

Traffic Impact Study

September 10, 2025



Civic 344 and 376 Sackville Drive Redevelopment



DP Project 24-560 Engineering Services



SUBMITTED BY:

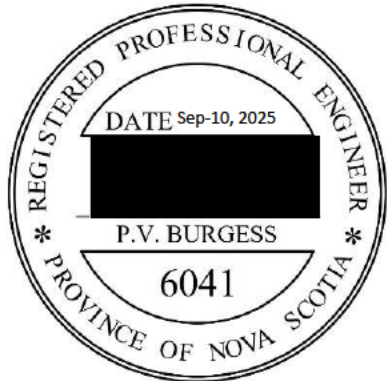
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Issued For	By	Date
Draft Submission to Client	PVB	August 5, 2025
Final Report	PVB	September 10, 2025
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1.0 INTRODUCTION

1.1 Project Overview

DesignPoint Engineering & Surveying has been retained to complete the traffic impact study for a proposed mixed use development located at Civics 344 and 376 Sackville Drive in Lower Sackville. The development will consist of 413 residential units and 28,400 square ft of commercial space. The proposed site location is shown in Figure 1. The need for a study is based the expected site trip generation of greater than 100 peak hour vehicle trips.

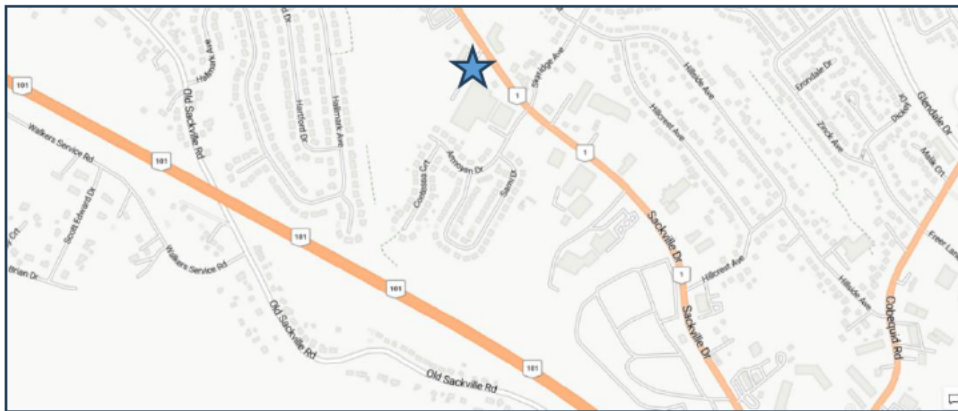


Figure 1 - Site Location

The proposed site is located off Sackville Drive, approximately 250 metres to the north of Skyridge Drive. The site plan is shown in Figure 2. It shows two driveways off Sackville Drive. Driveway #1 will be a residential driveway shared with the commercial development. It will also be used for truck deliveries. Driveway #2 will be primarily a commercial driveway. There will also be a connection to Armoyan Drive.

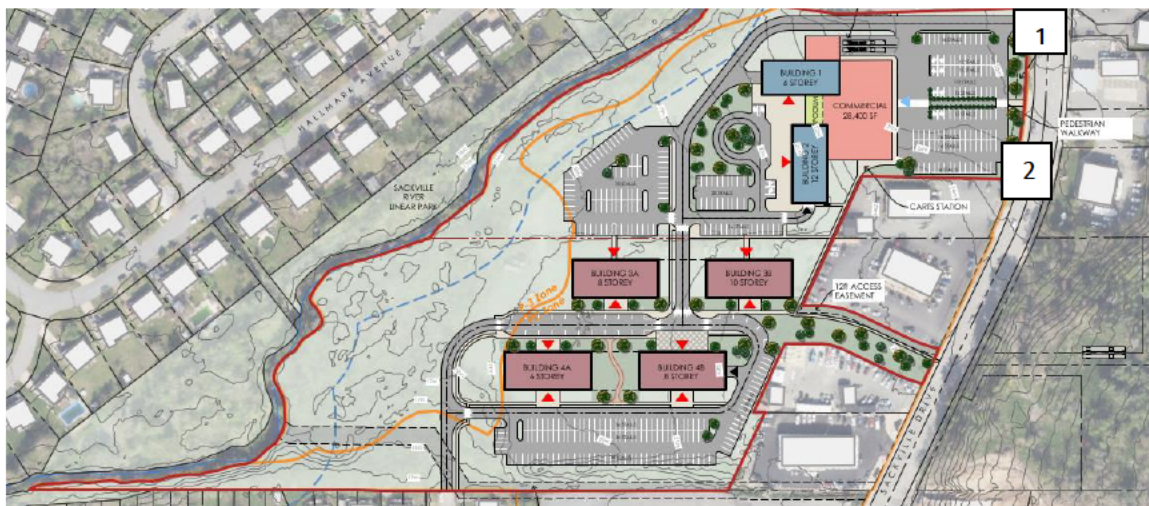


Figure 2 - Site Plan

1.2 Background

The Sackville Drive Secondary Planning Strategy was adopted by Halifax Regional Council in 2002. The main objective of the plan was to provide guidance for growth along the commercial corridor of Sackville Drive from Cobequid Road to Beaver Bank Road.

The plan adopted several transportation policies. They include:

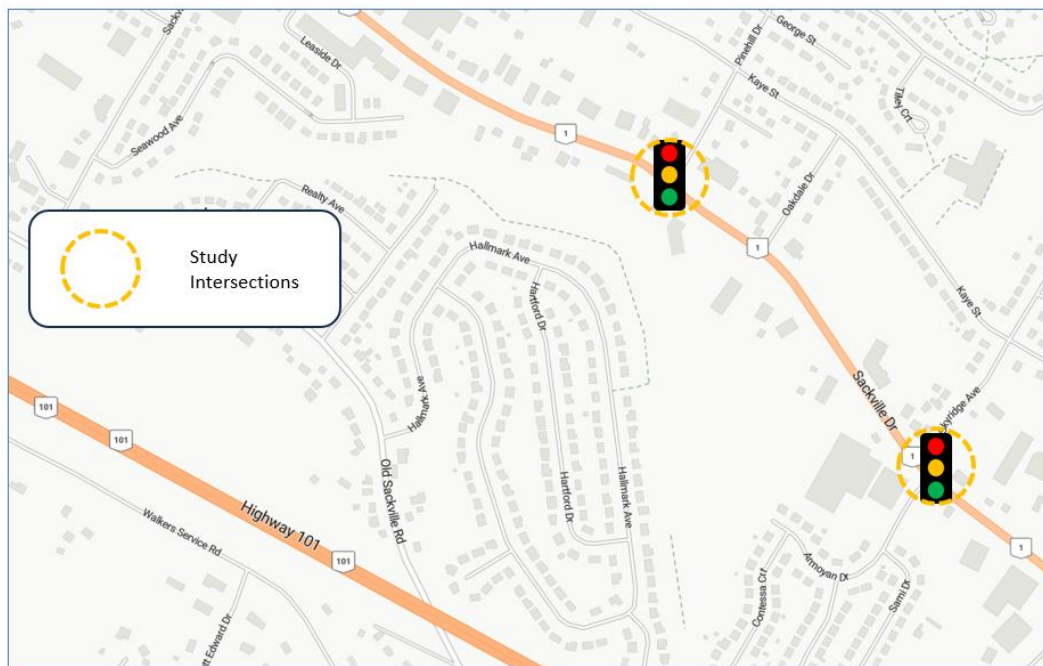
- Discourage new individual driveway access to Sackville Drive
- Encourage new developments next to existing developments to acquire the right-of-way to share the use of the existing driveway.
- Reduce the number of direct access points
- Introduce a grass median to reduce travel speeds and improve safety.

It also recommends that HRM:

- Develop a long-range capital works program for Sackville Drive
- Consult with businesses to minimize adverse impacts during construction, and
- Improve transit along the corridor.

2.0 EXISTING CONDITIONS

The study area includes the signalized intersections at Pinehill Drive and Armoyan Drive.



Sackville Drive

Sackville Drive is a four-lane major collector roadway that runs north-south and parallel to Highway 101. The section in question has sidewalks on both sides and **does not** have turning lanes.



Figure 3 - Sackville Drive Looking North

Intersection of Sackville Drive and Pinehill Drive

The Sackville Drive at Pinehill Road intersection is a four-leg signalized intersection. There are no turning lanes and there is a crosswalk crossing Sackville Drive on the south side.



Figure 4 - Sackville Drive at Pinehill Drive

Intersection of Sackville Drive at Armoyan Drive.

The Sackville Drive at Armoyan Drive intersection is a four-leg signalized intersection. The fourth leg is Skyridge Drive. There are no turning lanes and there are cross walks on all four approaches.



Figure 5 - Sackville Drive at Armoyan Drive.

2.1 Existing Traffic Conditions

A Miovision traffic counting device was set up to collect traffic volume data on Wednesday April 2, 2025, at the following intersections.

- Sackville Drive at Pinehill Drive
- Sackville Drive at Armoyan Drive.

The volumes were recorded for the AM, PM, and noon peak hour periods (7-9 am, 11-1 pm, and 4 -6 pm). The volumes were adjusted by a factor of 0.89 using the Halifax Harbour Bridges crossing data. The data indicates that traffic volumes in April tend to be higher than the overall daily average.

A summary of the AM and PM Peak existing traffic volumes used in our analysis is shown in Figures 6 and 7.

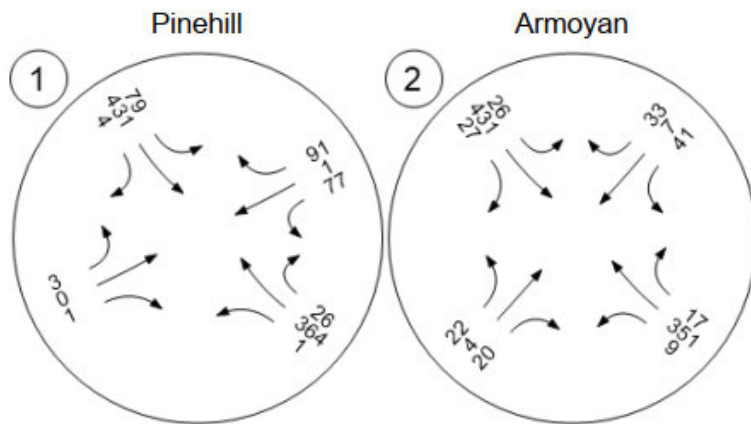


Figure 6-Existing Adjusted AM Peak Hour Volumes

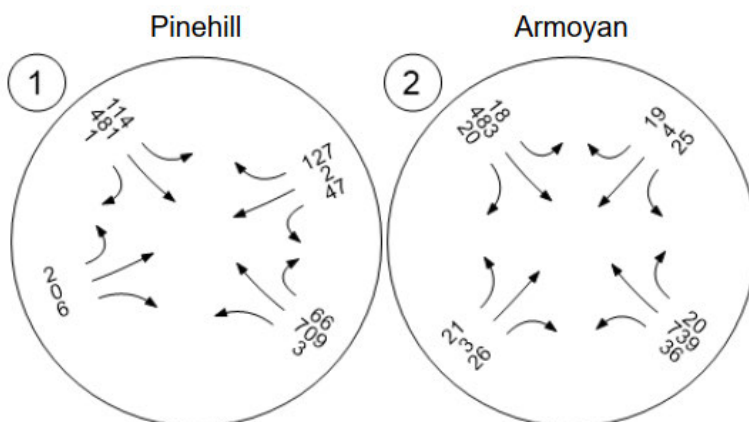


Figure 7-Existing Adjusted PM Peak Hour Volumes

The traffic volume data on Sackville indicates that the PM peak hour is the critical time period and has a two-way traffic volume of approximately 1100 vph.

2.2 Traffic Operations

The Highway Capacity Manual's (HCM) level of service (LOS) analysis is the most common method used to measure how well an intersection performs from a driver's perspective during a specific period. For urban roadways, the most common period studied is the weekday AM and PM peak hour. This usually occurs between 7 and 9 am, and between 4 and 6 pm.

The LOS is a measure of the average delay of each vehicle traveling through an intersection with grades ranging from 'A' to 'F'. 'A' is associated with minimal delay, and 'F' is associated with heavily congested conditions with unacceptable delays for drivers. Table 1 shows the LOS delay thresholds for a signalized intersection with a v/c ratio less than 1.00. If any intersection approach has a v/c > 1.00, the LOS is automatically designated as a LOS F.

The HRM Guidelines for the Preparation of Transportation Impact Studies (8th Revision) will be used to analyze if vehicular traffic generated by the development, exceeds the following v/c thresholds:

- v/c ratio of 0.85 for a shared through movement at a signalized intersection
- v/c ratio of 1.00 for an exclusive turning movement at a signalized intersection
- v/c ratio of 0.85 for the overall intersection.

Table 1 - HCM Level of Service Thresholds

Level of Service Thresholds for Signalized Intersections with v/c ratio < 1.00		
Level of Service	Average Control Delay (seconds per vehicle)	General Description
A	≤ 10	Free flow
B	10 – 20	Stable flow (slight delays)
C	20 – 35	Stable flow (acceptable delays)
D	35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	55 – 80	Unstable flow (intolerable delay)
F	> 80	Forced flow (congested and queues fail to clear)

For the two intersections, a simple two-phase operation and a 60-90 second cycle length was used in the VISTRO HCM analysis. Cycle lengths were calculated using VISTRO's optimizing program

The results are presented in Tables 2 and 3. They indicate that the v/c ratios fall within the HRM guidelines.

