

# Milhaus Residential

## Traffic Impact Statement

*City of Fort Myers, Florida*

May 2022

Kimley»Horn

# ***TRAFFIC IMPACT STATEMENT***

**Milhaus Residential**

**City of Fort Myers, FL**

***Prepared by:***

***Kimley-Horn and Associates, Inc.***

**May 2022**

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## 1.0 INTRODUCTION

Kimley-Horn has been retained to analyze and document the anticipated transportation impacts associated with the development of Milhaus Residential in the City of Fort Myers, Florida. The following traffic impact statement was performed to support access permits.

The ±21.42-acre project site is currently vacant and is located on the north side of SR 82, east of its intersection with Forum Boulevard in the City of Fort Myers. There are 3 single family homes on the northern portion of the project site. The proposed development consists of 350 apartment dwelling units. Construction is anticipated to begin in 2023, with a horizon year of 2024.

Access to the site will be provided via three (3) access points, as shown in the site plan provided in

### Appendix A:

- SR 82 and Forum Boulevard– Signalized
- SR 82 and Existing, Vacant Full Access Opening– Signalization Planned as part of Project Rainforest Development
- SR 82 and Project Driveway– Directional Median Opening

## 1.1 STUDY AREA

The proposed development is expected to generate more than 100, but less than 300, trips during the peak hour, as described in the trip generation section of this traffic impact statement. Per the City of Fort Myer's *Land Development Code* Section 134.2.29, this qualifies the development as a Level II Site Development Plan. Because of this, the study area for the analysis will include all project driveways, external intersections and roadways abutting the development, and roadways significantly impacted by the development. Per the City Code, significant impact occurs when the peak hour, directional net new trips account for 10% or more of the road segment's level of service C service volume. All signalized and unsignalized intersections along the significantly impacted road segments should also be included in the study area.

The analysis to determine the significantly impacted segments can be found in **Table 1**. The following intersections and roadways will be included in the study area, as agreed to in the approved methodology (**Appendix B**) and as shown in **Figure 1**:

### Intersections

- SR 82 and Forum Boulevard– Signalized
- SR 82 and Existing, Vacant Full Access Opening– Signalization Planned as part of Project Rainforest Development
- SR 82 and Project Driveway

### Roadways

- SR 82 from Forum Boulevard to the Project Site
- SR 82 from the Project Site to Buckingham Road

**Table 1: Study Area Calculation**

Roadway FromTo		Roadway Attributes				AM Peak Hour Project Traffic			Max % Impact <sup>3</sup>	Include Segment In Area? <sup>4</sup>	
		Functional Classification	Area Type	Number of Lanes	LOS C Volume <sup>1</sup>						
						% Assign <sup>2</sup>	NB / EB	SB / WB			
SR 82	Ortiz Avenue	I-75	Principal Arterial	U	6D	2,940	31.0%	10	34	1.16%	NO
	I-75	Forum Boulevard	Principal Arterial	U	6D	2,940	58.0%	19	64	2.18%	NO
	Forum Boulevard	Project Site	Principal Arterial	U	6D	2,940	75.0%	24	83	2.82%	YES
	Project Site	Buckingham Road	Principal Arterial	U	6D	2,940	25.0%	28	8	0.95%	YES
	Buckingham Road	Lee Boulevard	Principal Arterial	U	6D	2,940	20.0%	22	6	0.75%	NO
Forum Boulevard	SR 82	Colonial Boulevard	Urban Collector	U	4D	1,719	17.0%	5	19	1.11%	NO
Buckingham Road	SR 82	Alvin Ave	Urban Collector	U	2U	747	5.0%	6	2	0.80%	NO
	Alvin Ave	Gunnery Road	Urban Collector	U	2U	747	3.0%	3	1	0.40%	NO
Lee Boulevard	SR 82	Gunnery Road	Urban Collector	U	6D	2,646	7.0%	8	2	0.30%	NO
Notes: 1. Level of Service C service volume was determined from the 2020 FDOT Quality/LOS Tables. 2. Percent project traffic assignment was calculated as the maximum across the segment. 3. Percent impact was calculated as the maximum PM peak hour directional project traffic divided by the directional service volume. 4. In accordance with City of Fort Myers guidelines, the minimum threshold for significance was at least 10% impact of the road segment's LOS C service volume. In addition, adjacent roadway links are included in the study area.											



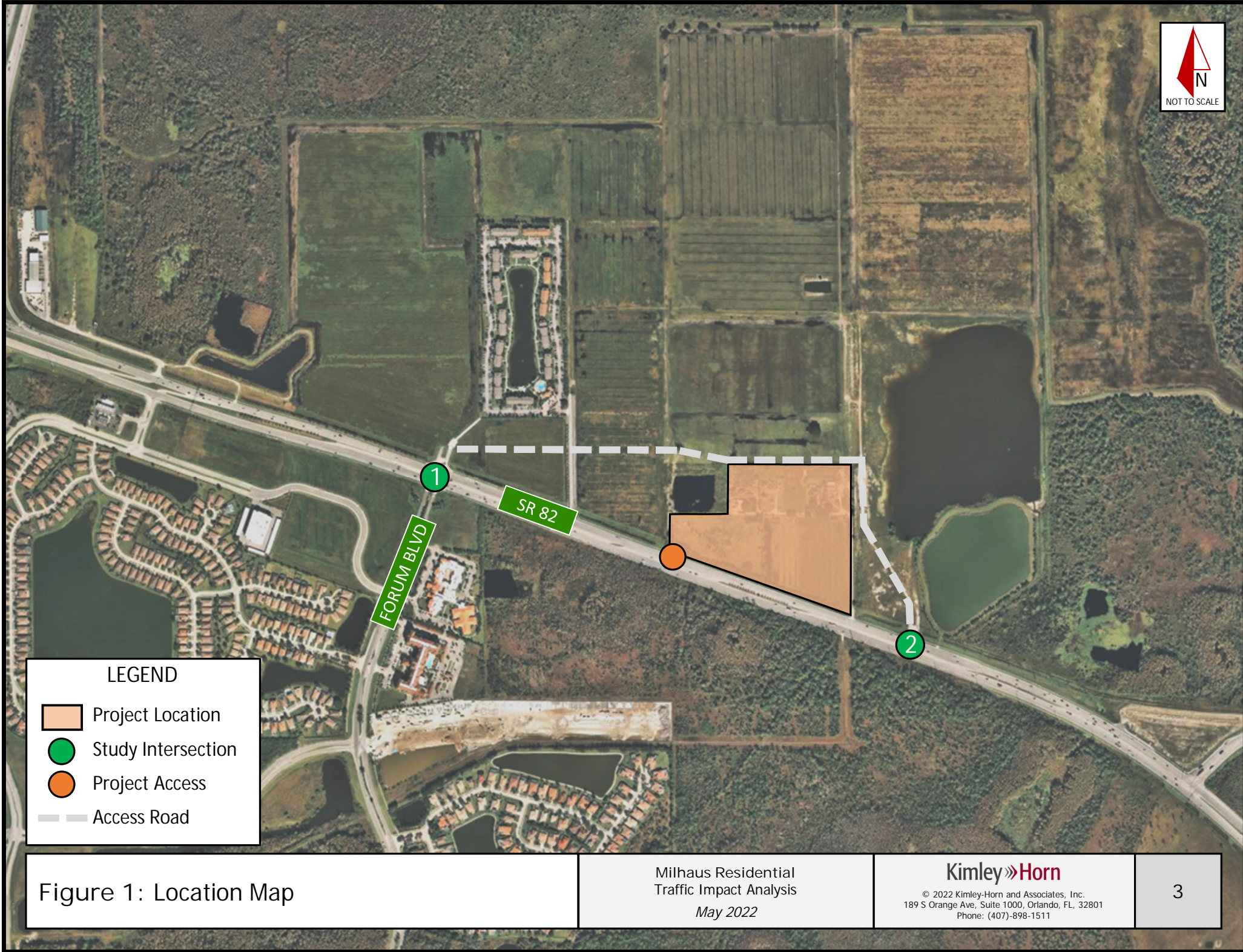


Figure 1: Location Map



## 2.0 DEVELOPMENT TRAFFIC

The applicant is proposing to develop the existing, vacant ±21.42 acre site with 350 multifamily housing units with a horizon year of 2024. The latest industry standards were used to determine the number of new external trips to be generated by the site at buildout. The latest adopted regional travel demand model was used to forecast the distribution of trips throughout the study area.

### 2.1 TRIP GENERATION

The 11th Edition of the Institute of Transportation Engineers' (ITE) Trip Generation Manual was referenced for Land Use Code 221 (Multifamily Housing Mid-Rise).

**Table 2** provides the daily, AM peak hour, and PM peak hour trip generation summary for the project. As shown in the table, the proposed site is anticipated to generate 1,623 daily trips, 142 AM peak hour trips (32 inbound and 110 outbound), and 137 PM peak hour trips (83 inbound and 54 outbound)..

**Table 2:** Trip Generation

Daily	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	Daily Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	4.64	1,623	50%	811	50%	812
Total Generated Trips						1,623	811		812	
AM Peak Hour	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	AM Peak Hour Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	0.41	142	23%	32	77%	110
Total Generated Trips						142	32		110	
PM Peak Hour	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	PM Peak Hour Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	0.39	137	61%	83	39%	54
Total Generated Trips						137	83		54	

Notes: <sup>1</sup> Vehicle trip rates and directional splits per data and procedures outlined in ITE Trip Generation Manual, 11th Edition



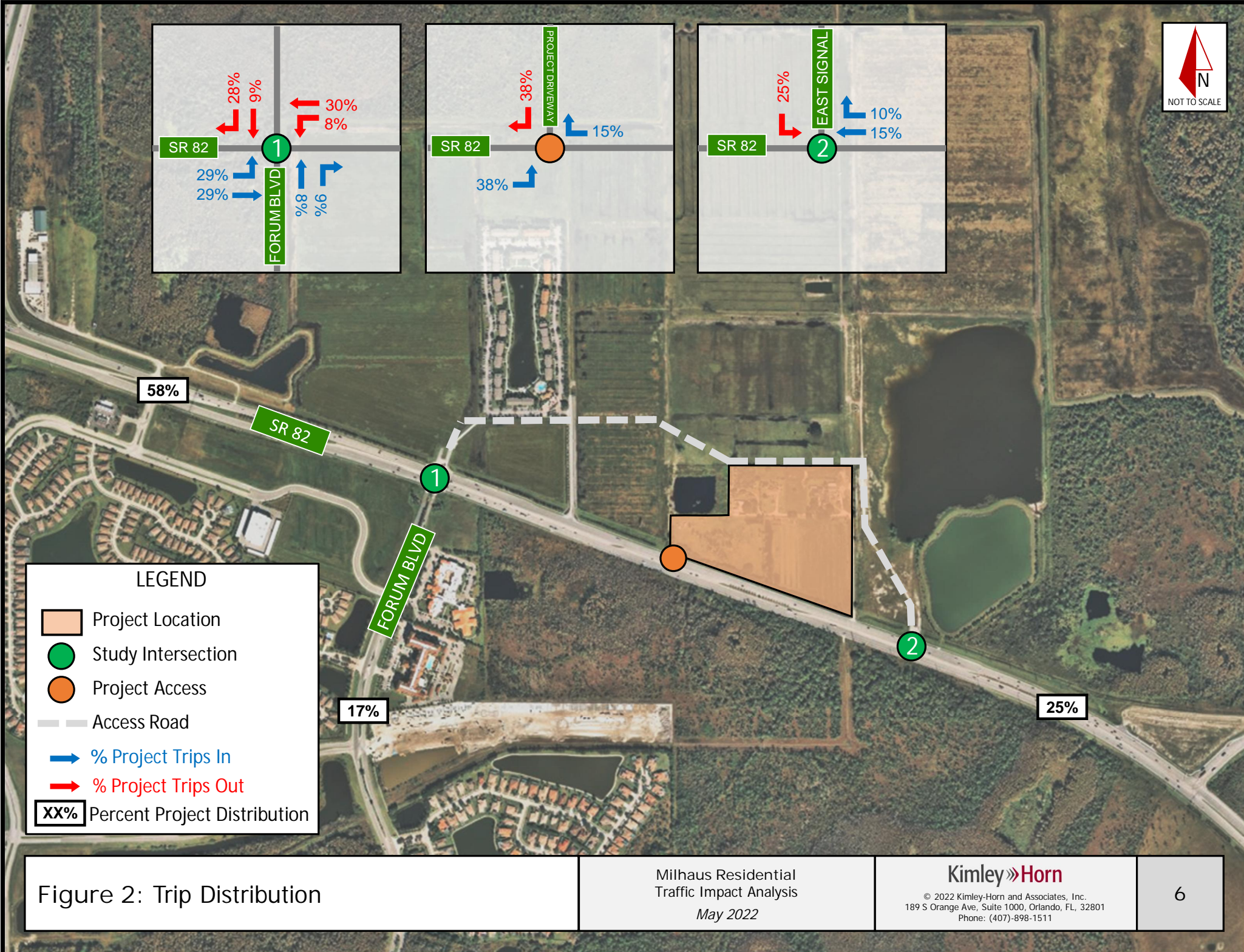
## 2.2 TRIP DISTRIBUTION

Projected traffic patterns on study area facilities were developed using the latest adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the District 1 Regional Planning Model (D1RPM) v2.0 set and situated within the existing roadway network to appropriately represent project access. The model was used to assign trips for all trip purposes between allocated origin and destination pairs using project buildout year model data. Trip distribution for the project was extracted from the completed model assignment and reviewed for logic. The resulting model plot showing the percent of daily project distribution is provided in **Appendix C**.

Daily model project distribution was referenced to manually assign project distribution at the study area intersections in general accordance with daily model output. **Figure 2** shows the intersection movement project distribution within the local operational area for use in forecasting project trips.

## 2.3 TRIP ASSIGNMENT

Project trip distribution percentages were used to assign anticipated project trips to the study area roadways and intersections. **Figures 3** shows the anticipated peak hour project trip assignments at study area intersections during both the AM and PM peak hours.





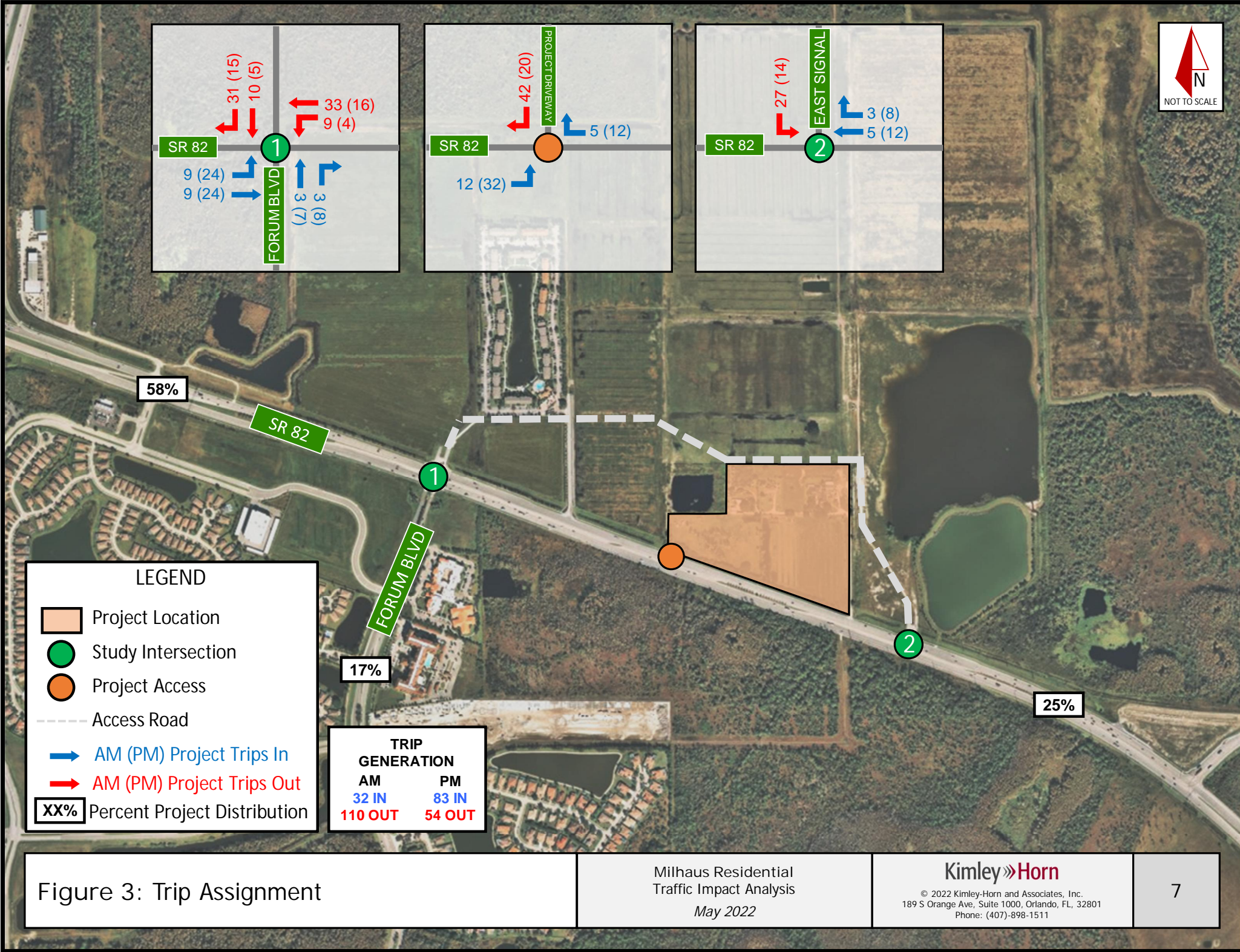


Figure 3: Trip Assignment

## 3.0 INTERSECTION OPERATIONAL ANALYSIS

### 3.1 EXISTING DATA

Turning movement counts (TMCs) were collected at the study intersections on Thursday, November 18, 2021 during the AM peak period (7:00 AM – 9:00 AM) and PM peak period (4:00 PM – 6:00 PM). The raw TMCs are provided in **Appendix D**. All traffic counts were adjusted to account for seasonal volumes using the SR 82 East of I-75 Peak Season Factor Category Report, provided by the Florida Department of Transportation (FDOT). The seasonal factor data is included in **Appendix E**.

Adjusted turning movement volume worksheets for all intersections are provided in **Appendix F**. The signal timing for the existing signalized study intersection was obtained from Lee County and is provided in **Appendix G**.

### 3.2 EXISTING CONDITIONS

An intersection operational analysis was performed for existing conditions during the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6<sup>th</sup> Edition* with Synchro (v11) software. Intersection level of service (LOS) and maximum volume to capacity (v/c) ratios for the AM and PM peak hour existing conditions are provided in **Tables 3 and 4**, respectively. Synchro outputs are provided in **Appendix H**.

As shown in **Tables 3 and 4**, the intersection of SR 82 & Forum Boulevard currently operates with an acceptable overall LOS under existing (2021) AM and PM peak hour conditions, with the exception of the northbound approach during both the AM and PM peak hour. This signal is a part of a coordinated corridor on SR 82 that gives green time prioritization for the major street, SR 82. Although the minor street approach operates with LOS F, it operates with manageable queues and v/c ratios less than one (1.0) during both the AM and PM peak hour.

