

Bluffton Community Hospital Development
Traffic Impact Study

Beaufort County, South Carolina

Prepared for

BMH

Prepared by

Kimley»Horn

July 2024

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Dillon Brent Turner
July 1, 2024

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Executive Summary

A traffic impact study was prepared for the Bluffton Community Hospital development. The proposed development is located west of the Bluffton Parkway at Buckwalter Parkway intersection and is proposed to consist of a 91,000 SF hospital. It is assumed that the project will access the roadway network via a right-in right-out (RIRO) driveway on Bluffton Parkway and a full-access driveway on Innovation Drive.

It was assumed that the development will be built and fully occupied by 2027. This study summarizes the results of the traffic analyses at the following five study intersections.

- 1) Innovation Drive at Bluffton Parkway
- 2) Bluffton Parkway at Access #1
- 3) Innovation Drive at Access #2
- 4) Bluffton Parkway at Buckwalter Parkway
- 5) Buckwalter Place Boulevard at Buckwalter Parkway

The results of the traffic analyses indicate the following improvements are recommended to mitigate the deficient LOS conditions in the study area.

Innovation Drive at Bluffton Parkway

- Install a traffic signal based on the traffic signal warrant analysis.
 - Note: A traffic signal is shown at the intersection of Innovation Drive at Bluffton Parkway in the *Bluffton Parkway Access Management Plan*.

Bluffton Parkway at Access #1

- No capacity improvements are recommended at this intersection.

Innovation Drive at Access #2

- No capacity improvements are recommended at this intersection.

Bluffton Parkway at Buckwalter Parkway

- No capacity improvements are recommended at this intersection.

Buckwalter Place Boulevard at Buckwalter Parkway

- No capacity improvements are recommended at this intersection.

1 Introduction

The purpose of this traffic impact study is to review the vehicular traffic impacts of the proposed Bluffton Community Hospital development in Bluffton, South Carolina. The proposed development is located on Bluffton Pkwy and is proposed to consist of a 91,000 SF hospital. It is assumed that the project will access the roadway network via a single full-access project driveway along Innovation Drive and a right-in right-out (RIRO) driveway on Bluffton Parkway. The location of the proposed development and concept plan are illustrated in **Figure 1** and **Figure 2**.

A traffic impact study was prepared for the Bluffton Community Hospital development. It was assumed that the development will be built and fully occupied by 2027. This study summarizes the results of the traffic analyses of 2024 Existing, 2027 No Build, and 2027 Build conditions at the following study intersections:

- 1) Innovation Drive at Bluffton Parkway
- 2) Bluffton Parkway at Access #1
- 3) Innovation Drive at Access #2
- 4) Bluffton Parkway at Buckwalter Parkway
- 5) Buckwalter Place Boulevard at Buckwalter Parkway

1.1 Existing Conditions

Bluffton Parkway (L-1863) is a four-lane, undivided, urban minor arterial with a posted speed limit of 45 mph. Based upon SCDOT data, 21,200 vehicles per day traveled along Bluffton Pkwy in 2023 at a count station located west of the Bluffton Parkway at Innovation Drive intersection.

Innovation Drive (L-1937) is a two-lane, undivided, urban local with a posted speed limit of 45 mph. No daily count data is available for Innovation Drive.

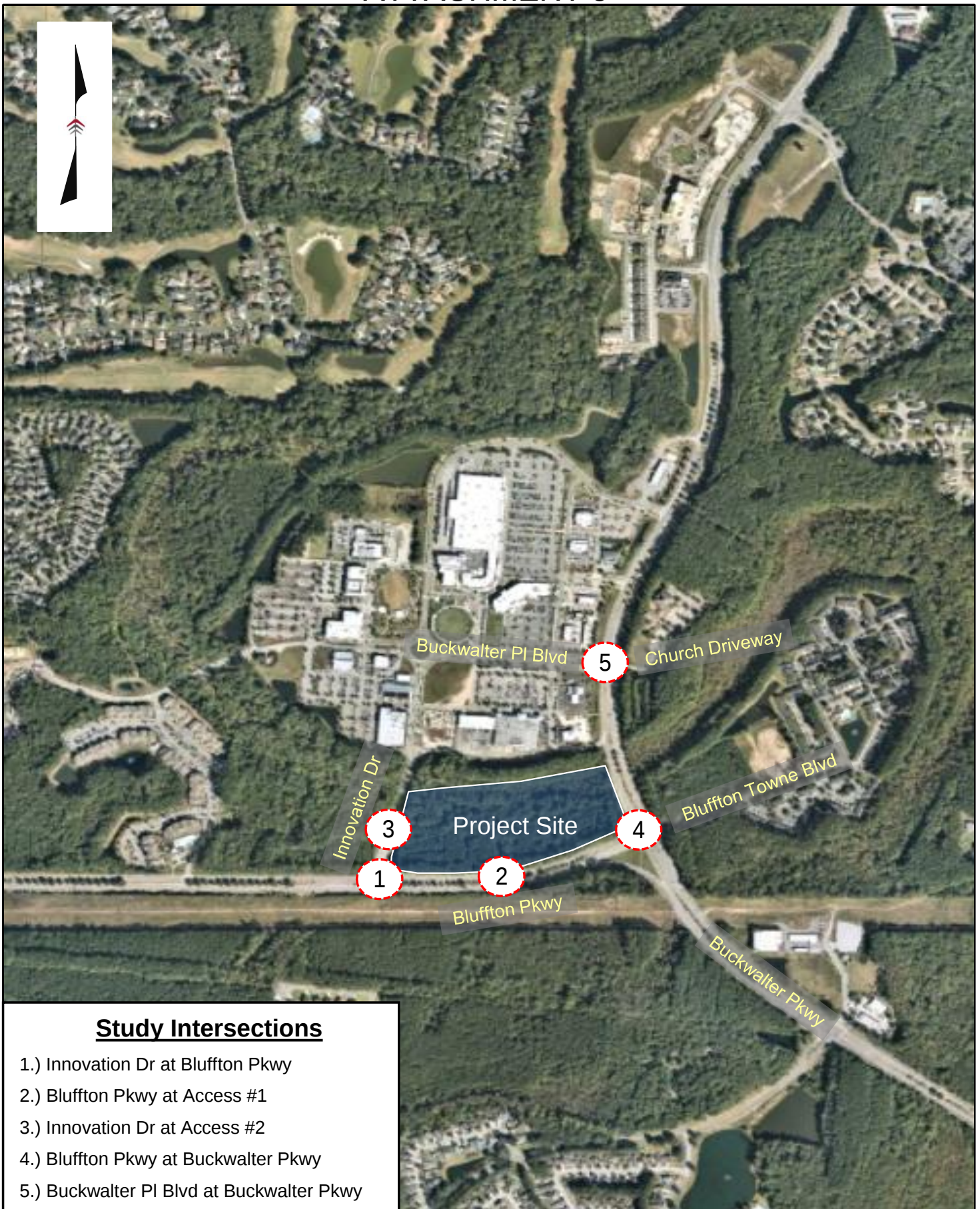
Buckwalter Parkway (L-1525) is a four-lane, undivided, urban minor arterial with a posted speed limit of 45 mph. Based upon SCDOT data, 20,400 vehicles per day traveled along Buckwalter Parkway in 2023 at a count station located north of the Buckwalter Parkway at Bluffton Parkway.

Buckwalter Towne Boulevard (L-749) is a two-lane, undivided, urban local with a posted speed limit of 25 mph. No daily count data is available for Buckwalter Towne Boulevard.

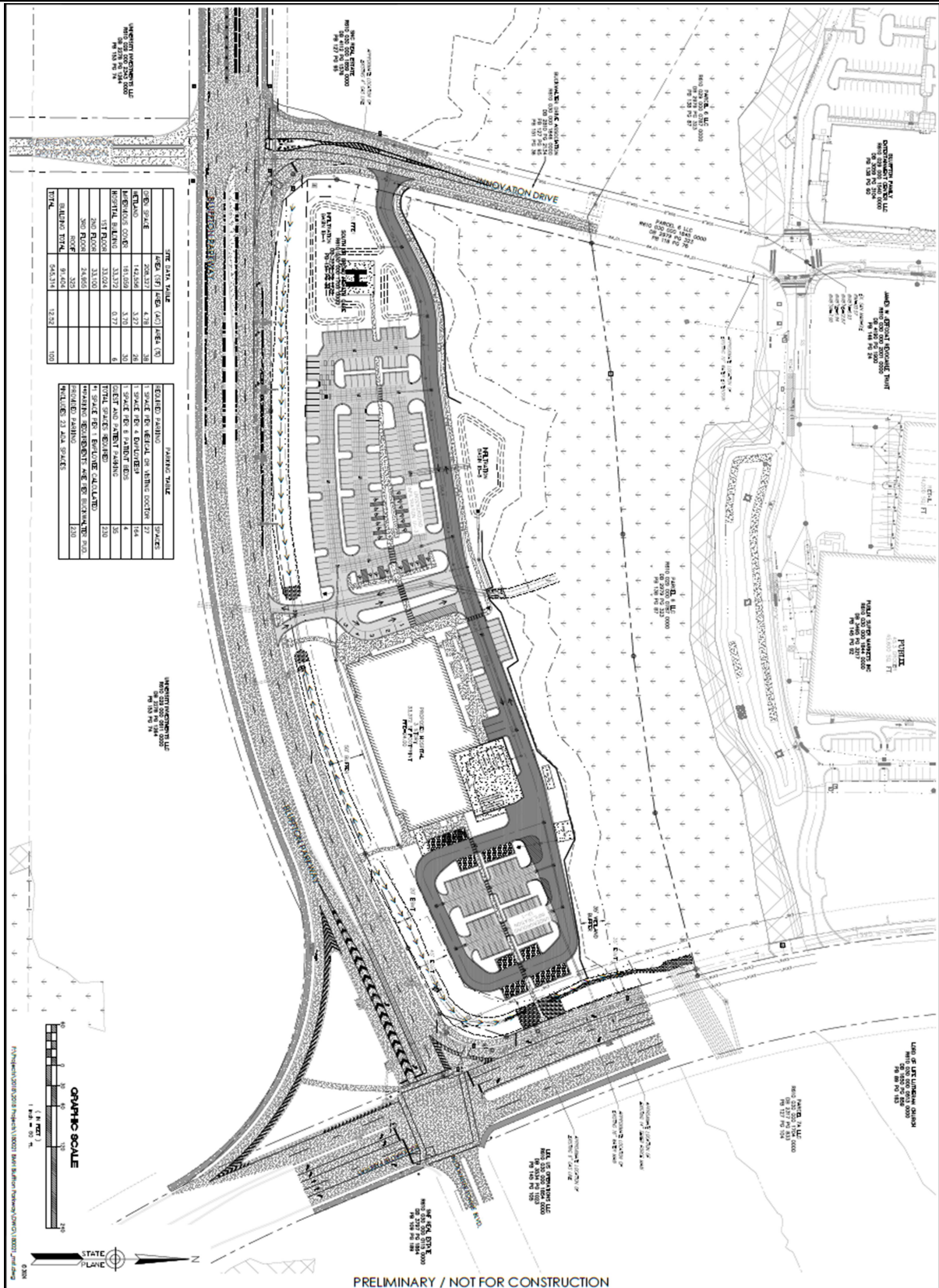
Buckwalter Place Boulevard (L-1087) is a two-lane, undivided, urban local with a posted speed limit of 35 mph. No daily count data is available for Buckwalter Place Boulevard.

The existing geometry and traffic control for the study area intersections is illustrated in **Figure 3**.