Table 2 - Existing AM Peak Hour Level of Service

Existing AM Peak Level of Service - Sackville Drive at Pinehill													
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Pinehill		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		1	364	26	79	431	4	3	0	1	77	1	91
v/c		0.21		0.22	0.32		0.32	0.01			0.32		
Delay (s)		10	10	10	12	11	11	19	19	19	23	23	23
LOS		B	B	B	B	B	B	B	B	B	C	C	C
95th% Queue (m/ln)		27		25	38		39	1			39		
Intersection 13 B													
Existing AM Peak Level of Service - Sackville Drive at Armoyan													
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		9	351	17	26	431	27	22	4	20	41	7	33
v/c		0.14		0.15	0.19		0.19	0.22			0.40		
Delay (s)		2	2	2	2	2	2	38	38	40	40	40	40
LOS		A	A	A	A	A	A	D	D	D	D	D	D
95th% Queue (m/ln)		7		6	9		8	13			24		
Intersection 7 A													

Table 3 - Existing PM Peak Hour Level of Service

LOS Criteria	Control	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Intersection
Total Hourly Vol		3	709	66	114	481	1	2	0	6	47	2	127	
v/c		0.31		0.32	0.32		0.32	0.03			0.70			
Delay (s)		4	4	4	6	5	4	37	37	37	45	45	45	9
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		28		25	15		26	2			60			
Existing PM Peak Level of Service - Sackville Drive at Armoyan														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave			
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Intersection
Total Hourly Vol		9	351	17	26	431	27	22	4	20	41	7	33	
v/c		0.14		0.15	0.19		0.19	0.22			0.40			
Delay (s)		2	2	2	2	2	2	38	38	40	40	40	40	7
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		7		6	9		8	13			24			

3.0 BACKGROUND TRAFFIC GROWTH

Background traffic growth is the general annual traffic growth in the study area that is estimated to occur with or without the development. For this study, it was assumed that the base year was 2025, full buildout was 2030, and the horizon year was assumed to be 2035.

It was assumed that the background traffic growth rate was 1% per year. Over a 10-year period, this equates to a growth factor of 1.10.

The 2035 Background traffic volumes are shown in Figures 8 and 9.

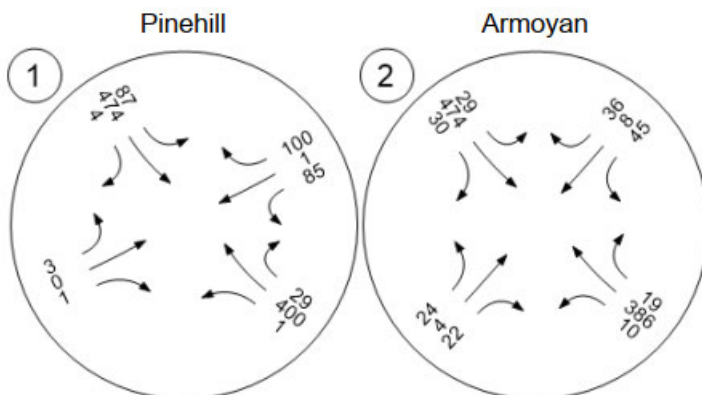


Figure 8 - 2035 Background AM Peak Hour Volumes

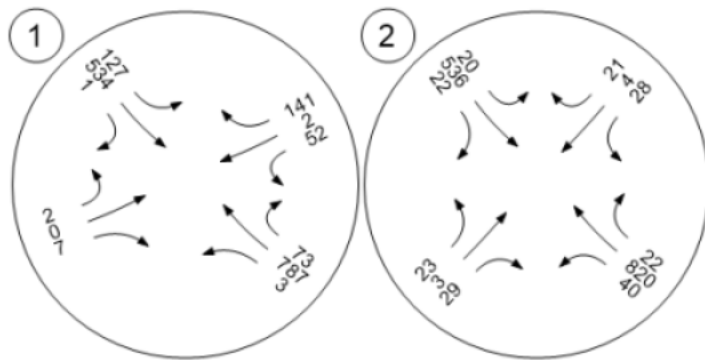


Figure 9 - 2035 Background PM Peak Hour Volumes

The level of service results for the Background Growth Scenario are presented in Tables 4 and 5. The results indicate that the v/c ratios fall within the HRM guidelines.

2035 Background AM Peak Level of Service - Sackville Drive at Pinehill														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Pinehill			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		1	400	29	87	474	4	3	0	1	85	1	100	
v/c		0.23		0.24	0.35		0.36	0.01			0.35			
Delay (s)		10	10	10	13	12	12	19	19	19	24	24	24	13
LOS		B	B	B	B	B	B	B	B	B	C	C	C	B
95th% Queue (m/ln)		30		28	42		45	1			43			
2035 Background AM Peak Level of Service - Sackville Drive at Armoyan														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		10	386	19	29	474	30	24	4	22	45	8	36	
v/c		0.16		0.16	0.21		0.21	0.24			0.43			
Delay (s)		2	2	2	2	2	2	38	38	38	40	40	40	7
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		8		7	10		10	14			26			

Table 4- 2035 Background PM Peak Level of Service

2035 Background PM Peak Level of Service - Sackville Drive at Pinehill														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Pinehill			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		3	787	73	127	534	1	2	0	7	52	2	141	
v/c		0.35		0.36	0.38		0.37	0.03			0.72			
Delay (s)		5	5	5	8	6	5	36	36	36	45	45	45	10
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		36		32	31		35	3			65			
2035 Background PM Peak Level of Service - Sackville Drive at Armoyan														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		40	820	22	20	536	22	23	3	29	28	4	21	
v/c		0.34		0.35	0.22		0.23	0.30			0.28			
Delay (s)		3	3	3	2	2	2	40	40	40	40	40	40	5
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		15		16	9		9	16			16			

4.0 DEVELOPMENT TRAFFIC

4.1 Trip Generation

Site trip generation was estimated Site traffic generation was estimated using the ITE Trip Generation Manual, 11th edition, and was calculated using the following assumptions:

Residential Trip Generation Assumptions	
Land Use Code	221 – Mid-Rise multi-family
Total # of Units	413
Average HH Size	2.25
Total # of Units	929
Non-Auto Mode Choice	26% ¹
Vehicle Occupancy	1.2 ²
Internal Trips	5%
Commercial Pass-by Trips	10%

Commercial land uses have not been finalized. For this study, we assumed a shopping plaza land use (LU 821). Using the above assumptions, the trip generation estimates are presented below:

Table 5 - Site Trip Generation

Land Use	Code	Units	Variable	Residential Trip Generation Rates ¹						Person Trips Generated			
				AM Peak			PM Peak			AM Peak		PM Peak	
				Rate	In	Out	Rate	In	Out	In	Out	In	Out
Multifamily Housing (Mid-Rise)	221	413	Dwellings	0.56	23%	77%	0.50	61%	39%	53	178	126	81
26% Transit Mode Choice										14	46	33	21
5% AT Trips (Internal)										3	9	6	4
Net Person Trips										37	123	87	56
1.2 Occupancy										31	102	72	46
Total Estimated Site Generated Trips										31	102	72	46
1. Trip generation rates calculated using ITE <i>Trip Generation Manual</i> , 11th Edition fitted curve equation.													
2. Pass-by trips applied to commercial trips only													

Land Use	Code	Units	Variable	Commercial Trip Generation Rates ¹						Car Trips Generated			
				AM Peak			PM Peak			AM Peak		PM Peak	
				Rate	In	Out	Rate	In	Out	In	Out	In	Out
Shopping Plaza	821	28.4	KGFA	1.73	62%	38%	5.20	49%	51%	30	19	72	75
10% Passby Trips										3	2	7	8
Total Estimated Site Generated Trips										27	17	65	68
1. Trip generation rates calculated using ITE <i>Trip Generation Manual</i> , 11th Edition fitted curve equation.													
2. Pass-by trips applied to commercial trips only													

¹ A non-auto mode choice of 26% aligns with the IMP target

² This is consistent with the HRM IMP



Figure 10 - Sight Distance

4.2 Access Management Review

The proposed site has three access points, two driveways off Sackville Drive, and one off Armoian Drive. A site visit was carried out on Thursday, July 24th to check sight distances.

In HRM, stopping sight distance (SSD) is the minimum requirement for sight distances at driveways and intersections. It is the distance a vehicle takes to avoid encountering an obstacle at the relative speed. It is the combination of the distance travelled during the perception and reaction time, the time it takes a driver to determine the need to stop, and the braking distance. This is the distance travelled once the brakes are applied to when the vehicle comes to a stop.

Given the complex situations that drivers often encounter at intersections, it is desirable to provide more than the minimum stopping sight distance to enhance safety.

Intersection sight distance (ISD) is defined as the sight distance available from a point where vehicles are required to stop on the road, while drivers are looking left and right along the major road, before entering the intersection.

The *Transportation Association of Canada Geometric Design Guide for Canadian Roads* provides a minimum stopping and intersection sight distances for various design speeds. It was assumed that the design speed for Sackville drive was 60 km/h. The results are shown below:

Driveway #1					
Approach	Design Speed (km/h)	Min SSD (m)	Min ISD for right turns	Min ISD for left turns	Measured Sight Distance
From the South	60	85	110	130	130m +
From the North					110m (1)

(1) Measured to traffic signal at Pinehill Drive



Figure 11 - Sight Distance Looking North

Driveway #2					
Approach	Design Speed (km/h)	Min SSD (m)	Min ISD for right turns	Min ISD for left turns	Measured Sight Distance
From the South	60	85	110	130	130m +
From the North					85-110 (1)

(1) View from north obstructed by signs, poles, and vegetation



Figure 12 - Sight Distance Looking North to Driveway #2



Figure 13 - Obstructed View from Driveway #2 Looking North

The view from Driveway #2 looking north is obstructed. The right-of-way should be cleared of signage and vegetation, and the sight distance should be rechecked using topographic survey data.

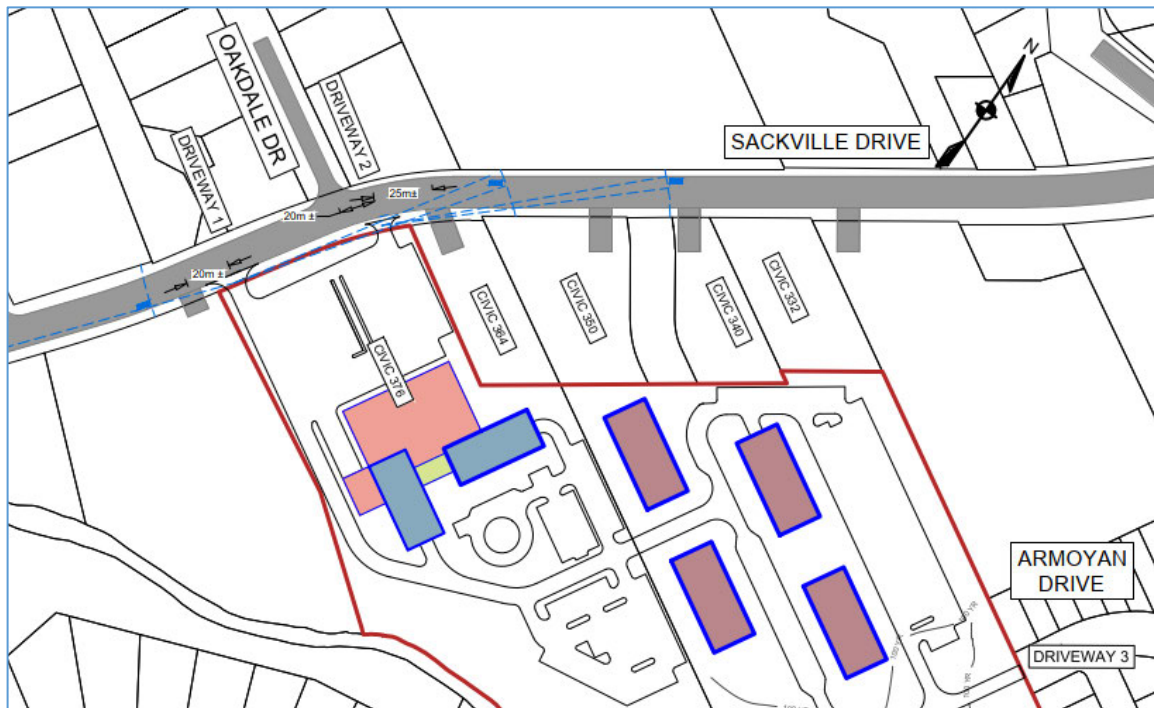


Figure 14 - Driveway Spacing

In addition to SSD and ISD, the following design elements were considered:

1. Spacing of adjacent driveways

The nearest adjacent driveway to Driveway #1 is the driveway to Civic 400. The centerline distance between the two driveways is approximately 20 metres. The nearest driveway to Driveway #2 is the driveway for Civic 364. The distance between these two driveways is approximately 25m.

While HRM does not specify the minimum distance for driveways, HRM Bylaw 300 does specify that no driveway shall be located within 8 metres of the intersection of a local street.

The Nova Scotia Department of Public Works' (NSDPW) Access Management Guidelines specifies a minimum adjacent driveway spacing of 20 metres for collector roadways.

2. Spacing of opposite driveways and roadways

Driveways and roadways on the opposite side of the roadway should be aligned where possible. The centreline spacing between Driveway #2 and Oakdale Drive is approximately 20 metres.

4.3 Trip Distribution and Assignment

Directional Distribution of site generated traffic was based on the traffic count data. This was approximately a 60-40 split between northbound and southbound traffic.

For assignment purposes, it was assumed that the:

- Commercial Buildings would use Driveways 1 and 2 (50-50 split)
- Buildings 1 and 2 would use Driveway #1
- Buildings 3A, 3B, 4A, and 4B would use Armoyan Drive

A summary of the total AM and PM peak hour traffic volumes is shown below:

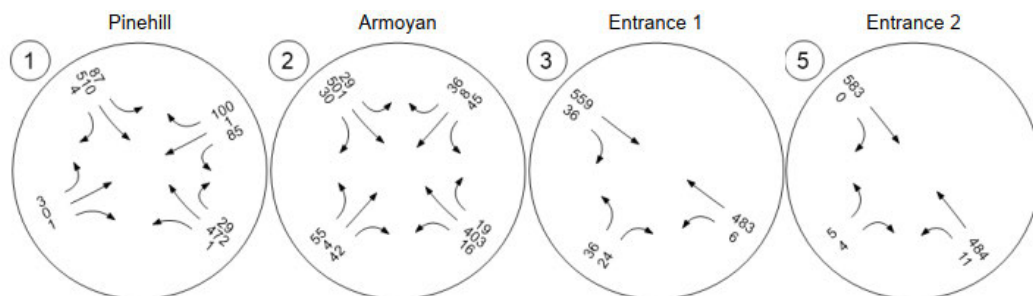


Figure 15- 2035 Total AM Peak

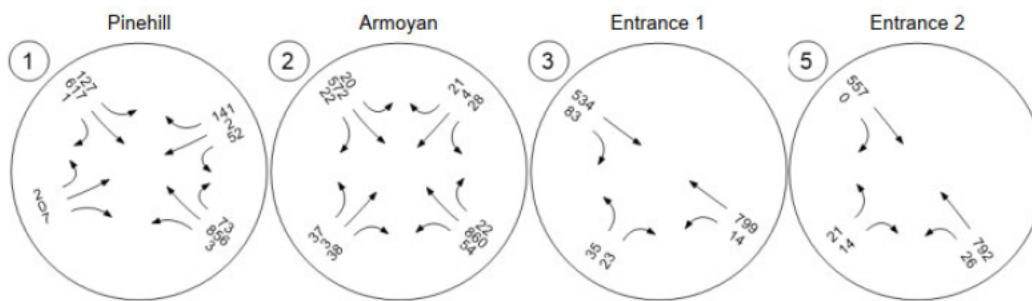


Figure 16 - 2035 Total PM Peak

4.4 Analysis

The HCM Method was used to measure the LOS for the two signalized intersections and the three stop-controlled intersections. Table 7 provides the HCM LOS criteria for unsignalized intersections.