**Table 3:** Existing (2021) Intersection Conditions Analysis (AM Peak Hour)

Existing Condition - 2021 - AM Peak Hour					
Intersection	Control Type	Approach	AM Peak Hour		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	B	EBR	0.37
		WB	B	WBL/T	0.85
		NB	F	NBL	0.91
		SB	-	-	-
		<b>Overall</b>	<b>C (21.7 s)</b>	<b>NBL</b>	<b>0.91</b>

**Table 4:** Existing (2021) Intersection Conditions (PM Peak Hour)

Existing Condition - 2021 - PM Peak Hour					
Intersection	Control Type	Approach	PM Peak Hour		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	C	EBT	0.77
		WB	B	WBL	0.75
		NB	F	NBR	0.91
		SB	-	-	-
		<b>Overall</b>	<b>C (25.0 s)</b>	<b>NBR</b>	<b>0.91</b>



### 3.3 BACKGROUND CONDITIONS

An intersection operational analysis was performed for background conditions during the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6<sup>th</sup> Edition* with Synchro (v11) software. The existing (2021) volumes were grown to Year 2024 background volumes by applying a growth rate of two percent (2%) over three (3) years. In addition to the 2% growth rate, vested traffic from the Project Rainforest development were included in the background growth. The volume development worksheets are provided in **Appendix F**.

Intersection level of service (LOS) and maximum volume to capacity (v/c) ratios for the AM and PM peak hour background conditions are provided in **Tables 5 and 6**, respectively. Synchro outputs are provided in **Appendix H**.

The study area intersections operate with an acceptable overall LOS in background conditions. The minor street approach at the study intersection of SR 82 and Forum Boulevard continues to operate with LOS F due to the green time prioritization of the major street, SR 82. The minor street approach movements continue to operate with manageable queue lengths and v/c ratios less than one (1.0).

**Table 5:** Background (2024) Intersection Conditions (AM Peak Hour)

Background Condition - 2024 - AM Peak Hour					
Intersection	Control Type	Approach	Without Improvements		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	B	EBL	0.75
		WB	B	WBT	0.86
		NB	E	NBL	0.73
		SB	F	SBR	0.83
		<b>Overall</b>	<b>B (19.4 s)</b>	<b>WBT</b>	<b>0.86</b>
SR 82 & East Project Access	Signalized	EB	A	EBL	0.81
		WB	C	WBT	0.95
		NB	-	-	-
		SB	F	SBL	0.60
		<b>Overall</b>	<b>B (18.4 s)</b>	<b>WBT</b>	<b>0.95</b>

**Table 6:** Background (2024) Intersection Conditions (PM Peak Hour)

Background Condition - 2024 - PM Peak Hour					
Intersection	Control Type	Approach	Without Improvements		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	A	EBL	0.72
		WB	A	WBL	0.88
		NB	F	NBR	0.96
		SB	F	SBR	0.84
		<b>Overall</b>	<b>B (15.1 s)</b>	<b>NBR</b>	<b>0.96</b>
SR 82 & East Project Access	Signalized	EB	B	EBT	0.81
		WB	B	WBT	0.51
		NB	-	-	-
		SB	E	SBL	0.56
		<b>Overall</b>	<b>B (16.6 s)</b>	<b>EBT</b>	<b>0.81</b>

### 3.4 BUILDOUT CONDITIONS

Buildout volumes were developed by adding anticipated project trips to background volumes. A determination of the impact of project traffic on the study area intersections was made. Turning movement volume worksheets for all intersections and driveways are provided in **Appendix F**.

An intersection operational analysis was performed for Year 2024 buildout conditions during the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6<sup>th</sup> Edition* with Synchro (v11) software. Intersection level of service (LOS), delay and maximum volume to capacity (v/c) ratios for the AM and PM peak hour buildout conditions are provided in **Tables 7 and 8**, respectively. Synchro outputs are provided in **Appendix H**.

**Figures 4 and 5** illustrate turning movement buildout volumes at the study intersections for the AM and PM peak hours, respectively.

Under buildout conditions, the following movements operate with a v/c ratio greater than one (1.0):

#### SR 82 & Forum Boulevard

- Southbound Right Movement - AM Peak Hour
- Northbound Right Movement - PM Peak Hour

#### SR 82 & East Project Access

- Southbound Left Movement - AM Peak Hour

To mitigate these deficiencies, minor signal timing adjustments are recommended. With these improvements implemented, the study area intersections operate with an acceptable overall LOS and v/c ratios less than one (1.0). The minor street approaches continue to operate with elevated delay due to the major street green time prioritization in the coordinated system along SR 82. The minor street movements operate with acceptable v/c ratios with the proposed improvements. In addition, the minor movements at the project driveway operate with LOS F during the AM peak hour under buildout conditions. These movements operate with acceptable v/c ratios and minimal queues.

No additional deficiencies are anticipated as a result of project traffic.

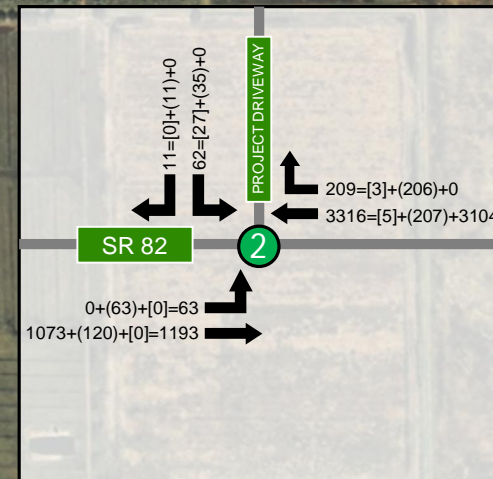
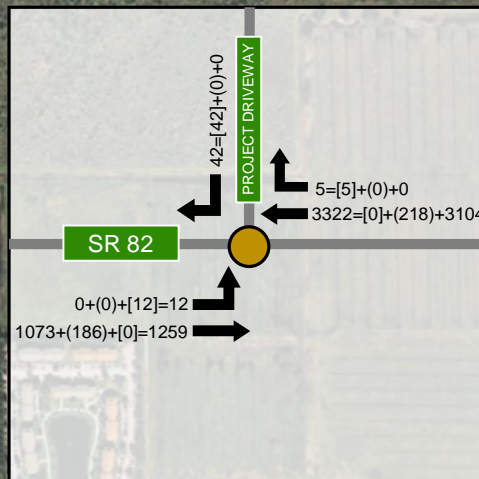
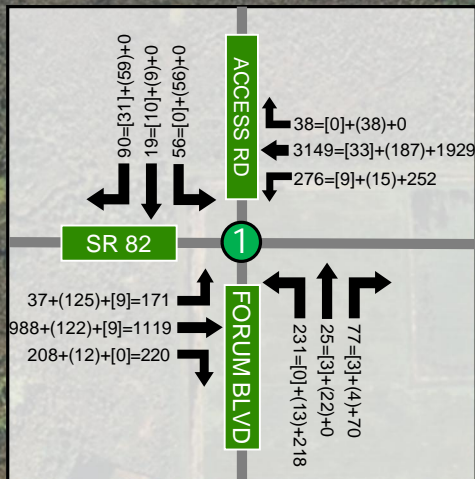
**Table 7: Buildout (2024) Intersection Conditions (AM Peak Hour)**

Buildout Condition - 2024 - AM Peak Hour									
Intersection	Control Type	Approach	AM Peak			Recommended Improvements	With Improvements		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio		Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	B	EBL	0.80	Minor Signal Timing Adjustments	B	EBL	0.80
		WB	B	WBL	0.86		B	WBL	0.86
		NB	E	NBL	0.75		E	NBL	0.78
		SB	F	SBR	1.27		F	SBR	0.90
		Overall	C (23.4 s)	SBR	1.27		C (21.2 s)	SBR	0.90
SR 82 & East Project Access	Signalized	EB	A	EBL	0.81	Minor Signal Timing Adjustments	A	EBL	0.81
		WB	C	WBT	0.95		C	WBT	0.96
		NB	-	-	-		-	-	-
		SB	F	SBL	1.06		F	SBL	0.90
		Overall	C (20.2 s)	SBL	1.06		C (20.7 s)	WBT	0.96
SR 82 & Project Driveway	TWSC	EB	F	EBL	0.73	-	-	-	-
		WB	-	-	-		-	-	-
		NB	-	-	-		-	-	-
		SB	F	SBR	0.79		-	-	-
		Overall	-	SBR	0.79		-	-	-

**Table 8: Buildout (2024) Intersection Conditions (PM Peak Hour)**

Buildout Condition - 2024 - PM Peak Hour									
Intersection	Control Type	Approach	PM Peak			Recommended Improvements	With Improvements		
			Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio		Level of Service (overall delay)	Max V/C Movement	Max V/C Ratio
SR 82 & Forum Blvd	Signalized	EB	A	EBL	0.75	Minor Signal Timing Adjustments	A	EBL	0.75
		WB	A	WBL	0.91		A	WBL	0.91
		NB	F	NBR	1.02		F	NBR	0.99
		SB	F	SBR	0.97		F	SBR	0.97
		Overall	B (17.7 s)	NBR	1.02		B (17.2 s)	NBR	0.99
SR 82 & East Project Access	Signalized	EB	B	EBT	0.81	-	-	-	-
		WB	B	WBT	0.52		-	-	-
		NB	-	-	-		-	-	-
		SB	E	SBL	0.62		-	-	-
		Overall	B (16.8 s)	EBT	0.81		-	-	-
SR 82 & Project Driveway	TWSC	EB	D	EBL	0.21	-	-	-	-
		WB	-	-	-		-	-	-
		NB	-	-	-		-	-	-
		SB	C	SBR	0.09		-	-	-
		Overall	-	EBL	0.21		-	-	-





SR 82

FORUM BLVD

1

2

### LEGEND

- Project Location
- AM Buildout (2024) Volumes
- Study Intersection
- Project Driveway
- Access Road

Buildout Total Traffic = [Project Traffic] + (Background Growth) + Existing

**Figure 4: Buildout Intersection Volumes (2024) – AM Peak Hour**

Milhaus Residential  
Traffic Impact Analysis  
May 2022

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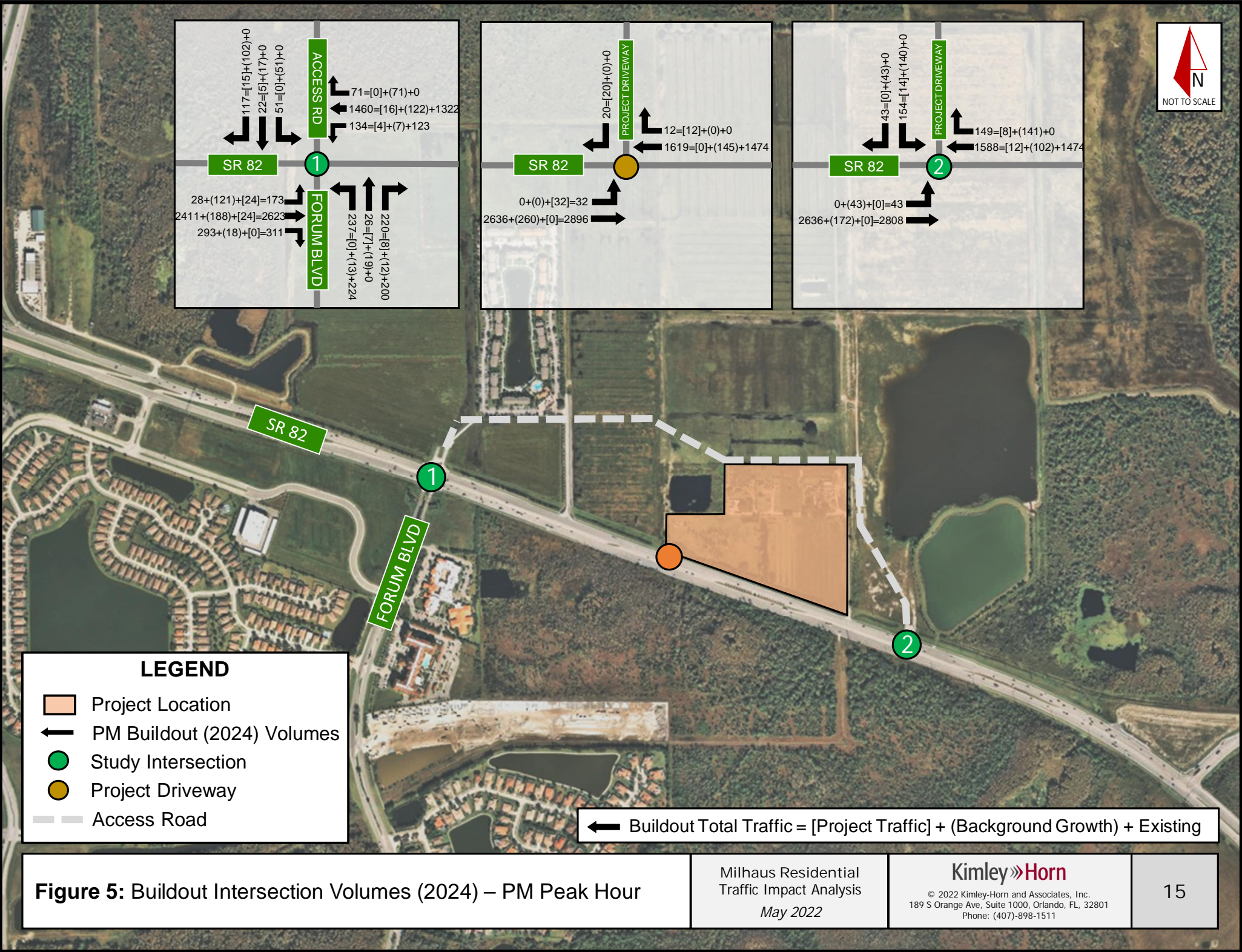


Figure 5: Buildout Intersection Volumes (2024) – PM Peak Hour

### 3.5 BUILDOUT INGRESS TURN LANE ANALYSIS

The existing turn lanes at the study intersections were evaluated to determine if sufficient length, including deceleration and storage, is provided to accommodate buildout project traffic. In addition, requirements from the City of Fort Myers Land Development Code was reviewed to determine if an ingress right-turn lane is warranted at the project driveway.

The total turn lane length is required to accommodate the minimum deceleration required in the 2021 FDOT Design Manual, Exhibit 212-1 and the expected 50<sup>th</sup> percentile queue as calculated using Synchro 11. Additionally, the existing storage length is considered sufficient if the turn lane can accommodate the 95<sup>th</sup> percentile queue length.

A summary of the queue length evaluation is provided in **Table 9** and shows that the existing westbound right-turn lane and existing eastbound left-turn lane at each of the project access points on SR 82 are sufficient to accommodate project traffic upon buildout of Milhaus Residential.

**Table 9: Turn Lane Assessment**

Intersection	Existing Total Turn Lane Length (Ft)	Required Deceleration (Ft) <sup>1</sup>	50th Percentile Queue Length (Ft) <sup>2</sup>	95th Percentile Queue Length (Ft) <sup>2</sup>	Required Total Turn Lane Length (Ft)	Existing Storage Length Sufficient? (Y/N) <sup>3</sup>
SR 82 & East Project Driveway						
Eastbound Left-Turn Lane	765	240	67	154	307	Y
Westbound Right-Turn Lane	445	240	0	27	240	Y
SR 82 & Forum Boulevard						
Eastbound Left-Turn Lane	775	240	93	186	333	Y
Westbound Right-Turn Lane	600	240	0	0	240	Y
SR 82 & Project Driveway						
Eastbound Left-Turn Lane	775	240	0	17	240	Y
Notes: 1. Based on the 2021 FDOT Design Manual. 2. Based on the 50th and 95th percentile back of queue length as reported in Synchro 11. Queue lengths were rounded up to the nearest 25 ft to accommodate for the average length of one vehicle. 3. The existing storage length was determined to be sufficient if the turn lane could accommodate the addition of the required deceleration length and 50th percentile queue length. Additionally, the existing storage length was considered sufficient if the turn lane could accommodate the 95th percentile queue length.						

In addition, the requirements from the City of Fort Myers Land Development Code was reviewed to determine if an ingress right-turn lane is warranted at the project driveway. Per Section 134.5.3 of the City of Fort Myers Code, turn lanes should be provided on state-maintained facilities in accordance with FDOT policies and standards. Per the FDOT Access Management Guidebook, on a roadway with a posted speed limit greater than 45 MPH (speed limit of SR 82 is 50 MPH), more than 35 right turns during the peak hour warrants a right-turn lane.

As shown in **Figures 4 and 5**, 5 vehicles during the AM peak hour and 12 vehicles during the PM peak hour are anticipated to complete the westbound right movement at the project driveway. Therefore, an ingress right-turn lane at the project driveway is not warranted.



## 4.0 ROADWAY SEGMENT ANALYSIS

### 4.1 EXISTING CONDITIONS

A roadway segment analysis was performed within the study area to determine existing AM and PM peak hour conditions. Existing volumes for the segment analysis were determined as the maximum, peak hour directional volume along the segment, as determined from the peak season adjusted turning movement count data from November 2021. This existing volume was then compared to the Maximum Service Volumes (MSV), determined from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.

The existing AM and PM peak hour roadway segment data is included in **Tables 10 and 11** for daily roadway segment conditions. As shown in the table, the analysis identifies the following existing roadway segment capacity deficiencies:

- SR 82 from Forum Boulevard to the Project Site – AM Peak Hour
- SR 82 from the Project Site to Buckingham Road – AM Peak Hour

**Table 10: AM Peak Hour Existing (2021) Roadway Segment Analysis**

Roadway  FromTo		Roadway Attributes <sup>1</sup>			Peak Hour Directional Maximum Service Volume <sup>2</sup>	Existing Peak Season Traffic Conditions			
		Area Type	Number of Lanes	Adopted LOS Standard		Volumes <sup>3</sup>		Maximum V/C Ratio	Level of Service
						NB / EB	SB / WB		
SR 82  Forum Blvd Project Site	Project Site Buckingham Rd	U U	6D 6D	D D	3,020 3,020	1,750 1,075	3,181 3,104	1.05 1.03	F F

Note:

1. The roadway attributes were obtained from the City of Fort Myers Comprehensive Plan.
2. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
3. Existing peak season traffic volumes are based on existing turning movement count data collected in November 2021.

**Table 11: PM Peak Hour Existing (2021) Roadway Segment Analysis**

Roadway  FromTo			Roadway Attributes <sup>1</sup>		Peak Hour Directional Maximum Service Volume <sup>2</sup>	Existing Peak Season Traffic Conditions				
			Area Type	Number of Lanes		Adopted LOS Standard	Volumes <sup>3</sup>		Maximum V/C Ratio	Level of Service
							NB / EB	SB / WB		
SR 82	Forum Blvd	Project Site	U	6D	D	3,020	2,960	1,769	0.98	C
	Project Site	Buckingham Rd	U	6D	D	3,020	2,642	1,474	0.87	C

Note:

1. The roadway attributes were obtained from the City of Fort Myers Comprehensive Plan.
2. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
3. Existing peak season traffic volumes are based on existing turning movement count data collected in November 2021.

## 4.2 BACKGROUND CONDITIONS

A roadway segment analysis was performed within the study area to determine background daily conditions. The existing (2021) PHPD volumes were grown to background (2024) volumes by applying an annual growth rate of 2.00% over three (3) years. In addition, vested trips from the Project Rainforest development were included in the background analysis. This projected background volume was then compared to the PHPD Maximum Service Volumes (MSV) for the respective roadway segment.