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THE DATA TABLE

ITEM	QTY	UNIT	PRICE	TOTAL
CONCRETE	14,200	CU YD	28	397,600
STEEL	14,200	CU YD	28	397,600
BRICKS	14,200	CU YD	28	397,600
CEMENT	14,200	CU YD	28	397,600
ROOFING	14,200	CU YD	28	397,600
PAVING	14,200	CU YD	28	397,600
LANDSCAPING	14,200	CU YD	28	397,600
TOTAL				3,976,000

THE DATA TABLE

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CONCRETE	14,200	CU YD	28	397,600
STEEL	14,200	CU YD	28	397,600
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PAVING	14,200	CU YD	28	397,600
LANDSCAPING	14,200	CU YD	28	397,600
TOTAL				3,976,000

JOB: 180021

SHEET #:

2

Overall Site Plan

Site Development Plan
For
Bluffton Community Hospital
Buckwalter & Sullivan Hwy
Bluffton, SC 29902

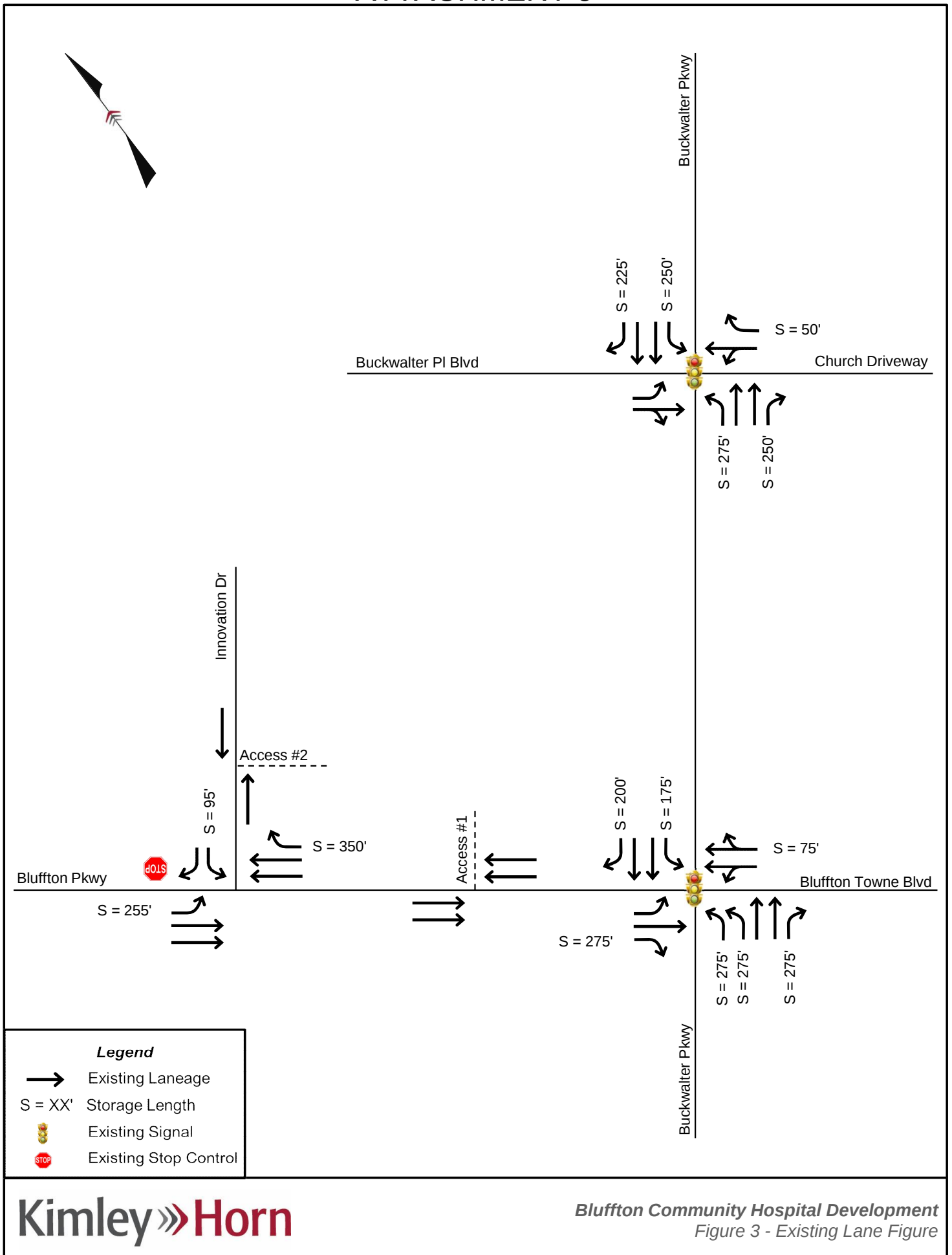
DAVIS & FLOYD
PLAN | DESIGN | ENGINEER

2712 BALL STREET SUITE A
BEAUFORT, SC 29902
(843) 379-2222

PLAN REVISIONS

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			
6			
7			
8			

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2 Project Traffic

2.1 Trip Generation

The trip generation rates and equations published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition* were used to estimate the trip generation potential for the development. The analysis was performed using the information provided for land use code (LUC) 610 – Hospital (KSF).

The estimated trip generation for the Bluffton Community Hospital development is summarized in **Table 1**, which indicates that the development is anticipated to generate 186 trips (125 in/61 out) during the AM peak hour and 174 trips (61 in/113 out) during the PM peak hour.

Table 1 – Trip Generation Summary

Bluffton Community Hospital Trip Generation									
Land Use	Intensity	Units	Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
610 - Hospital	91.0	KSF	3,950	186	125	61	174	61	113
Total Net New External Trips			3,950	186	125	61	174	61	113
Note: Trip generation was calculated using the following data:									
610 - Hospital			ITE 610	=	T = 5.29 * (X) + (3469.05); (50 % In; 50 % Out)				
<u>AM Peak-Hour Traffic Generation</u>									
610 - Hospital			ITE 610	=	LN (T) = 0.6 * LN (X) + (2.52); (67 % In; 33 % Out)				
<u>PM Peak-Hour Traffic Generation</u>									
610 - Hospital			ITE 610	=	LN (T) = 0.64 * LN (X) + (2.27); (35 % In; 65 % Out)				

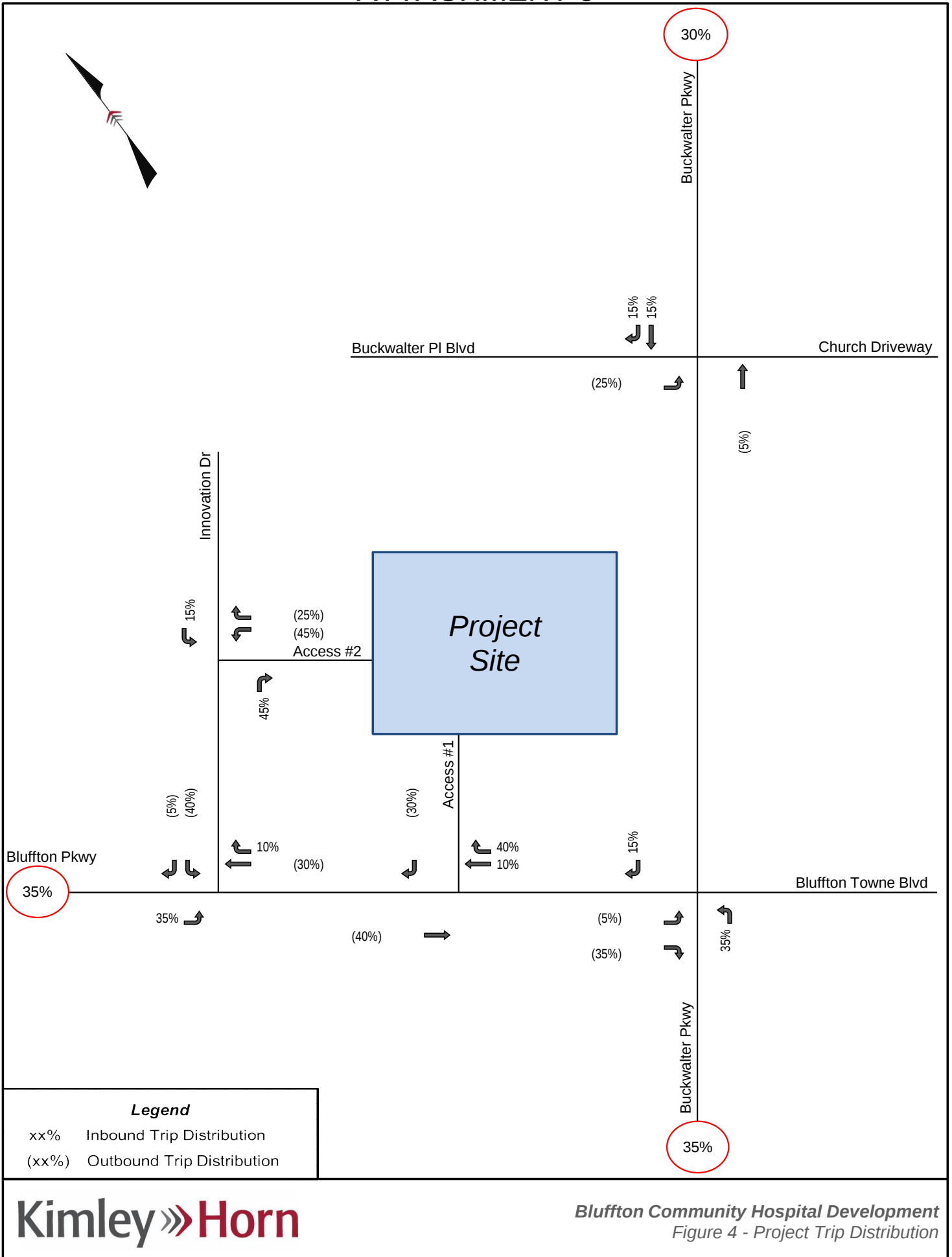
2.2 Trip Distribution & Assignment

New external trips generated by the proposed development were distributed and assigned to the surrounding roadway network based on existing travel patterns, surrounding land uses, and the proposed site layout. The trip distribution percentages used in this analysis are as follows.

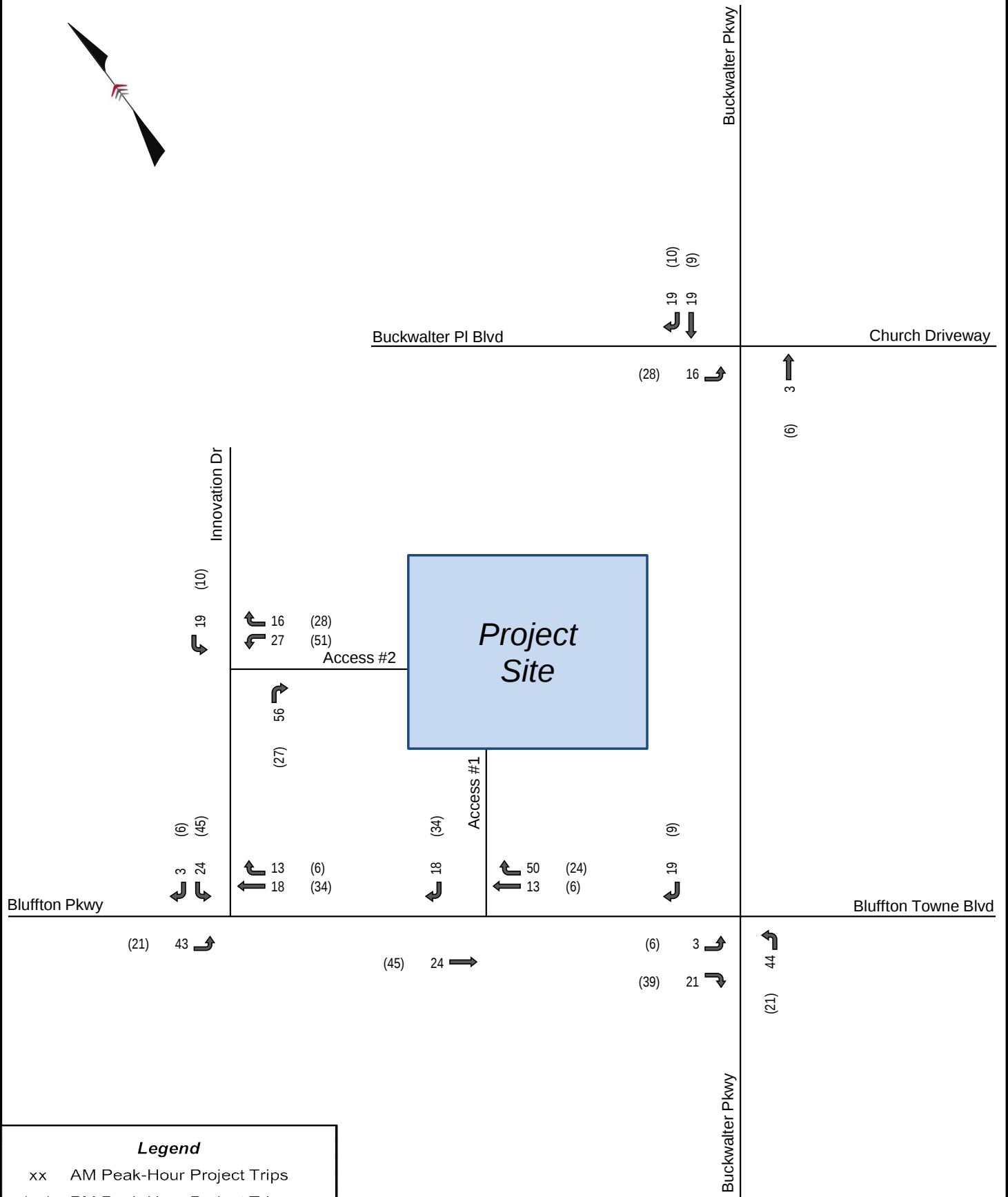
- 35% to/from the South via Buckwalter Parkway
- 30% to/from the North via Buckwalter Parkway
- 35% to/from the West via Bluffton Parkway

The site trip distribution and proposed new external trips are illustrated in **Figure 4** and **Figure 5**.

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3 Future Traffic Volume Development

The Existing 2024 traffic volumes were utilized in the analysis and future-year traffic volumes were developed for the projected 2027 traffic conditions. The future-year volumes consisted of the existing traffic volumes adjusted by an annual growth rate and the projected traffic volumes of the Bluffton Community Hospital development.

3.1 2024 Existing Traffic

Peak-hour intersection turning movement counts were conducted in a 13-hour peak period (7:00 AM to 6:00 PM), AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) on Tuesday, April 2nd, 2024 and Wednesday, May 15th, 2024.

Figure 6 illustrates the 2024 Existing Peak-Hour Traffic Volumes for the AM and PM peak hours. The raw turning-movement count data is included in **Appendix A**.

Worksheets documenting the traffic volume development are provided in **Appendix B**.

3.2 2027 No Build Traffic Development

It was assumed that the development will be built and fully occupied by 2027. The future-year traffic volumes consist of the 2024 Existing traffic volumes adjusted by a growth rate for the no-build scenarios.

The future-year traffic volumes consist of the 2024 Existing traffic volumes adjusted by a growth rate of 5% for the 2027 No Build conditions. To determine the historical growth rate in the area, traffic count data was obtained from SCDOT and includes count stations along Buckwalter Parkway and Bluffton Parkway. Historic growth rate calculations are provided in **Appendix C**.