Table 6 HCM Method for Unsignalized Intersections

Level of Service Thresholds for Stop-Controlled Intersections and Roundabouts with v/c ratio < 1.00		
Level of Service	Average Control Delay (seconds per vehicle)	General Description
A	≤ 10	Free flow
B	10 – 15	Stable flow (slight delays)
C	15-25	Stable flow (acceptable delays)
D	25-35	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	35-50	Unstable flow (intolerable delay)
F	> 50	Forced flow (congested and queues fail to clear)

The total AM and PM peak hour results are shown in Tables 8 and 9. The results indicate that all three intersection entrances will operate within the HRM Guidelines.

Table 7 - 2035 Total AM Peak LOS

2035 Total AM Peak Level of Service - Sackville Drive at Pinehill														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Pinehill			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		1	472	29	87	510	4	3	0	1	85	1	100	
v/c		0.27		0.28	0.38		0.39	0.01			0.35			
Delay (s)		11	11	11	13	12	12	19	19	19	24	24	24	14
LOS		B	B	B	B	B	B	B	B	B	C	C	C	B
95th% Queue (m/ln)		37		33	46		51	1			43			

2035 Total AM Peak Level of Service - Sackville Drive at Entrance #1														
LOS Criteria	Intersection Control	Entrance						Sackville Drive					Intersection	
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT		WBR
Total Hourly Vol		36		24					559	36	6	483		
v/c		0.12		0.03					0.01	0.00	0.01	0.00		
Delay (s)		18		12					0	0	9	0		1
LOS		C		B					A	A	A	A		C
95th% Queue (m/ln)		4		4					0	0	0	0		

2035 Total AM Peak Level of Service - Sackville Drive at Entrance #2														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway						Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		11	484			583	0	5		4				
v/c		0.01	0			0.01	0.00	0.02		0.01				
Delay (s)		9	0			0	0	17		10				0
LOS		A	A			A	A	C		B				C
95th% Queue (m/ln)		0	0			0	0	1		1				

2035 Total AM Peak Level of Service - Sackville Drive at Armoyan														
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave			Intersection
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Total Hourly Vol		16	403	19	29	501	30	55	4	42	45	8	36	
v/c		0.17		0.17	0.22		0.22	0.48			0.42			
Delay (s)		2	2	2	2	2	2	40	40	40	40	40	40	8
LOS		A	A	A	A	A	A	D	D	D	D	D	D	A
95th% Queue (m/ln)		8		8	11		11	30			26			

Table 8 - 2035 Total PM Peak Hour LOS

2035 Total PM Peak Level of Service - Sackville Drive at Pinehill													
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Pinehill		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		3	856	73	127	617	1	2	0	7	52	2	141
v/c		0.38		0.39	0.42		0.43	0.03			0.72		
Delay (s)		5	5	5	9	6	5	36	36	36	45	45	45
LOS		A	A	A	A	A	A	D	D	D	D	D	D
95th% Queue (m/ln)		40		36	36		42	3			65		

2035 Total PM Peak Level of Service - Sackville Drive at Entrance #1													
LOS Criteria	Intersection Control	Entrance			Sackville Drive			Sackville Drive			Sackville Drive		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		35		23					534	83	14	799	
v/c		0.15		0.03					0.01	0.00	0.01	0.01	
Delay (s)		23		13					0	0	9	0	
LOS		C		B					A	A	A	A	
95th% Queue (m/ln)		5		5					0	0	0	0	

2035 Total PM Peak Level of Service - Sackville Drive at Entrance #2													
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Driveway			Sackville Drive		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		26	792			557	0	21		14			
v/c		0.03	0.01			0.01	0.00	0.09		0.02			
Delay (s)		9	0			0	0	22		11			
LOS		A	A			A	A	C		B			
95th% Queue (m/ln)		0	0			0	0	3		3			

2035 Total PM Peak Level of Service - Sackville Drive at Armoyan													
LOS Criteria	Intersection Control	Sackville Dr			Sackville Dr			Armoyan Dr			Skyridge Ave		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Total Hourly Vol		54	860	22	20	572	22	37	3	38	28	4	21
v/c		0.37		0.38	0.24		0.24	0.39			0.26		
Delay (s)		3	3	3	2	2	2	40	40	40	39	39	39
LOS		A	A	A	A	A	A	D	D	D	D	D	D
95th% Queue (m/ln)		19		20	11		11	23			15		

4.5 Mitigation Measures

Signals

Signals are not warranted at any of the two Sackville Drive intersections because the side street volumes do not meet the minimum threshold (75 vph) over a 6-hour period as outlined by the Transportation Association of Canada's (TAC) Canadian Signal Warrant Matrix Procedure.

Left Turn Lane Warrants

A left turn warrant was completed for the two Sackville Drive entrances using the warrants outlined in the Ministry of Transportation Ontario (MTO) Geometric Design Standards for Ontario Highways for four-lane unsignalized intersections. For this analysis, we assumed that the PM peak hour (northbound direction) was the critical peak period direction.

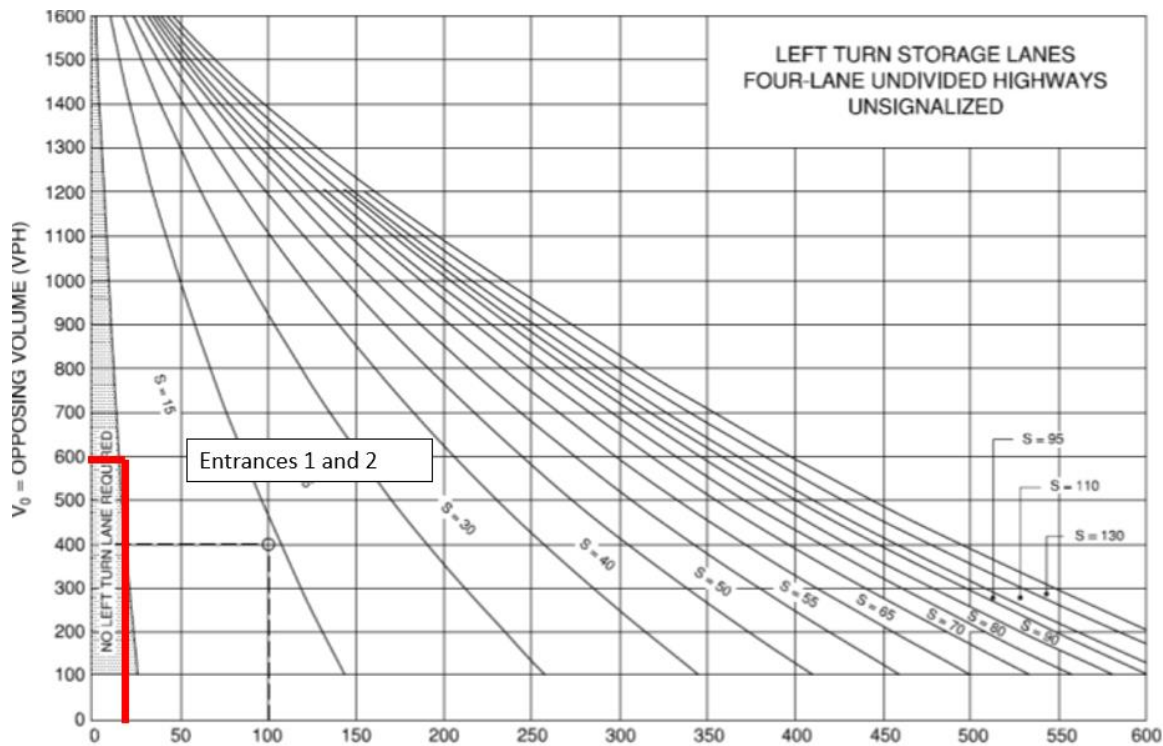


Figure 17 - MTO Left Turn Storage Warrant for Four Lane Highways Unsignalized

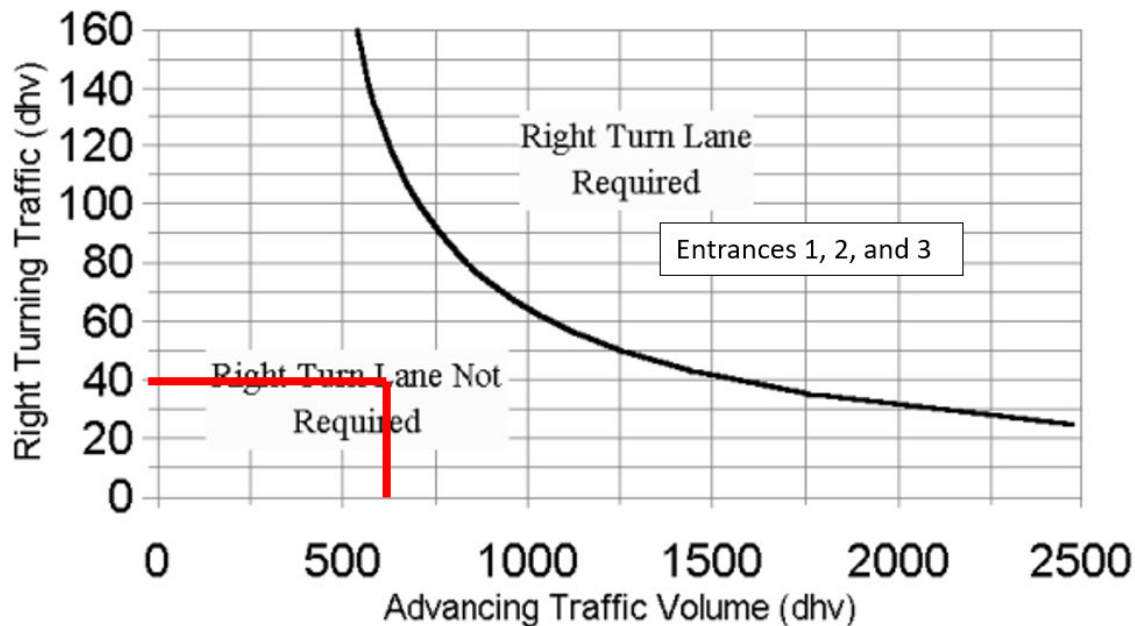
The southbound opposing direction volume for both entrances was approximately 600 vph (see Figure 16) and the northbound left turn volume was approximately **20 vph**. This indicates that a left turn storage lane (15m) would be needed for all three entrances. It would be difficult to install a left turn lane at Entrance #1, given its proximity to the signals at Pinehill (100m +/-). It would be difficult to install a left turn lane at Entrance #2 given its proximity to Oakdale Drive.

It should be pointed out that there are numerous intersections along Sackville Drive that do not have exclusive turn lanes. It appears that it has been the standard practice to use thru-left turn lanes at unsignalized intersections.

Right Turn Lane Warrants

A right turn analysis was completed for the two entrances using the Ohio Department of Transportation warrant for four-lane low speed (< 70 km/h) roadways. The southbound peak hour volume for the two entrances was approximately 600 vph (see Figure 16) and the maximum southbound right turn volume was approximately 40 vph. Based on this, a right turn lane is not warranted at the two Sackville Drive intersections.

4 Lane Highway Right Turn Lane Warrant (= <40 mph or 70 kph Posted Speed)



5.0 SUMMARY

- DesignPoint Engineering & Surveying has been retained to complete the traffic impact study for a proposed residential development at Civics 344 and 376, Sackville Drive in Lower Sackville, NS.
- The proposed development consists of 413 multi-family units and 28,400 square feet of commercial land use. The development will be serviced by three driveway entrances.
- Sackville Drive is a four-lane urban major collector that runs north-south and is parallel to Highway 101. The section of Sackville Drive between Pinehill Drive and Armoyan Drive, has a two-way PM peak hour volume of approximately 1100 vph.
- It is estimated that the development will generate 177 AM peak and 251 PM peak hour car volumes.
- A level of service analysis indicates that the proposed development will have no negative impact on the traffic flow along Sackville Drive
- An access management review indicates the following:
 - The sight distance from Driveway #2 is obstructed. The vegetation and signage within the right-of-way should be cleared. The sight distance should then be rechecked using topographic survey data.

- The centreline distance between Driveway #2 and Oakdale Drive is approximately 23 metres. Where HRM does not have minimum driveway spacing requirements, By-Law S-300 does state that no driveway should be within 8 metres of the intersection of a local street. This does meet the NSDPW Access Management Guidelines for a collector roadway.
- Northbound left turn lanes are warranted for the two Sackville Drive entrances. This is not consistent with current access (through-left turn lanes) along this section of Sackville Drive.
- Traffic signals and right turn storage lanes are not warranted.

6.0 RECOMMENDATIONS

1. The sight distance for the Driveway #2 intersection should be checked using topographical survey data after the removal of obstructing signage and vegetation.
2. The northbound left turn lanes at Driveways 1 and 2 should not be constructed. This is consistent with the thru-left turn lanes along this section of Sackville Drive.