The background (2024) roadway segment data is included in **Tables 12 and 13** for peak hour, peak direction roadway segment conditions. As shown in the table, the analysis identifies the following background deficiencies in addition to the existing roadway segment capacity deficiencies:

- SR 82 from the Project Site to Buckingham Road – PM Peak Hour

**Table 12: AM Peak Hour Background (2024) Roadway Segment Analysis**

Roadway FromTo		Peak Hour Directional Maximum Service Volume <sup>1</sup>	Existing Peak Season Traffic Conditions		Applied Growth Rate <sup>3</sup>	Future Background Traffic		Committed Traffic		Future Background Traffic with Committed Trips				
			Volumes <sup>2</sup>			Volumes <sup>4</sup>		Volumes <sup>4</sup>		Volumes <sup>4</sup>		Maximum V/C Ratio	Level of Service	
			NB / EB	SB / WB		NB / EB	SB / WB	NB / EB	SB / WB	NB / EB	SB / WB			
SR 82														
Forum Blvd		Project Site	3,020	1,750	3,181	2.00%	1,855	3,372	173	30	2,028	3,402	1.13	F
Project Site		Buckingham Rd	3,020	1,075	3,104	2.00%	1,140	3,290	39	227	1,179	3,517	1.16	F

Note:

1. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
2. Existing peak season traffic volumes are based on existing turning movement count data collected in November 2021.
3. Use of the FDOT Traffic Trend Analysis tool resulted in a low growth rate; therefore, a conservative 2.00% growth rate was applied.
4. Future background traffic volumes are the summation of the existing peak season volumes and background growth.

**Table 13: PM Peak Hour Background (2024) Roadway Segment Analysis**

Roadway FromTo		Peak Hour Directional Maximum Service Volume <sup>1</sup>	Existing Peak Season Traffic Conditions		Applied Growth Rate <sup>3</sup>	Future Background Traffic		Committed Traffic		Future Background Traffic with Committed Trips				
			Volumes <sup>2</sup>			Volumes <sup>4</sup>		Volumes <sup>4</sup>		Volumes <sup>4</sup>		Maximum V/C Ratio	Level of Service	
			NB / EB	SB / WB		NB / EB	SB / WB	NB / EB	SB / WB	NB / EB	SB / WB			
SR 82 Forum Blvd Project Site		Project Site	3,020	2,960	1,769	2.00%	3,138	1,875	118	117	3,256	1,992	1.08	F
		Buckingham Rd	3,020	2,642	1,474	2.00%	2,801	1,562	154	155	2,955	1,717	0.97	C

Note:

1. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
2. Existing peak season traffic volumes are based on existing turning movement count data collected in November 2021.
3. Use of the FDOT Traffic Trend Analysis tool resulted in a low growth rate; therefore, a conservative 2.00% growth rate was applied.
4. Future background traffic volumes are the summation of the existing peak season volumes and background growth.

## 4.3 BUILDOUT CONDITIONS

A roadway segment analysis was performed within the study area to determine buildout daily conditions. The AM and PM peak hour analysis was conducted by comparing the projected Year 2024 buildout AM and PM peak hour segment volumes to the Maximum Service Volumes (MSV) for each roadway segment.

The buildout roadway segment data is included in **Tables 14 and 15** for AM and PM roadway segment conditions, respectively. As shown in the table, study segment roadways are anticipated to continue to operate similar to background conditions with the addition of project trips (buildout conditions). No roadway segment deficiencies were identified as a result of project traffic.

**Table 14: AM Peak Hour Buildout (2024) Roadway Segment Analysis**

Roadway From	To	Future Background Traffic		AM Peak Hour Project Traffic			2024 Buildout AM Peak Hour Traffic Conditions			
		Volumes <sup>2</sup>		% Assign <sup>3</sup>	NB / EB	SB / WB	Volumes <sup>4</sup>		Maximum V/C Ratio	Level of Service
		NB / EB	SB / WB				NB / EB	SB / WB		
SR 82	Forum Blvd	2,028	3,402	38%	12	42	2,040	3,444	1.14	F
	Project Site	1,179	3,517	25%	28	8	1,207	3,525	1.17	F

Note:

1. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
2. Future background traffic volumes are the summation of the existing peak season volumes and background growth.
3. The percent project traffic is the maximum across the roadway segment
4. Buildout project traffic volumes are the summation of future background traffic and project traffic.

**Table 15: PM Peak Hour Buildout (2024) Roadway Segment Analysis**

Roadway From	To	Future Background Traffic		PM Peak Hour Project Traffic			2024 Buildout PM Peak Hour Traffic Conditions			
		Volumes <sup>2</sup>		% Assign <sup>3</sup>	NB / EB	SB / WB	Volumes <sup>4</sup>		Maximum V/C Ratio	Level of Service
		NB / EB	SB / WB				NB / EB	SB / WB		
SR 82	Forum Blvd	3,256	1,992	38%	32	21	3,288	2,013	1.09	F
	Project Site	2,955	1,717	25%	14	21	2,969	1,738	0.98	C

Note:

1. The peak hour directional service capacity was obtained from the City of Fort Myers Comprehensive Plan and the 2020 FDOT Quality/LOS Handbook.
2. Future background traffic volumes are the summation of the existing peak season volumes and background growth.
3. The percent project traffic is the maximum across the roadway segment
4. Buildout project traffic volumes are the summation of future background traffic and project traffic.



## 5.0 CONCLUSION

Kimley-Horn has been retained to analyze and document the anticipated operations associated with the development of Milhaus Residential in the City of Fort Myers, Florida.

The ±21.42-acre project site is currently vacant and is located on the north side of SR 82, east of its intersection with Forum Boulevard in the City of Fort Myers. There are 3 single family homes on the northern portion of the project site. The proposed development consists of 350 apartment dwelling units. Construction is anticipated to begin in 2023, with a horizon year of 2024. Access to the site will be provided via three access points along SR 82.

The proposed development is anticipated to generate 1,623 new daily trips, 142 new trips during the AM peak hour (32 in, 110 out) and 137 new trips during the PM peak hour (83 in, 54 out) based on the latest ITE Trip Generation Manual. Project trips were distributed onto the surrounding roadway network using the latest adopted regional travel demand model and manual assignment at the study area intersections.

An operational analysis for existing, background, and buildout conditions was performed at intersections within the study area during the AM and PM Peak Hour. Under existing and background conditions, the minor street approaches at the study area intersections operate with high delay. With the addition of project trips, minor street movements at the study area intersection operate with a v/c ratio greater than one (1.0). To mitigate these deficiencies, minor signal timing adjustments are recommended. With these improvements implemented, the study area intersections operate with an acceptable overall LOS and v/c ratios less than one (1.0). The minor street approaches continue to operate with elevated delay due to the major street green time prioritization in the coordinated system along SR 82. Otherwise, no new operational deficiencies were identified at the study area intersections as a result of project traffic.

A roadway segment capacity analysis was performed for the roadway segments in the study area for existing, background, and buildout conditions during both the AM and PM peak hour. The following existing and background roadway segment capacity deficiencies were identified:

- SR 82 from Forum Boulevard to the Project Site – AM/PM Peak Hour
- SR 82 from the Project Site to Buckingham Road – AM Peak Hour

No roadway segment deficiencies were identified as a result of project traffic.

The existing turn lanes at the study intersections were evaluated to determine if sufficient length, including deceleration and storage, is provided to accommodate buildout project traffic. The existing westbound right-turn lane and existing eastbound left-turn lane at each of the project driveways on SR 82 are sufficient in length to accommodate project traffic upon buildout of Milhaus Residential. In addition, the need for an ingress westbound right-turn lane at the project driveway was determined using the City of Fort Myers Land Development Code and FDOT guidelines. From these guidelines, an ingress right-turn lane at the project driveway is not warranted.

# APPENDIX A

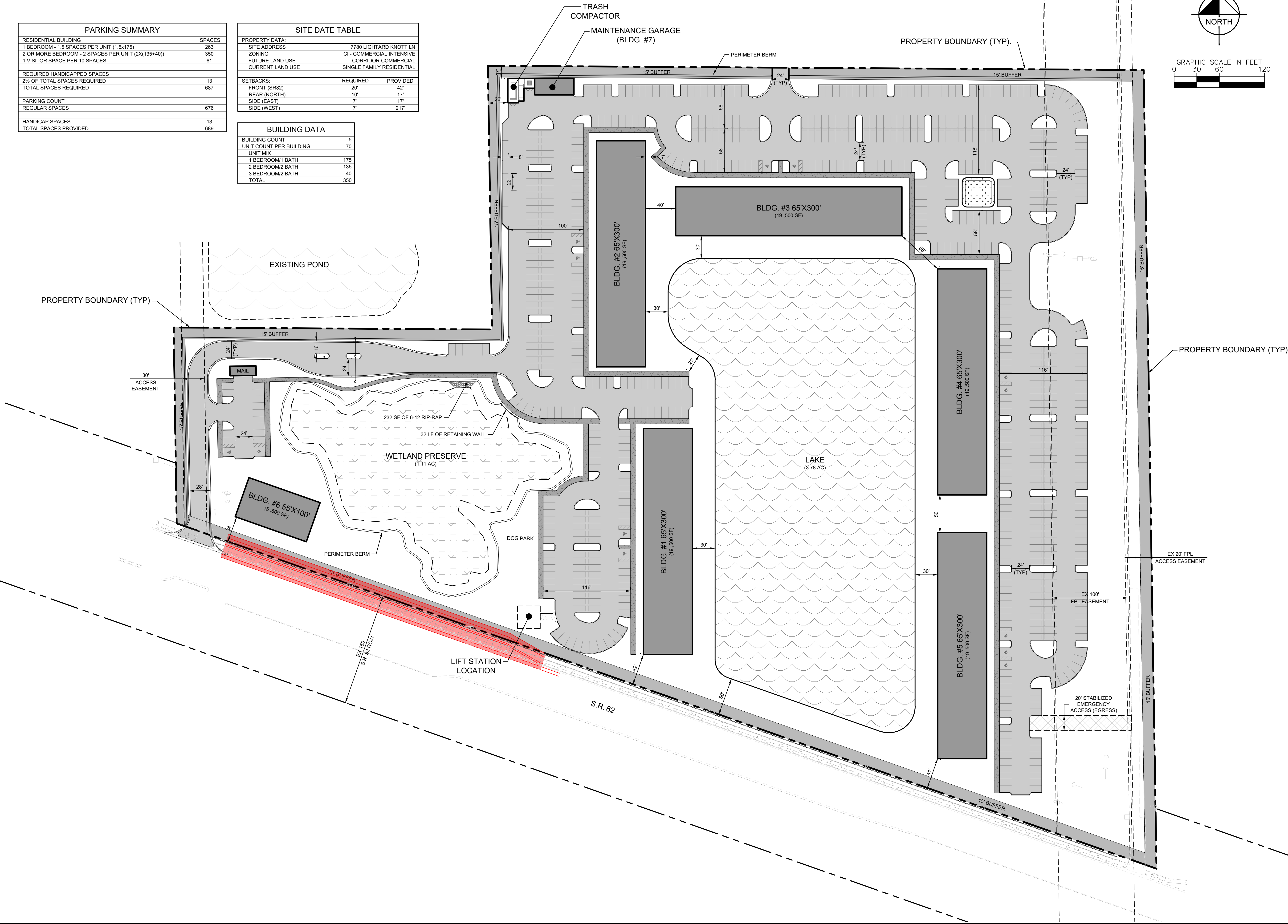
## Site Plan

Plotted By: Cygnio, Joe    Sheet Set: ##    Layout: Layout1    April 12, 2022    08:18:57am    K:\VFM\_Civil\48651002 - Milhaus SR 82 Resoning & Site Planning\Code\Exhibits\E01 - Site Plan\Rev02\148651002E01-Rev02.dwg  
This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

PARKING SUMMARY	
RESIDENTIAL BUILDING	SPACES
1 BEDROOM - 1.5 SPACES PER UNIT (1.5x175)	263
2 OR MORE BEDROOM - 2 SPACES PER UNIT (2X(135+40))	350
1 VISITOR SPACE PER 10 SPACES	61
REQUIRED HANDICAPPED SPACES	
2% OF TOTAL SPACES REQUIRED	13
TOTAL SPACES REQUIRED	687
PARKING COUNT	
REGULAR SPACES	676
HANDICAP SPACES	13
TOTAL SPACES PROVIDED	689

SITE DATE TABLE		
PROPERTY DATA:		
SITE ADDRESS	7780 LIGHTARD KNOTT LN	
ZONING	CI - COMMERCIAL INTENSIVE	
FUTURE LAND USE	CORRIDOR COMMERCIAL	
CURRENT LAND USE	SINGLE FAMILY RESIDENTIAL	
SETBACKS:		
	REQUIRED	PROVIDED
FRONT (SR82)	20'	42'
REAR (NORTH)	10'	17'
SIDE (EAST)	7'	17'
SIDE (WEST)	7'	217'

BUILDING DATA	
BUILDING COUNT	5
UNIT COUNT PER BUILDING	70
UNIT MIX	
1 BEDROOM/1 BATH	175
2 BEDROOM/2 BATH	135
3 BEDROOM/2 BATH	40
TOTAL	350



KHA PROJECT 148651002		DATE MARCH 2022		SCALE AS SHOWN		DESIGNED BY KHA		DRAWN BY KHA		CHECKED BY KHA		REVISIONS		DATE		BY	
PRELIMINARY SITE PLAN		HIGHWAY 82 MULTI-FAMILY DEVELOPMENT, LLC		PREPARED FOR MILHAUS		SHEET NUMBER E-01		1. REVISED PER CLIENT COMMENTS		3/24/22 KHA							

## APPENDIX B

### Approved Methodology Statement

## MEMORANDUM

To: Carl Karakos  
Transportation Engineer, City of Fort Myers

From: James Taylor, P.E.  
Kimley-Horn & Associates, Inc.

Date: April 22, 2022

Subject: SR 82 Multifamily  
Traffic Impact Statement (TIS) Methodology

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### Purpose

The purpose of this memorandum is to document assumptions and methodology to be used in a forthcoming Traffic Impact Statement (TIS) for the above-referenced project. The TIS, which is being conducted to accompany applicable permit applications for the project, will generally conform to the methodology herein and the policies established in the City of Fort Myer's *Land Development Code* Section 134.2.29 – Traffic Impact Statement Guidelines.

The ±21.42-acre project site is currently vacant and is located on the north side of SR 82, east of its intersection with Forum Boulevard in the City of Fort Myers. There are 3 single family homes on the northern portion of the project site. The proposed development consists of 350 apartment dwelling units. A conceptual site plan is included in **Attachment A**. Construction is anticipated to begin in 2023.



## Study Area

The proposed development is expected to generate more than 100 and less than 300 trips during the peak hour, as described in the trip generation section of this memorandum. Per the City of Fort Myer's *Land Development Code* Section 134.2.29 this qualifies the development as a Level II Site Development Plan. Because of this, the study area for the analysis will include all project driveways, external intersections and roadways abutting the development, and roadways significantly impacted by the development. Per the City Code, significant impact occurs when the peak hour, directional net new trips account for 10% or more of the road segment's level of service C service volume.

The analysis to determine the significantly impacted segments can be found in **Table 1**. The following intersections and roadways will be included in the study area, as shown in **Figure 1**:

### Intersections

- SR 82 and Forum Boulevard– Signalized
- SR 82 and Existing, Vacant Full Access Opening– Signalization Planned
- SR 82 and Project Driveway– Directional Median Opening

### Roadways

- SR 82 from Forum Boulevard to the Project Site
- SR 82 from the Project Site to Buckingham Road

**Table 1: Significant Impact Calculation**

Roadway From To		Roadway Attributes				AM Peak Hour Project Traffic			Max % Impact <sup>3</sup>	Include Segment In Area? <sup>4</sup>
		Functional Classification	Area Type	Number of Lanes	LOS C Volume <sup>1</sup>	% Assign <sup>2</sup>	NB / EB	SB / WB		
SR 82										
Ortiz Avenue	I-75	Principal Arterial	U	6D	2,940	31.0%	10	34	1.16%	NO
I-75	Forum Boulevard	Principal Arterial	U	6D	2,940	58.0%	19	64	2.18%	NO
Forum Boulevard	Project Site	Principal Arterial	U	6D	2,940	75.0%	24	83	2.82%	YES
Project Site	Buckingham Road	Principal Arterial	U	6D	2,940	25.0%	28	8	0.95%	YES
Buckingham Road	Lee Boulevard	Principal Arterial	U	6D	2,940	20.0%	22	6	0.75%	NO
Forum Boulevard										
SR 82	Colonial Boulevard	Urban Collector	U	4D	1,719	17.0%	5	19	1.11%	NO
Buckingham Road										
SR 82	Alvin Ave	Urban Collector	U	2U	747	5.0%	6	2	0.80%	NO
Alvin Ave	Gunnery Road	Urban Collector	U	2U	747	3.0%	3	1	0.40%	NO
Lee Boulevard										
SR 82	Gunnery Road	Urban Collector	U	6D	2,646	7.0%	8	2	0.30%	NO

**Notes:**

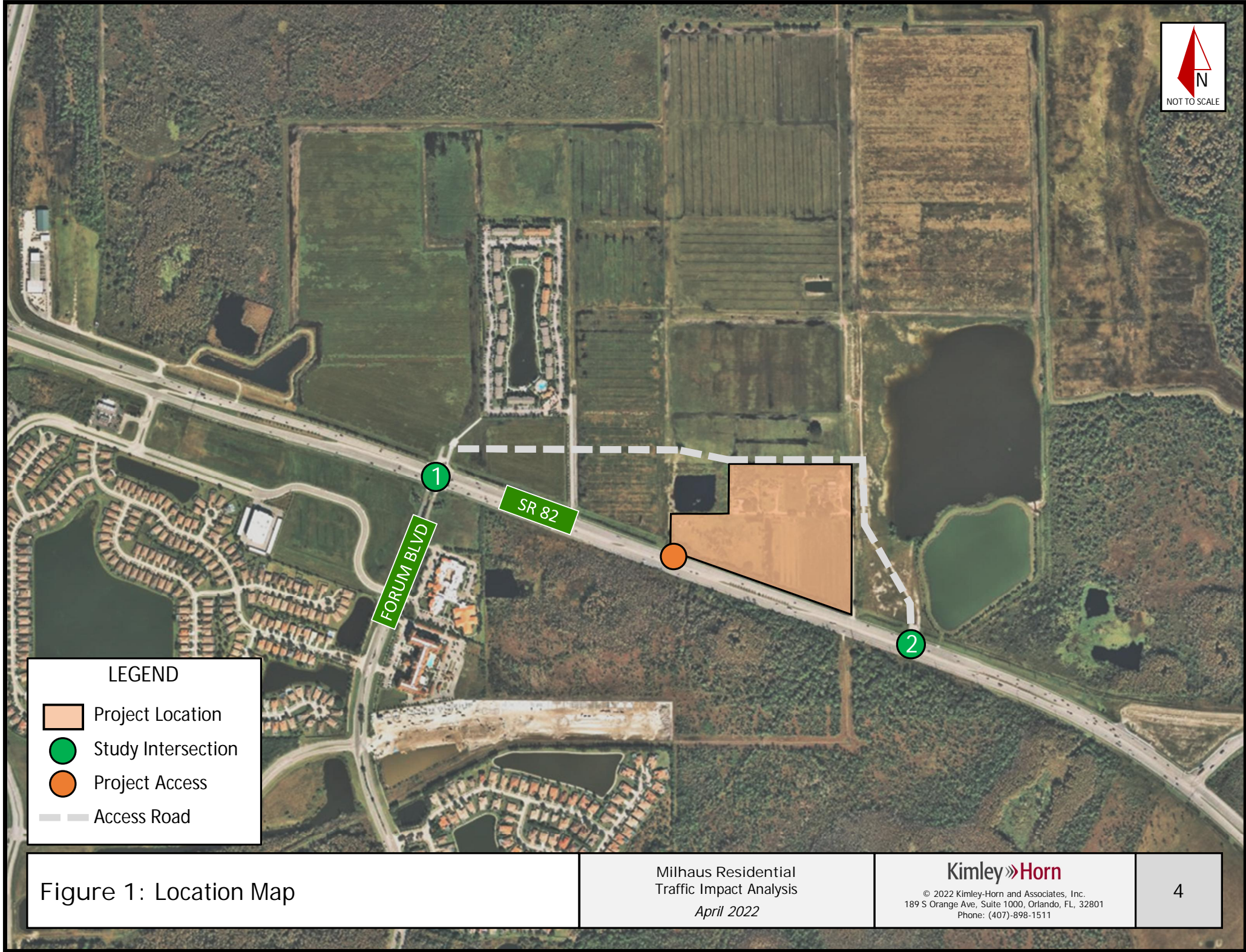
1. Level of Service C service volume was determined from the 2020 FDOT Quality/LOS Tables.

