0	0.0	0.0	9.7	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	20.6	28.9	0.1			0.1		
Approach LOS	C	D						

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	52.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	10	11	5	3	0
Future Volume (Veh/h)	1	10	11	5	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	11	12	5	3	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				28	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				28	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1613				992	1071

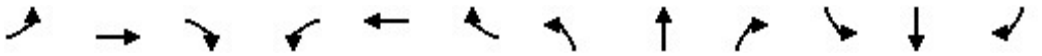
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	17	3
Volume Left	1	0	3
Volume Right	0	5	0
cSH	1613	1700	992
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.6	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	4	0	0	0
Future Volume (Veh/h)	0	1	4	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	4	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	8	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1016	1091	1636			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	4	0
Volume Left	0	4	0
Volume Right	1	0	0
cSH	1091	1636	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	8.3	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	7.2	0.0
Approach LOS	A		

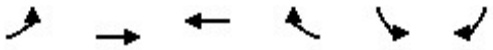
Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	4	9	22	1	4	10	539	19	3	496	8
Future Volume (Veh/h)	5	4	9	22	1	4	10	539	19	3	496	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	4	10	24	1	4	11	586	21	3	539	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1158	1174	539	1165	1162	586	548			607		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1158	1174	539	1165	1162	586	548			607		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	98	85	99	99	99			100		
cM capacity (veh/h)	171	191	546	165	194	514	1032			981		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	19	29	11	586	21	3	539	9
Volume Left	5	24	11	0	0	3	0	0
Volume Right	10	4	0	0	21	0	0	9
cSH	277	183	1032	1700	1700	981	1700	1700
Volume to Capacity	0.07	0.16	0.01	0.34	0.01	0.00	0.32	0.01
Queue Length 95th (m)	1.8	4.4	0.3	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	18.9	28.3	8.5	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	18.9	28.3	0.2			0.0		
Approach LOS	C	D						

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	38.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	10	11	5	5	3
Future Volume (Veh/h)	3	10	11	5	5	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	11	12	5	5	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				32	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				32	14
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1613				986	1071

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	14	17	8
Volume Left	3	0	5
Volume Right	0	5	3
cSH	1613	1700	1016
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	1.6	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	1.6	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	4	1	1	0
Future Volume (Veh/h)	0	4	4	1	1	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	4	1	1	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	10	1	1			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10	1	1			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1013	1090	1635			

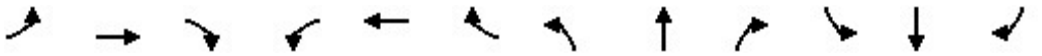
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	5	1
Volume Left	0	4	0
Volume Right	4	0	0
cSH	1090	1635	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.1	0.1	0.0
Control Delay (s)	8.3	5.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.3	5.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G

Synchro Reports

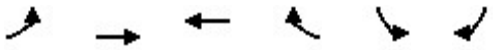
Total Volumes 2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	8	10	1	3	10	665	15	4	252	8
Future Volume (Veh/h)	8	0	8	10	1	3	10	665	15	4	252	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	9	11	1	3	11	723	16	4	274	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1030	1043	274	1036	1036	723	283			739		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1030	1043	274	1036	1036	723	283			739		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	95	100	99	99			100		
cM capacity (veh/h)	209	228	770	207	230	430	1291			876		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	18	15	11	723	16	4	274	9
Volume Left	9	11	11	0	0	4	0	0
Volume Right	9	3	0	0	16	0	0	9
cSH	329	233	1291	1700	1700	876	1700	1700
Volume to Capacity	0.05	0.06	0.01	0.43	0.01	0.00	0.16	0.01
Queue Length 95th (m)	1.4	1.6	0.2	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	16.6	21.5	7.8	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	16.6	21.5	0.1			0.1		
Approach LOS	C	C						

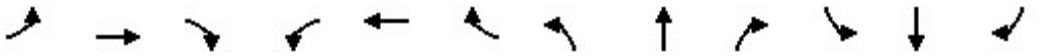
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	9	10	8	0
Future Volume (Veh/h)	1	8	9	10	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	10	11	9	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	21				26	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				26	16
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1608				993	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	10	21	9
Volume Left	1	0	9
Volume Right	0	11	0
cSH	1608	1700	993
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.7	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.7
Approach LOS			A