APPENDIX A

TRAFFIC COUNTS

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842



engineering • surveying • solutions

Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Pinehill Dr Southbound						Sackville Dr Westbound						Civic 412 Driveway Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 7:00AM	71	2	63	0	136	1	10	259	1	0	270	3	0	0	0	0	0	2	2	396	51	0	449	0	855
8:00AM	102	0	86	0	188	1	29	409	1	0	439	5	1	0	3	0	4	0	4	484	89	0	577	0	1208
9:00AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00AM	109	3	37	0	149	1	39	582	1	0	622	5	9	0	1	0	10	5	4	572	89	1	666	0	1447
12:00PM	119	0	51	0	170	9	26	677	3	0	706	3	5	0	3	0	8	4	2	592	94	0	688	0	1572
1:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00PM	132	2	39	0	173	9	64	769	4	0	837	5	7	0	6	0	13	6	1	496	121	0	618	0	1641
5:00PM	108	0	52	0	160	3	70	691	1	0	762	8	2	0	1	0	3	11	0	524	117	0	641	0	1566
6:00PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	641	7	328	0	976	24	238	3387	11	0	3636	29	24	0	14	0	38	28	13	3064	561	1	3639	0	8289
% Approach	65.7%	0.7%	33.6%	0%	-	-	6.5%	93.2%	0.3%	0%	-	-	63.2%	0%	36.8%	0%	-	-	0.4%	84.2%	15.4%	0%	-	-	-
% Total	7.7%	0.1%	4.0%	0%	11.8%	-	2.9%	40.9%	0.1%	0%	43.9%	-	0.3%	0%	0.2%	0%	0.5%	-	0.2%	37.0%	6.8%	0%	43.9%	-	-
Lights	630	7	326	0	963	-	236	3271	11	0	3518	-	24	0	14	0	38	-	13	2960	551	1	3525	-	8044
% Lights	98.3%	100%	99.4%	0%	98.7%	-	99.2%	96.6%	100%	0%	96.8%	-	100%	0%	100%	0%	100%	-	100%	96.6%	98.2%	100%	96.9%	-	97.0%
Single-Unit Trucks	7	0	2	0	9	-	0	78	0	0	78	-	0	0	0	0	0	-	0	63	5	0	68	-	155
% Single-Unit Trucks	1.1%	0%	0.6%	0%	0.9%	-	0%	2.3%	0%	0%	2.1%	-	0%	0%	0%	0%	0%	-	0%	2.1%	0.9%	0%	1.9%	-	1.9%
Articulated Trucks	1	0	0	0	1	-	0	5	0	0	5	-	0	0	0	0	0	-	0	4	0	0	4	-	10
% Articulated Trucks	0.2%	0%	0%	0%	0.1%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%
Buses	3	0	0	0	3	-	2	33	0	0	35	-	0	0	0	0	0	-	0	37	5	0	42	-	80
% Buses	0.5%	0%	0%	0%	0.3%	-	0.8%	1.0%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	1.2%	0.9%	0%	1.2%	-	1.0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	24	-	-	-	-	-	28	-	-	-	-	-	26	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	96.6%	-	-	-	-	-	92.9%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	3.4%	-	-	-	-	-	7.1%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

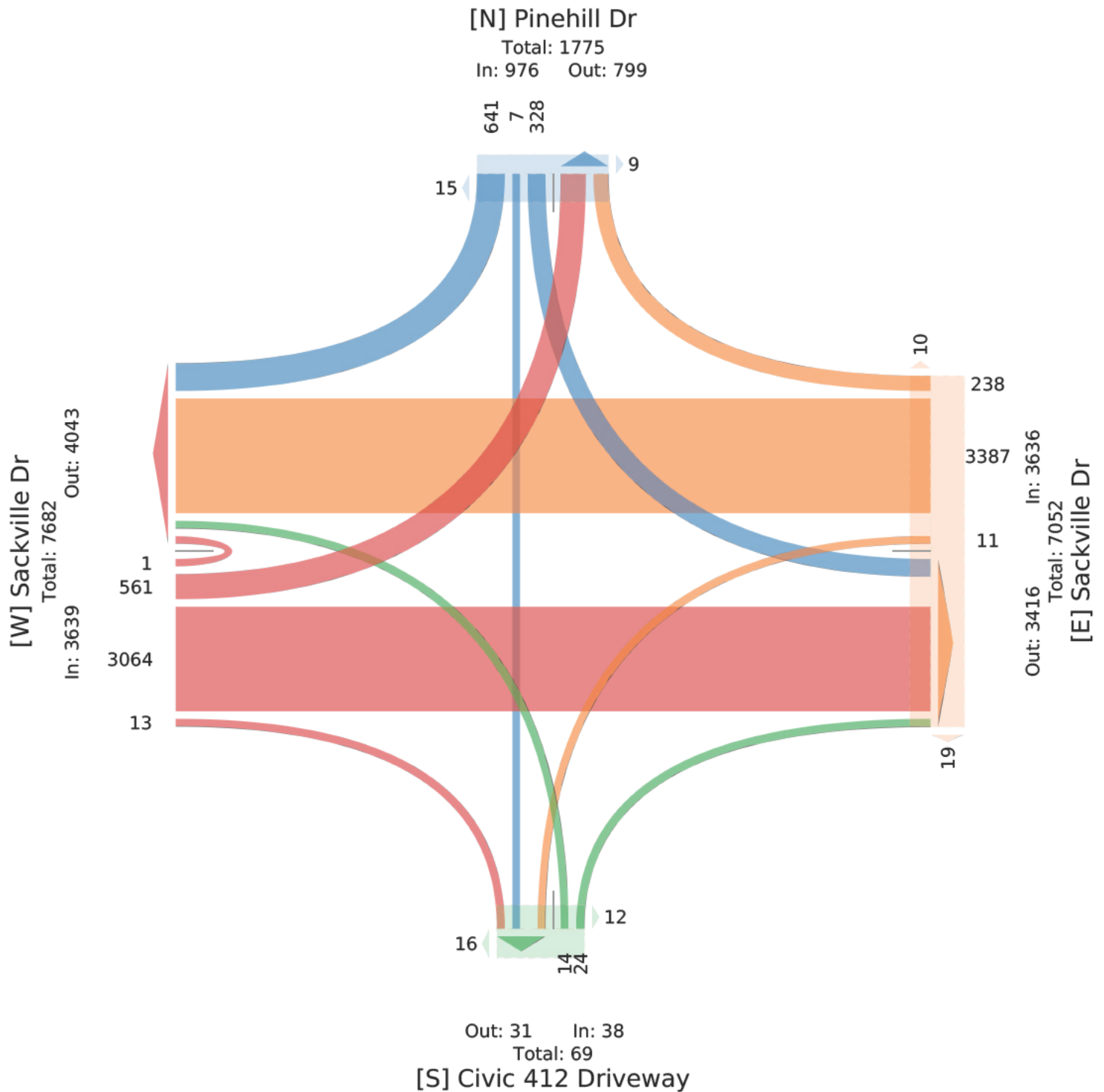
ID: 1282754, Location: 44.764376, -63.676842

DESIGNPOINT

engineering • surveying • solutions

Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA



24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

AM Peak (8 AM - 9 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians,

Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842



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Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Pinehill Dr Southbound						Sackville Dr Westbound						Civic 412 Driveway Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 8:00AM	19	0	18	0	37	1	7	88	1	0	96	3	1	0	0	0	1	0	1	113	23	0	137	0	271
8:15AM	27	0	17	0	44	0	6	89	0	0	95	0	0	0	0	0	0	0	2	115	27	0	144	0	283
8:30AM	25	0	24	0	49	0	9	120	0	0	129	1	0	0	3	0	3	0	0	130	27	0	157	0	338
8:45AM	31	0	27	0	58	0	7	112	0	0	119	1	0	0	0	0	0	0	1	126	12	0	139	0	316
Total	102	0	86	0	188	1	29	409	1	0	439	5	1	0	3	0	4	0	4	484	89	0	577	0	1208
% Approach	54.3%	0%	45.7%	0%	-	-	6.6%	93.2%	0.2%	0%	-	-	25.0%	0%	75.0%	0%	-	-	0.7%	83.9%	15.4%	0%	-	-	-
% Total	8.4%	0%	7.1%	0%	15.6%	-	2.4%	33.9%	0.1%	0%	36.3%	-	0.1%	0%	0.2%	0%	0.3%	-	0.3%	40.1%	7.4%	0%	47.8%	-	-
PHF	0.823	-	0.796	-	0.810	-	0.806	0.852	0.250	-	0.851	-	0.250	-	0.250	-	0.333	-	0.500	0.931	0.824	-	0.919	-	0.893
Lights	100	0	86	0	186	-	27	376	1	0	404	-	1	0	3	0	4	-	4	456	85	0	545	-	1139
% Lights	98.0%	0%	100%	0%	98.9%	-	93.1%	91.9%	100%	0%	92.0%	-	100%	0%	100%	0%	100%	-	100%	94.2%	95.5%	0%	94.5%	-	94.3%
Single-Unit Trucks	1	0	0	0	1	-	0	28	0	0	28	-	0	0	0	0	0	-	0	19	0	0	19	-	48
% Single-Unit Trucks	1.0%	0%	0%	0%	0.5%	-	0%	6.8%	0%	0%	6.4%	-	0%	0%	0%	0%	0%	-	0%	3.9%	0%	0%	3.3%	-	4.0%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	1	0	0	0	1	-	2	5	0	0	7	-	0	0	0	0	0	-	0	9	4	0	13	-	21
% Buses	1.0%	0%	0%	0%	0.5%	-	6.9%	1.2%	0%	0%	1.6%	-	0%	0%	0%	0%	0%	-	0%	1.9%	4.5%	0%	2.3%	-	1.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

AM Peak (8 AM - 9 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians,
Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842

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Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

[N] Pinehill Dr

Total: 306

In: 188 Out: 118

102 86

1

29

409

1

In: 439

Total: 1010

[E] Sackville Dr

Out: 571

5

Out: 5 In: 4

Total: 9

[S] Civic 412 Driveway

[W] Sackville Dr

Total: 1091

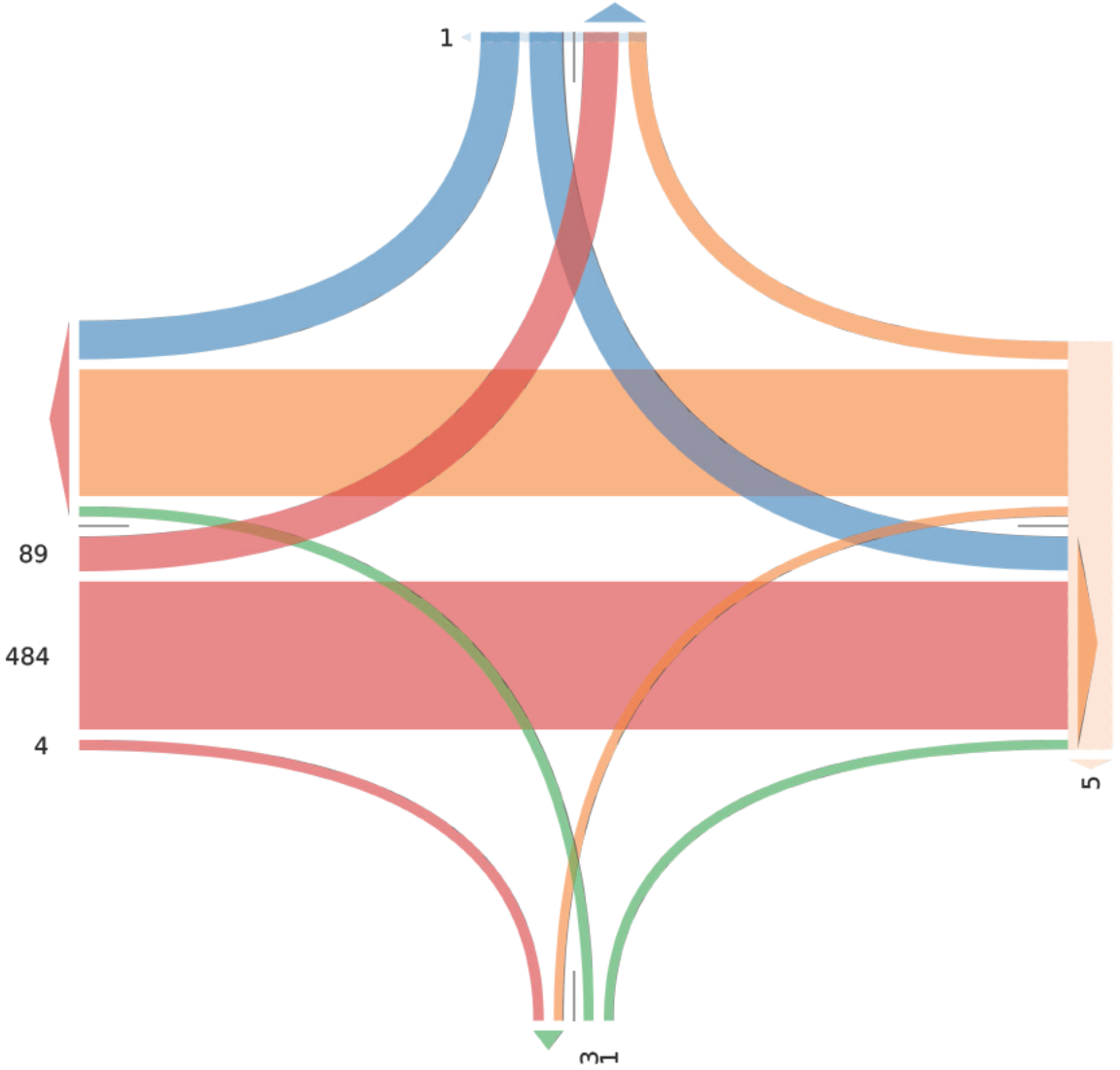
Out: 514

In: 577

89

484

4



24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians,

Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842



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90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Pinehill Dr Southbound						Sackville Dr Westbound						Civic 412 Driveway Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 11:45AM	24	0	5	0	29	0	12	154	0	0	166	2	1	0	1	0	2	2	1	149	28	0	178	0	375
12:00PM	32	0	13	0	45	1	7	168	1	0	176	0	1	0	0	0	1	2	1	125	20	0	146	0	368
12:15PM	29	0	14	0	43	6	12	170	1	0	183	2	0	0	2	0	2	1	0	162	29	0	191	0	419
12:30PM	31	0	14	0	45	2	2	178	0	0	180	1	2	0	0	0	2	1	0	166	21	0	187	0	414
Total	116	0	46	0	162	9	33	670	2	0	705	5	4	0	3	0	7	6	2	602	98	0	702	0	1576
% Approach	71.6%	0%	28.4%	0%	-	-	4.7%	95.0%	0.3%	0%	-	-	57.1%	0%	42.9%	0%	-	-	0.3%	85.8%	14.0%	0%	-	-	-
% Total	7.4%	0%	2.9%	0%	10.3%	-	2.1%	42.5%	0.1%	0%	44.7%	-	0.3%	0%	0.2%	0%	0.4%	-	0.1%	38.2%	6.2%	0%	44.5%	-	-
PHF	0.906	-	0.821	-	0.900	-	0.688	0.941	0.500	-	0.963	-	0.500	-	0.375	-	0.875	-	0.500	0.907	0.845	-	0.919	-	0.940
Lights	114	0	45	0	159	-	33	652	2	0	687	-	4	0	3	0	7	-	2	582	95	0	679	-	1532
% Lights	98.3%	0%	97.8%	0%	98.1%	-	100%	97.3%	100%	0%	97.4%	-	100%	0%	100%	0%	100%	-	100%	96.7%	96.9%	0%	96.7%	-	97.2%
Single-Unit Trucks	2	0	1	0	3	-	0	12	0	0	12	-	0	0	0	0	0	-	0	14	3	0	17	-	32
% Single-Unit Trucks	1.7%	0%	2.2%	0%	1.9%	-	0%	1.8%	0%	0%	1.7%	-	0%	0%	0%	0%	0%	-	0%	2.3%	3.1%	0%	2.4%	-	2.0%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.1%
Buses	0	0	0	0	0	-	0	6	0	0	6	-	0	0	0	0	0	-	0	4	0	0	4	-	10
% Buses	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.6%	-	0.6%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	9	-	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842