2. Percent project traffic assignment was calculated as the maximum across the segment.

3. Percent impact was calculated as the maximum PM peak hour directional project traffic divided by the directional service volume.

4. In accordance with City of Fort Myers guidelines, the minimum threshold for significance was at least 10% impact of the road segment's LOS C service volume. In addition, adjacent roadway links are included in the study area.





LEGEND





-  Project Location
-  Study Intersection
-  Project Access
-  Access Road

Figure 1: Location Map



## Data Collection

Per the City of Fort Myers *Requirements for Detailed Traffic Impact Analysis*, all data must be field collected. Therefore, AM (7:00–9:00 AM) and PM (4:00–6:00 PM) peak period turning movement counts will be collected at existing study area intersections for the intersection analysis. All traffic counts will be adjusted to account for seasonal volumes using the SR 82 East of I-75 Peak Season Factor Category Report, provided by the Florida Department of Transportation (FDOT). This report is included in **Attachment B**. The date the traffic counts are collected will determine the specific seasonal factor. This adjusted data will also be used to determine the peak hour, peak direction (PHPD) traffic volume for the roadway segment analysis.

## Trip Generation

For the proposed multifamily development, 11<sup>th</sup> Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* was reviewed for available Land Use Code (LUC) that may coincide with the proposed use. LUC 221, Multifamily Housing (Mid-Rise) was used.

The Daily, AM, and PM peak hour trip generation summary for the project is shown in **Table 2**. As shown in the table, the development is anticipated to generate 1,623 new daily trips, 142 new trips during the AM peak hour (32 in, 110 out) and 137 new trips during the PM peak hour (83 in, 54 out).

**Table 2:** Trip Generation Summary

Daily	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	Daily Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	4.64	1,623	50%	811	50%	812
	Total Generated Trips					1,623	811		812	
AM Peak Hour	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	AM Peak Hour Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	0.41	142	23%	32	77%	110
	Total Generated Trips					142	32		110	
PM Peak Hour	Land Use	ITE LUC	Size	Units	ITE Trip Rate <sup>1</sup>	PM Peak Hour Trip Generation				
						Total	In <sup>1</sup>		Out <sup>1</sup>	
	Multifamily Housing (Mid-Rise)	221	350	DU	0.39	137	61%	83	39%	54
	Total Generated Trips					137	83		54	

Notes: <sup>1</sup> Vehicle trip rates and directional splits per data and procedures outlined in ITE Trip Generation Manual, 11th Edition

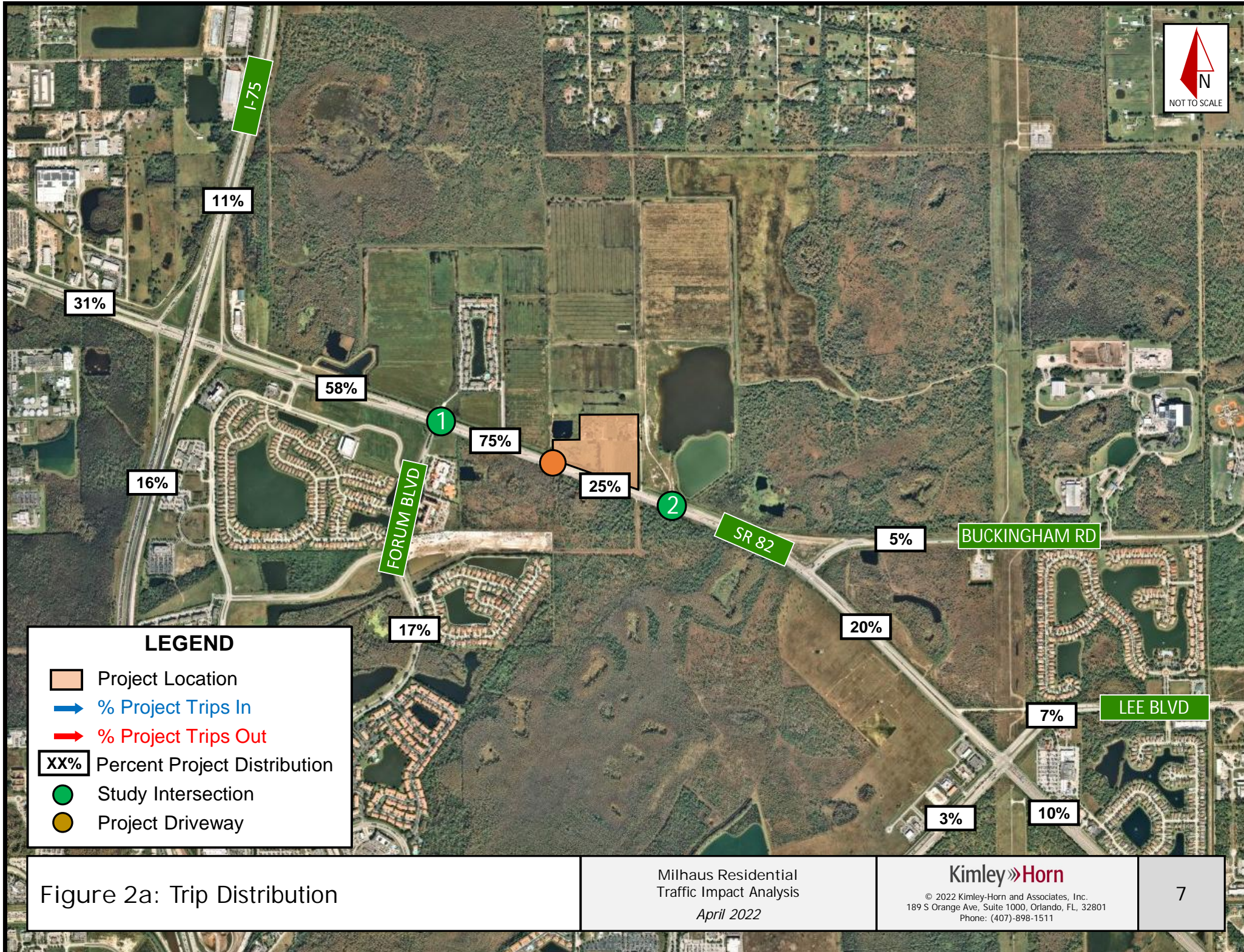


**Trip Distribution**

The distribution of project traffic was performed using the Florida Standard Urban Transportation Model Structure (FSUTMS). Land use data for the project was entered into a new traffic analysis zone (TAZ) within the FDOT District One Regional Planning Model (D1RPM) set and situated within the existing roadway network to appropriately represent project access. The resulting model outputs showing the distribution, as a percent, of daily project trips are provided in **Attachment C**.

**Figure 2** displays the anticipated general trip distribution in the study area. The project trips will be manually distributed and assigned at study area intersections and driveways as part of the Traffic Impact Statement.







### **Background Growth Rate**

Background traffic volumes will be forecasted to the study horizon year (2024) for the proposed development by applying an annual growth rate to existing count data. The compounded annual growth was calculated using FDOT's Traffic Trend Analysis Tool and annual traffic count data from the Lee County Traffic Count Database System and resulted in a low growth rate. Because of this, a conservative 2% growth rate was applied to determine volumes for the buildout year. **Attachment D** provides the growth trend calculation worksheet.

Committed trips from the adjacent industrial development, Project Rainforest, will be included in the background traffic volumes forecast.

### **Operational Analysis**

Operational analyses will be conducted for the AM and PM peak hours at the study intersections. Intersection analyses will be performed using procedures outlined in the Highway Capacity Manual 6<sup>th</sup> Edition with Synchro (v11) software.

Operational analyses will be conducted for existing (2022), background (2024), and buildout (2024) conditions. AM and PM peak hour existing traffic volumes will be obtained using the adjusted intersection turning movement count data. Background traffic volumes will be derived by applying the annual growth rate to the existing traffic volumes and adding vested trips. Buildout traffic conditions will be developed by adding anticipated project trips to the background volumes. If intersection deficiencies are identified, strategies and improvements will be developed as mitigation measures.

### **Roadway Segment Analysis**

A roadway segment analysis will be conducted for the roadways within the study area. These roadways will be evaluated to determine the LOS and capacity based on existing (2022), background (2024), and buildout (2024) conditions for the AM and PM peak hour, peak direction. Roadway segment volumes will be developed for the three scenarios using the same procedure as outline above.

### **Turn Lane Analysis**

Based on the Lee County *Traffic Impact Statement Guidelines for Development Orders*, an analysis to determine if turn lanes, traffic signals, or other site related improvements will be required at the project's access points. Turn lanes, if warranted, shall include and enhance turning, acceleration, deceleration and/or storage movements of vehicles as required by Lee County Land Development Code (LDC) and/or the Lee County Turn Lane Policy (Administrative Code 11-4).

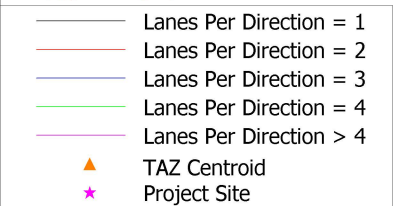
### **Documentation**

All analyses and findings will be documented in a report to be provided to the City of Fort Myers for review.

## APPENDIX C

### D1RPM Model Plot



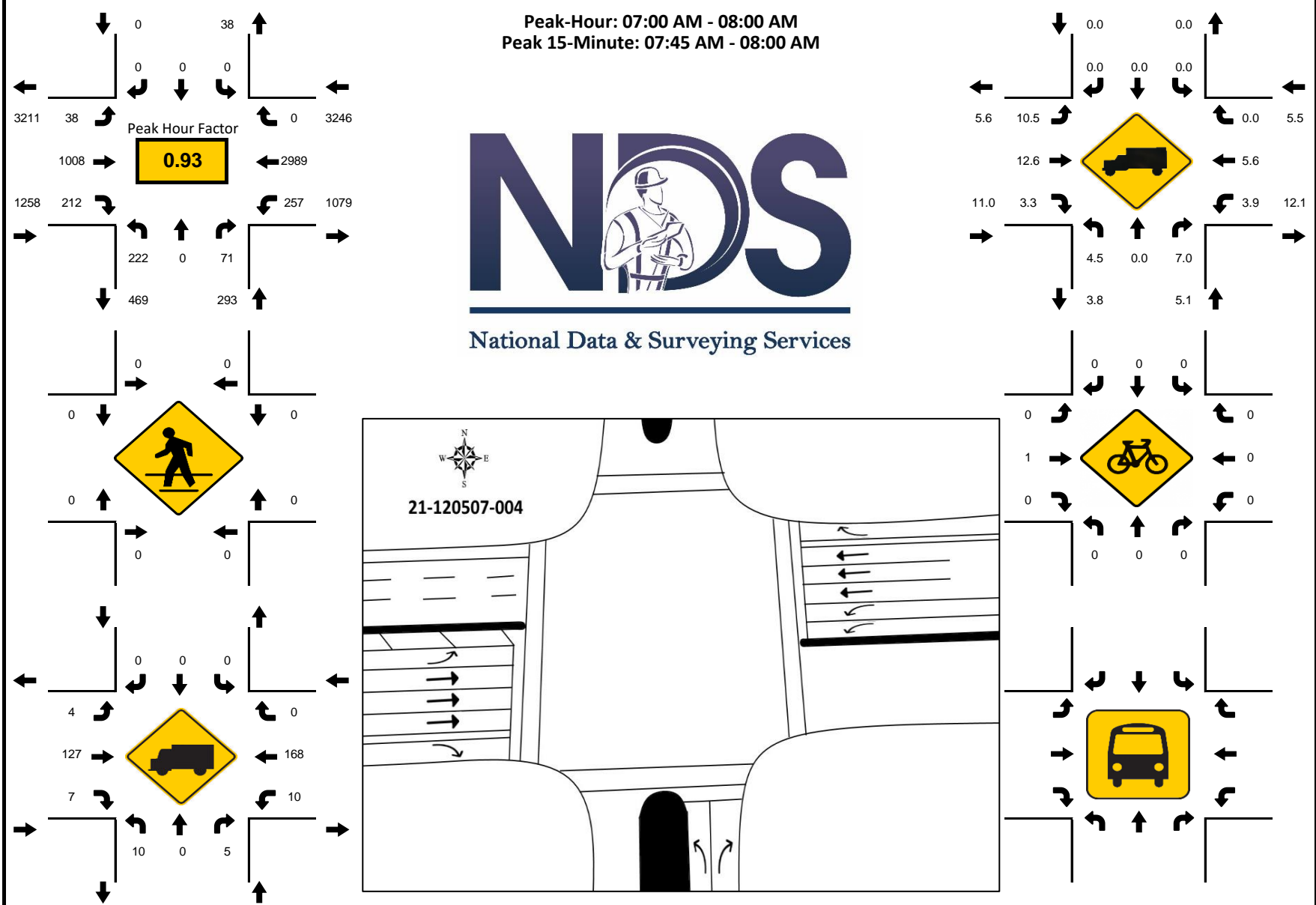


C:\FSUTMS\D1\D1RPM\_v2.0\D1RPMv2.0\_1-29-21\YR2015\YR2023EC\SR82MF\_23\HWYLOAD\_23A.NET

## APPENDIX D

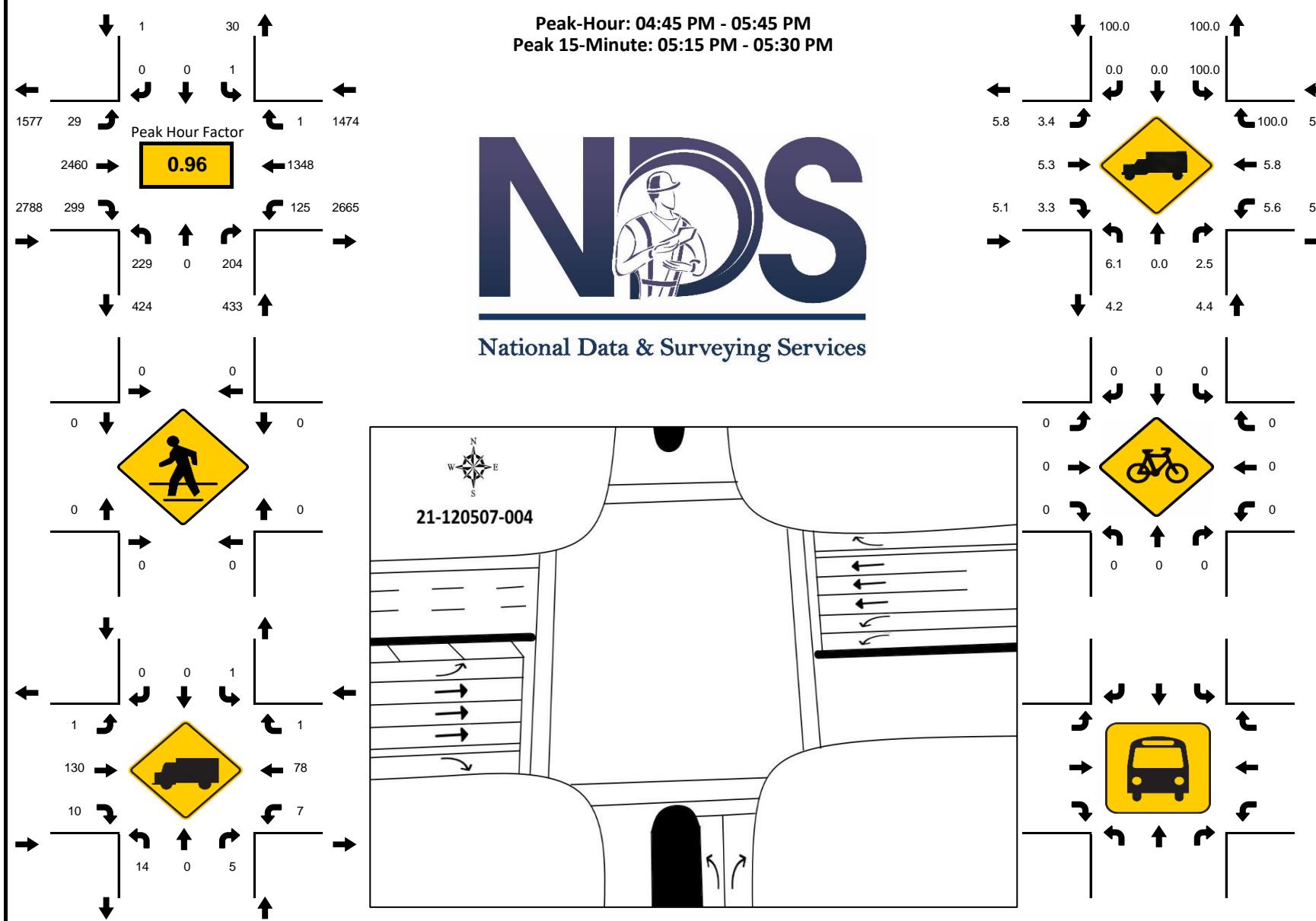
### Turning Movement Counts

**PROJECT ID:** 21-120507-004  
**DATE:** Thu, Nov 18, 2021

[illegible]



**PROJECT ID:** 21-120507-004  
**DATE:** Thu, Nov 18, 2021

[illegible]

## APPENDIX E

### FDOT's Florida Traffic Online (FTO) Data

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 1208 SR 82, E OF I-75

WEEK	DATES	SF	MOCF: 0.89 PSCF
1	01/01/2020 - 01/04/2020	0.00	0.00
2	01/05/2020 - 01/11/2020	0.00	0.00
* 3	01/12/2020 - 01/18/2020	0.83	0.93
* 4	01/19/2020 - 01/25/2020	0.82	0.92
* 5	01/26/2020 - 02/01/2020	0.81	0.91
* 6	02/02/2020 - 02/08/2020	0.79	0.89
* 7	02/09/2020 - 02/15/2020	0.78	0.88
* 8	02/16/2020 - 02/22/2020	0.81	0.91
* 9	02/23/2020 - 02/29/2020	0.84	0.94
*10	03/01/2020 - 03/07/2020	0.86	0.97
*11	03/08/2020 - 03/14/2020	0.89	1.00
*12	03/15/2020 - 03/21/2020	0.92	1.03
*13	03/22/2020 - 03/28/2020	1.00	1.12
*14	03/29/2020 - 04/04/2020	1.08	1.21
*15	04/05/2020 - 04/11/2020	1.15	1.29
16	04/12/2020 - 04/18/2020	1.23	1.38
17	04/19/2020 - 04/25/2020	1.20	1.35
18	04/26/2020 - 05/02/2020	1.17	1.31
19	05/03/2020 - 05/09/2020	1.13	1.27
20	05/10/2020 - 05/16/2020	1.10	1.24
21	05/17/2020 - 05/23/2020	1.12	1.26
22	05/24/2020 - 05/30/2020	1.14	1.28
23	05/31/2020 - 06/06/2020	1.15	1.29
24	06/07/2020 - 06/13/2020	1.17	1.31
25	06/14/2020 - 06/20/2020	1.19	1.34
26	06/21/2020 - 06/27/2020	1.20	1.35
27	06/28/2020 - 07/04/2020	1.20	1.35
28	07/05/2020 - 07/11/2020	1.21	1.36
29	07/12/2020 - 07/18/2020	1.21	1.36
30	07/19/2020 - 07/25/2020	1.19	1.34
31	07/26/2020 - 08/01/2020	1.18	1.33
32	08/02/2020 - 08/08/2020	1.16	1.30
33	08/09/2020 - 08/15/2020	1.15	1.29
34	08/16/2020 - 08/22/2020	1.13	1.27
35	08/23/2020 - 08/29/2020	1.12	1.26
36	08/30/2020 - 09/05/2020	1.10	1.24
37	09/06/2020 - 09/12/2020	1.08	1.21
38	09/13/2020 - 09/19/2020	1.07	1.20
39	09/20/2020 - 09/26/2020	1.05	1.18
40	09/27/2020 - 10/03/2020	1.04	1.17
41	10/04/2020 - 10/10/2020	1.02	1.15
42	10/11/2020 - 10/17/2020	1.00	1.12
43	10/18/2020 - 10/24/2020	0.99	1.11
44	10/25/2020 - 10/31/2020	0.97	1.09
45	11/01/2020 - 11/07/2020	0.96	1.08
46	11/08/2020 - 11/14/2020	0.94	1.06
47	11/15/2020 - 11/21/2020	0.93	1.04
48	11/22/2020 - 11/28/2020	0.91	1.02
49	11/29/2020 - 12/05/2020	0.89	1.00
50	12/06/2020 - 12/12/2020	0.88	0.99
51	12/13/2020 - 12/19/2020	0.86	0.97
52	12/20/2020 - 12/26/2020	0.85	0.96
53	12/27/2020 - 12/31/2020	0.83	0.93