In addition to the historical growth rate, the adjacent development traffic volumes of Bluffton Commons (*Bluffton Commons – Turn Lane and Preliminary Signal Warrant Analysis*, BIHL Engineering, 2018), Elle Apartments, Parkways Multifamily, Buckwalter MOB, and Cross Schools were included as part of the 2027 No Build AM and PM peaks. The AM and PM peak hour adjacent development volumes are illustrated in Error! Reference source not found..

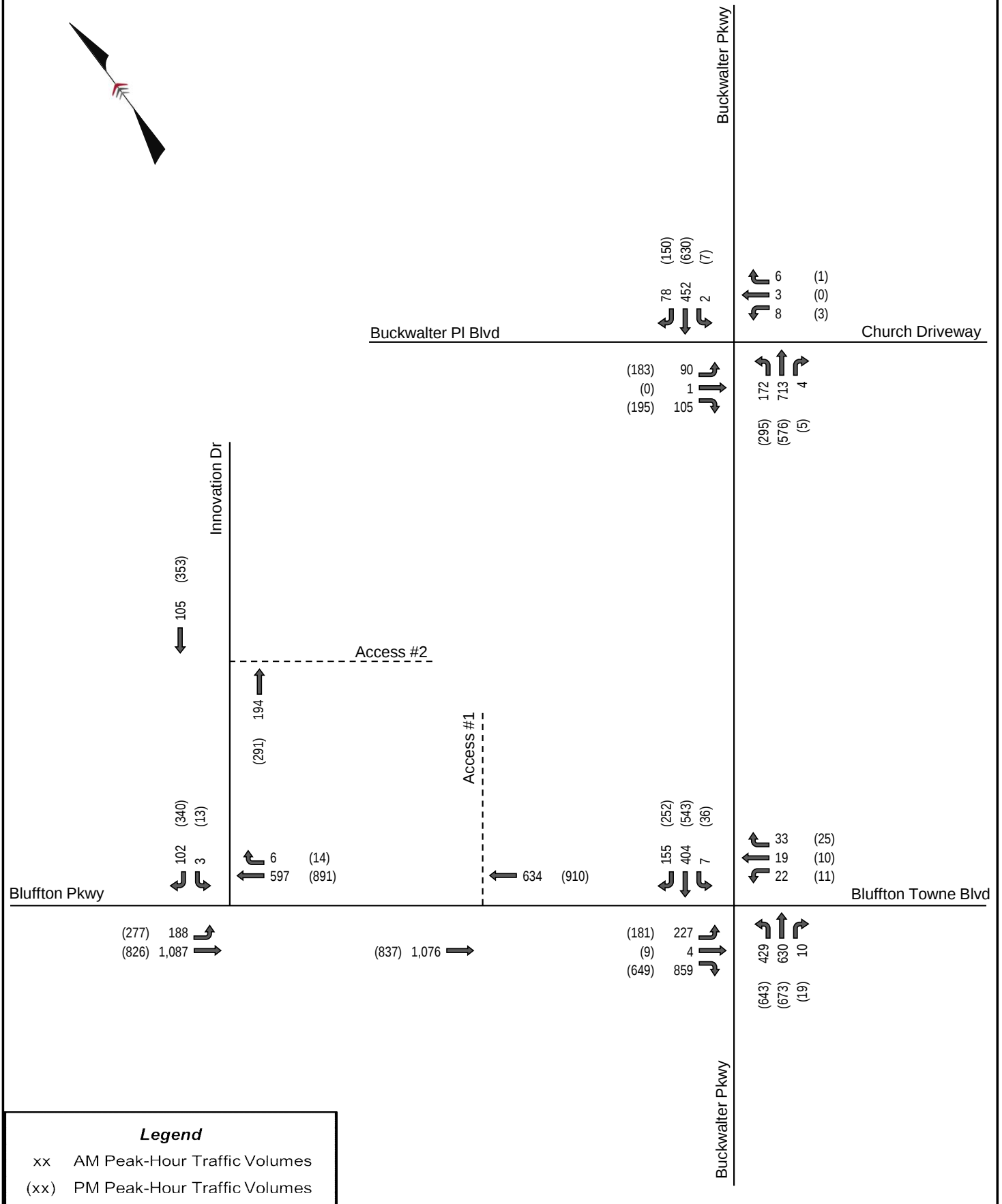
Please note, some of these projects have not been submitted to Beaufort County, however, Kimley-Horn is currently working on some of these TIAs and their respective trip generations and trip assignments were used in this TIA.

Figure 8 illustrates the 2027 No Build traffic volumes for the AM and PM peak hours.

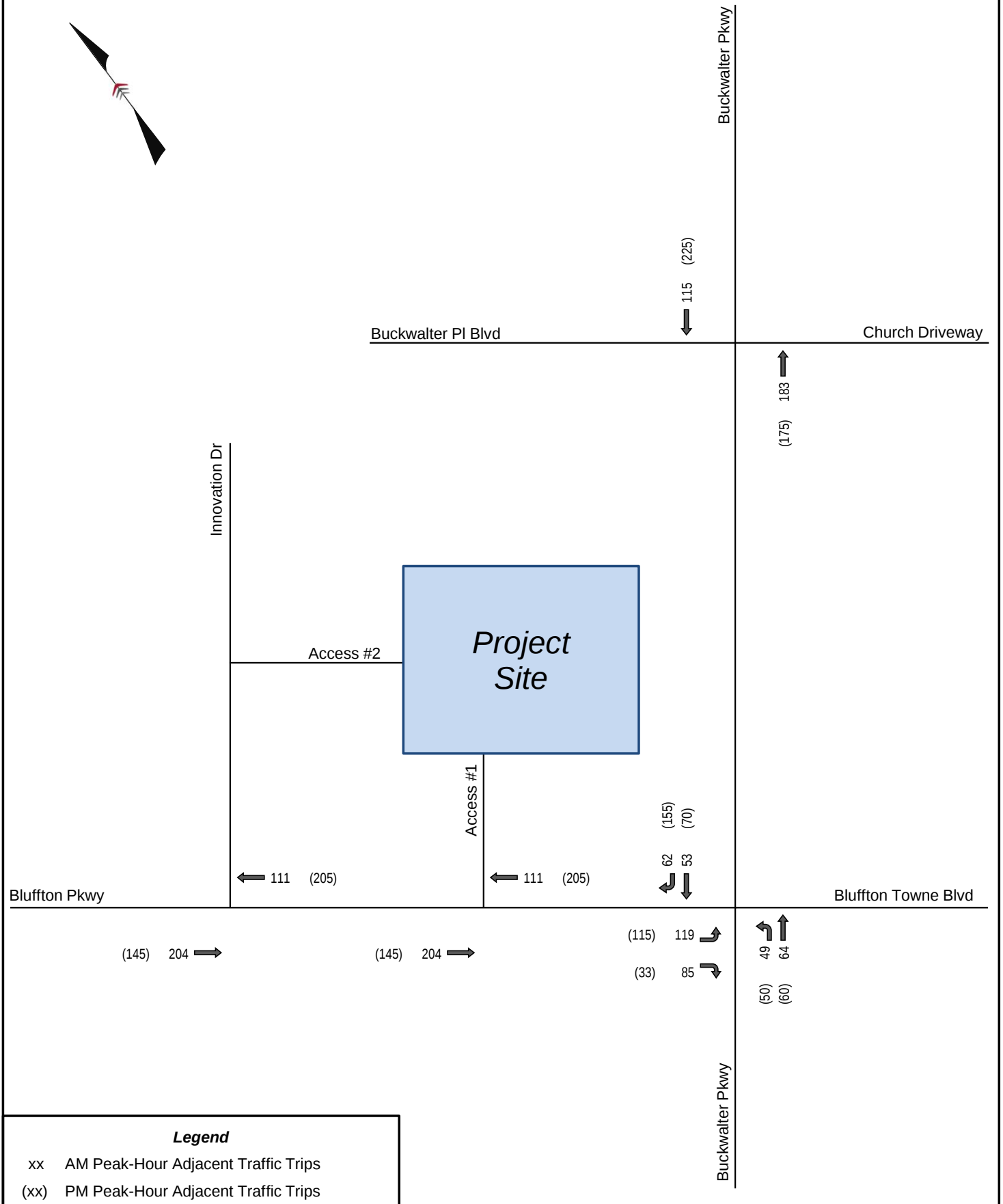
3.3 2027 Build Traffic Development

The Bluffton Community Hospital project traffic volumes were added to the no build traffic volumes to develop build traffic volumes for both horizon years. Error! Reference source not found. illustrates the 2027 build traffic volumes for the AM and PM peak hours.

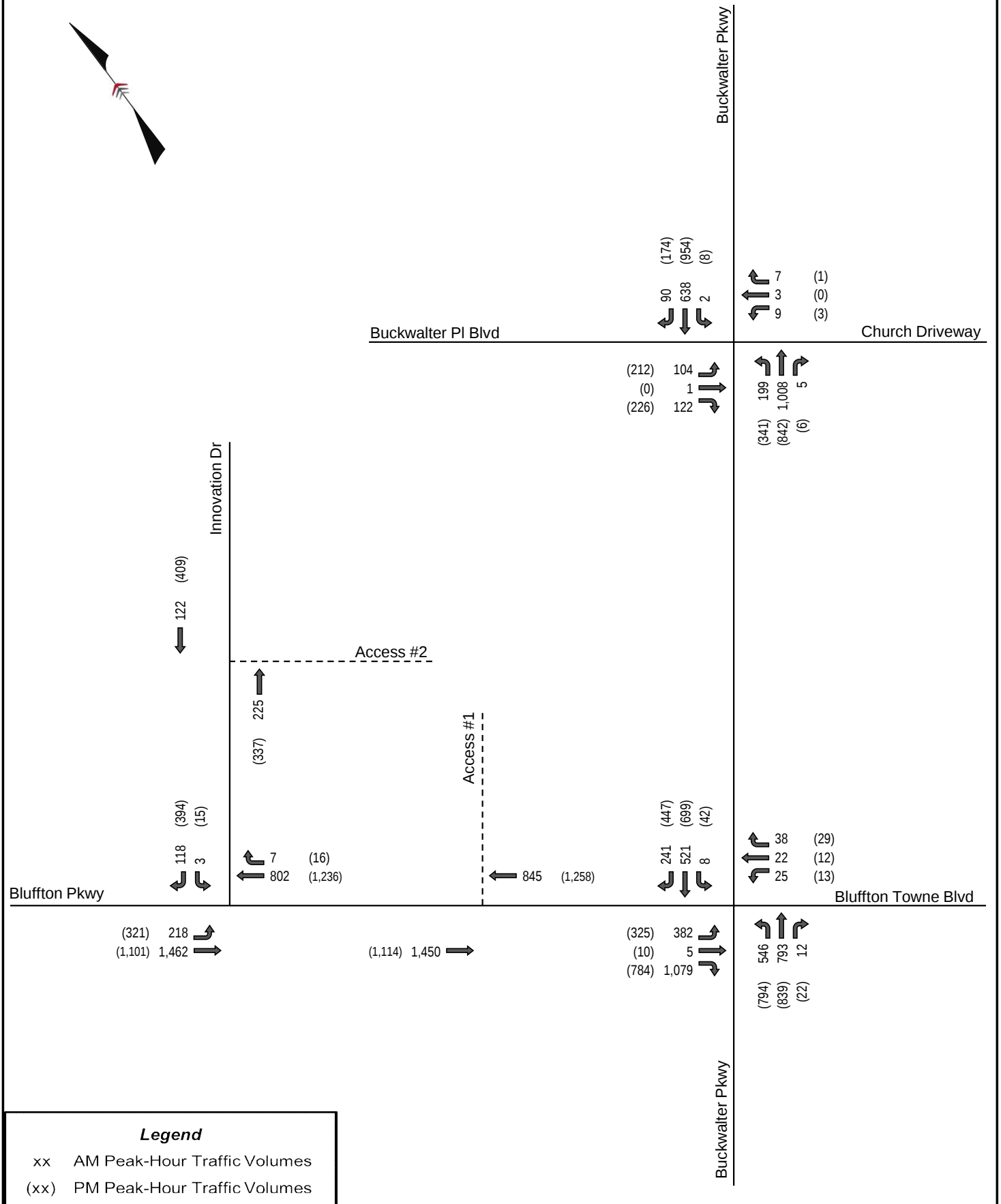
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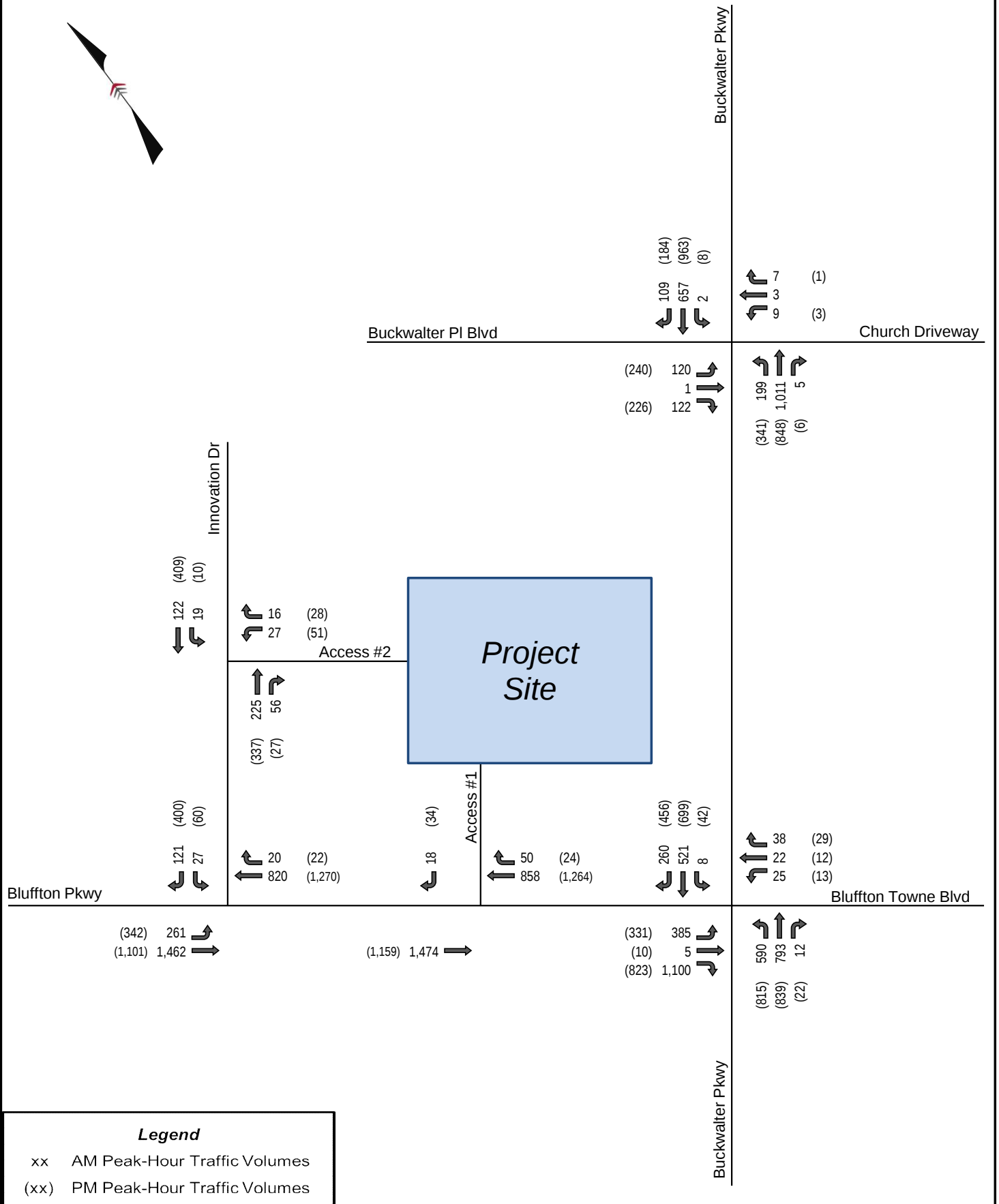
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4 Capacity Analysis