DESIGNPOINT

engineering • surveying • solutions

Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

[N] Pinehill Dr

Total: 293

In: 162 Out: 131

116 46 5

4

[W] Sackville Dr

Total: 1491

Out: 789

In: 702

98

602

2

33

670

2

In: 705

Total: 1357

Out: 652

[E] Sackville Dr

3 3

Out: 4 In: 7

Total: 11

[S] Civic 412 Driveway

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282754, Location: 44.764376, -63.676842



engineering • surveying • solutions

Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Pinehill Dr Southbound						Sackville Dr Westbound						Civic 412 Driveway Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 4:30PM	24	1	7	0	32	2	15	202	1	0	218	1	1	0	1	0	2	0	1	127	33	0	161	0	413
4:45PM	45	1	9	0	55	3	20	197	1	0	218	0	4	0	0	0	4	1	0	117	30	0	147	0	424
5:00PM	39	0	23	0	62	3	24	208	1	0	233	2	2	0	1	0	3	1	0	140	38	0	178	0	476
5:15PM	35	0	14	0	49	0	15	190	0	0	205	1	0	0	0	0	0	3	0	157	27	0	184	0	438
Total	143	2	53	0	198	8	74	797	3	0	874	4	7	0	2	0	9	5	1	541	128	0	670	0	1751
% Approach	72.2%	1.0%	26.8%	0%	-	-	8.5%	91.2%	0.3%	0%	-	-	77.8%	0%	22.2%	0%	-	-	0.1%	80.7%	19.1%	0%	-	-	-
% Total	8.2%	0.1%	3.0%	0%	11.3%	-	4.2%	45.5%	0.2%	0%	49.9%	-	0.4%	0%	0.1%	0%	0.5%	-	0.1%	30.9%	7.3%	0%	38.3%	-	-
PHF	0.794	0.500	0.576	-	0.798	-	0.771	0.958	0.750	-	0.938	-	0.438	-	0.500	-	0.563	-	0.250	0.861	0.842	-	0.910	-	0.920
Lights	142	2	52	0	196	-	74	784	3	0	861	-	7	0	2	0	9	-	1	533	126	0	660	-	1726
% Lights	99.3%	100%	98.1%	0%	99.0%	-	100%	98.4%	100%	0%	98.5%	-	100%	0%	100%	0%	100%	-	100%	98.5%	98.4%	0%	98.5%	-	98.6%
Single-Unit Trucks	1	0	1	0	2	-	0	7	0	0	7	-	0	0	0	0	0	-	0	2	2	0	4	-	13
% Single-Unit Trucks	0.7%	0%	1.9%	0%	1.0%	-	0%	0.9%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0%	0.4%	1.6%	0%	0.6%	-	0.7%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	6	0	0	6	-	11
% Buses	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	1.1%	0%	0%	0.9%	-	0.6%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	75.0%	-	-	-	-	-	80.0%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	25.0%	-	-	-	-	-	20.0%	-	-	-	-	-	-	

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Pinehill Dr - TMC

Wed Apr 2, 2025

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

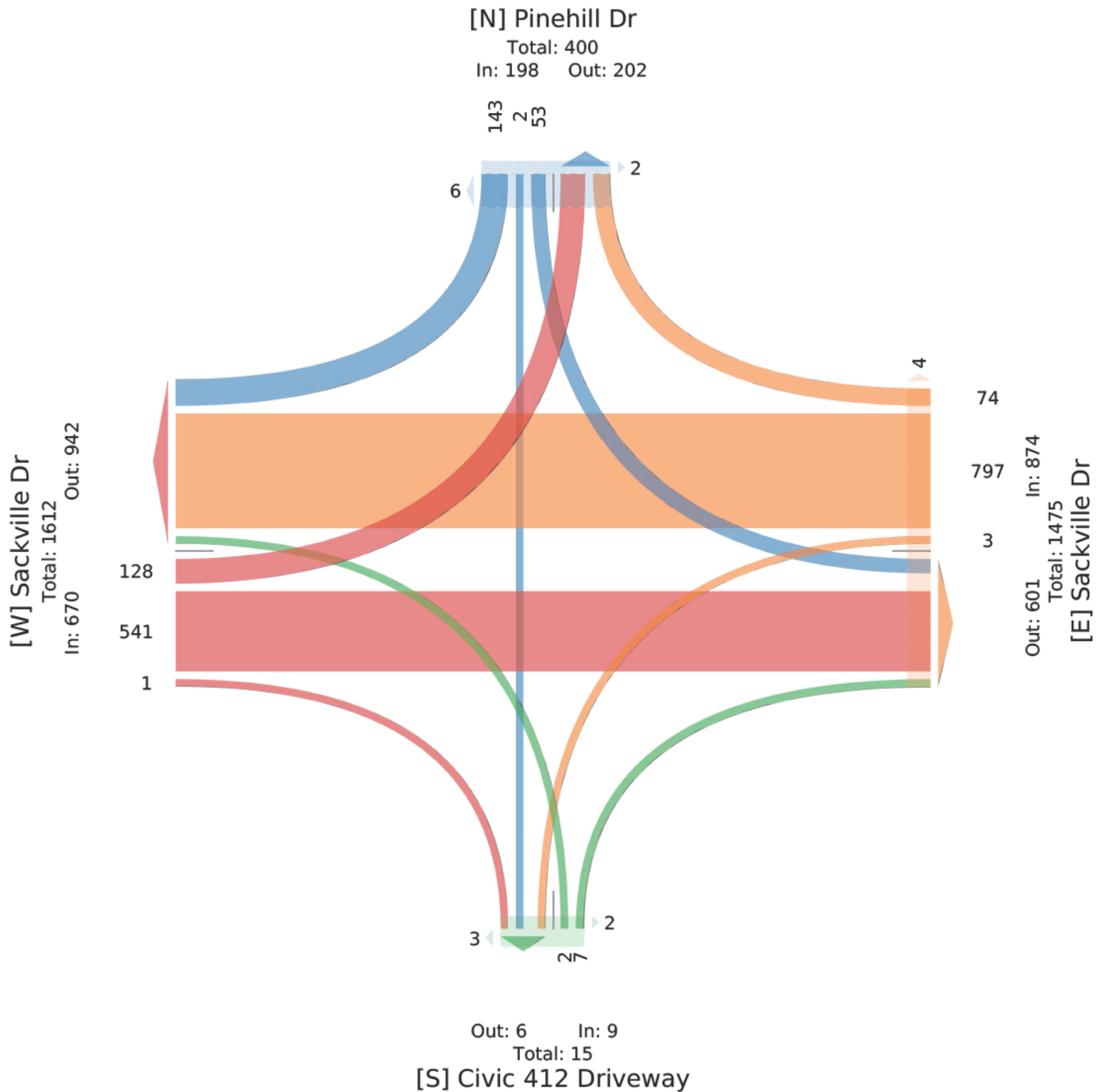
ID: 1282754, Location: 44.764376, -63.676842

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90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA



24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256



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90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Skyridge Ave Southbound						Sackville Dr Westbound						Armoyan Dr Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 7:00AM	18	3	37	0	58	2	10	264	13	0	287	0	43	6	16	0	65	2	12	437	11	0	460	7	870
8:00AM	37	8	46	0	91	2	19	394	10	0	423	1	23	5	25	0	53	0	30	484	29	0	543	7	1110
11:00AM	21	4	24	0	49	4	30	600	15	0	645	2	11	5	27	0	43	1	11	577	20	0	608	8	1345
12:00PM	21	9	30	0	60	4	28	652	28	0	708	0	13	0	16	0	29	1	37	591	17	0	645	5	1442
4:00PM	19	4	23	0	46	1	24	786	32	0	842	5	18	3	28	0	49	1	20	507	24	0	551	5	1488
5:00PM	21	8	31	0	60	4	30	685	34	0	749	8	26	4	18	0	48	7	23	527	18	0	568	9	1425
Total	137	36	191	0	364	17	141	3381	132	0	3654	16	134	23	130	0	287	12	133	3123	119	0	3375	41	7680
% Approach	37.6%	9.9%	52.5%	0%	-	-	3.9%	92.5%	3.6%	0%	-	-	46.7%	8.0%	45.3%	0%	-	-	3.9%	92.5%	3.5%	0%	-	-	-
% Total	1.8%	0.5%	2.5%	0%	4.7%	-	1.8%	44.0%	1.7%	0%	47.6%	-	1.7%	0.3%	1.7%	0%	3.7%	-	1.7%	40.7%	1.5%	0%	43.9%	-	-
Lights	113	35	182	0	330	-	127	3279	124	0	3530	-	129	21	127	0	277	-	131	3023	95	0	3249	-	7386
% Lights	82.5%	97.2%	95.3%	0%	90.7%	-	90.1%	97.0%	93.9%	0%	96.6%	-	96.3%	91.3%	97.7%	0%	96.5%	-	98.5%	96.8%	79.8%	0%	96.3%	-	96.2%
Single-Unit Trucks	21	1	7	0	29	-	11	63	2	0	76	-	2	0	1	0	3	-	0	57	22	0	79	-	187
% Single-Unit Trucks	15.3%	2.8%	3.7%	0%	8.0%	-	7.8%	1.9%	1.5%	0%	2.1%	-	1.5%	0%	0.8%	0%	1.0%	-	0%	1.8%	18.5%	0%	2.3%	-	2.4%
Articulated Trucks	1	0	0	0	1	-	0	7	0	0	7	-	0	0	0	0	0	-	0	6	0	0	6	-	14
% Articulated Trucks	0.7%	0%	0%	0%	0.3%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.2%
Buses	2	0	1	0	3	-	3	32	6	0	41	-	3	2	2	0	7	-	2	37	2	0	41	-	92
% Buses	1.5%	0%	0.5%	0%	0.8%	-	2.1%	0.9%	4.5%	0%	1.1%	-	2.2%	8.7%	1.5%	0%	2.4%	-	1.5%	1.2%	1.7%	0%	1.2%	-	1.2%
Bicycles on Road	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0.5%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	15	-	-	-	-	-	12	-	-	-	-	-	39	-
% Pedestrians	-	-	-	-	-	94.1%	-	-	-	-	-	93.8%	-	-	-	-	-	100%	-	-	-	-	-	95.1%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	5.9%	-	-	-	-	-	6.3%	-	-	-	-	-	0%	-	-	-	-	-	4.9%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256

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Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

[N] Skyridge Ave

Total: 647

In: 364 Out: 283

137
36
191

15

2

17

4

141

3381

132

In: 3654

Total: 7102

[E] Sackville Dr

Out: 3448

12

5

7

130
23
134

Out: 301 In: 287

Total: 588

[S] Armoyan Dr

[W] Sackville Dr

Total: 7023

Out: 3648

In: 3375

119

3123

133

24

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

AM Peak (8 AM - 9 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256



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Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Skyridge Ave Southbound						Sackville Dr Westbound						Armoyan Dr Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 8:00AM	14	2	17	0	33	2	7	89	0	0	96	0	7	1	2	0	10	0	3	111	10	0	124	2	263
8:15AM	9	2	10	0	21	0	2	75	4	0	81	0	7	2	6	0	15	0	7	121	3	0	131	0	248
8:30AM	5	0	11	0	16	0	3	123	0	0	126	1	4	1	9	0	14	0	7	118	10	0	135	4	291
8:45AM	9	4	8	0	21	0	7	107	6	0	120	0	5	1	8	0	14	0	13	134	6	0	153	1	308
Total	37	8	46	0	91	2	19	394	10	0	423	1	23	5	25	0	53	0	30	484	29	0	543	7	1110
% Approach	40.7%	8.8%	50.5%	0%	-	-	4.5%	93.1%	2.4%	0%	-	-	43.4%	9.4%	47.2%	0%	-	-	5.5%	89.1%	5.3%	0%	-	-	-
% Total	3.3%	0.7%	4.1%	0%	8.2%	-	1.7%	35.5%	0.9%	0%	38.1%	-	2.1%	0.5%	2.3%	0%	4.8%	-	2.7%	43.6%	2.6%	0%	48.9%	-	-
PHF	0.661	0.500	0.676	-	0.689	-	0.679	0.801	0.417	-	0.839	-	0.821	0.625	0.694	-	0.883	-	0.577	0.903	0.725	-	0.887	-	0.901
Lights	31	8	45	0	84	-	18	365	9	0	392	-	22	5	24	0	51	-	29	467	20	0	516	-	1043
% Lights	83.8%	100%	97.8%	0%	92.3%	-	94.7%	92.6%	90.0%	0%	92.7%	-	95.7%	100%	96.0%	0%	96.2%	-	96.7%	96.5%	69.0%	0%	95.0%	-	94.0%
Single-Unit Trucks	3	0	1	0	4	-	0	23	0	0	23	-	0	0	0	0	0	-	0	11	7	0	18	-	45
% Single-Unit Trucks	8.1%	0%	2.2%	0%	4.4%	-	0%	5.8%	0%	0%	5.4%	-	0%	0%	0%	0%	0%	-	0%	2.3%	24.1%	0%	3.3%	-	4.1%
Articulated Trucks	1	0	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	2.7%	0%	0%	0%	1.1%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.2%
Buses	2	0	0	0	2	-	1	5	1	0	7	-	1	0	1	0	2	-	1	6	2	0	9	-	20
% Buses	5.4%	0%	0%	0%	2.2%	-	5.3%	1.3%	10.0%	0%	1.7%	-	4.3%	0%	4.0%	0%	3.8%	-	3.3%	1.2%	6.9%	0%	1.7%	-	1.8%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	7	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