\* PEAK SEASON

27-FEB-2021 10:29:54

830UPD

1\_1208\_PKSEASON.TXT



## APPENDIX F

### Turning Movement Volume Worksheets

INTERSECTION VOLUME DEVELOPMENT  
Forum Boulevard @ SR 82  
AM Peak Hour

Case	Forum Boulevard Northbound			West Project Access Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	222	0	71	0	0	0	38	1,008	212	257	2,989	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	218	0	70	0	0	0	37	988	208	252	2,929	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	22	0	56	9	59	123	63	0	0	11	38
2024 Peak Season Volumes	231	22	74	56	9	59	162	1,110	220	267	3,116	38
Project Assignment	0.0%	8.0%	9.0%	0.0%	9.0%	28.0%	29.0%	29.0%	0.0%	8.0%	30.0%	0.0%
	--	IN	IN	--	OUT	OUT	IN	IN	--	OUT	OUT	--
Project Traffic (Net New Trips)	0	3	3	0	10	31	9	9	0	9	33	0
Total Build-Out Volumes	231	25	77	56	19	90	171	1,119	220	276	3,149	38

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06

INTERSECTION VOLUME DEVELOPMENT  
East Project Access @ SR 82  
AM Peak Hour

Case	- Northbound			East Project Access Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	0	0	0	0	0	0	0	1,095	0	0	3,167	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	0	0	0	0	0	0	0	1,073	0	0	3,104	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	0	0	35	0	11	63	4	0	0	21	206
2024 Peak Season Volumes	0	0	0	35	0	11	63	1,141	0	0	3,311	206
Project Assignment	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.0%	10.0%
	--	--	--	OUT	--	--	--	--	--	--	IN	IN
Project Traffic (Net New Trips)	0	0	0	27	0	0	0	0	0	0	5	3
Total Build-Out Volumes	0	0	0	62	0	11	63	1,141	0	0	3,316	209

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06



INTERSECTION VOLUME DEVELOPMENT  
Project Driveway @ SR 82  
AM Peak Hour

Case	- Northbound			Project Driveway Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	0	0	0	0	0	0	0	1,095	0	0	3,167	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	0	0	0	0	0	0	0	1,073	0	0	3,104	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	0	0	0	0	0	0	122	0	0	32	0
2024 Peak Season Volumes	0	0	0	0	0	0	0	1,259	0	0	3,322	0
Project Assignment	0.0%	0.0%	0.0%	0.0%	0.0%	38.0%	38.0%	0.0%	0.0%	0.0%	0.0%	15.0%
	--	--	--	--	--	OUT	IN	--	--	--	--	IN
Project Traffic (Net New Trips)	0	0	0	0	0	42	12	0	0	0	0	5
Total Build-Out Volumes	0	0	0	0	0	42	12	1,259	0	0	3,322	5

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06

INTERSECTION VOLUME DEVELOPMENT  
Forum Boulevard @ SR 82  
PM Peak Hour

Case	Forum Boulevard Northbound			West Project Access Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	229	0	204	0	0	0	29	2,460	299	125	1,349	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	224	0	200	0	0	0	28	2,411	293	123	1,322	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	19	0	51	17	102	119	43	0	0	43	71
2024 Peak Season Volumes	237	19	212	51	17	102	149	2,599	311	130	1,444	71
Project Assignment	0.0%	8.0%	9.0%	0.0%	9.0%	28.0%	29.0%	29.0%	0.0%	8.0%	30.0%	0.0%
	--	IN	IN	--	OUT	OUT	IN	IN	--	OUT	OUT	--
Project Traffic (Net New Trips)	0	7	8	0	5	15	24	24	0	4	16	0
Total Build-Out Volumes	237	26	220	51	22	117	173	2,623	311	134	1,460	71

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06

INTERSECTION VOLUME DEVELOPMENT  
East Project Access @ SR 82  
PM Peak Hour

Case	- Northbound			East Project Access Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	0	0	0	0	0	0	0	2,690	0	0	1,504	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	0	0	0	0	0	0	0	2,636	0	0	1,474	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	0	0	140	0	43	43	14	0	0	14	141
2024 Peak Season Volumes	0	0	0	140	0	43	43	2,808	0	0	1,576	141
Project Assignment	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.0%	10.0%
	--	--	--	OUT	--	--	--	--	--	--	IN	IN
Project Traffic (Net New Trips)	0	0	0	14	0	0	0	0	0	0	12	8
Total Build-Out Volumes	0	0	0	154	0	43	43	2,808	0	0	1,588	149

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06

INTERSECTION VOLUME DEVELOPMENT  
Project Driveway @ SR 82  
PM Peak Hour

Case	- Northbound			Project Driveway Southbound			SR 82 Eastbound			SR 82 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11/18/21 Observed Volumes	0	0	0	0	0	0	0	2,690	0	0	1,504	0
Peak Season Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
2021 Peak Season Volumes	0	0	0	0	0	0	0	2,636	0	0	1,474	0
Growth Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Vested Traffic: Project Rainforest	0	0	0	0	0	0	0	102	0	0	57	0
2024 Peak Season Volumes	0	0	0	0	0	0	0	2,896	0	0	1,619	0
Project Assignment	0.0%	0.0%	0.0%	0.0%	0.0%	38.0%	38.0%	0.0%	0.0%	0.0%	0.0%	15.0%
	--	--	--	--	--	OUT	IN	--	--	--	--	IN
Project Traffic (Net New Trips)	0	0	0	0	0	20	32	0	0	0	0	12
Total Build-Out Volumes	0	0	0	0	0	20	32	2,896	0	0	1,619	12

Raw-To-Peak Season Factor: 0.98  
Applied Growth Rate: 2.00%  
Existing Year: 2021  
Build-Out Year: 2024  
Growth Factor: 1.06



## APPENDIX G

### Signal Timings

## Lee County, FL



MOVING TRAFFIC FORWARD

## 4205 - MLK (SR 82) &amp; Forum - - Econolite Type - ASC/3

## Controller Timing Plan (MM) 2-1

## Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	EBLT	WB		NB	WBLT	EB										
Min Green	5	20	0	10	5	20	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	26	0	37	0	31	0	37	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	5.0	0.0	2.0	2.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	20	60	0	30	20	60	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.2	5.2	3.0	4.9	5.2	5.2	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clear	2.0	2.6	2.0	3.0	3.0	2.2	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
---------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

## Lee County, FL



MOVING TRAFFIC FORWARD

4205 - MLK (SR 82) &amp; Forum - - Econolite Type - ASC/3

## Coordination Pattern Data

## Coordinator Pattern Data (MM) 3-2

## Coordinator Pattern # 11

Split Pattern	11	TS2 (Pat-Off)	3-2	Splits In	Percent
Cycle	150	Std (COS)	0	Offsets In	Percent
Offset Value	0%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk	No	Sequence	1		
Rest					
Phase	No	Action Plan	11		
Reservice					
Max Select	MAXINH	Force Off	Fixed		

## Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	EBLT	WB		NB	WBLT	EB										
Splits (Split Pat 11)	11	67	0	22	17	60	0	22	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	99%	0%	0%

## Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

## Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																



**Coordinator Pattern # 12**

Split Pattern	12	TS2 (Pat-Off)	3-3	Splits In	Percent
Cycle	120	Std (COS)	81	Offsets In	Percent
Offset Value	39%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	5		
Phase					
Reservice	No	Action Plan	12		
Max Select	MAXINH	Force Off	Fixed		

**Split Preference Phases**

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	EBLT	WB		NB	WBLT	EB										
Splits (Split Pat 12)	13	59	0	28	18	54	0	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

**Misc. Data**

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

**Split Pattern**

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

**Coordinator Pattern # 13**

Split Pattern	13	TS2 (Pat-Off)	4-1	Splits In	Percent
Cycle	160	Std (COS)	9	Offsets In	Percent
Offset Value	25%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	5		
Phase					
Reservice	No	Action Plan	13		

Max Select      None      Force Off      Fixed

### Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	EBLT	WB		NB	WBLT	EB										
Splits (Split Pat 13)	10	68	0	22	13	65	0	22	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

### Misc. Data

Veh Perm 1    0    Veh Perm 2    0    Veh Perm 2 Disp    0  
 Split Demand    0    Split Demand    0    Crossing Arterial    0  
 Pat 1                      Pat 2                      Pat

### Split Pattern















Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

## APPENDIX H

### Synchro Outputs

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Existing  
AM Peak Hour

							
Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	37	988	208	252	2929	218	70
Future Volume (vph)	37	988	208	252	2929	218	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	705		1000	1000		0	0
Storage Lanes	1		1	2		1	1
Taper Length (ft)	25			25		25	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00
Frt			0.850				0.850
Flt Protected	0.950			0.950		0.950	
Satd. Flow (prot)	1626	4673	1455	3303	4893	1719	1538
Flt Permitted	0.950			0.950		0.950	
Satd. Flow (perm)	1626	4673	1455	3303	4893	1719	1538
Right Turn on Red			Yes				Yes
Satd. Flow (RTOR)			224				75
Link Speed (mph)		50			50	45	
Link Distance (ft)		2030			5681	1130	
Travel Time (s)		27.7			77.5	17.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	11%	11%	6%	6%	5%	5%
Adj. Flow (vph)	40	1062	224	271	3149	234	75
Shared Lane Traffic (%)							
Lane Group Flow (vph)	40	1062	224	271	3149	234	75
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	Left	Left	Left	Right
Median Width(ft)		24			24	12	
Link Offset(ft)		0			0	0	
Crosswalk Width(ft)		16			16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		9	15		15	9
Number of Detectors	1	2	1	1	2	1	1
Detector Template	Left	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94		
Detector 2 Size(ft)		6			6		
Detector 2 Type		Cl+Ex			Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)		0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	1	6		5	2	4	



Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Existing  
AM Peak Hour



Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			6				4
Detector Phase	1	6	6	5	2	4	4
Switch Phase							
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	10.0	10.0
Minimum Split (s)	12.2	27.4	27.4	13.2	27.8	25.9	25.9
Total Split (s)	16.0	90.0	90.0	26.0	100.0	34.0	34.0
Total Split (%)	10.7%	60.0%	60.0%	17.3%	66.7%	22.7%	22.7%
Maximum Green (s)	8.8	82.6	82.6	17.8	92.2	26.1	26.1
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	4.9	4.9
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.9	7.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0
Act Effect Green (s)	7.9	86.3	86.3	16.3	97.9	23.8	23.8
Actuated g/C Ratio	0.05	0.58	0.58	0.11	0.65	0.16	0.16
v/c Ratio	0.47	0.39	0.24	0.75	0.99	0.86	0.24
Control Delay	58.9	28.6	11.9	73.5	23.2	88.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	28.6	11.9	73.5	23.2	88.7	12.6
LOS	E	C	B	E	C	F	B
Approach Delay		26.7			27.2	70.2	
Approach LOS		C			C	E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 29.7

Intersection LOS: C

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82



# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

Existing  
AM Peak Hour



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	⇐	⇑⇑⇑	⇑	⇑⇑	⇑⇑⇑	⇑	⇑
Traffic Volume (veh/h)	37	988	208	252	2929	218	70
Future Volume (veh/h)	37	988	208	252	2929	218	70
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)			1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1737	1737	1811	1811	1826	1826
Adj Flow Rate, veh/h		1062	224	271	3149	234	75
Peak Hour Factor		0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		11	11	6	6	5	5
Cap, veh/h		2832	879	319	3694	258	229
Arrive On Green		0.60	0.60	0.10	0.75	0.15	0.15
Sat Flow, veh/h		4898	1472	3346	5107	1739	1547
Grp Volume(v), veh/h		1062	224	271	3149	234	75
Grp Sat Flow(s),veh/h/ln		1581	1472	1673	1648	1739	1547
Q Serve(g_s), s		17.4	10.8	12.0	66.5	19.9	6.5
Cycle Q Clear(g_c), s		17.4	10.8	12.0	66.5	19.9	6.5
Prop In Lane			1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		2832	879	319	3694	258	229
V/C Ratio(X)		0.37	0.25	0.85	0.85	0.91	0.33
Avail Cap(c_a), veh/h		2832	879	397	3694	303	269
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.26	0.26	1.00	1.00
Uniform Delay (d), s/veh		15.7	14.3	66.8	13.2	62.9	57.2
Incr Delay (d2), s/veh		0.4	0.7	4.0	0.7	26.9	0.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.0	3.6	5.2	19.8	10.6	5.8
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		16.1	15.0	70.8	13.9	89.8	58.0
LnGrp LOS		B	B	E	B	F	E
Approach Vol, veh/h		1286			3420	309	
Approach Delay, s/veh		15.9			18.4	82.1	
Approach LOS		B			B	F	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		119.9		30.1	22.5	97.4	
Change Period (Y+Rc), s		* 7.8		7.9	8.2	* 7.8	
Max Green Setting (Gmax), s		* 92		26.1	17.8	* 83	
Max Q Clear Time (g_c+I1), s		68.5		21.9	14.0	19.4	
Green Ext Time (p_c), s		22.0		0.4	0.3	9.7	
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			21.7				
HCM 6th LOS			C				




















### Notes

User approved ignoring U-Turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Existing  
PM Peak Hour

							
Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		  		 	  		
Traffic Volume (vph)	28	2411	293	123	1322	224	200
Future Volume (vph)	28	2411	293	123	1322	224	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	705		1000	1000		0	0
Storage Lanes	1		1	2		1	1
Taper Length (ft)	25			25		25	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00
Frt			0.850				0.850
Flt Protected	0.950			0.950		0.950	
Satd. Flow (prot)	1719	4940	1538	3303	4893	1736	1553
Flt Permitted	0.950			0.950		0.950	
Satd. Flow (perm)	1719	4940	1538	3303	4893	1736	1553
Right Turn on Red			Yes				Yes
Satd. Flow (RTOR)			305				94
Link Speed (mph)		50			50	45	
Link Distance (ft)		2030			5681	1130	
Travel Time (s)		27.7			77.5	17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	6%	6%	4%	4%
Adj. Flow (vph)	29	2511	305	128	1377	233	208
Shared Lane Traffic (%)							
Lane Group Flow (vph)	29	2511	305	128	1377	233	208
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	Left	Left	Left	Right
Median Width(ft)		24			24	12	
Link Offset(ft)		0			0	0	
Crosswalk Width(ft)		16			16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		9	15		15	9
Number of Detectors	1	2	1	1	2	1	1
Detector Template	Left	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94		
Detector 2 Size(ft)		6			6		
Detector 2 Type		Cl+Ex			Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)		0.0			0.0		
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	1	6		5	2	4	

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Existing  
PM Peak Hour



Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			6				4
Detector Phase	1	6	6	5	2	4	4
Switch Phase							
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	10.0	10.0
Minimum Split (s)	15.4	27.4	27.4	13.2	27.8	25.9	25.9
Total Split (s)	16.0	104.0	104.0	21.0	109.0	35.0	35.0
Total Split (%)	10.0%	65.0%	65.0%	13.1%	68.1%	21.9%	21.9%
Maximum Green (s)	8.8	96.6	96.6	12.8	101.2	27.1	27.1
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	4.9	4.9
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.9	7.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0
Act Effect Green (s)	7.6	100.6	100.6	11.1	110.0	24.8	24.8
Actuated g/C Ratio	0.05	0.63	0.63	0.07	0.69	0.16	0.16
v/c Ratio	0.35	0.81	0.28	0.56	0.41	0.87	0.65
Control Delay	103.5	8.6	1.0	86.4	7.5	94.5	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.5	8.6	1.0	86.4	7.5	94.5	43.9
LOS	F	A	A	F	A	F	D
Approach Delay		8.8			14.2	70.6	
Approach LOS		A			B	E	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 40 (25%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 78.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82





# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

Existing  
PM Peak Hour

























Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	⇐	⇑⇑⇑	⇑	⇑⇑	⇑⇑⇑	⇑	⇑
Traffic Volume (veh/h)	28	2411	293	123	1322	224	200
Future Volume (veh/h)	28	2411	293	123	1322	224	200
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)			1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1826	1826	1811	1811	1841	1841
Adj Flow Rate, veh/h		2511	305	128	1377	233	208
Peak Hour Factor		0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	5	6	6	4	4
Cap, veh/h		3252	1010	170	3731	258	230
Arrive On Green		0.65	0.65	0.05	0.75	0.15	0.15
Sat Flow, veh/h		5149	1547	3346	5107	1753	1560
Grp Volume(v), veh/h		2511	305	128	1377	233	208
Grp Sat Flow(s),veh/h/ln		1662	1547	1673	1648	1753	1560
Q Serve(g_s), s		56.5	13.7	6.0	15.2	20.9	21.0
Cycle Q Clear(g_c), s		56.5	13.7	6.0	15.2	20.9	21.0
Prop In Lane			1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		3252	1010	170	3731	258	230
V/C Ratio(X)		0.77	0.30	0.75	0.37	0.90	0.91
Avail Cap(c_a), veh/h		3252	1010	268	3731	297	264
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh		19.5	12.0	74.9	6.7	67.1	67.1
Incr Delay (d2), s/veh		1.8	0.8	5.8	0.3	26.6	29.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		20.3	4.7	2.7	4.6	11.1	19.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		21.3	12.8	80.8	6.9	93.6	96.6
LnGrp LOS		C	B	F	A	F	F
Approach Vol, veh/h		2816			1505	441	
Approach Delay, s/veh		20.4			13.2	95.0	
Approach LOS		C			B	F	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		128.5		31.5	16.3	112.2	
Change Period (Y+Rc), s		* 7.8		7.9	8.2	* 7.8	
Max Green Setting (Gmax), s		* 1E2		27.1	12.8	* 97	
Max Q Clear Time (g_c+I1), s		17.2		23.0	8.0	58.5	
Green Ext Time (p_c), s		12.7		0.6	0.1	29.1	
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			25.0				
HCM 6th LOS			C				
<b>Notes</b>							
User approved ignoring U-Turning movement.							
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.							