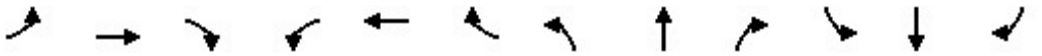
Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	1	6	0	0	3	0	6	0	0	0
Future Volume (Veh/h)	0	0	1	6	0	0	3	0	6	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	7	0	0	3	0	7	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	10	13	0	10	10	4	0			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10	13	0	10	10	4	0			7		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1013	884	1091	1010	888	1086	1636			1627		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	7	10	0
Volume Left	0	7	3	0
Volume Right	1	0	7	0
cSH	1091	1010	1636	1700
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.2	0.0	0.0
Control Delay (s)	8.3	8.6	2.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.6	2.2	0.0
Approach LOS	A	A		

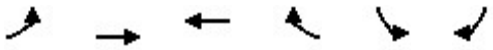
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	15.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	11	18	1	3	12	442	16	2	407	9
Future Volume (Veh/h)	6	4	11	18	1	3	12	442	16	2	407	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	4	12	20	1	3	13	480	17	2	442	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	956	969	442	966	962	480	452			497		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	956	969	442	966	962	480	452			497		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	98	91	100	99	99			100		
cM capacity (veh/h)	236	252	620	226	254	590	1119			1077		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	23	24	13	480	17	2	442	10
Volume Left	7	20	13	0	0	2	0	0
Volume Right	12	3	0	0	17	0	0	10
cSH	354	246	1119	1700	1700	1077	1700	1700
Volume to Capacity	0.06	0.10	0.01	0.28	0.01	0.00	0.26	0.01
Queue Length 95th (m)	1.7	2.6	0.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.9	21.2	8.3	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	15.9	21.2	0.2			0.0		
Approach LOS	C	C						

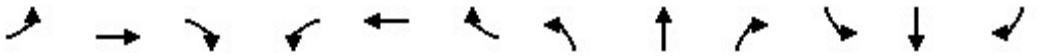
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	8	9	11	11	3
Future Volume (Veh/h)	3	8	9	11	11	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	10	12	12	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	22				31	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	22				31	16
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1607				986	1069

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	22	15
Volume Left	3	0	12
Volume Right	0	12	3
cSH	1607	1700	1002
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	1.8	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	1.8	0.0	8.6
Approach LOS			A

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	3	8	0	0	3	1	8	0	1	0
Future Volume (Veh/h)	0	0	3	8	0	0	3	1	8	0	1	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	3	9	0	0	3	1	9	0	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	12	17	1	16	12	6	1			10		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12	17	1	16	12	6	1			10		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1008	879	1090	1001	884	1083	1635			1623		

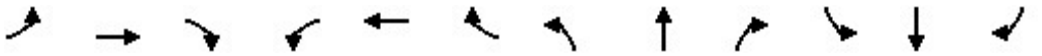
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	9	13	1
Volume Left	0	9	3	0
Volume Right	3	0	9	0
cSH	1090	1001	1635	1623
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.1	0.2	0.0	0.0
Control Delay (s)	8.3	8.6	1.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.6	1.7	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix H

Synchro Reports

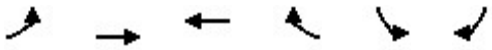
Total Volumes 2030



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	9	11	1	3	11	734	16	5	278	9
Future Volume (Veh/h)	9	0	9	11	1	3	11	734	16	5	278	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	10	12	1	3	12	798	17	5	302	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1138	1151	302	1144	1144	798	312			815		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1138	1151	302	1144	1144	798	312			815		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	93	99	99	99			99		
cM capacity (veh/h)	176	197	742	174	198	389	1260			821		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	20	16	12	798	17	5	302	10
Volume Left	10	12	12	0	0	5	0	0
Volume Right	10	3	0	0	17	0	0	10
cSH	285	196	1260	1700	1700	821	1700	1700
Volume to Capacity	0.07	0.08	0.01	0.47	0.01	0.01	0.18	0.01
Queue Length 95th (m)	1.8	2.1	0.2	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	18.6	25.0	7.9	0.0	0.0	9.4	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	18.6	25.0	0.1			0.1		
Approach LOS	C	D						