AM Peak (8 AM - 9 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians,
Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256

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Provided by: DesignPoint Engineering &
Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

[N] Skyridge Ave

Total: 144

In: 91 Out: 53

37 8 46

2

[W] Sackville Dr

Total: 999
In: 543 Out: 456

3

29

484

30

4

19

394

10

In: 423
Total: 976
Out: 553

[E] Sackville Dr

1

25 5 23

Out: 48 In: 53
Total: 101

[S] Armoyan Dr

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256



engineering • surveying • solutions

Provided by: DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Skyridge Ave Southbound						Sackville Dr Westbound						Armoyan Dr Northbound						Sackville Dr Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2025-04-02 12:00PM	5	0	15	0	20	0	3	154	2	0	159	0	1	0	5	0	6	1	6	130	3	0	139	3	324
12:15PM	3	1	3	0	7	1	10	163	10	0	183	0	1	0	3	0	4	0	10	170	2	0	182	1	376
12:30PM	6	6	5	0	17	1	10	164	12	0	186	0	4	0	7	0	11	0	13	148	8	0	169	1	383
12:45PM	7	2	7	0	16	2	5	171	4	0	180	0	7	0	1	0	8	0	8	143	4	0	155	0	359
Total	21	9	30	0	60	4	28	652	28	0	708	0	13	0	16	0	29	1	37	591	17	0	645	5	1442
% Approach	35.0%	15.0%	50.0%	0%	-	-	4.0%	92.1%	4.0%	0%	-	-	44.8%	0%	55.2%	0%	-	-	5.7%	91.6%	2.6%	0%	-	-	-
% Total	1.5%	0.6%	2.1%	0%	4.2%	-	1.9%	45.2%	1.9%	0%	49.1%	-	0.9%	0%	1.1%	0%	2.0%	-	2.6%	41.0%	1.2%	0%	44.7%	-	-
PHF	0.750	0.375	0.500	-	0.750	-	0.700	0.953	0.583	-	0.952	-	0.464	-	0.571	-	0.659	-	0.712	0.869	0.531	-	0.886	-	0.941
Lights	17	9	27	0	53	-	25	640	28	0	693	-	13	0	16	0	29	-	37	571	13	0	621	-	1396
% Lights	81.0%	100%	90.0%	0%	88.3%	-	89.3%	98.2%	100%	0%	97.9%	-	100%	0%	100%	0%	100%	-	100%	96.6%	76.5%	0%	96.3%	-	96.8%
Single-Unit Trucks	4	0	3	0	7	-	3	7	0	0	10	-	0	0	0	0	0	-	0	13	4	0	17	-	34
% Single-Unit Trucks	19.0%	0%	10.0%	0%	11.7%	-	10.7%	1.1%	0%	0%	1.4%	-	0%	0%	0%	0%	0%	-	0%	2.2%	23.5%	0%	2.6%	-	2.4%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.1%
Buses	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	5	0	0	5	-	10
% Buses	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.8%	-	0.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians,
Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256

DESIGNPOINT

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Surveying Ltd.

90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

[N] Skyridge Ave

Total: 105

In: 60 Out: 45

21 9 30

3

1

1

28

652

28

In: 708

Total: 1342

[E] Sackville Dr

Out: 634

[W] Sackville Dr

Total: 1334

Out: 689

In: 645

17

591

37

4

1

19 13

Out: 74 In: 29

Total: 103

[S] Armoyan Dr

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1282758, Location: 44.760716, -63.672256



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90 Western Parkway, Suite 500,
Bedford, NS, B4B 2J3, CA

Leg Direction	Skyridge Ave Southbound							Sackville Dr Westbound							Armoyan Dr Northbound							Sackville Dr Eastbound							
Time	R	T	L	U	App	Ped*		R	T	L	U	App	Ped*		R	T	L	U	App	Ped*		R	T	L	U	App	Ped*		Int
2025-04-02 4:15PM	9	1	6	0	16	1		10	204	10	0	224	1		6	0	7	0	13	0		2	122	7	0	131	1		384
4:30PM	4	1	2	0	7	0		1	192	10	0	203	2		6	1	6	0	13	0		5	117	8	0	130	0		353
4:45PM	3	1	12	0	16	0		6	210	9	0	225	0		5	1	7	0	13	0		7	137	4	0	148	3		402
5:00PM	5	2	8	0	15	1		10	224	12	0	246	0		12	1	4	0	17	1		8	167	1	0	176	2		454
Total	21	5	28	0	54	2		27	830	41	0	898	3		29	3	24	0	56	1		22	543	20	0	585	6		1593
% Approach	38.9%	9.3%	51.9%	0%	-	-		3.0%	92.4%	4.6%	0%	-	-		51.8%	5.4%	42.9%	0%	-	-		3.8%	92.8%	3.4%	0%	-	-		-
% Total	1.3%	0.3%	1.8%	0%	3.4%	-		1.7%	52.1%	2.6%	0%	56.4%	-		1.8%	0.2%	1.5%	0%	3.5%	-		1.4%	34.1%	1.3%	0%	36.7%	-		-
PHF	0.583	0.625	0.583	-	0.844	-		0.675	0.926	0.854	-	0.913	-		0.604	0.750	0.857	-	0.824	-		0.688	0.813	0.625	-	0.831	-		0.877
Lights	20	4	28	0	52	-		26	815	38	0	879	-		28	3	23	0	54	-		22	536	16	0	574	-		1559
% Lights	95.2%	80.0%	100%	0%	96.3%	-		96.3%	98.2%	92.7%	0%	97.9%	-		96.6%	100%	95.8%	0%	96.4%	-		100%	98.7%	80.0%	0%	98.1%	-		97.9%
Single-Unit Trucks	1	1	0	0	2	-		0	9	2	0	11	-		1	0	1	0	2	-		0	3	4	0	7	-		22
% Single-Unit Trucks	4.8%	20.0%	0%	0%	3.7%	-		0%	1.1%	4.9%	0%	1.2%	-		3.4%	0%	4.2%	0%	3.6%	-		0%	0.6%	20.0%	0%	1.2%	-		1.4%
Articulated Trucks	0	0	0	0	0	-		0	1	0	0	1	-		0	0	0	0	0	-		0	0	0	0	0	-		1
% Articulated Trucks	0%	0%	0%	0%	0%	-		0%	0.1%	0%	0%	0.1%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0.1%
Buses	0	0	0	0	0	-		1	5	1	0	7	-		0	0	0	0	0	-		0	4	0	0	4	-		11
% Buses	0%	0%	0%	0%	0%	-		3.7%	0.6%	2.4%	0%	0.8%	-		0%	0%	0%	0%	0%	-		0%	0.7%	0%	0%	0.7%	-		0.7%
Bicycles on Road	0	0	0	0	0	-		0	0	0	0	0	-		0	0	0	0	0	-		0	0	0	0	0	-		0
% Bicycles on Road	0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%
Pedestrians	-	-	-	-	-	2		-	-	-	-	-	3		-	-	-	-	-	1		-	-	-	-	-	-		6
% Pedestrians	-	-	-	-	-	100%		-	-	-	-	-	100%		-	-	-	-	-	100%		-	-	-	-	-	-		100%
Bicycles on Crosswalk	-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	-		0
% Bicycles on Crosswalk	-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	-		0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

24-560 Sackville Dr at Skyridge Ave - TMC

Wed Apr 2, 2025

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

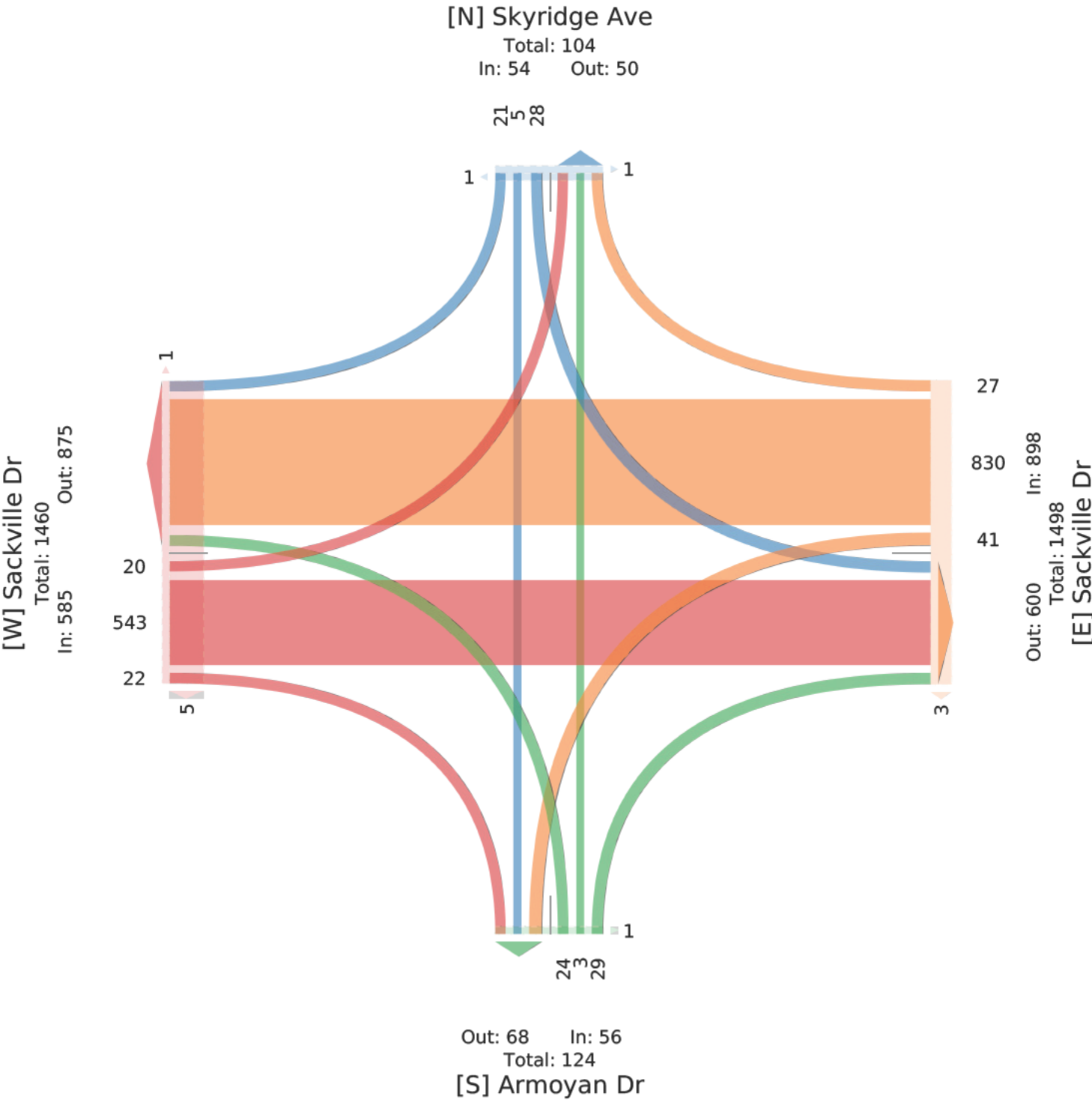
ID: 1282758, Location: 44.760716, -63.672256



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90 Western Parkway, Suite 500,
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APPENDIX B

PTV VISTRO REPORTS

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 12.9
Level Of Service: B
Volume to Capacity (v/c): 0.316

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	1	409	29	89	484	4	3	0	1	86	1	102
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	364	26	79	431	4	3	0	1	77	1	91
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	91	7	20	108	1	1	0	0	19	0	23
Total Analysis Volume [veh/h]	1	364	26	79	431	4	3	0	1	77	1	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	55	0	0	55	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	51	51	51	51	31	31
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.19	0.18	0.00	0.12
s, saturation flow rate [veh/h]	1682	1494	1246	1528	1192	1370
c, Capacity [veh/h]	993	847	760	866	481	530
d1, Uniform Delay [s]	9.63	9.64	10.68	10.30	19.39	21.89
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.59	1.09	0.96	0.03	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.22	0.32	0.32	0.01	0.32
d, Delay for Lane Group [s/veh]	10.10	10.23	11.77	11.26	19.42	23.47
Lane Group LOS	B	B	B	B	B	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.99	1.80	2.73	2.87	0.06	2.81
50th-Percentile Queue Length [m/ln]	15.15	13.75	20.83	21.89	0.44	21.44
95th-Percentile Queue Length [veh/ln]	3.58	3.25	4.92	5.17	0.10	5.06
95th-Percentile Queue Length [m/ln]	27.27	24.76	37.50	39.40	0.80	38.59