# Timings

## 1: Forum Blvd & SR 82 /SR 82

# Background

AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	123	1110	220	267	3116	38	231	22	56	9	59
Future Volume (vph)	123	1110	220	267	3116	38	231	22	56	9	59
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8	7	4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8	11.7	11.7	11.7
Total Split (s)	15.0	79.7	79.7	28.3	93.0	93.0	28.0	22.0	20.0	14.0	14.0
Total Split (%)	10.0%	53.1%	53.1%	18.9%	62.0%	62.0%	18.7%	14.7%	13.3%	9.3%	9.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8	3.7	3.7	3.7
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	9.6	78.2	78.2	17.7	86.9	86.9	30.7	17.0	14.9	6.3	6.3
Actuated g/C Ratio	0.06	0.52	0.52	0.12	0.58	0.58	0.20	0.11	0.10	0.04	0.04
v/c Ratio	0.82	0.49	0.27	0.74	1.18	0.04	0.91	0.41	0.38	0.13	0.21
Control Delay	71.5	40.1	14.5	52.8	123.8	0.0	90.3	24.6	54.8	72.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.5	40.1	14.5	52.8	123.8	0.0	90.3	24.6	54.8	72.4	1.5
LOS	E	D	B	D	F	A	F	C	D	E	A
Approach Delay		39.8			116.9			70.9		30.9	
Approach LOS		D			F			E		C	

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 90.6

Intersection LOS: F

Intersection Capacity Utilization 106.4%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82

























# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

# Background

AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	39	123	1110	220	267	3116	38	231	22	74	56	9
Future Volume (veh/h)	39	123	1110	220	267	3116	38	231	22	74	56	9
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1737	1737	1811	1811	1870	1826	1870	1826	1870	1870
Adj Flow Rate, veh/h		134	1194	237	287	3351	41	248	24	80	61	10
Peak Hour Factor		0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92
Percent Heavy Veh, %		2	11	11	6	6	2	5	2	5	2	2
Cap, veh/h		178	3485	1082	337	3910	1253	339	56	188	186	91
Arrive On Green		0.05	0.73	0.73	0.10	0.79	0.79	0.13	0.15	0.15	0.04	0.05
Sat Flow, veh/h		3456	4742	1472	3346	4944	1585	1739	379	1264	1781	1870
Grp Volume(v), veh/h		134	1194	237	287	3351	41	248	0	104	61	10
Grp Sat Flow(s),veh/h/ln		1728	1581	1472	1673	1648	1585	1739	0	1643	1781	1870
Q Serve(g_s), s		5.7	13.4	7.6	12.7	66.0	0.8	20.0	0.0	8.6	4.8	0.8
Cycle Q Clear(g_c), s		5.7	13.4	7.6	12.7	66.0	0.8	20.0	0.0	8.6	4.8	0.8
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.77	1.00	
Lane Grp Cap(c), veh/h		178	3485	1082	337	3910	1253	339	0	244	186	91
V/C Ratio(X)		0.75	0.34	0.22	0.85	0.86	0.03	0.73	0.00	0.43	0.33	0.11
Avail Cap(c_a), veh/h		180	3485	1082	448	3910	1253	339	0	244	269	91
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		70.2	7.0	6.3	66.3	10.2	3.4	56.5	0.0	58.1	64.2	68.2
Incr Delay (d2), s/veh		16.3	0.3	0.5	1.2	0.2	0.0	7.9	0.0	1.2	1.0	0.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.2	7.1	4.0	6.5	19.2	0.4	14.4	0.0	6.5	4.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		86.5	7.3	6.8	67.5	10.4	3.4	64.4	0.0	59.3	65.2	68.8
LnGrp LOS		F	A	A	E	B	A	E	A	E	E	E
Approach Vol, veh/h			1565			3679			352			135
Approach Delay, s/veh			14.0			14.8			62.9			91.9
Approach LOS			B			B			E			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	127.4	28.0	15.1	23.3	119.0	13.0	30.1				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	7.8	* 85	20.2	* 7.3	20.1	* 72	* 13	14.2				
Max Q Clear Time (g_c+I1), s	7.7	68.0	22.0	8.0	14.7	15.4	6.8	10.6				
Green Ext Time (p_c), s	0.0	16.6	0.0	0.0	0.5	11.4	0.0	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			19.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

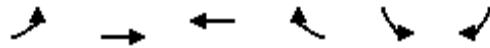
Background

AM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	59
Future Volume (veh/h)	59
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	64
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	77
Arrive On Green	0.05
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	64
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	6.0
Cycle Q Clear(g_c), s	6.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	77
V/C Ratio(X)	0.83
Avail Cap(c_a), veh/h	77
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	70.7
Incr Delay (d2), s/veh	50.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	6.3
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	121.0
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

# Timings 2: SR 82 & East Project Driveway

Background  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	1141	3311	206	35	11
Future Volume (vph)	63	1141	3311	206	35	11
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	11.7	11.7
Total Split (s)	16.0	138.0	122.0	122.0	12.0	12.0
Total Split (%)	10.7%	92.0%	81.3%	81.3%	8.0%	8.0%
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	8.2	130.3	114.4	114.4	5.3	5.3
Actuated g/C Ratio	0.05	0.87	0.76	0.76	0.04	0.04
v/c Ratio	0.77	0.31	0.96	0.18	0.61	0.18
Control Delay	116.7	2.0	25.0	0.9	108.6	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.7	2.0	25.0	0.9	108.6	37.0
LOS	F	A	C	A	F	D
Approach Delay		7.9	23.6		91.4	
Approach LOS		A	C		F	

## Intersection Summary

Cycle Length: 150  
Actuated Cycle Length: 150  
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow  
Natural Cycle: 130  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.96  
Intersection Signal Delay: 20.3  
Intersection Capacity Utilization 80.1%  
Analysis Period (min) 15

Intersection LOS: C  
ICU Level of Service D

## Splits and Phases: 2: SR 82 & East Project Driveway

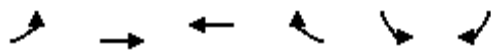
Ø1	Ø2 (R)		Ø4
16 s	122 s		12 s
Ø6 (R)			
138 s			



## HCM 6th Signalized Intersection Summary

### 2: SR 82 & East Project Driveway

Background  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	1141	3311	206	35	11
Future Volume (veh/h)	63	1141	3311	206	35	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1722	1722	1811	1811	1870	1870
Adj Flow Rate, veh/h	68	1240	3599	224	38	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	6	6	2	2
Cap, veh/h	84	4084	3788	1176	63	56
Arrive On Green	0.05	0.87	0.77	0.77	0.04	0.04
Sat Flow, veh/h	1640	4856	5107	1535	1781	1585
Grp Volume(v), veh/h	68	1240	3599	224	38	12
Grp Sat Flow(s),veh/h/ln	1640	1567	1648	1535	1781	1585
Q Serve(g_s), s	6.2	7.1	93.8	6.0	3.2	1.1
Cycle Q Clear(g_c), s	6.2	7.1	93.8	6.0	3.2	1.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	84	4084	3788	1176	63	56
V/C Ratio(X)	0.81	0.30	0.95	0.19	0.60	0.21
Avail Cap(c_a), veh/h	91	4084	3788	1176	63	56
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	1.8	15.1	4.8	71.3	70.3
Incr Delay (d2), s/veh	38.3	0.2	6.9	0.4	36.2	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.0	28.8	1.7	2.1	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	108.8	1.9	22.0	5.2	107.5	78.9
LnGrp LOS	F	A	C	A	F	E
Approach Vol, veh/h		1308	3823		50	
Approach Delay, s/veh		7.5	21.0		100.7	
Approach LOS		A	C		F	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	122.6		12.0		138.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	8.3	114.3		* 5.3		130.3
Max Q Clear Time (g_c+l1), s	8.2	95.8		5.2		9.1
Green Ext Time (p_c), s	0.0	18.1		0.0		10.8

#### Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

#### Notes

User approved pedestrian interval to be less than phase max green.























\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

## 1: Forum Blvd & SR 82 /SR 82

# Background

PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	2599	311	130	1444	71	237	19	51	17	102
Future Volume (vph)	119	2599	311	130	1444	71	237	19	51	17	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8	7	4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	3.0	5.0	5.0
Minimum Split (s)	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8	9.7	11.7	11.7
Total Split (s)	18.6	81.1	81.1	14.4	76.9	76.9	21.6	27.8	11.7	17.9	17.9
Total Split (%)	13.8%	60.1%	60.1%	10.7%	57.0%	57.0%	16.0%	20.6%	8.7%	13.3%	13.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8	3.7	3.7	3.7
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	10.6	74.4	74.4	8.3	72.7	72.7	28.9	19.6	13.4	8.4	8.4
Actuated g/C Ratio	0.08	0.55	0.55	0.06	0.54	0.54	0.21	0.15	0.10	0.06	0.06
v/c Ratio	0.60	0.99	0.33	0.67	0.57	0.08	0.96	0.74	0.40	0.16	0.36
Control Delay	69.6	46.2	2.4	78.3	22.3	0.2	96.2	43.2	52.5	61.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	46.2	2.4	78.3	22.3	0.2	96.2	43.2	52.5	61.4	3.3
LOS	E	D	A	E	C	A	F	D	D	E	A
Approach Delay		42.9			25.7			69.9		23.7	
Approach LOS		D			C			E		C	

### Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 39.3

Intersection LOS: D

Intersection Capacity Utilization 96.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82

























# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

# Background

PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	119	2599	311	130	1444	71	237	19	212	51	17
Future Volume (veh/h)	30	119	2599	311	130	1444	71	237	19	212	51	17
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1826	1826	1811	1811	1870	1841	1870	1841	1870	1870
Adj Flow Rate, veh/h		129	2707	324	135	1504	77	247	21	221	55	18
Peak Hour Factor		0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92
Percent Heavy Veh, %		2	5	5	6	6	2	4	2	4	2	2
Cap, veh/h		180	4549	1412	154	4518	1449	324	22	229	127	155
Arrive On Green		0.05	0.91	0.91	0.05	0.91	0.91	0.10	0.16	0.16	0.04	0.08
Sat Flow, veh/h		3456	4985	1547	3346	4944	1585	1753	139	1467	1781	1870
Grp Volume(v), veh/h		129	2707	324	135	1504	77	247	0	242	55	18
Grp Sat Flow(s),veh/h/ln		1728	1662	1547	1673	1648	1585	1753	0	1606	1781	1870
Q Serve(g_s), s		5.0	14.0	3.1	5.4	5.1	0.6	13.8	0.0	20.2	3.8	1.2
Cycle Q Clear(g_c), s		5.0	14.0	3.1	5.4	5.1	0.6	13.8	0.0	20.2	3.8	1.2
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.91	1.00	
Lane Grp Cap(c), veh/h		180	4549	1412	154	4518	1449	324	0	251	127	155
V/C Ratio(X)		0.72	0.60	0.23	0.88	0.33	0.05	0.76	0.00	0.96	0.43	0.12
Avail Cap(c_a), veh/h		292	4549	1412	154	4518	1449	324	0	251	127	155
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		63.0	1.1	0.7	64.0	0.7	0.5	51.2	0.0	56.6	54.4	57.3
Incr Delay (d2), s/veh		5.3	0.6	0.4	34.5	0.2	0.1	10.1	0.0	46.7	2.3	0.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		4.1	0.4	0.3	5.4	0.1	0.0	3.8	0.0	16.8	3.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		68.3	1.7	1.0	98.5	0.9	0.6	61.3	0.0	103.2	56.7	57.6
LnGrp LOS		E	A	A	F	A	A	E	A	F	E	E
Approach Vol, veh/h			3160			1716			489			184
Approach Delay, s/veh			4.4			8.5			82.1			81.6
Approach LOS			A			A			F			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	132.7	21.6	19.0	14.4	132.5	11.7	28.9				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	11.4	* 69	13.8	* 11	6.2	* 74	* 5	20.0				
Max Q Clear Time (g_c+I1), s	7.0	7.1	15.8	11.3	7.4	16.0	5.8	22.2				
Green Ext Time (p_c), s	0.1	15.1	0.0	0.0	0.0	43.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									
Notes												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

# HCM 6th Signalized Intersection Summary

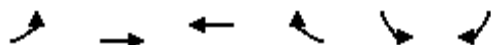
## 1: Forum Blvd & SR 82 /SR 82

Background  
PM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	102
Future Volume (veh/h)	102
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	111
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	132
Arrive On Green	0.08
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	111
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	9.3
Cycle Q Clear(g_c), s	9.3
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	132
V/C Ratio(X)	0.84
Avail Cap(c_a), veh/h	132
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	61.0
Incr Delay (d2), s/veh	36.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	8.7
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	97.8
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

# Timings 2: SR 82 & East Project Driveway

Background  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	2808	1576	141	140	43
Future Volume (vph)	43	2808	1576	141	140	43
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	24.7	24.7
Total Split (s)	18.0	129.0	111.0	111.0	31.0	31.0
Total Split (%)	11.3%	80.6%	69.4%	69.4%	19.4%	19.4%
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	8.9	121.3	107.4	107.4	24.3	24.3
Actuated g/C Ratio	0.06	0.76	0.67	0.67	0.15	0.15
v/c Ratio	0.49	0.81	0.52	0.14	0.57	0.17
Control Delay	90.4	14.6	14.6	1.7	72.1	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.4	14.6	14.6	1.7	72.1	16.1
LOS	F	B	B	A	E	B
Approach Delay		15.8	13.5		58.9	
Approach LOS		B	B		E	

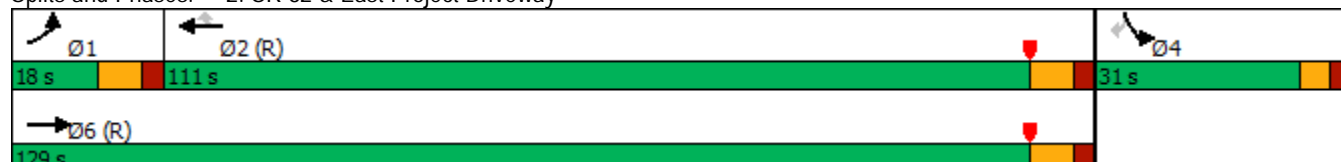
## Intersection Summary

Cycle Length: 160  
Actuated Cycle Length: 160  
Offset: 103.3 (65%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow  
Natural Cycle: 90  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.81  
Intersection Signal Delay: 16.6  
Intersection Capacity Utilization 74.0%  
Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service D

## Splits and Phases: 2: SR 82 & East Project Driveway

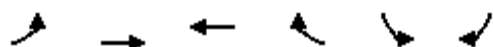




# HCM 6th Signalized Intersection Summary

## 2: SR 82 & East Project Driveway

Background  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	2808	1576	141	140	43
Future Volume (veh/h)	43	2808	1576	141	140	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1826	1826	1811	1811	1870	1870
Adj Flow Rate, veh/h	47	3052	1713	153	152	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	6	6	2	2
Cap, veh/h	60	3779	3340	1037	271	241
Arrive On Green	0.03	0.76	0.68	0.68	0.15	0.15
Sat Flow, veh/h	1739	5149	5107	1535	1781	1585
Grp Volume(v), veh/h	47	3052	1713	153	152	47
Grp Sat Flow(s),veh/h/ln	1739	1662	1648	1535	1781	1585
Q Serve(g_s), s	4.3	61.1	27.5	5.7	12.7	4.1
Cycle Q Clear(g_c), s	4.3	61.1	27.5	5.7	12.7	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	60	3779	3340	1037	271	241
V/C Ratio(X)	0.78	0.81	0.51	0.15	0.56	0.20
Avail Cap(c_a), veh/h	112	3779	3340	1037	271	241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.6	12.1	12.9	9.4	62.9	59.3
Incr Delay (d2), s/veh	19.4	2.0	0.6	0.3	8.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	19.0	9.5	1.9	6.4	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	96.0	14.0	13.5	9.7	71.1	61.1
LnGrp LOS	F	B	B	A	E	E
Approach Vol, veh/h		3099	1866		199	
Approach Delay, s/veh		15.3	13.1		68.7	
Approach LOS		B	B		E	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.2	115.8		31.0		129.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	10.3	103.3		* 24		121.3
Max Q Clear Time (g_c+I1), s	6.3	29.5		14.7		63.1
Green Ext Time (p_c), s	0.0	20.4		0.4		47.8

### Intersection Summary























HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
AM Peak Hour

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	39	132	1119	220	276	3146	38	231	25	77	56	19
Future Volume (vph)	39	132	1119	220	276	3146	38	231	25	77	56	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		705		1000	1000		610	0		0	0	
Storage Lanes		2		1	2		1	1		0	1	
Taper Length (ft)		25			25			25			25	
Lane Util. Factor	0.91	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.850		0.887			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3366	4673	1455	3303	4893	1583	1719	1616	0	1770	1863
Flt Permitted		0.950			0.950			0.352			0.686	
Satd. Flow (perm)	0	3366	4673	1455	3303	4893	1583	637	1616	0	1278	1863
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				252			193		81			
Link Speed (mph)			50			50			45			30
Link Distance (ft)			1015			1732			1130			435
Travel Time (s)			13.8			23.6			17.1			9.9
Peak Hour Factor	0.93	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92
Heavy Vehicles (%)	11%	2%	11%	11%	6%	6%	2%	5%	2%	5%	2%	2%
Adj. Flow (vph)	42	143	1203	237	297	3383	41	248	27	83	61	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	185	1203	237	297	3383	41	248	110	0	61	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)			24			24			12			12
Link Offset(ft)			0			0			0			0
Crosswalk Width(ft)			16			16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Number of Detectors	1	1	2	1	1	2	1	1	2		1	2
Detector Template	Left	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	20	100	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	20	6	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94			94			94
Detector 2 Size(ft)			6			6			6			6
Detector 2 Type			Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)			0.0			0.0			0.0			0.0
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	1	1	6		5	2		3	8		7	4













Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
AM Peak Hour

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	252
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Heavy Vehicles (%)	2%
Adj. Flow (vph)	98
Shared Lane Traffic (%)	
Lane Group Flow (vph)	98
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
AM Peak Hour

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Permitted Phases				6			2	8			4	
Detector Phase	1	1	6	6	5	2	2	3	8		7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0		5.0	5.0
Minimum Split (s)	12.2	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8		11.7	11.7
Total Split (s)	15.0	15.0	79.7	79.7	28.3	93.0	93.0	28.0	22.0		20.0	14.0
Total Split (%)	10.0%	10.0%	53.1%	53.1%	18.9%	62.0%	62.0%	18.7%	14.7%		13.3%	9.3%
Maximum Green (s)	7.8	7.8	72.3	72.3	20.1	85.2	85.2	20.2	14.2		13.3	7.3
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8		3.7	3.7
All-Red Time (s)	2.0	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0		3.0	3.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8		6.7	6.7
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None
Act Effect Green (s)		8.7	75.4	75.4	17.9	85.2	85.2	33.3	19.6		16.3	6.7
Actuated g/C Ratio		0.06	0.50	0.50	0.12	0.57	0.57	0.22	0.13		0.11	0.04
v/c Ratio		0.95	0.51	0.28	0.75	1.22	0.04	0.87	0.39		0.36	0.25
Control Delay		121.0	26.4	2.7	72.2	126.0	0.0	82.1	25.0		53.0	76.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		121.0	26.4	2.7	72.2	126.0	0.0	82.1	25.0		53.0	76.6
LOS		F	C	A	E	F	A	F	C		D	E
Approach Delay			33.7			120.4			64.5			28.3
Approach LOS			C			F			E			C

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 90.2

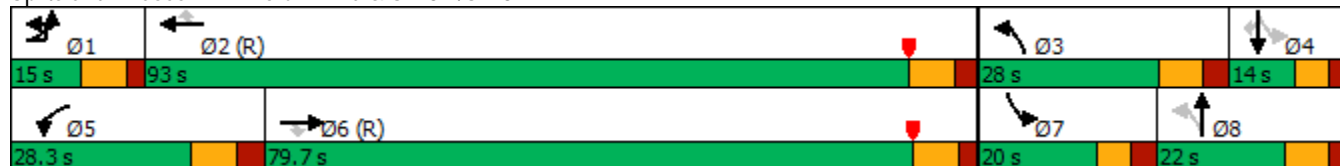
Intersection LOS: F

Intersection Capacity Utilization 108.6%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82