Capacity/level-of-service (LOS) analyses were conducted using the *Highway Capacity Manual (HCM)*, 6th Edition, methodologies of the *Synchro*, Version 12, traffic analysis software. Capacity analyses were conducted for the AM and PM peak hours of the 2024 existing conditions, 2027 No Build conditions, and 2027 Build conditions analysis scenarios. Synchro lanes, volumes, and timings report were utilized to report 95th percentile queuing.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, gridlocked conditions with high vehicular delays, and are generally considered undesirable. **Table 2** lists the LOS control delay thresholds published in the *HCM* for signalized and unsignalized intersections.

Table 2 – HCM Level of Service Criteria

LOS	Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

As part of the intersection analysis, SCDOT's default Synchro parameters were utilized. Existing peak-hour factors (PHF) were utilized for the existing scenarios and the PHFs for the future-year scenarios were adjusted to a minimum of 0.90 and maximum of 0.95. Existing heavy vehicle percentages were utilized for all scenarios, with a minimum of 2% considered.

Unsignalized intersections operating at LOS A-LOS C are considered to operate with short delays, unsignalized intersections operating at LOS D-LOS E are considered to operate with moderate delays, and intersections operating at LOS F are considered to operate with long delays.

It should be noted that traffic signal timings are anticipated to be adjusted with the increase in traffic volumes in the study network between 2024 Existing conditions and 2027 No Build conditions. Therefore, traffic signal timings were optimized under future conditions.

The following sections outline the results of the capacity analysis for each of the study intersections. The capacity analysis worksheets are included in **Appendix D**.

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4.1 Bluffton Parkway at Innovation Drive

Using the 13-hour count data collected and the anticipated new traffic generated by the proposed development, a traffic signal warrant analysis was performed for the intersection of Bluffton Parkway at Innovation Drive. The signal warrant analysis is based on requirements provided in Chapter 4C of the *2021 Manual on Uniform Traffic Control Devices (MUTCD)*.

From the results of the traffic signal warrant analysis, it is recommended to install a signal at the intersection of Bluffton Parkway at Innovation Drive. It should be noted, this intersection is included within the *Bluffton Parkway Access Management Plan* and should be improved at the approval of the traffic signal. A traffic signal was modeled under 2027 Build Improve conditions.

The capacity analysis results for the Bluffton Parkway at Innovation Drive intersection are summarized in **Table 3**.

Table 3 – Bluffton Parkway at Innovation Drive Analysis Results

Bluffton Parkway at Innovation Drive LOS (Delay)								
Condition	Measure	EB (Bluffton Pkwy)		WB (Bluffton Pkwy)		SB (Innovation Dr)		Intersection
		EBL	EBT	WBT	WBR	SBL	SBR	
AM Peak Hour								
2024 Existing	LOS (Delay)	B (10.1)		-		B (13.0)		-
	Synchro 95th Q	23'	-	-	-	5'	15'	
2027 No Build	LOS (Delay)	B (12.2)		-		C (17.1)		-
	Synchro 95th Q	35'	-	-	-	10'	23'	
2027 Build	LOS (Delay)	B (13.1)		-		F (141.4)		-
	Synchro 95th Q	48'	-	-	-	103'	25'	
2027 Build Improved	LOS (Delay)	A (6.3)		B (11.9)		B (19.3)		A (8.7)
	Synchro 95th Q	77'	218'	198'	12'	30'	49'	
PM Peak Hour								
2024 Existing	LOS (Delay)	B (13.4)		-		D (30.3)		-
	Synchro 95th Q	50'	-	-	-	35'	125'	
2027 No Build	LOS (Delay)	C (24.0)		-		F (140.0)		-
	Synchro 95th Q	118'	-	-	-	78'	333'	
2027 Build	LOS (Delay)	D (28.4)		-		F (\$)		-
	Synchro 95th Q	145'	-	-	-	245'	365'	
2027 Build Improved	LOS (Delay)	B (13.7)		E (60.7)		C (22.2)		C (33.7)
	Synchro 95th Q	#207	143'	#464	13'	58'	213'	
	Existing Storage	255'			350'	95'		
\$ - Delay exceeds 300 seconds								

Based on the results presented in **Table 3**, the intersection of Bluffton Parkway at Innovation Drive is currently operating with long delays along the southbound approach during the PM peak hour. Under 2027 No-Build and 2027 Build conditions the southbound approach is anticipated to operate with long delays during the AM and PM peak hour.

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To mitigate the long delays on the minor street approaches, a traffic signal was taken into consideration as an improvement. With implementation of a traffic signal, the overall intersection is expected to operate at LOS A during the AM peak hour and LOS C during the PM peak hour.

The results of the signal warrant analysis indicate that the applicable criteria meet MUTCD warrants based on the projected 2027 Build condition traffic volumes for each analyzed scenario. Therefore, a traffic signal is recommended. When installed, it is recommended this intersection be coordinated with the adjacent signalized intersection of Buckwalter Parkway at Buckwalter Place Boulevard.

4.2 Bluffton Parkway at Access #1

A turn-lane warrant analysis was conducted for the westbound right-turn movement under 2027 Build conditions. The results of the turn lane analysis indicate that a dedicated westbound right-turn lane along Bluffton Pkwy to the project site is not warranted and therefore, is not recommended to be constructed with the development. Worksheets documenting the turn lane warrant analyses are included in **Appendix F**.

The capacity analysis results for the Bluffton Parkway at Access #1 intersection are summarized in **Table 4**.

Table 4 – Bluffton Parkway at Access #1 Analysis Results

Bluffton Parkway at Access #1 LOS (Delay)		
Condition	Measure	SB (Access #1)
		SBR
AM Peak Hour		
2027 Build	LOS (Delay)	B (12.3)
	Synchro 95th Q	3'
PM Peak Hour		
2027 Build	LOS (Delay)	C (15.7)
	Synchro 95th Q	8'

Based on the results presented in **Table 4**, the intersection of Bluffton Parkway at Access #1 is anticipated to operate under 2027 Build conditions at LOS B during the AM peak hour and LOS C during the PM peak hour. Therefore, no capacity improvements are recommended at this intersection.

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4.3 Innovation Drive at Access #2

The capacity analysis results for the Innovation Drive at Access #2 intersection are summarized in **Table 5**.

Table 5 – Innovation Dr at Access #2 Analysis Results

Innovation Drive at Access #2 LOS (Delay)				
Condition	Measure	WB (Access #2)		SB (Innovation Dr)
		WBL	WBR	SBL
AM Peak Hour				
2027 Build	LOS (Delay)	B (11.4)		A (7.9)
	Synchro 95th Q	8'		3'
PM Peak Hour				
2027 Build	LOS (Delay)	C (16.9)		A (8.1)
	Synchro 95th Q	20'		0'

Based on the results presented in **Table 5**, the intersection of Innovation Drive at Access #2 is anticipated to operate under 2027 Build conditions at LOS B during the AM peak hour and LOS C during the PM peak hour. Therefore, no capacity improvements are recommended at this intersection.

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4.4 Buckwalter Parkway at Bluffton Parkway

The capacity analysis results for Buckwalter Parkway at Bluffton Parkway intersection are summarized in **Table 6**.

Table 6 – Buckwalter Parkway at Bluffton Parkway Analysis Results

Bluffton Parkway at Buckwalter Parkway LOS (Delay)														
Condition	Measure	EB (Bluffton Pkwy)			WB (Bluffton Towne Blvd)			NB (Buckwalter Pkwy)			SB (Buckwalter Pkwy)			Intersection
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM Peak Hour														
2024 Existing	LOS (Delay)	C (28.5)			C (21.7)			C (21.5)			B (17.0)			C (21.4)
	Synchro 95th Q	173'	#652		22'			#228	224'	0'	17'	146'	45'	
2027 No Build	LOS (Delay)	C (34.1)			C (21.3)			C (30.0)			C (32.4)			C (30.9)
	Synchro 95th Q	367'	#1308		26'			#436	499'	0'	28'	#372	108'	
2027 Build	LOS (Delay)	C (34.5)			C (21.5)			C (30.5)			C (34.5)			C (31.7)
	Synchro 95th Q	380'	#1325		26'			#463	494'	0'	28'	#385	117'	
PM Peak Hour														
2024 Existing	LOS (Delay)	C (28.1)			C (22.8)			D (39.7)			B (17.3)			C (32.3)
	Synchro 95th Q	133'	#364		15'			#318	202'	0'	46'	166'	50'	
2027 No Build	LOS (Delay)	D (38.8)			C (23.2)			D (49.4)			C (32.7)			D (43.1)
	Synchro 95th Q	#344	#590		20'			#389	280'	0'	58'	261'	72'	
2027 Build	LOS (Delay)	D (39.7)			C (24.4)			D (38.8)			D (37.8)			D (38.4)
	Synchro 95th Q	#354	#632		21'			#420	330'	0'	#72	301'	81'	
	Existing Storage						75'	225'		200'	175'		200'	

Based on the results presented in **Table 6**, the intersection of Buckwalter Parkway at Bluffton Parkway is anticipated to maintain no build operations with the addition of project traffic. 2027 Build conditions at LOS C during the AM peak hour and LOS D during the PM peak hour. A SIM Traffic queuing analysis was performed, and no significant queuing is anticipated at the intersection of Buckwalter Parkway at Bluffton Parkway. The turn-lane storages at all approaches are expected to accommodate the turning movement volumes and therefore, no capacity improvements are recommended at this intersection.

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4.5 Buckwalter Parkway at Buckwalter Place Boulevard

The capacity analysis results for the Buckwalter Parkway at Buckwalter Place Boulevard intersection are summarized in **Table 7**.

Table 7 – Buckwalter Pkwy at Buckwalter Place Boulevard Analysis Results

Buckwalter Parkway at Buckwalter Place Boulevard LOS (Delay)														
Condition	Measure	EB (Buckwalter Pl Blvd)			WB (Church Driveway)			NB (Buckwalter Pkwy)			SB (Buckwalter Pkwy)			Intersection
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM Peak Hour														
2024 Existing	LOS (Delay)	B (18.1)			B (16.3)			A (6.2)			B (12.4)			A (9.6)
	Synchro 95th Q	61'	32'		13'	0'		44'	84'	0'	7'	95'	0'	
2027 No Build	LOS (Delay)	B (18.5)			B (16.4)			A (7.0)			B (13.6)			B (10.3)
	Synchro 95th Q	76'	38'		15'	0'		53'	137'	0'	7'	144'	7'	
2027 Build	LOS (Delay)	B (18.6)			B (16.4)			A (7.0)			B (13.7)			B (10.5)
	Synchro 95th Q	#95	38'		16'	0'		53'	137'	0'	7'	149'	13'	
PM Peak Hour														
2024 Existing	LOS (Delay)	C (25.5)			C (20.9)			A (7.2)			B (14.6)			B (13.4)
	Synchro 95th Q	#144	0'		6'	0'		#103	61'	0'	12'	127'	21'	
2027 No Build	LOS (Delay)	C (30.5)			C (26.0)			A (9.8)			C (20.0)			B (17.1)
	Synchro 95th Q	#193	7'		7'	0'		#216	114'	0'	16'	#255	36'	
2027 Build	LOS (Delay)	C (29.7)			C (26.8)			A (9.9)			B (19.7)			B (17.0)
	Synchro 95th Q	229'	5'		7'	0'		231'	125'	0'	16'	276'	38'	
	Existing Storage							225'		225'	250'		225'	

Based on the results presented in **Table 7**, the intersection of Buckwalter Parkway at Buckwalter Place Boulevard is anticipated to operate under 2027 Build conditions at LOS B during the AM and PM peak hours. Therefore, no capacity improvements are recommended at this intersection.