Movement, Approach, & Intersection Results

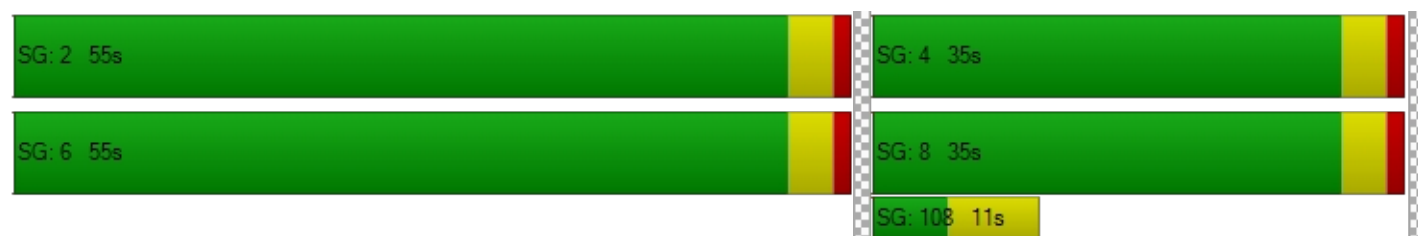
d_M, Delay for Movement [s/veh]	10.10	10.16	10.23	11.77	11.45	11.26	19.42	19.42	19.42	23.47	23.47	23.47
Movement LOS	B	B	B	B	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	10.17			11.50			19.42			23.47		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	12.92											
Intersection LOS	B											
Intersection V/C	0.316											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.608			0.000			0.000			0.000		
Crosswalk LOS	B			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1133			1133			689			689		
d_b, Bicycle Delay [s]	8.45			8.45			19.34			19.34		
I_b,int, Bicycle LOS Score for Intersection	1.882			1.984			1.566			1.838		
Bicycle LOS	A			A			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Armoyan

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 6.9
Level Of Service: A
Volume to Capacity (v/c): 0.214

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	10	394	19	29	484	30	25	5	23	46	8	37
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	351	17	26	431	27	22	4	20	41	7	33
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	88	4	7	108	7	6	1	5	10	2	8
Total Analysis Volume [veh/h]	9	351	17	26	431	27	22	4	20	41	7	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	66	0	0	66	0	0	24	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	73	73	73	73	9	9
g / C, Green / Cycle	0.81	0.81	0.81	0.81	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.16	0.16	0.03	0.06
s, saturation flow rate [veh/h]	1641	1506	1570	1501	1524	1463
c, Capacity [veh/h]	1375	1224	1320	1220	209	204
d1, Uniform Delay [s]	1.79	1.79	1.85	1.87	37.69	38.54
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	0.25	0.32	0.35	0.52	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.15	0.19	0.19	0.22	0.40
d, Delay for Lane Group [s/veh]	2.01	2.05	2.17	2.22	38.21	39.78
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.48	0.45	0.63	0.61	0.96	1.75
50th-Percentile Queue Length [m/ln]	3.65	3.42	4.84	4.67	7.34	13.33
95th-Percentile Queue Length [veh/ln]	0.86	0.81	1.14	1.10	1.73	3.15
95th-Percentile Queue Length [m/ln]	6.57	6.16	8.71	8.41	13.21	23.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.01	2.03	2.05	2.17	2.20	2.22	38.21	38.21	38.21	39.78	39.78	39.78
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.03			2.20			38.21			39.78		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	6.89											
Intersection LOS	A											
Intersection V/C	0.214											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.532			0.000			1.799			1.854		
Crosswalk LOS	B			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1378			1378			444			444		
d_b, Bicycle Delay [s]	4.36			4.36			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	1.871			1.959			1.636			1.693		
Bicycle LOS	A			A			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Entrance 1**

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.005

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	571	0	0	456
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	508	0	0	406
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	127	0	0	102
Total Analysis Volume [veh/h]	0	0	508	0	0	406
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.79	9.83	0.00	0.00	8.42	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.31		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.005

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	456	571	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	406	508	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	102	127	0	0	0
Total Analysis Volume [veh/h]	0	406	508	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.42	0.00	0.00	0.00	14.79	9.83
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		12.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 9.1
Level Of Service: A
Volume to Capacity (v/c): 0.397

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	3	797	74	128	541	1	2	0	7	53	2	143
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	709	66	114	481	1	2	0	6	47	2	127
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	177	17	29	120	0	1	0	2	12	1	32
Total Analysis Volume [veh/h]	3	709	66	114	481	1	2	0	6	47	2	127
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	68	0	0	68	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	78	78	78	78	14	14
g / C, Green / Cycle	0.78	0.78	0.78	0.78	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.25	0.25	0.27	0.24	0.01	0.12
s, saturation flow rate [veh/h]	1681	1484	816	1531	1425	1410
c, Capacity [veh/h]	1338	1149	687	1185	253	251
d1, Uniform Delay [s]	3.37	3.38	4.80	3.37	36.69	41.59
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.60	0.73	1.25	0.70	0.05	3.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.32	0.32	0.32	0.03	0.70
d, Delay for Lane Group [s/veh]	3.97	4.10	6.05	4.07	36.74	45.14
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.03	1.83	1.09	1.87	0.17	4.43
50th-Percentile Queue Length [m/ln]	15.49	13.97	8.27	14.21	1.30	33.77
95th-Percentile Queue Length [veh/ln]	3.66	3.30	1.95	3.36	0.31	7.88
95th-Percentile Queue Length [m/ln]	27.89	25.15	14.89	25.59	2.35	60.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.97	4.03	4.10	6.05	4.51	4.07	36.74	36.74	36.74	45.14	45.14	45.14
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.03			4.81			36.74			45.14		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.14											
Intersection LOS	A											
Intersection V/C	0.397											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	41.41			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.738			0.000			0.000			0.000		
Crosswalk LOS	B			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1280			1280			560			560		
d_b, Bicycle Delay [s]	6.48			6.48			25.92			25.92		
I_b,int, Bicycle LOS Score for Intersection	2.201			2.051			1.573			1.850		
Bicycle LOS	B			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: ArmoyanControl Type:
Analysis Method:
Analysis Period:Signalized
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):4.8
A
0.292**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	41	830	22	20	543	22	24	3	29	28	5	21
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	739	20	18	483	20	21	3	26	25	4	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	185	5	5	121	5	5	1	7	6	1	5
Total Analysis Volume [veh/h]	36	739	20	18	483	20	21	3	26	25	4	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	69	0	0	69	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	75	75	75	75	7	7
g / C, Green / Cycle	0.83	0.83	0.83	0.83	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.26	0.26	0.17	0.17	0.03	0.03
s, saturation flow rate [veh/h]	1568	1518	1567	1511	1491	1500
c, Capacity [veh/h]	1345	1260	1343	1254	178	182
d1, Uniform Delay [s]	1.71	1.75	1.54	1.56	39.28	39.20
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.64	0.33	0.36	0.86	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.31	0.20	0.20	0.28	0.26
d, Delay for Lane Group [s/veh]	2.29	2.39	1.88	1.93	40.13	39.96
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	0.93	0.55	0.54	1.08	1.03
50th-Percentile Queue Length [m/ln]	7.09	7.07	4.19	4.09	8.24	7.88
95th-Percentile Queue Length [veh/ln]	1.67	1.67	0.99	0.97	1.95	1.86
95th-Percentile Queue Length [m/ln]	12.76	12.73	7.54	7.36	14.83	14.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.29	2.34	2.39	1.88	1.90	1.93	40.13	40.13	40.13	39.96	39.96	39.96
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.34			1.90			40.13			39.96		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	4.79											
Intersection LOS	A											
Intersection V/C	0.292											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.689			0.000			1.854			1.812		
Crosswalk LOS	B			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1444			1444			378			378		
d_b, Bicycle Delay [s]	3.47			3.47			29.61			29.61		
I_b,int, Bicycle LOS Score for Intersection	2.215			1.989			1.642			1.639		
Bicycle LOS	B			A			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Entrance 1**

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service:
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.52	8.32	0.00	0.00	7.22	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		0.00		3.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service:
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 7th Edition
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):

13.4
B
0.350

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	1	409	29	89	484	4	3	0	1	86	1	102
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	400	29	87	474	4	3	0	1	85	1	100
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	7	22	119	1	1	0	0	21	0	25
Total Analysis Volume [veh/h]	1	400	29	87	474	4	3	0	1	85	1	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	55	0	0	55	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	51	51	51	51	31	31
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.13	0.14	0.21	0.20	0.00	0.14
s, saturation flow rate [veh/h]	1682	1494	1200	1528	1171	1370
c, Capacity [veh/h]	993	847	733	866	473	530
d1, Uniform Delay [s]	9.77	9.78	11.24	10.58	19.39	22.21
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.54	0.67	1.32	1.14	0.03	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.24	0.35	0.36	0.01	0.35
d, Delay for Lane Group [s/veh]	10.30	10.45	12.56	11.72	19.42	24.03
Lane Group LOS	B	B	B	B	B	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.22	2.01	3.08	3.32	0.06	3.15
50th-Percentile Queue Length [m/ln]	16.92	15.35	23.50	25.27	0.44	24.01
95th-Percentile Queue Length [veh/ln]	4.00	3.63	5.55	5.97	0.10	5.67
95th-Percentile Queue Length [m/ln]	30.46	27.62	42.29	45.49	0.80	43.21

Movement, Approach, & Intersection Results

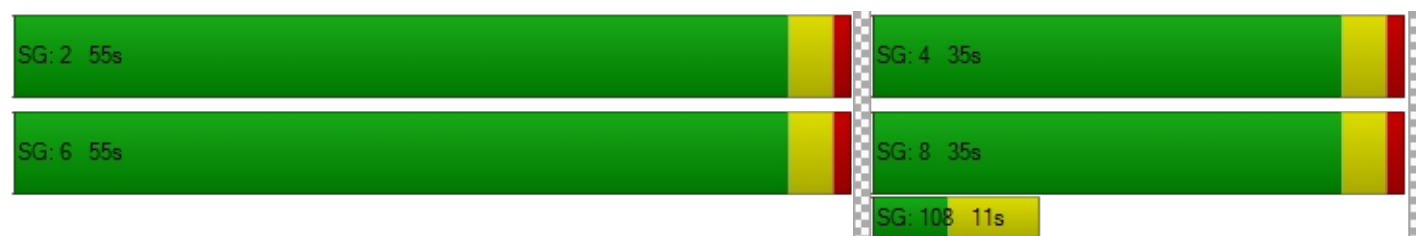
d_M, Delay for Movement [s/veh]	10.30	10.37	10.45	12.56	12.02	11.72	19.42	19.42	19.42	24.03	24.03	24.03
Movement LOS	B	B	B	B	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	10.37			12.10			19.42			24.03		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	13.37											
Intersection LOS	B											
Intersection V/C	0.350											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.656			0.000			0.000			0.000		
Crosswalk LOS	B			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1133			1133			689			689		
d_b, Bicycle Delay [s]	8.45			8.45			19.34			19.34		
I_b,int, Bicycle LOS Score for Intersection	1.914			2.026			1.566			1.867		
Bicycle LOS	A			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: ArmoyanControl Type:
Analysis Method:
Analysis Period:Signalized
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):7.0
A
0.236**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	10	394	19	29	484	30	25	5	23	46	8	37
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	386	19	29	474	30	24	4	22	45	8	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	97	5	7	119	8	6	1	6	11	2	9
Total Analysis Volume [veh/h]	10	386	19	29	474	30	24	4	22	45	8	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	66	0	0	66	0	0	24	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	73	73	73	73	9	9
g / C, Green / Cycle	0.81	0.81	0.81	0.81	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.18	0.17	0.03	0.06
s, saturation flow rate [veh/h]	1637	1506	1561	1501	1504	1467
c, Capacity [veh/h]	1368	1220	1309	1216	211	208
d1, Uniform Delay [s]	1.86	1.87	1.94	1.96	37.57	38.52
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.29	0.36	0.40	0.57	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.16	0.21	0.21	0.24	0.43
d, Delay for Lane Group [s/veh]	2.11	2.16	2.30	2.36	38.14	39.90
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.55	0.52	0.73	0.71	1.05	1.93
50th-Percentile Queue Length [m/ln]	4.20	3.94	5.58	5.43	7.97	14.69
95th-Percentile Queue Length [veh/ln]	0.99	0.93	1.32	1.28	1.88	3.47
95th-Percentile Queue Length [m/ln]	7.56	7.10	10.05	9.78	14.35	26.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.11	2.13	2.16	2.30	2.33	2.36	38.14	38.14	38.14	39.90	39.90	39.90
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.13			2.33			38.14			39.90		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	6.98											
Intersection LOS	A											
Intersection V/C	0.236											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.572			0.000			1.807			1.868		
Crosswalk LOS	B			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1378			1378			444			444		
d_b, Bicycle Delay [s]	4.36			4.36			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	1.902			1.999			1.642			1.706		
Bicycle LOS	A			A			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Entrance 1

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	571	0	0	456
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	559	0	0	447
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	140	0	0	112
Total Analysis Volume [veh/h]	0	0	559	0	0	447
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.88	10.02	0.00	0.00	8.57	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.95		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	456	571	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	447	559	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	112	140	0	0	0
Total Analysis Volume [veh/h]	0	447	559	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.57	0.00	0.00	0.00	15.88	10.02
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		12.95	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 9.9
Level Of Service: A
Volume to Capacity (v/c): 0.455