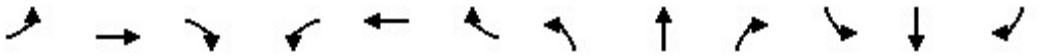
Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	48.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	9	10	11	8	0
Future Volume (Veh/h)	1	9	10	11	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	10	11	12	9	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	23				29	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				29	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1605				990	1068

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	23	9
Volume Left	1	0	9
Volume Right	0	12	0
cSH	1605	1700	990
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.7	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.7
Approach LOS			A

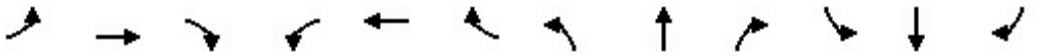
Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	1	6	0	0	3	0	6	0	0	0
Future Volume (Veh/h)	0	0	1	6	0	0	3	0	6	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	7	0	0	3	0	7	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	10	13	0	10	10	4	0			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10	13	0	10	10	4	0			7		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1013	884	1091	1010	888	1086	1636			1627		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	7	10	0
Volume Left	0	7	3	0
Volume Right	1	0	7	0
cSH	1091	1010	1636	1700
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.2	0.0	0.0
Control Delay (s)	8.3	8.6	2.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.6	2.2	0.0
Approach LOS	A	A		

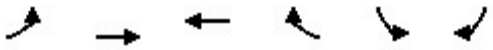
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	15.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	12	20	1	3	13	488	17	2	449	10
Future Volume (Veh/h)	7	4	12	20	1	3	13	488	17	2	449	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	4	13	22	1	3	14	530	18	2	488	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1054	1068	488	1065	1061	530	499			548		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1054	1068	488	1065	1061	530	499			548		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	98	98	89	100	99	99			100		
cM capacity (veh/h)	202	220	584	193	222	553	1075			1032		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	25	26	14	530	18	2	488	11
Volume Left	8	22	14	0	0	2	0	0
Volume Right	13	3	0	0	18	0	0	11
cSH	312	210	1075	1700	1700	1032	1700	1700
Volume to Capacity	0.08	0.12	0.01	0.31	0.01	0.00	0.29	0.01
Queue Length 95th (m)	2.1	3.3	0.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	17.5	24.6	8.4	0.0	0.0	8.5	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	17.5	24.6	0.2			0.0		
Approach LOS	C	C						

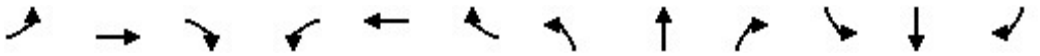
Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	35.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	9	10	12	12	3
Future Volume (Veh/h)	3	9	10	12	12	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	10	11	13	13	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	24				34	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	24				34	18
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1604				983	1067

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	13	24	16
Volume Left	3	0	13
Volume Right	0	13	3
cSH	1604	1700	998
Volume to Capacity	0.00	0.01	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	1.7	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	1.7	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	3	8	0	0	3	1	8	0	1	0
Future Volume (Veh/h)	0	0	3	8	0	0	3	1	8	0	1	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	3	9	0	0	3	1	9	0	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	12	17	1	16	12	6	1			10		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12	17	1	16	12	6	1			10		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1008	879	1090	1001	884	1083	1635			1623		

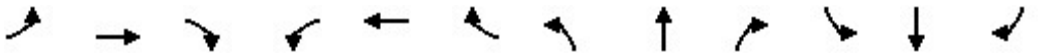
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	9	13	1
Volume Left	0	9	3	0
Volume Right	3	0	9	0
cSH	1090	1001	1635	1623
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.1	0.2	0.0	0.0
Control Delay (s)	8.3	8.6	1.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.6	1.7	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix I