5 Conclusion

A traffic impact study was prepared for the Bluffton Community Hospital development. The proposed development is located west of the Bluffton Parkway at Buckwalter Parkway intersection and is proposed to consist of a 91,000 SF hospital. It is assumed that the project will access the roadway network via a right-in right-out (RIRO) driveway on Bluffton Parkway and a full-access driveway on Innovation Drive.

It was assumed that the development will be built and fully occupied by 2027. This study summarizes the results of the traffic analyses at the following five study intersections.

- 1) Innovation Drive at Bluffton Parkway
- 2) Bluffton Parkway at Access #1
- 3) Innovation Drive at Access #2
- 4) Bluffton Parkway at Buckwalter Parkway
- 5) Buckwalter Place Boulevard at Buckwalter Parkway

The results of the traffic analyses indicate the following improvements are recommended to mitigate the deficient LOS conditions in the study area.

Innovation Drive at Bluffton Parkway

- Install a traffic signal based on the traffic signal warrant analysis.
 - Note: A traffic signal is shown at the intersection of Innovation Drive at Bluffton Parkway in the *Bluffton Parkway Access Management Plan*.

Bluffton Parkway at Access #1

- No capacity improvements are recommended at this intersection.

Innovation Drive at Access #2

- No capacity improvements are recommended at this intersection.

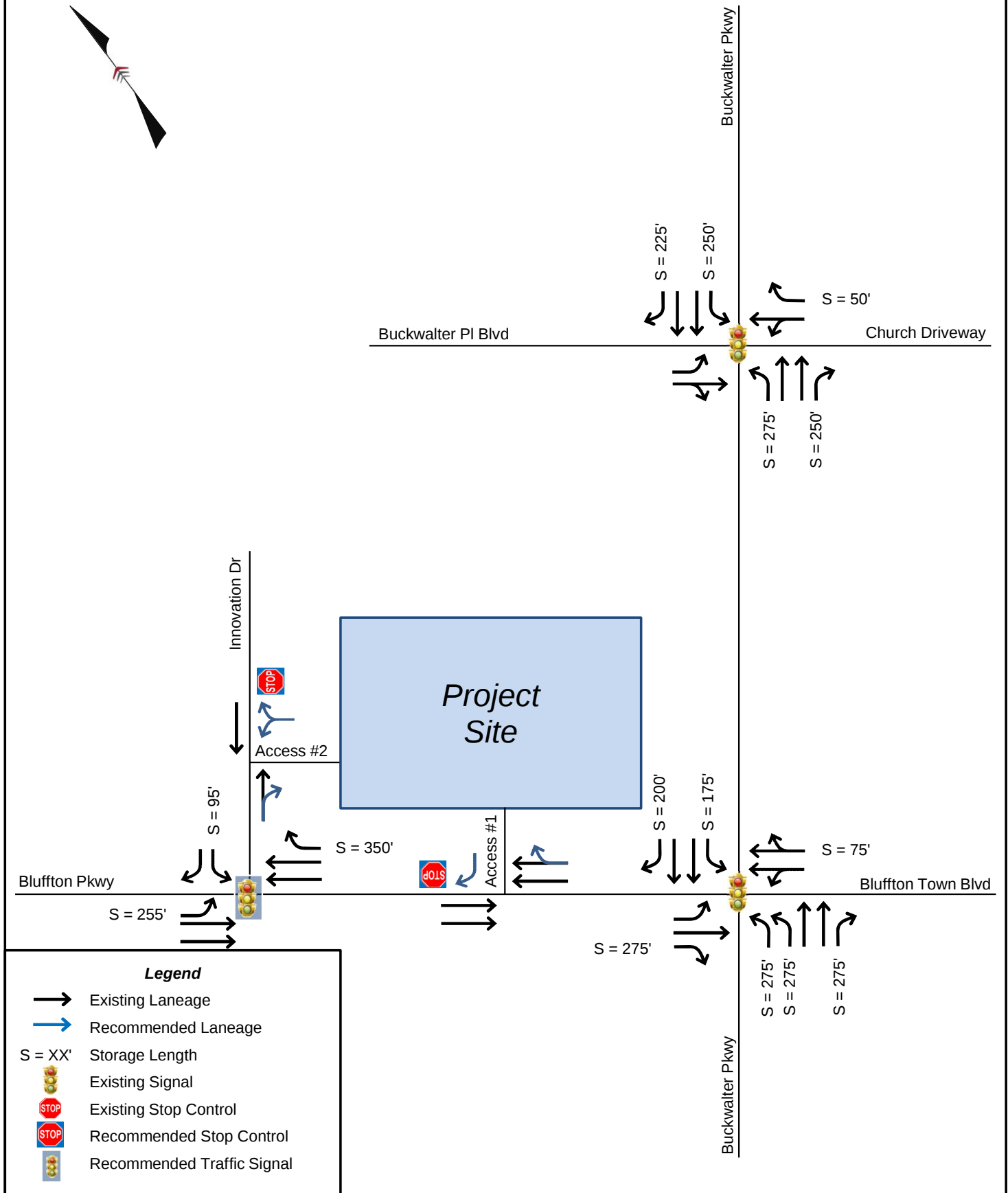
Bluffton Parkway at Buckwalter Parkway

- No capacity improvements are recommended at this intersection.

Buckwalter Place Boulevard at Buckwalter Parkway

- No capacity improvements are recommended at this intersection.

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Appendix A – Turning Movement Counts



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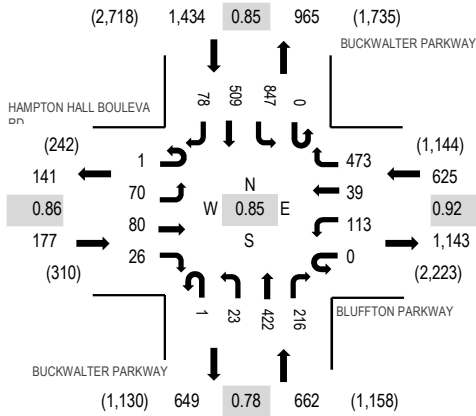
Location: 1 BUCKWALTER PARKWAY & BLUFFTON PARKWAY AM

Date: Wednesday, May 15, 2024

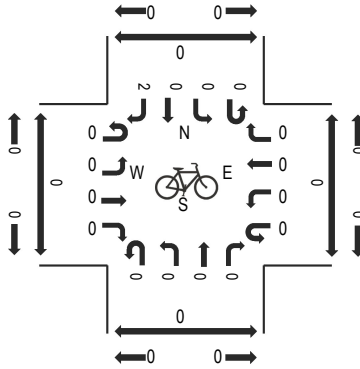
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

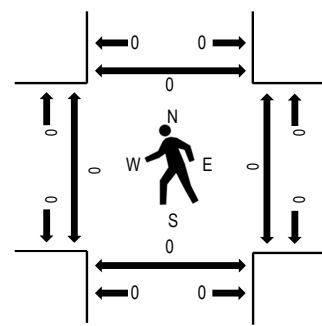
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	HAMPTON HALL Eastbound				BLUFFTON PARKWAY Westbound				BUCKWALTER PARKWAY Northbound				BUCKWALTER PARKWAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	6	12	4	0	9	2	51	0	1	50	38	0	209	86	2	470	2,670	0	0	0	0
7:15 AM	0	13	13	3	0	22	10	89	1	1	94	39	0	241	90	8	624	2,797	0	0	0	0
7:30 AM	0	7	17	5	0	25	6	123	1	5	124	60	0	231	99	17	720	2,898	0	0	0	0
7:45 AM	0	10	35	2	0	26	11	137	0	6	127	79	0	250	142	31	856	2,888	0	0	0	0
8:00 AM	1	24	15	8	0	26	16	114	0	4	60	28	0	172	113	16	597	2,660	0	0	0	0
8:15 AM	0	29	13	11	0	36	6	99	0	8	111	49	0	194	155	14	725		0	0	0	0
8:30 AM	0	15	12	6	0	36	11	129	0	5	104	48	0	192	128	24	710		0	0	0	0
8:45 AM	0	24	22	3	0	25	17	118	0	4	77	34	0	220	68	16	628		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
Lights	1	70	80	24	0	110	39	469	1	22	418	215	0	846	505	74	2,874
Mediums	0	0	0	2	0	3	0	3	0	1	4	1	0	1	4	3	22
Total	1	70	80	26	0	113	39	473	1	23	422	216	0	847	509	78	2,898

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %	0.0%				0.2%				0.0%				0.1%				0.1%
Heavy Vehicle %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.1%
Peak Hour Factor	0.86				0.92				0.78				0.85				0.85
Peak Hour Factor	0.25	0.79	0.57	0.64	0.00	0.86	0.74	0.87	0.50	0.72	0.83	0.68	0.00	0.93	0.87	0.69	0.85



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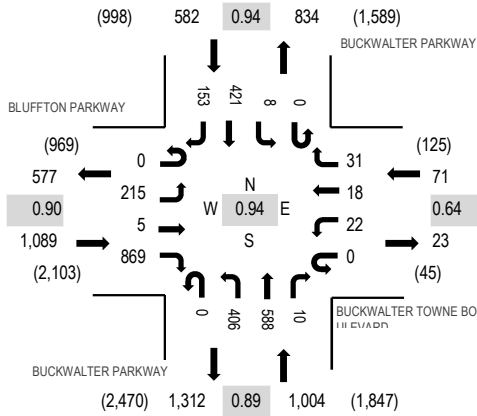
Location: 2 BUCKWALTER PARKWAY & BUCKWALTER TOWNE BOULEVARD AM

Date: Wednesday, May 15, 2024

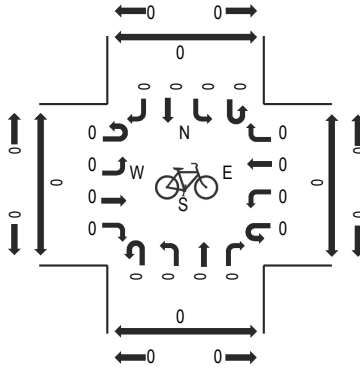
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

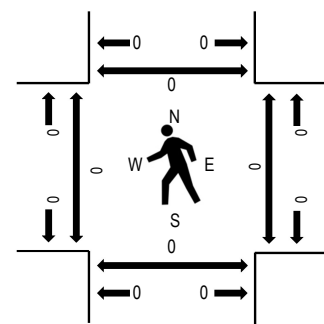
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BLUFFTON PARKWAY				BUCKWALTER TOWNE				BUCKWALTER PARKWAY				BUCKWALTER PARKWAY				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
7:00 AM	0	28	0	167	0	4	2	6	0	31	93	1	0	0	79	11	422	2,392	0	0	0	0
7:15 AM	0	41	1	196	0	4	1	15	0	63	137	1	0	2	68	14	543	2,558	0	0	0	0
7:30 AM	0	56	1	251	0	5	1	6	0	85	160	2	0	5	116	21	709	2,746	0	0	0	0
7:45 AM	0	58	0	210	0	1	2	13	0	106	175	3	0	1	117	32	718	2,740	0	0	0	0
8:00 AM	0	45	2	162	0	6	5	3	0	102	127	1	0	1	94	40	588	2,681	0	0	0	0
8:15 AM	0	56	2	246	0	10	10	9	0	113	126	4	0	1	94	60	731		0	0	0	0
8:30 AM	0	58	1	243	0	2	3	10	0	107	145	2	0	5	88	39	703		0	0	0	0
8:45 AM	0	56	1	222	0	3	0	4	0	99	162	2	0	6	82	22	659		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Lights	0	212	4	859	0	19	16	31	0	398	585	9	0	7	413	151	2,704
Mediums	0	3	1	9	0	3	2	0	0	7	3	1	0	1	8	2	40
Total	0	215	5	869	0	22	18	31	0	406	588	10	0	8	421	153	2,746

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %	0.1%				0.0%				0.1%				0.0%				0.1%
Heavy Vehicle %	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Peak Hour Factor	0.90				0.64				0.89				0.94				0.94
Peak Hour Factor	0.00	0.94	0.75	0.89	0.00	0.55	0.50	0.67	0.00	0.95	0.86	0.63	0.00	0.54	0.90	0.71	0.94