Lane Group	SBR
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.7
Total Split (s)	14.0
Total Split (%)	9.3%
Maximum Green (s)	7.3
Yellow Time (s)	3.7
All-Red Time (s)	3.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.7
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	6.7
Actuated g/C Ratio	0.04
v/c Ratio	0.32
Control Delay	2.6
Queue Delay	0.0
Total Delay	2.6
LOS	A
Approach Delay	
Approach LOS	
Intersection Summary	

























# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

Buildout

AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	39	132	1119	220	276	3146	38	231	25	77	56	19
Future Volume (veh/h)	39	132	1119	220	276	3146	38	231	25	77	56	19
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1737	1737	1811	1811	1870	1826	1870	1826	1870	1870
Adj Flow Rate, veh/h		143	1203	237	297	3383	41	248	27	83	61	21
Peak Hour Factor		0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92
Percent Heavy Veh, %		2	11	11	6	6	2	5	2	5	2	2
Cap, veh/h		180	3565	1107	347	4005	1284	329	60	184	186	91
Arrive On Green		0.05	0.75	0.75	0.10	0.81	0.81	0.13	0.15	0.15	0.04	0.05
Sat Flow, veh/h		3456	4742	1472	3346	4944	1585	1739	404	1243	1781	1870
Grp Volume(v), veh/h		143	1203	237	297	3383	41	248	0	110	61	21
Grp Sat Flow(s),veh/h/ln		1728	1581	1472	1673	1648	1585	1739	0	1647	1781	1870
Q Serve(g_s), s		6.1	12.7	7.1	13.1	61.8	0.8	20.0	0.0	9.1	4.8	1.6
Cycle Q Clear(g_c), s		6.1	12.7	7.1	13.1	61.8	0.8	20.0	0.0	9.1	4.8	1.6
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.75	1.00	
Lane Grp Cap(c), veh/h		180	3565	1107	347	4005	1284	329	0	244	186	91
V/C Ratio(X)		0.80	0.34	0.21	0.86	0.84	0.03	0.75	0.00	0.45	0.33	0.23
Avail Cap(c_a), veh/h		180	3565	1107	448	4005	1284	329	0	244	268	91
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		70.3	6.2	5.5	66.1	8.6	2.8	56.5	0.0	58.3	64.2	68.6
Incr Delay (d2), s/veh		21.5	0.3	0.4	12.3	2.4	0.0	9.4	0.0	1.3	1.0	1.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.8	6.5	3.7	10.1	22.1	0.4	14.6	0.0	6.9	4.1	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		91.8	6.5	6.0	78.4	10.9	2.8	65.9	0.0	59.6	65.2	69.9
LnGrp LOS		F	A	A	E	B	A	E	A	E	E	E
Approach Vol, veh/h			1583			3721			358			180
Approach Delay, s/veh			14.1			16.2			64.0			173.3
Approach LOS			B			B			E			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	130.4	28.0	15.1	23.7	121.7	13.0	30.1				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	7.8	* 85	20.2	* 7.3	20.1	* 72	* 13	14.2				
Max Q Clear Time (g_c+I1), s	8.1	63.8	22.0	9.3	15.1	14.7	6.8	11.1				
Green Ext Time (p_c), s	0.0	20.6	0.0	0.0	0.4	11.6	0.0	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

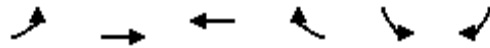
Buildout  
AM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	90
Future Volume (veh/h)	90
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	98
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	77
Arrive On Green	0.05
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	98
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	7.3
Cycle Q Clear(g_c), s	7.3
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	77
V/C Ratio(X)	1.27
Avail Cap(c_a), veh/h	77
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	71.4
Incr Delay (d2), s/veh	191.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	12.1
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	262.7
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

# Lanes, Volumes, Timings

## 2: SR 82 & East Project Driveway

Buildout  
AM Peak Hour

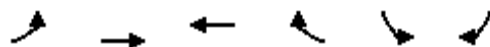


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	1141	3316	209	62	11
Future Volume (vph)	63	1141	3316	209	62	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	750			450	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1612	4631	4893	1524	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1612	4631	4893	1524	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				227		12
Link Speed (mph)		50	50		30	
Link Distance (ft)		1766	1094		505	
Travel Time (s)		24.1	14.9		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	12%	6%	6%	2%	2%
Adj. Flow (vph)	68	1240	3604	227	67	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	1240	3604	227	67	12
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	

# Lanes, Volumes, Timings

## 2: SR 82 & East Project Driveway

Buildout  
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	11.7	11.7
Total Split (s)	16.0	138.0	122.0	122.0	12.0	12.0
Total Split (%)	10.7%	92.0%	81.3%	81.3%	8.0%	8.0%
Maximum Green (s)	8.3	130.3	114.3	114.3	5.3	5.3
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag		Lag	
Lead-Lag Optimize?	Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	8.2	130.3	114.4	114.4	5.3	5.3
Actuated g/C Ratio	0.05	0.87	0.76	0.76	0.04	0.04
v/c Ratio	0.77	0.31	0.97	0.19	1.08	0.18
Control Delay	94.0	3.2	25.2	0.9	202.1	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	3.2	25.2	0.9	202.1	37.0
LOS	F	A	C	A	F	D
Approach Delay	7.9		23.8		177.0	
Approach LOS	A		C		F	

### Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 22.1

Intersection LOS: C

Intersection Capacity Utilization 80.2%

ICU Level of Service D

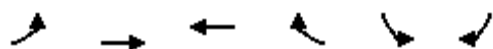
Analysis Period (min) 15

Splits and Phases: 2: SR 82 & East Project Driveway

	Ø1		Ø2 (R)		Ø4
16 s		122 s		12 s	
	Ø6 (R)				
138 s					

# HCM 6th Signalized Intersection Summary 2: SR 82 & East Project Driveway

Buildout  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	1141	3316	209	62	11
Future Volume (veh/h)	63	1141	3316	209	62	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1722	1722	1811	1811	1870	1870
Adj Flow Rate, veh/h	68	1240	3604	227	67	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	6	6	2	2
Cap, veh/h	84	4084	3788	1176	63	56
Arrive On Green	0.05	0.87	0.77	0.77	0.04	0.04
Sat Flow, veh/h	1640	4856	5107	1535	1781	1585
Grp Volume(v), veh/h	68	1240	3604	227	67	12
Grp Sat Flow(s),veh/h/ln	1640	1567	1648	1535	1781	1585
Q Serve(g_s), s	6.2	7.1	94.3	6.1	5.3	1.1
Cycle Q Clear(g_c), s	6.2	7.1	94.3	6.1	5.3	1.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	84	4084	3788	1176	63	56
V/C Ratio(X)	0.81	0.30	0.95	0.19	1.06	0.21
Avail Cap(c_a), veh/h	91	4084	3788	1176	63	56
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	1.8	15.1	4.8	72.3	70.3
Incr Delay (d2), s/veh	38.3	0.2	7.0	0.4	132.5	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	1.8	37.8	3.1	8.5	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	108.8	1.9	22.2	5.2	204.8	78.9
LnGrp LOS	F	A	C	A	F	E
Approach Vol, veh/h		1308	3831		79	
Approach Delay, s/veh		7.5	21.2		185.7	
Approach LOS		A	C		F	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	122.6		12.0		138.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	8.3	114.3		* 5.3		130.3
Max Q Clear Time (g_c+I1), s	8.2	96.3		7.3		9.1
Green Ext Time (p_c), s	0.0	17.7		0.0		10.8

## Intersection Summary






HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

## Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th TWSC 3: SR 82 & Project Driveway























Buildout  
AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	1259	3322	5	0	42
Future Vol, veh/h	12	1259	3322	5	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	360	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	1368	3611	5	0	46
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	3616	0	-	0	-	1808
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	18	-	-	-	0	58
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	18	-	-	-	-	58
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.8	0		175		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	18	-	-	-	58	
HCM Lane V/C Ratio	0.725	-	-	-	0.787	
HCM Control Delay (s)	\$ 405.8	-	-	-	175	
HCM Lane LOS	F	-	-	-	F	
HCM 95th %tile Q(veh)	1.9	-	-	-	3.4	



Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
PM Peak Hour

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	143	2623	311	134	1460	71	237	26	220	51	22
Future Volume (vph)	30	143	2623	311	134	1460	71	237	26	220	51	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		705		1000	1000		610	0		0	0	
Storage Lanes		2		1	2		1	1		0	1	
Taper Length (ft)		25			25			25			25	
Lane Util. Factor	0.91	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.850		0.866			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3416	4940	1538	3303	4893	1583	1736	1585	0	1770	1863
Flt Permitted		0.950			0.950			0.399			0.573	
Satd. Flow (perm)	0	3416	4940	1538	3303	4893	1583	729	1585	0	1067	1863
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				324			222		115			
Link Speed (mph)			50			50			45			30
Link Distance (ft)			1015			1732			1130			435
Travel Time (s)			13.8			23.6			17.1			9.9
Peak Hour Factor	0.96	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92
Heavy Vehicles (%)	5%	2%	5%	5%	6%	6%	2%	4%	2%	4%	2%	2%
Adj. Flow (vph)	31	155	2732	324	140	1521	77	247	28	229	55	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	2732	324	140	1521	77	247	257	0	55	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)			24			24			12			12
Link Offset(ft)			0			0			0			0
Crosswalk Width(ft)			16			16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	60		9	15		60	15		9	60	
Number of Detectors	1	1	2	1	1	2	1	1	2		1	2
Detector Template	Left	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	20	100	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	20	6	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94			94			94
Detector 2 Size(ft)			6			6			6			6
Detector 2 Type			Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)			0.0			0.0			0.0			0.0
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	1	1	6		5	2		3	8		7	4













Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
PM Peak Hour

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	117
Future Volume (vph)	117
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	222
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Heavy Vehicles (%)	2%
Adj. Flow (vph)	127
Shared Lane Traffic (%)	
Lane Group Flow (vph)	127
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	60
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	

Lanes, Volumes, Timings  
1: Forum Blvd & SR 82 /SR 82

Buildout  
PM Peak Hour

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Permitted Phases				6			2	8			4	
Detector Phase	1	1	6	6	5	2	2	3	8		7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0		3.0	5.0
Minimum Split (s)	12.2	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8		9.7	11.7
Total Split (s)	18.6	18.6	81.1	81.1	14.4	76.9	76.9	21.6	27.8		11.7	17.9
Total Split (%)	13.8%	13.8%	60.1%	60.1%	10.7%	57.0%	57.0%	16.0%	20.6%		8.7%	13.3%
Maximum Green (s)	11.4	11.4	73.7	73.7	6.2	69.1	69.1	13.8	20.0		5.0	11.2
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8		3.7	3.7
All-Red Time (s)	2.0	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0		3.0	3.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8		6.7	6.7
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None
Act Effect Green (s)		11.1	74.2	74.2	8.0	71.7	71.7	29.4	20.0		13.9	8.9
Actuated g/C Ratio		0.08	0.55	0.55	0.06	0.53	0.53	0.22	0.15		0.10	0.07
v/c Ratio		0.66	1.01	0.33	0.71	0.59	0.08	0.95	0.77		0.40	0.20
Control Delay		71.9	49.4	2.5	82.2	23.1	0.2	92.2	46.9		52.2	62.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		71.9	49.4	2.5	82.2	23.1	0.2	92.2	46.9		52.2	62.1
LOS		E	D	A	F	C	A	F	D		D	E
Approach Delay			46.0			26.8			69.1			23.6
Approach LOS			D			C			E			C

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 41.4

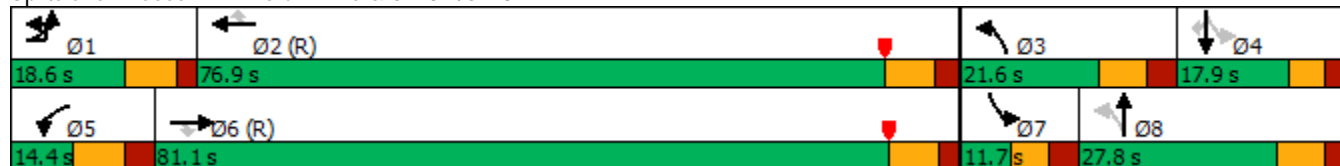
Intersection LOS: D

Intersection Capacity Utilization 98.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82




























Lane Group	SBR
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.7
Total Split (s)	17.9
Total Split (%)	13.3%
Maximum Green (s)	11.2
Yellow Time (s)	3.7
All-Red Time (s)	3.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.7
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	8.9
Actuated g/C Ratio	0.07
v/c Ratio	0.41
Control Delay	3.9
Queue Delay	0.0
Total Delay	3.9
LOS	A
Approach Delay	
Approach LOS	
Intersection Summary	

# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

Buildout

PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	143	2623	311	134	1460	71	237	26	220	51	22
Future Volume (veh/h)	30	143	2623	311	134	1460	71	237	26	220	51	22
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln		1870	1826	1826	1811	1811	1870	1841	1870	1841	1870	1870
Adj Flow Rate, veh/h		155	2732	324	140	1521	77	247	28	229	55	24
Peak Hour Factor		0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92
Percent Heavy Veh, %		2	5	5	6	6	2	4	2	4	2	2
Cap, veh/h		207	4549	1412	154	4480	1436	319	27	224	119	155
Arrive On Green		0.06	0.91	0.91	0.05	0.91	0.91	0.10	0.16	0.16	0.04	0.08
Sat Flow, veh/h		3456	4985	1547	3346	4944	1585	1753	176	1436	1781	1870
Grp Volume(v), veh/h		155	2732	324	140	1521	77	247	0	257	55	24
Grp Sat Flow(s),veh/h/ln		1728	1662	1547	1673	1648	1585	1753	0	1612	1781	1870
Q Serve(g_s), s		6.0	14.3	3.1	5.6	5.6	0.6	13.8	0.0	21.1	3.8	1.6
Cycle Q Clear(g_c), s		6.0	14.3	3.1	5.6	5.6	0.6	13.8	0.0	21.1	3.8	1.6
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.89	1.00	
Lane Grp Cap(c), veh/h		207	4549	1412	154	4480	1436	319	0	252	119	155
V/C Ratio(X)		0.75	0.60	0.23	0.91	0.34	0.05	0.77	0.00	1.02	0.46	0.15
Avail Cap(c_a), veh/h		292	4549	1412	154	4480	1436	319	0	252	119	155
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		62.5	1.1	0.7	64.1	0.9	0.6	51.3	0.0	57.0	54.4	57.5
Incr Delay (d2), s/veh		6.6	0.6	0.4	47.3	0.2	0.1	11.3	0.0	62.0	2.8	0.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		4.9	0.4	0.3	6.0	0.2	0.1	4.1	0.0	18.8	3.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		69.0	1.7	1.0	111.4	1.1	0.7	62.6	0.0	118.9	57.2	58.0
LnGrp LOS		E	A	A	F	A	A	E	A	F	E	E
Approach Vol, veh/h			3211			1738			504			206
Approach Delay, s/veh			4.9			9.9			91.3			101.8
Approach LOS			A			A			F			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	131.6	21.6	19.0	14.4	132.5	11.7	28.9				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	11.4	* 69	13.8	* 11	6.2	* 74	* 5	20.0				
Max Q Clear Time (g_c+I1), s	8.0	7.6	15.8	12.8	7.6	16.3	5.8	23.1				
Green Ext Time (p_c), s	0.1	15.4	0.0	0.0	0.0	43.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									
Notes												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

# HCM 6th Signalized Intersection Summary

## 1: Forum Blvd & SR 82 /SR 82

Buildout  
PM Peak Hour

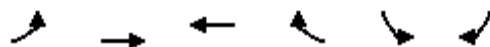
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	117
Future Volume (veh/h)	117
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	127
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	132
Arrive On Green	0.08
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	127
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	10.8
Cycle Q Clear(g_c), s	10.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	132
V/C Ratio(X)	0.97
Avail Cap(c_a), veh/h	132
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	61.7
Incr Delay (d2), s/veh	67.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	11.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	129.4
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	



# Lanes, Volumes, Timings

## 2: SR 82 & East Project Driveway

Buildout  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	2808	1588	149	154	43
Future Volume (vph)	43	2808	1588	149	154	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	750			450	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	4940	4893	1524	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1719	4940	4893	1524	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				162		47
Link Speed (mph)		50	50		30	
Link Distance (ft)		1766	1094		505	
Travel Time (s)		24.1	14.9		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	6%	6%	2%	2%
Adj. Flow (vph)	47	3052	1726	162	167	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	3052	1726	162	167	47
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	

# Lanes, Volumes, Timings

## 2: SR 82 & East Project Driveway

Buildout  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	24.7	24.7
Total Split (s)	18.0	129.0	111.0	111.0	31.0	31.0
Total Split (%)	11.3%	80.6%	69.4%	69.4%	19.4%	19.4%
Maximum Green (s)	10.3	121.3	103.3	103.3	24.3	24.3
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effect Green (s)	8.9	121.3	107.4	107.4	24.3	24.3
Actuated g/C Ratio	0.06	0.76	0.67	0.67	0.15	0.15
v/c Ratio	0.49	0.81	0.53	0.15	0.62	0.17
Control Delay	90.4	14.6	14.7	1.7	74.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.4	14.6	14.7	1.7	74.7	16.1
LOS	F	B	B	A	E	B
Approach Delay		15.8	13.6		61.9	
Approach LOS		B	B		E	

### Intersection Summary

Area Type: Other  
 Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 103.3 (65%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 16.9  
 Intersection Capacity Utilization 74.8%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service D

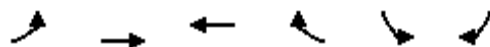
### Splits and Phases: 2: SR 82 & East Project Driveway



## HCM 6th Signalized Intersection Summary

### 2: SR 82 & East Project Driveway

Buildout  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	2808	1588	149	154	43
Future Volume (veh/h)	43	2808	1588	149	154	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1826	1826	1811	1811	1870	1870
Adj Flow Rate, veh/h	47	3052	1726	162	167	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	6	6	2	2
Cap, veh/h	60	3779	3340	1037	271	241
Arrive On Green	0.03	0.76	0.68	0.68	0.15	0.15
Sat Flow, veh/h	1739	5149	5107	1535	1781	1585
Grp Volume(v), veh/h	47	3052	1726	162	167	47
Grp Sat Flow(s),veh/h/ln	1739	1662	1648	1535	1781	1585
Q Serve(g_s), s	4.3	61.1	27.9	6.1	14.0	4.1
Cycle Q Clear(g_c), s	4.3	61.1	27.9	6.1	14.0	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	60	3779	3340	1037	271	241
V/C Ratio(X)	0.78	0.81	0.52	0.16	0.62	0.20
Avail Cap(c_a), veh/h	112	3779	3340	1037	271	241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.6	12.1	12.9	9.4	63.5	59.3
Incr Delay (d2), s/veh	19.4	2.0	0.6	0.3	10.1	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	26.1	14.7	3.6	11.6	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	96.0	14.0	13.5	9.7	73.6	61.1
LnGrp LOS	F	B	B	A	E	E
Approach Vol, veh/h		3099	1888		214	
Approach Delay, s/veh		15.3	13.2		70.9	
Approach LOS		B	B		E	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.2	115.8		31.0		129.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	10.3	103.3		* 24		121.3
Max Q Clear Time (g_c+I1), s	6.3	29.9		16.0		63.1
Green Ext Time (p_c), s	0.0	20.8		0.4		47.8