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	3	797	74	128	541	1	2	0	7	53	2	143
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	787	73	127	534	1	2	0	7	52	2	141
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	197	18	32	134	0	1	0	2	13	1	35
Total Analysis Volume [veh/h]	3	787	73	127	534	1	2	0	7	52	2	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	68	0	0	68	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	76	76	76	76	16	16
g / C, Green / Cycle	0.76	0.76	0.76	0.76	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.27	0.27	0.32	0.28	0.01	0.14
s, saturation flow rate [veh/h]	1681	1484	713	1531	1425	1408
c, Capacity [veh/h]	1315	1129	599	1165	271	270
d1, Uniform Delay [s]	3.93	3.94	6.48	4.00	35.56	40.91
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.73	0.89	1.81	0.92	0.05	3.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.36	0.38	0.37	0.03	0.72
d, Delay for Lane Group [s/veh]	4.66	4.82	8.28	4.92	35.61	44.56
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.59	2.33	2.25	2.55	0.19	4.90
50th-Percentile Queue Length [m/ln]	19.75	17.78	17.18	19.43	1.44	37.31
95th-Percentile Queue Length [veh/ln]	4.66	4.20	4.06	4.59	0.34	8.53
95th-Percentile Queue Length [m/ln]	35.54	32.00	30.93	34.97	2.59	64.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.66	4.73	4.82	8.28	5.55	4.92	35.61	35.61	35.61	44.56	44.56	44.56
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.74			6.07			35.61			44.56		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.90											
Intersection LOS	A											
Intersection V/C	0.455											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	41.41			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.803			0.000			0.000			0.000		
Crosswalk LOS	C			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1280			1280			560			560		
d_b, Bicycle Delay [s]	6.48			6.48			25.92			25.92		
I_b,int, Bicycle LOS Score for Intersection	2.272			2.106			1.574			1.881		
Bicycle LOS	B			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: ArmoyanControl Type:
Analysis Method:
Analysis Period:Signalized
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):5.0
A
0.324**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	41	830	22	20	543	22	24	3	29	28	5	21
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	820	22	20	536	22	23	3	29	28	4	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	205	6	5	134	6	6	1	7	7	1	5
Total Analysis Volume [veh/h]	40	820	22	20	536	22	23	3	29	28	4	21
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	69	0	0	69	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	74	74	74	74	8	8
g / C, Green / Cycle	0.83	0.83	0.83	0.83	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.29	0.29	0.19	0.19	0.04	0.04
s, saturation flow rate [veh/h]	1557	1518	1553	1511	1493	1502
c, Capacity [veh/h]	1331	1254	1327	1249	183	188
d1, Uniform Delay [s]	1.85	1.90	1.64	1.67	39.09	39.01
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	0.76	0.39	0.42	0.91	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.35	0.22	0.23	0.30	0.28
d, Delay for Lane Group [s/veh]	2.53	2.66	2.03	2.09	40.00	39.81
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.13	1.14	0.66	0.65	1.19	1.14
50th-Percentile Queue Length [m/ln]	8.59	8.67	4.99	4.93	9.05	8.68
95th-Percentile Queue Length [veh/ln]	2.03	2.05	1.18	1.16	2.14	2.05
95th-Percentile Queue Length [m/ln]	15.46	15.60	8.99	8.87	16.29	15.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.53	2.59	2.66	2.03	2.06	2.09	40.00	40.00	40.00	39.81	39.81	39.81
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.59			2.06			40.00			39.81		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	4.97											
Intersection LOS	A											
Intersection V/C	0.324											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.751			0.000			1.868			1.822		
Crosswalk LOS	C			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1444			1444			378			378		
d_b, Bicycle Delay [s]	3.47			3.47			29.61			29.61		
I_b,int, Bicycle LOS Score for Intersection	2.287			2.036			1.650			1.647		
Bicycle LOS	B			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Entrance 1

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.52	8.32	0.00	0.00	7.22	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		0.00		3.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 13.5
Level Of Service: B
Volume to Capacity (v/c): 0.368

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	1	409	29	89	484	4	3	0	1	86	1	102
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	72	0	0	36	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	472	29	87	510	4	3	0	1	85	1	100
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	118	7	22	128	1	1	0	0	21	0	25
Total Analysis Volume [veh/h]	1	472	29	87	510	4	3	0	1	85	1	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	55	0	0	55	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	51	51	51	51	31	31
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.23	0.22	0.00	0.14
s, saturation flow rate [veh/h]	1682	1499	1153	1528	1171	1370
c, Capacity [veh/h]	993	850	706	866	473	530
d1, Uniform Delay [s]	10.03	10.04	11.62	10.81	19.39	22.21
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	0.82	1.54	1.30	0.03	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.28	0.38	0.39	0.01	0.35
d, Delay for Lane Group [s/veh]	10.69	10.86	13.17	12.11	19.42	24.03
Lane Group LOS	B	B	B	B	B	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.66	2.42	3.34	3.69	0.06	3.15
50th-Percentile Queue Length [m/ln]	20.31	18.43	25.48	28.09	0.44	24.01
95th-Percentile Queue Length [veh/ln]	4.80	4.35	6.02	6.64	0.10	5.67
95th-Percentile Queue Length [m/ln]	36.55	33.18	45.86	50.56	0.80	43.21

Movement, Approach, & Intersection Results

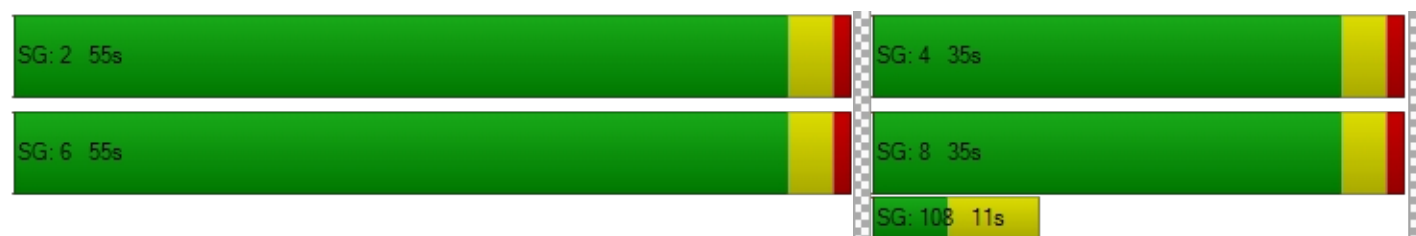
d_M, Delay for Movement [s/veh]	10.69	10.76	10.86	13.17	12.48	12.11	19.42	19.42	19.42	24.03	24.03	24.03
Movement LOS	B	B	B	B	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	10.77			12.58			19.42			24.03		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	13.54											
Intersection LOS	B											
Intersection V/C	0.368											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.700			0.000			0.000			0.000		
Crosswalk LOS	B			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1133			1133			689			689		
d_b, Bicycle Delay [s]	8.45			8.45			19.34			19.34		
I_b,int, Bicycle LOS Score for Intersection	1.974			2.055			1.566			1.867		
Bicycle LOS	A			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Armoyan

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 8.4
Level Of Service: A
Volume to Capacity (v/c): 0.253

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	10	394	19	29	484	30	25	5	23	46	8	37
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	17	0	0	27	0	31	0	20	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	403	19	29	501	30	55	4	42	45	8	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	101	5	7	125	8	14	1	11	11	2	9
Total Analysis Volume [veh/h]	16	403	19	29	501	30	55	4	42	45	8	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	66	0	0	66	0	0	24	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	73	73	73	73	9	9
g / C, Green / Cycle	0.81	0.81	0.81	0.81	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.14	0.14	0.18	0.18	0.07	0.06
s, saturation flow rate [veh/h]	1593	1508	1565	1502	1445	1465
c, Capacity [veh/h]	1329	1217	1307	1212	212	213
d1, Uniform Delay [s]	1.94	1.95	2.02	2.05	38.69	38.34
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.31	0.39	0.43	1.65	1.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.17	0.22	0.22	0.48	0.42
d, Delay for Lane Group [s/veh]	2.21	2.26	2.41	2.48	40.34	39.65
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.60	0.58	0.80	0.78	2.21	1.92
50th-Percentile Queue Length [m/ln]	4.60	4.40	6.13	5.97	16.85	14.66
95th-Percentile Queue Length [veh/ln]	1.09	1.04	1.45	1.41	3.98	3.46
95th-Percentile Queue Length [m/ln]	8.29	7.91	11.04	10.74	30.34	26.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.21	2.24	2.26	2.41	2.44	2.48	40.34	40.34	40.34	39.65	39.65	39.65
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.24			2.44			40.34			39.65		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	8.38											
Intersection LOS	A											
Intersection V/C	0.253											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.599			0.000			1.861			1.868		
Crosswalk LOS	B			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1378			1378			444			444		
d_b, Bicycle Delay [s]	4.36			4.36			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	1.921			2.022			1.726			1.706		
Bicycle LOS	A			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Entrance 1**

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 18.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.118

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	571	0	0	456
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	24	0	36	6	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	24	559	36	6	483
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	6	140	9	2	121
Total Analysis Volume [veh/h]	36	24	559	36	6	483
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.03	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.39	11.78	0.00	0.00	8.69	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.53	0.53	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [m/ln]	4.05	4.05	0.00	0.00	0.08	0.04
d_A, Approach Delay [s/veh]	15.74		0.00		0.11	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.87					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 17.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.017

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	456	571	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1000	1.1000	1.1000	1.1000	1.1000	1.1000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	37	24	0	5	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	484	583	0	5	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	121	146	0	1	1
Total Analysis Volume [veh/h]	11	484	583	0	5	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	8.66	0.00	0.00	0.00	17.33	10.31
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.01	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [m/ln]	0.14	0.07	0.00	0.00	0.53	0.53
d_A, Approach Delay [s/veh]	0.19		0.00		14.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.21					
Intersection LOS	C					

Intersection Level Of Service Report**Intersection 1: Pinehill**

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 9.8
Level Of Service: A
Volume to Capacity (v/c): 0.489

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.66	3.50	3.50	3.50	3.66	3.66	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	3	797	74	128	541	1	2	0	7	53	2	143
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	69	0	0	83	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	856	73	127	617	1	2	0	7	52	2	141
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	214	18	32	154	0	1	0	2	13	1	35
Total Analysis Volume [veh/h]	3	856	73	127	617	1	2	0	7	52	2	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	68	0	0	68	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	6	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	76	76	76	76	16	16
g / C, Green / Cycle	0.76	0.76	0.76	0.76	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.29	0.29	0.35	0.32	0.01	0.14
s, saturation flow rate [veh/h]	1680	1488	709	1531	1425	1408
c, Capacity [veh/h]	1315	1132	593	1165	271	270
d1, Uniform Delay [s]	4.05	4.06	6.76	4.24	35.56	40.91
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.82	1.00	2.16	1.14	0.05	3.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.39	0.42	0.43	0.03	0.72
d, Delay for Lane Group [s/veh]	4.88	5.05	8.92	5.38	35.61	44.56
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.88	2.60	2.62	3.09	0.19	4.90
50th-Percentile Queue Length [m/ln]	21.98	19.83	20.00	23.51	1.44	37.31
95th-Percentile Queue Length [veh/ln]	5.19	4.69	4.72	5.55	0.34	8.53
95th-Percentile Queue Length [m/ln]	39.56	35.70	36.00	42.32	2.59	64.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.88	4.95	5.05	8.92	6.08	5.38	35.61	35.61	35.61	44.56	44.56	44.56
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.96			6.56			35.61			44.56		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.85											
Intersection LOS	A											
Intersection V/C	0.489											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	41.41			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	2.865			0.000			0.000			0.000		
Crosswalk LOS	C			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1280			1280			560			560		
d_b, Bicycle Delay [s]	6.48			6.48			25.92			25.92		
I_b,int, Bicycle LOS Score for Intersection	2.329			2.174			1.574			1.881		
Bicycle LOS	B			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Armoyan

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 5.6
Level Of Service: A
Volume to Capacity (v/c): 0.363

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	41	830	22	20	543	22	24	3	29	28	5	21
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	40	0	0	36	0	14	0	9	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	860	22	20	572	22	37	3	38	28	4	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	215	6	5	143	6	9	1	10	7	1	5
Total Analysis Volume [veh/h]	54	860	22	20	572	22	37	3	38	28	4	21
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	69	0	0	69	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	6	0	0	12	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	73	73	73	73	9	9
g / C, Green / Cycle	0.82	0.82	0.82	0.82	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.31	0.31	0.20	0.20	0.05	0.04
s, saturation flow rate [veh/h]	1506	1519	1559	1512	1475	1506
c, Capacity [veh/h]	1271	1237	1312	1231	202	207
d1, Uniform Delay [s]	2.15	2.24	1.91	1.94	38.62	37.99
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.82	0.89	0.43	0.47	1.21	0.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.38	0.24	0.24	0.39	0.26
d, Delay for Lane Group [s/veh]	2.97	3.13	2.34	2.41	39.83	38.64
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.41	1.48	0.83	0.81	1.68	1.12
50th-Percentile Queue Length [m/ln]	10.77	11.31	6.29	6.21	12.84	8.52
95th-Percentile Queue Length [veh/ln]	2.54	2.67	1.49	1.47	3.03	2.01
95th-Percentile Queue Length [m/ln]	19.39	20.36	11.33	11.17	23.11	15.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.97	3.05	3.13	2.34	2.37	2.41	39.83	39.83	39.83	38.64	38.64	38.64
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	3.05			2.37			39.83			38.64		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	5.63											
Intersection LOS	A											
Intersection V/C	0.363											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			0.0			9.0			9.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	36.45			0.00			36.45			36.45		
I_p,int, Pedestrian LOS Score for Intersection	2.790			0.000			1.917			1.822		
Crosswalk LOS	C			F			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1444			1444			378			378		
d_b, Bicycle Delay [s]	3.47			3.47			29.61			29.61		
I_b,int, Bicycle LOS Score for Intersection	2.332			2.066			1.688			1.647		
Bicycle LOS	B			B			A			A		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Entrance 1

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 22.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.149

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	30.48
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	541	0	0	773
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	23	0	83	14	35
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	23	534	83	14	799
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	6	134	21	4	200
Total Analysis Volume [veh/h]	35	23	534	83	14	799
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.03	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	22.90	12.76	0.00	0.00	8.77	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.66	0.66	0.00	0.00	0.02	0.01
95th-Percentile Queue Length [m/ln]	5.02	5.02	0.00	0.00	0.18	0.09
d_A, Approach Delay [s/veh]	18.88		0.00		0.15	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 5: Entrance 2

Control Type: Two-way stop
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 22.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.091

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	773	541	0	0	0
Base Volume Adjustment Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1100	1.1100	1.1100	1.1100	1.1100	1.1100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	28	23	0	21	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	792	557	0	21	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	198	139	0	5	4
Total Analysis Volume [veh/h]	26	792	557	0	21	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.09	0.02
d_M, Delay for Movement [s/veh]	8.59	0.00	0.00	0.00	22.06	11.42
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.02	0.00	0.00	0.37	0.37
95th-Percentile Queue Length [m/ln]	0.33	0.17	0.00	0.00	2.82	2.82
d_A, Approach Delay [s/veh]	0.27		0.00		17.80	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.60					
Intersection LOS	C					