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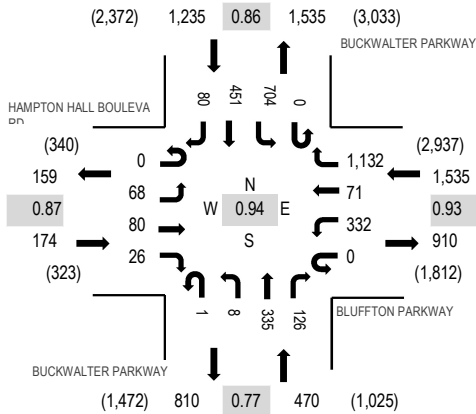
Location: 1 BUCKWALTER PARKWAY & BLUFFTON PARKWAY PM

Date: Wednesday, May 15, 2024

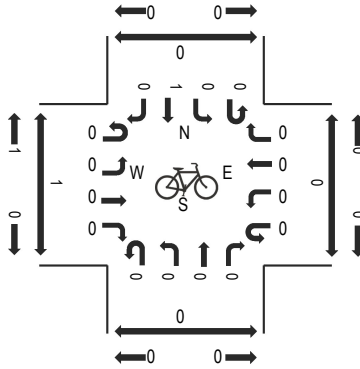
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

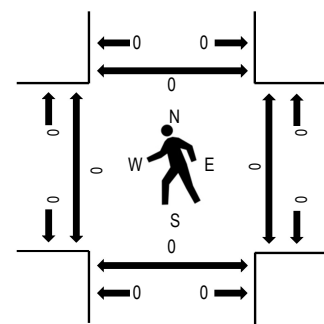
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	HAMPTON HALL Eastbound				BLUFFTON PARKWAY Westbound				BUCKWALTER PARKWAY Northbound				BUCKWALTER PARKWAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	12	17	6	0	70	24	252	0	7	116	53	0	190	100	30	877	3,265	2	0	1	0
4:15 PM	0	16	7	3	0	66	23	280	0	2	110	33	1	162	91	15	809	3,278	0	0	0	0
4:30 PM	0	27	24	3	0	63	15	273	0	7	76	33	0	168	72	23	784	3,381	0	0	0	0
4:45 PM	0	17	20	1	0	67	20	283	0	2	75	25	0	192	74	19	795	3,414	0	0	0	0
5:00 PM	0	24	18	12	0	83	14	314	0	2	94	23	0	158	129	19	890	3,392	0	0	0	0
5:15 PM	0	11	22	8	0	95	20	276	0	2	81	39	0	190	148	20	912		0	0	0	0
5:30 PM	0	16	20	5	0	87	17	259	1	2	85	39	0	164	100	22	817		0	0	0	0
5:45 PM	0	14	14	6	0	81	13	242	0	3	79	36	0	165	101	19	773		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights	0	66	78	26	0	328	71	1,129	1	8	332	124	0	692	440	79	3,374
Mediums	0	2	2	0	0	4	0	3	0	0	3	2	0	11	11	1	39
Total	0	68	80	26	0	332	71	1,132	1	8	335	126	0	704	451	80	3,414

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Heavy Vehicle %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Peak Hour Factor	0.87				0.93				0.77				0.86				0.94
Peak Hour Factor	0.00	0.78	0.88	0.65	0.00	0.91	0.85	0.92	0.25	0.64	0.81	0.68	0.25	0.93	0.81	0.73	0.94



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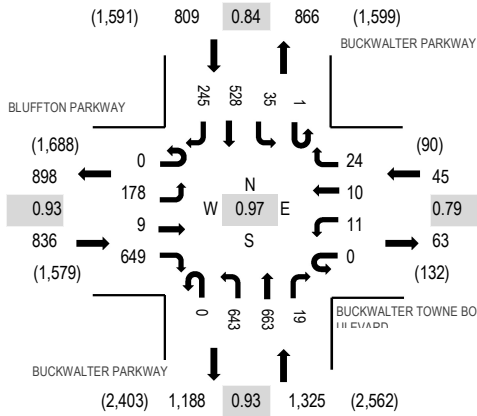
Location: 2 BUCKWALTER PARKWAY & BUCKWALTER TOWNE BOULEVARD PM

Date: Wednesday, May 15, 2024

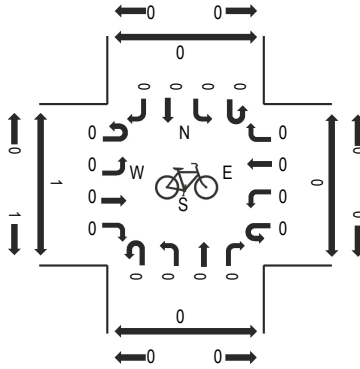
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

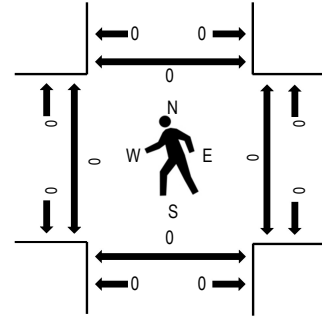
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BLUFFTON PARKWAY				BUCKWALTER TOWNE				BUCKWALTER PARKWAY				BUCKWALTER PARKWAY				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
4:00 PM	0	52	2	168	0	0	1	5	0	169	170	1	0	11	156	40	775	3,015	0	0	0	0
4:15 PM	0	53	0	171	0	3	3	8	0	163	186	9	0	9	70	66	741	2,954	0	0	0	0
4:30 PM	0	46	3	150	0	4	6	3	0	153	138	5	0	8	147	74	737	2,975	0	0	0	0
4:45 PM	0	27	4	160	0	4	0	8	0	158	169	4	1	7	155	65	762	2,917	0	0	0	0
5:00 PM	0	23	4	159	0	5	4	9	0	189	169	5	0	11	87	49	714	2,807	0	0	0	0
5:15 PM	0	24	1	159	0	5	1	6	0	177	130	3	0	8	197	51	762		0	0	0	0
5:30 PM	0	33	4	145	0	1	1	2	0	142	145	7	0	11	161	27	679		0	0	0	0
5:45 PM	0	39	3	149	0	3	2	6	0	117	147	6	0	6	144	30	652		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Lights	0	173	8	638	0	10	9	22	0	632	651	19	1	32	516	244	2,955
Mediums	0	5	1	10	0	1	1	2	0	10	12	0	0	3	12	1	58
Total	0	178	9	649	0	11	10	24	0	643	663	19	1	35	528	245	3,015

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %		0.1%				0.0%				0.1%				0.0%			0.1%
Heavy Vehicle %	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Peak Hour Factor		0.93				0.79				0.93				0.84			0.97
Peak Hour Factor	0.00	0.84	0.81	0.95	0.00	0.90	0.54	0.78	0.00	0.90	0.89	0.64	0.25	0.84	0.76	0.86	0.97

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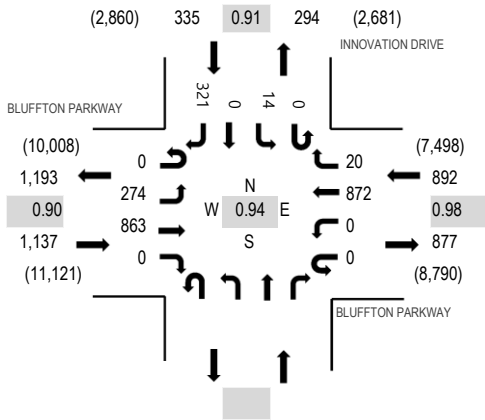
Location: 3 INNOVATION DRIVE & BLUFFTON PARKWAY AM

Date: Wednesday, May 15, 2024

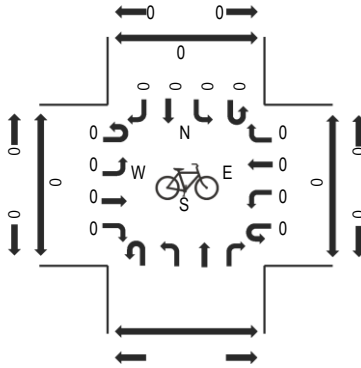
Peak Hour: 03:45 PM - 04:45 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

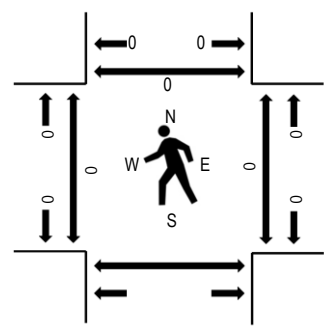
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BLUFFTON PARKWAY Eastbound				BLUFFTON PARKWAY Westbound				INNOVATION DRIVE Northbound				INNOVATION DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:00 AM	0	3	37	0	0	0	26	0					0	0	0	1	67	521	0	0		0
6:15 AM	0	6	48	0	0	0	26	0					0	0	0	5	85	718	0	0		0
6:30 AM	0	13	85	0	0	0	42	2					0	0	0	3	145	991	0	0		1
6:45 AM	0	25	146	0	0	0	45	1					0	0	0	7	224	1,338	1	0		0
7:00 AM	0	22	189	0	0	0	42	3					0	2	0	6	264	1,605	0	0		0
7:15 AM	0	36	237	0	0	0	71	3					0	0	0	11	358	1,764	0	0		0
7:30 AM	0	51	316	0	0	0	111	0					0	1	0	13	492	1,959	0	0		0
7:45 AM	0	54	262	0	0	0	143	1					0	0	0	31	491	2,001	0	0		0
8:00 AM	1	33	220	0	0	0	147	1					0	0	0	21	423	1,989	0	0		0
8:15 AM	0	42	296	0	0	0	186	1					0	1	0	27	553	1,921	0	0		0
8:30 AM	0	59	296	0	0	0	151	4					0	1	0	23	534	1,711	0	0		0
8:45 AM	0	67	270	0	0	0	111	3					0	3	0	25	479	1,560	0	0		0
9:00 AM	0	34	176	0	0	0	101	9					0	1	0	34	355	1,409	0	0		1
9:15 AM	0	42	156	0	0	0	93	10					0	4	0	38	343	1,362	0	0		0
9:30 AM	0	55	169	0	0	0	103	3					0	3	0	50	383	1,358	0	0		0
9:45 AM	0	46	148	0	0	0	102	2					0	3	0	27	328	1,291	0	0		0
10:00 AM	0	33	135	0	0	0	97	1					0	4	0	38	308	1,330	0	0		0
10:15 AM	0	48	153	0	0	0	103	0					0	1	0	34	339	1,377	0	0		0
10:30 AM	0	36	132	0	0	0	96	4					0	0	0	48	316	1,388	0	0		0
10:45 AM	0	52	162	0	0	0	96	2					0	4	0	51	367	1,467	0	0		0
11:00 AM	0	64	144	0	1	0	91	4					0	7	0	44	355	1,518	0	0		0
11:15 AM	0	54	141	0	0	0	98	10					0	2	0	45	350	1,605	0	0		0
11:30 AM	0	46	156	0	0	0	125	3					0	1	0	64	395	1,665	0	0		0
11:45 AM	0	57	153	0	1	0	137	9					0	6	0	55	418	1,664	0	0		0
12:00 PM	0	75	133	0	0	0	150	4					0	1	0	79	442	1,627	0	0		0
12:15 PM	0	50	161	0	0	0	119	7					0	4	0	69	410	1,570	0	0		0
12:30 PM	0	44	167	0	0	0	115	8					0	2	0	58	394	1,552	0	0		0
12:45 PM	0	43	132	0	0	0	139	3					0	0	0	64	381	1,538	0	0		0
1:00 PM	0	54	107	0	0	0	143	9					0	3	0	69	385	1,578	0	0		0
1:15 PM	0	51	121	0	0	0	161	4					0	3	0	52	392	1,601	0	0		0
1:30 PM	0	44	106	0	1	0	150	6					0	2	0	71	380	1,648	0	0		0
1:45 PM	0	64	134	0	0	0	153	5					0	2	0	63	421	1,673	0	0		0
2:00 PM	0	36	134	0	0	0	156	8					0	1	0	73	408	1,738	0	0		0
2:15 PM	0	54	139	0	0	0	166	7					0	2	0	71	439	1,803	0	0		0

ATTACHMENT 5

2:30 PM	0	41	146	0	0	0	137	8	0	5	0	68	405	1,898	0	0	0
2:45 PM	0	52	173	0	0	0	186	4	0	2	0	69	486	2,008	0	0	0
3:00 PM	0	41	177	0	0	0	177	11	0	3	0	64	473	2,107	0	0	0
3:15 PM	0	66	162	0	0	0	212	12	0	2	0	80	534	2,212	0	0	0
3:30 PM	0	50	155	0	0	0	221	4	0	5	0	80	515	2,309	0	0	0
3:45 PM	0	61	236	0	0	0	212	7	0	3	0	66	585	2,364	0	0	0
4:00 PM	0	69	217	0	0	0	199	2	0	7	0	84	578	2,364	0	0	0
4:15 PM	0	82	225	0	0	0	234	6	0	3	0	81	631	2,343	0	0	0
4:30 PM	0	62	185	0	0	0	227	5	0	1	0	90	570	2,284	0	0	0
4:45 PM	0	64	197	0	0	0	235	2	0	2	0	85	585	2,199	0	0	1
5:00 PM	0	54	174	0	0	0	226	1	0	4	0	98	557	2,062	0	1	0
5:15 PM	0	52	188	0	0	0	236	4	0	3	0	89	572	1,961	0	0	0
5:30 PM	0	54	182	0	0	0	172	5	0	0	0	72	485	1,849	0	0	0
5:45 PM	0	45	185	0	0	0	140	4	0	5	0	69	448	1,754	0	0	0
6:00 PM	0	58	147	0	0	0	157	2	0	2	0	90	456	1,631	0	0	0
6:15 PM	0	39	139	0	0	0	212	4	0	1	0	65	460		0	0	0
6:30 PM	0	42	130	0	0	0	144	7	0	3	0	64	390		0	0	0
6:45 PM	1	24	91	0	0	0	141	7	0	2	0	59	325		0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	1	0					0	0	0	0	2
Lights	0	273	847	0	0	0	857	20					0	14	0	319	2,330
Mediums	0	1	15	0	0	0	14	0					0	0	0	2	32
Total	0	274	863	0	0	0	872	20					0	14	0	321	2,364