#### Intersection Summary






HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

#### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th TWSC 3: SR 82 & Project Driveway

Buildout  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	2896	1619	12	0	20
Future Vol, veh/h	32	2896	1619	12	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	360	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	3148	1760	13	0	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1773	0	887
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	5.34	-	7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3.12	-	3.92
Pot Cap-1 Maneuver	163	-	247
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	163	-	247
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	21
HCM LOS			C























Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	163	-	-	-	247
HCM Lane V/C Ratio	0.213	-	-	-	0.088
HCM Control Delay (s)	33	-	-	-	21
HCM Lane LOS	D	-	-	-	C
HCM 95th %tile Q(veh)	0.8	-	-	-	0.3

# Timings

## 1: Forum Blvd & SR 82 /SR 82

# Buildout with Improvement

AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	132	1119	220	276	3146	38	231	25	56	19	90
Future Volume (vph)	132	1119	220	276	3146	38	231	25	56	19	90
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8	7	4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8	11.7	11.7	11.7
Total Split (s)	15.0	79.7	79.7	28.3	93.0	93.0	25.0	22.0	20.0	17.0	17.0
Total Split (%)	10.0%	53.1%	53.1%	18.9%	62.0%	62.0%	16.7%	14.7%	13.3%	11.3%	11.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8	3.7	3.7	3.7
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	10.7	77.3	77.3	18.0	85.2	85.2	30.7	17.5	17.1	7.4	7.4
Actuated g/C Ratio	0.07	0.52	0.52	0.12	0.57	0.57	0.20	0.12	0.11	0.05	0.05
v/c Ratio	0.77	0.50	0.27	0.75	1.22	0.04	0.97	0.42	0.34	0.23	0.37
Control Delay	89.0	25.2	3.2	69.4	126.3	0.0	103.5	26.3	53.4	73.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.0	25.2	3.2	69.4	126.3	0.0	103.5	26.3	53.4	73.5	4.0
LOS	F	C	A	E	F	A	F	C	D	E	A
Approach Delay		29.2			120.3			79.8		28.9	
Approach LOS		C			F			E		C	

## Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 89.9

Intersection LOS: F

Intersection Capacity Utilization 108.6%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82

























# HCM 6th Signalized Intersection Summary

# Buildout with Improvement

## 1: Forum Blvd & SR 82 /SR 82

AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	39	132	1119	220	276	3146	38	231	25	77	56	19
Future Volume (veh/h)	39	132	1119	220	276	3146	38	231	25	77	56	19
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Adj Sat Flow, veh/h/ln		1870	1737	1737	1811	1811	1870	1826	1870	1826	1870	1870
Adj Flow Rate, veh/h		143	1203	237	297	3383	41	248	27	83	61	21
Peak Hour Factor		0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92
Percent Heavy Veh, %		2	11	11	6	6	2	5	2	5	2	2
Cap, veh/h		180	3565	1107	347	4005	1284	320	60	185	210	128
Arrive On Green		0.05	0.75	0.75	0.10	0.81	0.81	0.11	0.15	0.15	0.04	0.07
Sat Flow, veh/h		3456	4742	1472	3346	4944	1585	1739	404	1243	1781	1870
Grp Volume(v), veh/h		143	1203	237	297	3383	41	248	0	110	61	21
Grp Sat Flow(s),veh/h/ln		1728	1581	1472	1673	1648	1585	1739	0	1647	1781	1870
Q Serve(g_s), s		6.1	12.7	7.1	13.1	61.8	0.8	17.2	0.0	9.1	4.7	1.6
Cycle Q Clear(g_c), s		6.1	12.7	7.1	13.1	61.8	0.8	17.2	0.0	9.1	4.7	1.6
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.75	1.00	
Lane Grp Cap(c), veh/h		180	3565	1107	347	4005	1284	320	0	245	210	128
V/C Ratio(X)		0.80	0.34	0.21	0.86	0.84	0.03	0.78	0.00	0.45	0.29	0.16
Avail Cap(c_a), veh/h		180	3565	1107	448	4005	1284	320	0	245	294	128
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		70.3	6.2	5.5	66.1	8.6	2.8	57.1	0.0	58.2	61.5	65.8
Incr Delay (d2), s/veh		21.5	0.3	0.4	12.3	2.4	0.0	11.4	0.0	1.3	0.8	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.8	6.5	3.7	10.1	22.1	0.4	15.2	0.0	6.9	4.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		91.8	6.5	6.0	78.4	10.9	2.8	68.5	0.0	59.5	62.2	66.4
LnGrp LOS		F	A	A	E	B	A	E	A	E	E	E
Approach Vol, veh/h			1583			3721			358			180
Approach Delay, s/veh			14.1			16.2			65.7			97.1
Approach LOS			B			B			E			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	130.4	25.0	18.1	23.7	121.7	12.9	30.2				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	7.8	* 85	17.2	* 10	20.1	* 72	* 13	14.2				
Max Q Clear Time (g_c+I1), s	8.1	63.8	19.2	11.2	15.1	14.7	6.7	11.1				
Green Ext Time (p_c), s	0.0	20.6	0.0	0.0	0.4	11.6	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



# HCM 6th Signalized Intersection Summary

















## 1: Forum Blvd & SR 82 /SR 82

Buildout with Improvement  
AM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	90
Future Volume (veh/h)	90
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	98
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	109
Arrive On Green	0.07
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	98
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	9.2
Cycle Q Clear(g_c), s	9.2
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	109
V/C Ratio(X)	0.90
Avail Cap(c_a), veh/h	109
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	69.3
Incr Delay (d2), s/veh	56.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	9.2
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	125.4
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

# Timings 2: SR 82 & East Project Driveway

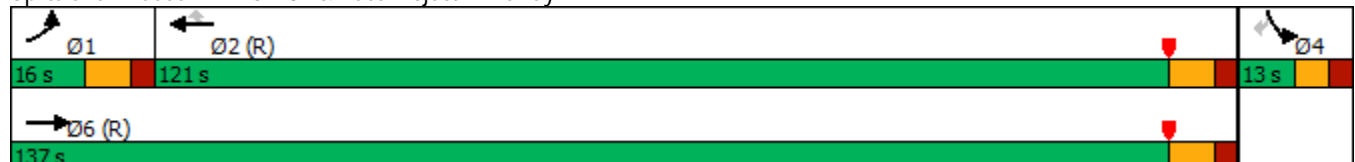
Buildout with Improvement  
AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		  	  			
Traffic Volume (vph)	63	1141	3316	209	62	11
Future Volume (vph)	63	1141	3316	209	62	11
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	11.7	11.7
Total Split (s)	16.0	137.0	121.0	121.0	13.0	13.0
Total Split (%)	10.7%	91.3%	80.7%	80.7%	8.7%	8.7%
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	8.2	129.3	113.4	113.4	6.3	6.3
Actuated g/C Ratio	0.05	0.86	0.76	0.76	0.04	0.04
v/c Ratio	0.77	0.31	0.97	0.19	0.91	0.16
Control Delay	95.2	3.1	27.3	0.9	150.0	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.2	3.1	27.3	0.9	150.0	35.1
LOS	F	A	C	A	F	D
Approach Delay		7.9	25.7		132.5	
Approach LOS		A	C		F	

## Intersection Summary

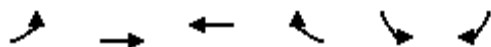
Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 22.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 80.2%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 2: SR 82 & East Project Driveway



# HCM 6th Signalized Intersection Summary 2: SR 82 & East Project Driveway

Buildout with Improvement  
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	1141	3316	209	62	11
Future Volume (veh/h)	63	1141	3316	209	62	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1722	1722	1811	1811	1870	1870
Adj Flow Rate, veh/h	68	1240	3604	227	67	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	12	6	6	2	2
Cap, veh/h	84	4053	3755	1166	75	67
Arrive On Green	0.05	0.86	0.76	0.76	0.04	0.04
Sat Flow, veh/h	1640	4856	5107	1535	1781	1585
Grp Volume(v), veh/h	68	1240	3604	227	67	12
Grp Sat Flow(s),veh/h/ln	1640	1567	1648	1535	1781	1585
Q Serve(g_s), s	6.2	7.4	97.0	6.3	5.6	1.1
Cycle Q Clear(g_c), s	6.2	7.4	97.0	6.3	5.6	1.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	84	4053	3755	1166	75	67
V/C Ratio(X)	0.81	0.31	0.96	0.19	0.90	0.18
Avail Cap(c_a), veh/h	91	4053	3755	1166	75	67
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	1.9	16.0	5.1	71.5	69.4
Incr Delay (d2), s/veh	38.3	0.2	7.9	0.4	69.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	2.1	39.5	3.2	7.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	108.8	2.1	24.0	5.5	141.1	70.6
LnGrp LOS	F	A	C	A	F	E
Approach Vol, veh/h		1308	3831		79	
Approach Delay, s/veh		7.7	22.9		130.4	
Approach LOS		A	C		F	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	121.6		13.0		137.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	8.3	113.3		* 6.3		129.3
Max Q Clear Time (g_c+l1), s	8.2	99.0		7.6		9.4
Green Ext Time (p_c), s	0.0	14.1		0.0		10.8

## Intersection Summary






HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

## Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
3: SR 82 & Project Driveway

Buildout with Improvement  
AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	1259	3322	5	0	42
Future Vol, veh/h	12	1259	3322	5	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	360	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	1368	3611	5	0	46

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	3616	0	0 - 1808
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	5.34	-	- - 7.14
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	3.12	-	- - 3.92
Pot Cap-1 Maneuver	18	-	- 0 58
Stage 1	-	-	- 0 -
Stage 2	-	-	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	18	-	- - 58
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	175
HCM LOS			F























Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	18	-	-	-	58
HCM Lane V/C Ratio	0.725	-	-	-	0.787
HCM Control Delay (s)	\$ 405.8	-	-	-	175
HCM Lane LOS	F	-	-	-	F
HCM 95th %tile Q(veh)	1.9	-	-	-	3.4

# Timings

## 1: Forum Blvd & SR 82 /SR 82

# Buildout with Improvement

PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	143	2623	311	134	1460	71	237	26	51	22	117
Future Volume (vph)	143	2623	311	134	1460	71	237	26	51	22	117
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8	7	4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	5.0	3.0	5.0	5.0
Minimum Split (s)	12.2	27.4	27.4	13.2	27.8	27.8	12.8	12.8	9.7	11.7	11.7
Total Split (s)	18.6	81.1	81.1	14.4	76.9	76.9	21.6	28.5	11.0	17.9	17.9
Total Split (%)	13.8%	60.1%	60.1%	10.7%	57.0%	57.0%	16.0%	21.1%	8.1%	13.3%	13.3%
Yellow Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	4.8	4.8	3.7	3.7	3.7
All-Red Time (s)	2.0	2.2	2.2	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.4	7.4	8.2	7.8	7.8	7.8	7.8	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	11.2	74.2	74.2	8.2	71.8	71.8	29.3	20.5	13.1	8.8	8.8
Actuated g/C Ratio	0.08	0.55	0.55	0.06	0.53	0.53	0.22	0.15	0.10	0.07	0.07
v/c Ratio	0.66	1.01	0.33	0.70	0.58	0.08	0.95	0.77	0.43	0.20	0.41
Control Delay	71.8	49.4	2.5	80.9	23.0	0.2	93.7	47.3	54.6	62.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	49.4	2.5	80.9	23.0	0.2	93.7	47.3	54.6	62.4	4.0
LOS	E	D	A	F	C	A	F	D	D	E	A
Approach Delay		46.0			26.7			70.0		24.3	
Approach LOS		D			C			E		C	

## Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 41.4

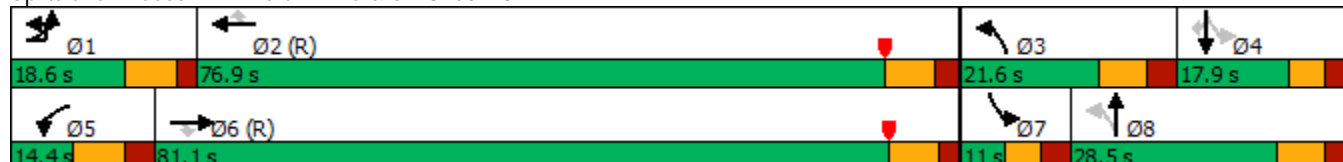
Intersection LOS: D

Intersection Capacity Utilization 98.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Forum Blvd & SR 82 /SR 82


























# HCM 6th Signalized Intersection Summary

# Buildout with Improvement

1: Forum Blvd & SR 82 /SR 82

PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	30	143	2623	311	134	1460	71	237	26	220	51	22
Future Volume (veh/h)	30	143	2623	311	134	1460	71	237	26	220	51	22
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln		1870	1826	1826	1811	1811	1870	1841	1870	1841	1870	1870
Adj Flow Rate, veh/h		155	2732	324	140	1521	77	247	28	229	55	24
Peak Hour Factor		0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92
Percent Heavy Veh, %		2	5	5	6	6	2	4	2	4	2	2
Cap, veh/h		207	4549	1412	154	4480	1436	319	28	232	113	155
Arrive On Green		0.06	0.91	0.91	0.05	0.91	0.91	0.10	0.16	0.16	0.03	0.08
Sat Flow, veh/h		3456	4985	1547	3346	4944	1585	1753	176	1436	1781	1870
Grp Volume(v), veh/h		155	2732	324	140	1521	77	247	0	257	55	24
Grp Sat Flow(s),veh/h/ln		1728	1662	1547	1673	1648	1585	1753	0	1612	1781	1870
Q Serve(g_s), s		6.0	14.3	3.1	5.6	5.6	0.6	13.8	0.0	21.5	3.8	1.6
Cycle Q Clear(g_c), s		6.0	14.3	3.1	5.6	5.6	0.6	13.8	0.0	21.5	3.8	1.6
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.89	1.00	
Lane Grp Cap(c), veh/h		207	4549	1412	154	4480	1436	319	0	260	113	155
V/C Ratio(X)		0.75	0.60	0.23	0.91	0.34	0.05	0.77	0.00	0.99	0.49	0.15
Avail Cap(c_a), veh/h		292	4549	1412	154	4480	1436	319	0	260	113	155
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		62.5	1.1	0.7	64.1	0.9	0.6	51.3	0.0	56.5	55.0	57.5
Incr Delay (d2), s/veh		6.6	0.6	0.4	47.3	0.2	0.1	11.3	0.0	52.1	3.2	0.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		4.9	0.4	0.3	6.0	0.2	0.1	4.1	0.0	18.0	3.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		69.0	1.7	1.0	111.4	1.1	0.7	62.6	0.0	108.6	58.3	58.0
LnGrp LOS		E	A	A	F	A	A	E	A	F	E	E
Approach Vol, veh/h			3211			1738			504			206
Approach Delay, s/veh			4.9			9.9			86.0			102.1
Approach LOS			A			A			F			F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	131.6	21.6	19.0	14.4	132.5	11.0	29.6				
Change Period (Y+Rc), s	7.2	* 7.8	7.8	* 7.8	8.2	* 7.8	* 6.7	7.8				
Max Green Setting (Gmax), s	11.4	* 69	13.8	* 11	6.2	* 74	* 4.3	20.7				
Max Q Clear Time (g_c+I1), s	8.0	7.6	15.8	12.8	7.6	16.3	5.8	23.5				
Green Ext Time (p_c), s	0.1	15.4	0.0	0.0	0.0	43.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			17.2									
HCM 6th LOS			B									
Notes												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												















HCM 6th Signalized Intersection Summary  
1: Forum Blvd & SR 82 /SR 82

Buildout with Improvement  
PM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	117
Future Volume (veh/h)	117
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	127
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	132
Arrive On Green	0.08
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	127
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	10.8
Cycle Q Clear(g_c), s	10.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	132
V/C Ratio(X)	0.97
Avail Cap(c_a), veh/h	132
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	61.7
Incr Delay (d2), s/veh	67.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	11.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	129.4
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

# Timings 2: SR 82 & East Project Driveway

Buildout with Improvement  
PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	2808	1588	149	154	43
Future Volume (vph)	43	2808	1588	149	154	43
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases				2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	25.7	25.7	25.7	24.7	24.7
Total Split (s)	18.0	129.0	111.0	111.0	31.0	31.0
Total Split (%)	11.3%	80.6%	69.4%	69.4%	19.4%	19.4%
Yellow Time (s)	5.1	5.1	5.1	5.1	3.7	3.7
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	8.9	121.3	107.4	107.4	24.3	24.3
Actuated g/C Ratio	0.06	0.76	0.67	0.67	0.15	0.15
v/c Ratio	0.49	0.81	0.53	0.15	0.62	0.17
Control Delay	90.4	14.6	14.7	1.7	74.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.4	14.6	14.7	1.7	74.7	16.1
LOS	F	B	B	A	E	B
Approach Delay		15.8	13.6		61.9	
Approach LOS		B	B		E	

## Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 103.3 (65%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 16.9  
 Intersection Capacity Utilization 74.8%  
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service D

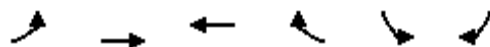
## Splits and Phases: 2: SR 82 & East Project Driveway



## HCM 6th Signalized Intersection Summary

### 2: SR 82 & East Project Driveway

Buildout with Improvement  
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	2808	1588	149	154	43
Future Volume (veh/h)	43	2808	1588	149	154	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1826	1826	1811	1811	1870	1870
Adj Flow Rate, veh/h	47	3052	1726	162	167	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	6	6	2	2
Cap, veh/h	60	3779	3340	1037	271	241
Arrive On Green	0.03	0.76	0.68	0.68	0.15	0.15
Sat Flow, veh/h	1739	5149	5107	1535	1781	1585
Grp Volume(v), veh/h	47	3052	1726	162	167	47
Grp Sat Flow(s),veh/h/ln	1739	1662	1648	1535	1781	1585
Q Serve(g_s), s	4.3	61.1	27.9	6.1	14.0	4.1
Cycle Q Clear(g_c), s	4.3	61.1	27.9	6.1	14.0	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	60	3779	3340	1037	271	241
V/C Ratio(X)	0.78	0.81	0.52	0.16	0.62	0.20
Avail Cap(c_a), veh/h	112	3779	3340	1037	271	241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.6	12.1	12.9	9.4	63.5	59.3
Incr Delay (d2), s/veh	19.4	2.0	0.6	0.3	10.1	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	26.1	14.7	3.6	11.6	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	96.0	14.0	13.5	9.7	73.6	61.1
LnGrp LOS	F	B	B	A	E	E
Approach Vol, veh/h		3099	1888		214	
Approach Delay, s/veh		15.3	13.2		70.9	
Approach LOS		B	B		E	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.2	115.8		31.0		129.0
Change Period (Y+Rc), s	7.7	7.7		* 6.7		7.7
Max Green Setting (Gmax), s	10.3	103.3		* 24		121.3
Max Q Clear Time (g_c+I1), s	6.3	29.9		16.0		63.1
Green Ext Time (p_c), s	0.0	20.8		0.4		47.8

#### Intersection Summary






HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

#### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
3: SR 82 & Project Driveway

Buildout with Improvement  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	2896	1619	12	0	20
Future Vol, veh/h	32	2896	1619	12	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	360	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	3148	1760	13	0	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1773	0	-	0	-	887
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	163	-	-	-	0	247
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	163	-	-	-	-	247
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		21		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	163	-	-	-	247	
HCM Lane V/C Ratio	0.213	-	-	-	0.088	
HCM Control Delay (s)	33	-	-	-	21	
HCM Lane LOS	D	-	-	-	C	
HCM 95th %tile Q(veh)	0.8	-	-	-	0.3	