Synchro Reports

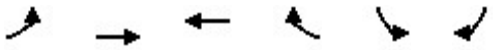
Total Volumes 2035



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	9	13	1	4	12	810	18	5	307	9
Future Volume (Veh/h)	9	0	9	13	1	4	12	810	18	5	307	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	10	14	1	4	13	880	20	5	334	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1254	1270	334	1260	1260	880	344			900		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1254	1270	334	1260	1260	880	344			900		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	99	90	99	99	99			99		
cM capacity (veh/h)	146	167	712	145	169	349	1226			763		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	20	19	13	880	20	5	334	10
Volume Left	10	14	13	0	0	5	0	0
Volume Right	10	4	0	0	20	0	0	10
cSH	242	166	1226	1700	1700	763	1700	1700
Volume to Capacity	0.08	0.11	0.01	0.52	0.01	0.01	0.20	0.01
Queue Length 95th (m)	2.1	3.0	0.3	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	21.2	29.4	8.0	0.0	0.0	9.7	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	21.2	29.4	0.1			0.1		
Approach LOS	C	D						

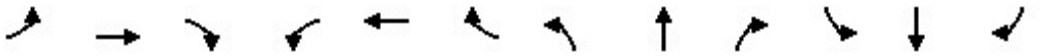
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	52.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	10	11	11	9	0
Future Volume (Veh/h)	1	10	11	11	9	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	11	12	12	10	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	24				31	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	24				31	18
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1604				988	1066

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	24	10
Volume Left	1	0	10
Volume Right	0	12	0
cSH	1604	1700	988
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.6	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	8.7
Approach LOS			A

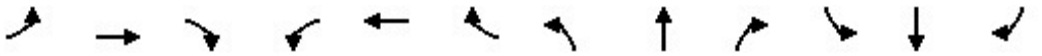
Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	1	6	0	0	4	0	6	0	0	0
Future Volume (Veh/h)	0	0	1	6	0	0	4	0	6	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	7	0	0	4	0	7	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	12	15	0	12	12	4	0			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12	15	0	12	12	4	0			7		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1009	881	1091	1007	885	1086	1636			1627		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	7	11	0
Volume Left	0	7	4	0
Volume Right	1	0	7	0
cSH	1091	1007	1636	1700
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.2	0.1	0.0
Control Delay (s)	8.3	8.6	2.6	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.6	2.6	0.0
Approach LOS	A	A		

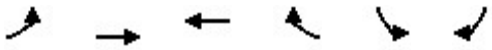
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	15.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	13	22	1	4	14	539	19	3	496	11
Future Volume (Veh/h)	7	5	13	22	1	4	14	539	19	3	496	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	5	14	24	1	4	15	586	21	3	539	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1166	1182	539	1178	1173	586	551			607		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1166	1182	539	1178	1173	586	551			607		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	97	97	85	99	99	99			100		
cM capacity (veh/h)	168	188	546	160	190	514	1029			981		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	27	29	15	586	21	3	539	12
Volume Left	8	24	15	0	0	3	0	0
Volume Right	14	4	0	0	21	0	0	12
cSH	271	177	1029	1700	1700	981	1700	1700
Volume to Capacity	0.10	0.16	0.01	0.34	0.01	0.00	0.32	0.01
Queue Length 95th (m)	2.6	4.6	0.4	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	19.8	29.2	8.6	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	19.8	29.2	0.2			0.0		
Approach LOS	C	D						

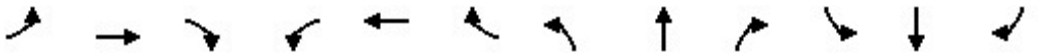
Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	38.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	10	11	12	12	4
Future Volume (Veh/h)	4	10	11	12	12	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	11	12	13	13	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	25				38	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				38	18
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1603				977	1066

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	15	25	17
Volume Left	4	0	13
Volume Right	0	13	4
cSH	1603	1700	997
Volume to Capacity	0.00	0.01	0.02
Queue Length 95th (m)	0.1	0.0	0.4
Control Delay (s)	1.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	1.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	8	0	0	4	1	8	0	1	0
Future Volume (Veh/h)	0	0	4	8	0	0	4	1	8	0	1	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	9	0	0	4	1	9	0	1	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	14	19	1	18	14	6	1			10		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	14	19	1	18	14	6	1			10		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			100		
cM capacity (veh/h)	1005	877	1090	995	882	1083	1635			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	9	14	1
Volume Left	0	9	4	0
Volume Right	4	0	9	0
cSH	1090	995	1635	1623
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (m)	0.1	0.2	0.1	0.0
Control Delay (s)	8.3	8.7	2.1	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	8.7	2.1	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	17.7%	ICU Level of Service	A	
Analysis Period (min)	15			