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %			0.1%				0.1%								0.0%		0.1%
Heavy Vehicle %	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%					0.0%	0.0%	0.0%	0.0%	0.1%
Peak Hour Factor			0.90				0.98								0.91		0.94
Peak Hour Factor	0.25	0.84	0.87	0.00	0.50	0.00	0.98	0.73					0.00	0.64	0.00	0.92	0.94

ATTACHMENT 5

Appendix B – Traffic Volume Development Worksheets

ATTACHMENT 5

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Bluffton Pkwy at Innovation Dr
COUNT DATE: May 15, 2024
AM PEAK HOUR FACTOR: 0.90 AM FUTURE PEAK HOUR FACTOR: 0.90
PM PEAK HOUR FACTOR: 0.94 PM FUTURE PEAK HOUR FACTOR: 0.94

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
AM Adjusted Turning Movement Counts ¹	1	188	1,074	0	0	0	627	7	0	0	0	0	0	2	0	102	
AM Volume Balancing	0	0	13	0	0	0	-30	-1	0	0	0	0	0	1	0	0	
AM 2024 EXISTING TRAFFIC	1	188	1,087	0	0	0	597	6	0	0	0	0	0	3	0	102	
AM Heavy Vehicle Percentage	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
AM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
AM 2027 NO-BUILD TRAFFIC GROWTH	0	30	171	0	0	0	94	1	0	0	0	0	0	0	0	16	
AM 2027 NO-BUILD TRAFFIC (No AD)	1	218	1,258	0	0	0	691	7	0	0	0	0	0	3	0	118	
AM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
AM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM NO-BUILD TRAFFIC (No AD)	1	188	1,087	0	0	0	597	6	0	0	0	0	0	3	0	102	
Approved Development 1: Cross Schools			60				41										
Approved Development 2: Elle Apartments			8				4										
Approved Development 3: Bluffton Commons (Washi			62				45										
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	204	0	0	0	111	0	0	0	0	0	0	0	0	0	
AM 2027 NO-BUILD TRAFFIC	1	218	1,462	0	0	0	802	7	0	0	0	0	0	3	0	118	
AM NO-BUILD TRAFFIC	1	188	1,291	0	0	0	708	6	0	0	0	0	0	3	0	102	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering		35%					10%									
	Exiting						30%							40%		5%	
"AM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By																
	Net New	0	43	0	0	0	0	18	13	0	0	0	0	0	24	0	3
AM TOTAL PROJECT TRIPS		0	43	0	0	0	0	18	13	0	0	0	0	0	24	0	3
AM 2027 BUILD-OUT TRAFFIC	1	261	1,462	0	0	0	820	20	0	0	0	0	0	27	0	121	
AM BUILD-OUT TRAFFIC	1	231	1,291	0	0	0	726	19	0	0	0	0	0	27	0	105	

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
PM Adjusted Turning Movement Counts ¹	0	277	824	0	0	0	895	15	0	0	0	0	0	13	0	340	
PM Volume Balancing	0	0	2	0	0	0	-4	-1	0	0	0	0	0	0	0	0	
PM 2024 EXISTING TRAFFIC	0	277	826	0	0	0	891	14	0	0	0	0	0	13	0	340	
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
PM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
PM 2027 NO-BUILD TRAFFIC GROWTH	0	44	130	0	0	0	140	2	0	0	0	0	0	2	0	54	
PM 2027 NO-BUILD TRAFFIC (No AD)	0	321	956	0	0	0	1,031	16	0	0	0	0	0	15	0	394	
PM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
PM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM NO-BUILD TRAFFIC (No AD)	0	277	826	0	0	0	891	14	0	0	0	0	0	13	0	340	
Approved Development 1: Cross Schools			16				23										
Approved Development 2: Elle Apartments			4				10										
Approved Development 3: Bluffton Commons (Washi			81				85										
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	145	0	0	0	205	0	0	0	0	0	0	0	0	0	
PM 2027 NO-BUILD TRAFFIC	0	321	1,101	0	0	0	1,236	16	0	0	0	0	0	15	0	394	
PM NO-BUILD TRAFFIC	0	277	971	0	0	0	1,096	14	0	0	0	0	0	13	0	340	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering		35%					10%									
	Exiting						30%							40%		5%	
"PM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By Net New	0	21	0	0	0	0	34	6	0	0	0	0	0	45	0	6
PM TOTAL PROJECT TRIPS		0	21	0	0	0	0	34	6	0	0	0	0	0	45	0	6
PM 2027 BUILD-OUT TRAFFIC		0	342	1,101	0	0	0	1,270	22	0	0	0	0	0	60	0	400
PM BUILD-OUT TRAFFIC		0	298	971	0	0	0	1,130	20	0	0	0	0	0	58	0	346

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

AM Peak Hour																	
AM 2024 EXISTING TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movement Counts ¹		0	0	1,076	0	0	0	634	0	0	0	0	0	0	0	0	0
AM Volume Balancing		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2024 EXISTING TRAFFIC		0	0	1,076	0	0	0	634	0	0	0	0	0	0	0	0	0
AM Heavy Vehicle Percentage		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
AM 2027 NO-BUILD TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
AM 2027 NO-BUILD TRAFFIC GROWTH		0	0	170	0	0	0	100	0	0	0	0	0	0	0	0	0
AM 2027 NO-BUILD TRAFFIC (No AD)		0	0	1,246	0	0	0	734	0	0	0	0	0	0	0	0	0
AM NO-BUILD TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate		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%
AM NO-BUILD TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM NO-BUILD TRAFFIC (No AD)		0	0	1,076	0	0	0	634	0	0	0	0	0	0	0	0	0
Approved Development 1: Cross Schools				60				41									
Approved Development 2: Elle Apartments				8				4									
Approved Development 3: Bluffton Commons (Wash)				62				45									
TOTAL AM APPROVED DEVELOPMENT TRAFFIC		0	0	204	0	0	0	111	0	0	0	0	0	0	0	0	0
AM 2027 NO-BUILD TRAFFIC		0	0	1,450	0	0	0	845	0	0	0	0	0	0	0	0	0
AM NO-BUILD TRAFFIC		0	0	1,280	0	0	0	745	0	0	0	0	0	0	0	0	0
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering							10%	40%								
	Exiting			40%													30%
"AM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By																
	Net New	0	0	24	0	0	0	13	50	0	0	0	0	0	0	0	18
AM TOTAL PROJECT TRIPS		0	0	24	0	0	0	13	50	0	0	0	0	0	0	0	18
AM 2027 BUILD-OUT TRAFFIC		0	0	1,474	0	0	0	858	50	0	0	0	0	0	0	0	18
AM BUILD-OUT TRAFFIC		0	0	1,304	0	0	0	758	50	0	0	0	0	0	0	0	18

PM Peak Hour																	
PM 2024 EXISTING TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movement Counts ¹		0	0	837	0	0	0	910	0	0	0	0	0	0	0	0	0
PM Volume Balancing		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2024 EXISTING TRAFFIC		0	0	837	0	0	0	910	0	0	0	0	0	0	0	0	0
PM Heavy Vehicle Percentage		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
PM 2027 NO-BUILD TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
PM 2027 NO-BUILD TRAFFIC GROWTH		0	0	132	0	0	0	143	0	0	0	0	0	0	0	0	0
PM 2027 NO-BUILD TRAFFIC (No AD)		0	0	969	0	0	0	1,053	0	0	0	0	0	0	0	0	0
PM NO-BUILD TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate		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%
PM NO-BUILD TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM NO-BUILD TRAFFIC (No AD)		0	0	837	0	0	0	910	0	0	0	0	0	0	0	0	0
Approved Development 1: Cross Schools				16				23									
Approved Development 2: Elle Apartments				4				10									
Approved Development 3: Bluffton Commons (Washi				81				85									
TOTAL PM APPROVED DEVELOPMENT TRAFFIC		0	0	145	0	0	0	205	0	0	0	0	0	0	0	0	0
PM 2027 NO-BUILD TRAFFIC		0	0	1,114	0	0	0	1,258	0	0	0	0	0	0	0	0	0
PM NO-BUILD TRAFFIC		0	0	982	0	0	0	1,115	0	0	0	0	0	0	0	0	0
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering							10%	40%								
	Exiting			40%													30%
"PM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By	0	0	45	0	0	0	6	24	0	0	0	0	0	0	0	34
	Net New	0	0	45	0	0	0	6	24	0	0	0	0	0	0	0	34
PM TOTAL PROJECT TRIPS		0	0	45	0	0	0	6	24	0	0	0	0	0	0	0	34
PM 2027 BUILD-OUT TRAFFIC		0	0	1,159	0	0	0	1,264	24	0	0	0	0	0	0	0	34
PM BUILD-OUT TRAFFIC		0	0	1,027	0	0	0	1,121	24	0	0	0	0	0	0	0	34

ATTACHMENT 5

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Innovation Dr at Access #2
COUNT DATE: May 15, 2024
AM PEAK HOUR FACTOR: 0.90 AM FUTURE PEAK HOUR FACTOR: 0.90
PM PEAK HOUR FACTOR: 0.90 PM FUTURE PEAK HOUR FACTOR: 0.90

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
AM Adjusted Turning Movement Counts ¹	0	0	0	0	0	0	0	0	0	0	195	0	0	0	104	0	
AM Volume Balancing	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	1	0	
AM 2024 EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	194	0	0	0	105	0	
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	
AM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
AM 2027 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	31	0	0	0	17	0	
AM 2027 NO-BUILD TRAFFIC (No AD)	0	0	0	0	0	0	0	0	0	0	225	0	0	0	122	0	
AM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
AM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM NO-BUILD TRAFFIC (No AD)	0	0	0	0	0	0	0	0	0	0	194	0	0	0	105	0	
Approved Development 1: Cross Schools																	
Approved Development 2: Elle Apartments																	
Approved Development 3: Bluffton Commons (Wash																	
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM 2027 NO-BUILD TRAFFIC	0	0	0	0	0	0	0	0	0	0	225	0	0	0	122	0	
AM NO-BUILD TRAFFIC	0	0	0	0	0	0	0	0	0	0	194	0	0	0	105	0	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering											45%			15%		
	Exiting						45%	25%									
"AM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By																
	Net New	0	0	0	0	0	27	0	16	0	0	0	56	0	19	0	0
AM TOTAL PROJECT TRIPS		0	0	0	0	0	27	0	16	0	0	0	56	0	19	0	0
AM 2027 BUILD-OUT TRAFFIC		0	0	0	0	0	27	0	16	0	0	225	56		19	122	0
AM BUILD-OUT TRAFFIC		0	0	0	0	0	27	0	16	0	0	194	56	0	19	105	0

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
PM Adjusted Turning Movement Counts ¹	0	0	0	0	0	0	0	0	0	0	292	0	0	0	353	0	
PM Volume Balancing	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	
PM 2024 EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	291	0	0	0	353	0	
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
PM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
PM 2027 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	46	0	0	0	56	0	
PM 2027 NO-BUILD TRAFFIC (No AD)	0	0	0	0	0	0	0	0	0	0	337	0	0	0	409	0	
PM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
PM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM NO-BUILD TRAFFIC (No AD)	0	0	0	0	0	0	0	0	0	0	291	0	0	0	353	0	
Approved Development 1: Cross Schools																	
Approved Development 2: Elle Apartments																	
Approved Development 3: Bluffton Commons (Wash																	
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM 2027 NO-BUILD TRAFFIC	0	0	0	0	0	0	0	0	0	0	337	0	0	0	409	0	
PM NO-BUILD TRAFFIC	0	0	0	0	0	0	0	0	0	0	291	0	0	0	353	0	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering											45%			15%		
	Exiting						45%	25%									
"PM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By Net New	0	0	0	0	0	51	0	28	0	0	0	27	0	10	0	0
PM TOTAL PROJECT TRIPS		0	0	0	0	0	51	0	28	0	0	0	27	0	10	0	0
PM 2027 BUILD-OUT TRAFFIC		0	0	0	0	0	51	0	28	0	0	337	27	0	10	409	0
PM BUILD-OUT TRAFFIC		0	0	0	0	0	51	0	28	0	0	291	27	0	10	353	0

ATTACHMENT 5

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Buckwalter Pkwy at Bluffton Parkway
COUNT DATE: May 15, 2024
AM PEAK HOUR FACTOR: 0.94 AM FUTURE PEAK HOUR FACTOR: 0.94
PM PEAK HOUR FACTOR: 0.97 PM FUTURE PEAK HOUR FACTOR: 0.95

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
AM Adjusted Turning Movement Counts ¹	0	215	5	869	0	22	18	31	0	406	588	10	0	8	421	153	
AM Volume Balancing	0	12	-1	-10	0	0	1	2	0	23	42	0	0	-1	-17	2	
AM 2024 EXISTING TRAFFIC	0	227	4	859	0	22	19	33	0	429	630	10	0	7	404	155	
AM Heavy Vehicle Percentage	2%	2%	20%	2%	2%	14%	11%	2%	2%	2%	2%	10%	2%	13%	2%	2%	
AM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
AM 2027 NO-BUILD TRAFFIC GROWTH	0	36	1	135	0	3	3	5	0	68	99	2	0	1	64	24	
AM 2027 NO-BUILD TRAFFIC (No AD)	0	263	5	994	0	25	22	38	0	497	729	12	0	8	468	179	
AM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
AM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM NO-BUILD TRAFFIC (No AD)	0	227	4	859	0	22	19	33	0	429	630	10	0	7	404	155	
Approved Development 1: Cross Schools				60						41	18				26		
Approved Development 2: Elle Apartments		4		4						2						2	
Approved Development 3: Bluffton Commons (Washi		62									31				23	45	
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	119	0	85	0	0	0	0	0	49	64	0	0	0	53	62	
AM 2027 NO-BUILD TRAFFIC	0	382	5	1,079	0	25	22	38	0	546	793	12	0	8	521	241	
AM NO-BUILD TRAFFIC	0	346	4	944	0	22	19	33	0	478	694	10	0	7	457	217	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering										35%						15%
	Exiting		5%		35%												
"AM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By																
	Net New	0	3	0	21	0	0	0	0	0	44	0	0	0	0	0	19
AM TOTAL PROJECT TRIPS		0	3	0	21	0	0	0	0	0	44	0	0	0	0	0	19
AM 2027 BUILD-OUT TRAFFIC	0	385	5	1,100	0	25	22	38	0	590	793	12	0	8	521	260	
AM BUILD-OUT TRAFFIC	0	349	4	965	0	22	19	33	0	522	694	10	0	7	457	236	

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
PM Adjusted Turning Movement Counts ¹	0	178	9	649	0	11	10	24	0	643	663	19	1	35	528	245	
PM Volume Balancing	0	3	0	0	0	0	0	1	0	0	10	0	0	1	15	7	
PM 2024 EXISTING TRAFFIC	0	181	9	649	0	11	10	25	0	643	673	19	1	36	543	252	
PM Heavy Vehicle Percentage	2%	3%	11%	2%	2%	9%	10%	8%	2%	2%	2%	2%	2%	9%	2%	2%	
PM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
PM 2027 NO-BUILD TRAFFIC GROWTH	0	29	1	102	0	2	2	4	0	101	106	3	0	6	86	40	
PM 2027 NO-BUILD TRAFFIC (No AD)	0	210	10	751	0	13	12	29	0	744	779	22	1	42	629	292	
PM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
PM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM NO-BUILD TRAFFIC (No AD)	0	181	9	649	0	11	10	25	0	643	673	19	1	36	543	252	
Approved Development 1: Cross Schools				16						23	11				6		
Approved Development 2: Elle Apartments		3		4						5						5	
Approved Development 3: Bluffton Commons (Washi		81									40				43	85	
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	115	0	33	0	0	0	0	0	50	60	0	0	0	70	155	
PM 2027 NO-BUILD TRAFFIC	0	325	10	784	0	13	12	29	0	794	839	22	1	42	699	447	
PM NO-BUILD TRAFFIC	0	296	9	682	0	11	10	25	0	693	733	19	1	36	613	407	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering										35%						15%
	Exiting		5%		35%												
"PM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By Net New	0	6	0	39	0	0	0	0	0	21	0	0	0	0	0	9
PM TOTAL PROJECT TRIPS		0	6	0	39	0	0	0	0	0	21	0	0	0	0	0	9
PM 2027 BUILD-OUT TRAFFIC		0	331	10	823	0	13	12	29	0	815	839	22	1	42	699	456
PM BUILD-OUT TRAFFIC		0	302	9	721	0	11	10	25	0	714	733	19	1	36	613	416

ATTACHMENT 5

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Buckwalter Pkwy at Buckwalter PI Blvd
COUNT DATE: April 2, 2024
AM PEAK HOUR FACTOR: 0.89 AM FUTURE PEAK HOUR FACTOR: 0.90
PM PEAK HOUR FACTOR: 0.95 PM FUTURE PEAK HOUR FACTOR: 0.95

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
AM Adjusted Turning Movement Counts ¹	0	90	1	99	0	7	3	6	1	184	762	5	3	2	428	78	
AM Volume Balancing	0	0	0	6	0	1	0	0	0	-12	-49	-1	0	0	24	0	
AM 2024 EXISTING TRAFFIC	0	90	1	105	0	8	3	6	1	172	713	4	3	2	452	78	
AM Heavy Vehicle Percentage	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	
AM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
AM 2027 NO-BUILD TRAFFIC GROWTH	0	14	0	17	0	1	0	1	0	27	112	1	0	0	71	12	
AM 2027 NO-BUILD TRAFFIC (No AD)	0	104	1	122	0	9	3	7	1	199	825	5	3	2	523	90	
AM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
AM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM NO-BUILD TRAFFIC (No AD)	0	90	1	105	0	8	3	6	1	172	713	4	3	2	452	78	
Approved Development 1: Cross Schools										18					26		
Approved Development 2: Elle Apartments										4					2		
Approved Development 3: Bluffton Commons (Washi										93					68		
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	183	0	0	0	115	0	
AM 2027 NO-BUILD TRAFFIC	0	104	1	122	0	9	3	7	1	199	1,008	5	3	2	638	90	
AM NO-BUILD TRAFFIC	0	90	1	105	0	8	3	6	1	172	896	4	3	2	567	78	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering															15%	15%
	Exiting		25%									5%					
"AM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By																
	Net New	0	16	0	0	0	0	0	0	0	0	3	0	0	0	19	19
AM TOTAL PROJECT TRIPS		0	16	0	0	0	0	0	0	0	0	3	0	0	0	19	19
AM 2027 BUILD-OUT TRAFFIC		0	120	1	122	0	9	3	7	1	199	1,011	5	3	2	657	109
AM BUILD-OUT TRAFFIC		0	106	1	105	0	8	3	6	1	172	899	4	3	2	586	97

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
PM Adjusted Turning Movement Counts ¹	0	183	0	200	0	4	0	1	4	300	585	5	6	7	647	150	
PM Volume Balancing	0	0	0	-5	0	-1	0	0	0	-5	-9	0	0	0	-17	0	
PM 2024 EXISTING TRAFFIC	0	183	0	195	0	3	0	1	4	295	576	5	6	7	630	150	
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
PM 2027 NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
PM 2027 NO-BUILD TRAFFIC GROWTH	0	29	0	31	0	0	0	0	1	46	91	1	1	1	99	24	
PM 2027 NO-BUILD TRAFFIC (No AD)	0	212	0	226	0	3	0	1	5	341	667	6	7	8	729	174	
PM NO-BUILD TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	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%	
PM NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM NO-BUILD TRAFFIC (No AD)	0	183	0	195	0	3	0	1	4	295	576	5	6	7	630	150	
Approved Development 1: Cross Schools											11					6	
Approved Development 2: Elle Apartments											3					5	
Approved Development 3: Bluffton Commons (Washi											121					128	
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	175	0	0	0	225	0	
PM 2027 NO-BUILD TRAFFIC	0	212	0	226	0	3	0	1	5	341	842	6	7	8	954	174	
PM NO-BUILD TRAFFIC	0	183	0	195	0	3	0	1	4	295	751	5	6	7	855	150	
"SITE TRAFFIC DISTRIBUTION"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering															15%	15%
	Exiting		25%									5%					
"PM PROJECT TRIPS"																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By Net New	0	28	0	0	0	0	0	0	0	0	6	0	0	0	9	10
PM TOTAL PROJECT TRIPS		0	28	0	0	0	0	0	0	0	0	6	0	0	0	9	10
PM 2027 BUILD-OUT TRAFFIC		0	240	0	226	0	3	0	1	5	341	848	6	7	8	963	184
PM BUILD-OUT TRAFFIC		0	211	0	195	0	3	0	1	4	295	757	5	6	7	864	160

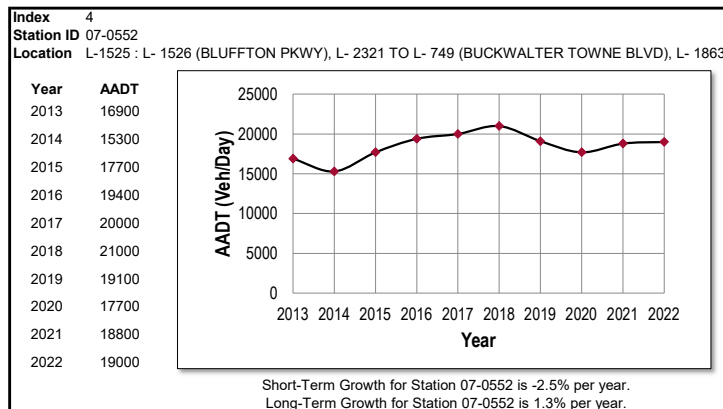
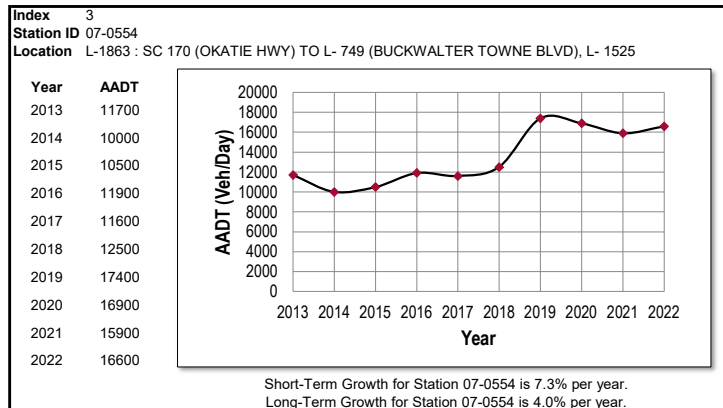
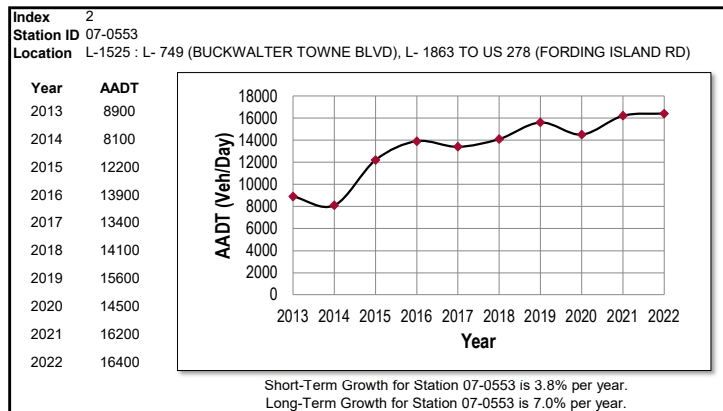
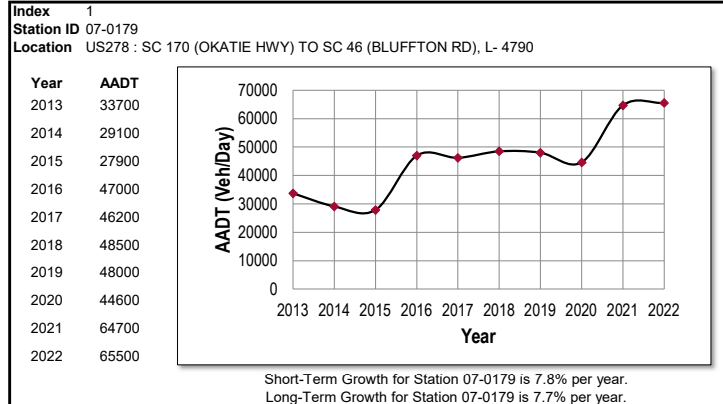
ATTACHMENT 5



*Bluffton Community Hospital Development
Traffic Impact Study*

Appendix C – Historic Growth Rate Worksheet

ATTACHMENT 5



ATTACHMENT 5

Appendix D – Capacity Analysis Worksheets

ATTACHMENT 5

2024 EXISTING CONDITIONS

HCM 6TH

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Existing AM (2024)
06/26/2024

Intersection							
Int Delay, s/veh	1.7						
Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	1	188	1087	597	6	3	102
Future Vol, veh/h	1	188	1087	597	6	3	102
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	Yield	-	None
Storage Length	-	255	-	-	350	95	0
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	2	2	2	2	2
Mvmt Flow	1	209	1208	663	7	3	113
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	663	663	0	-	0	1687	332
Stage 1	-	-	-	-	-	663	-
Stage 2	-	-	-	-	-	1024	-
Critical Hdwy	6.44	4.16	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.23	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	545	915	-	-	-	85	664
Stage 1	-	-	-	-	-	474	-
Stage 2	-	-	-	-	-	307	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	910	910	-	-	-	65	664
Mov Cap-2 Maneuver	-	-	-	-	-	65	-
Stage 1	-	-	-	-	-	365	-
Stage 2	-	-	-	-	-	307	-
Approach	EB		WB		SB		
HCM Control Delay, s/v	1.5		0		13		
HCM LOS					B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	910	-	-	-	65	664	
HCM Lane V/C Ratio	0.231	-	-	-	0.051	0.171	
HCM Control Delay (s/veh)	10.1	-	-	-	63.4	11.5	
HCM Lane LOS	B	-	-	-	F	B	
HCM 95th %tile Q (veh)	0.9	-	-	-	0.2	0.6	

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	4	859	22	19	33	429	630	10	7	404	155
Future Volume (veh/h)	227	4	859	22	19	33	429	630	10	7	404	155
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1604	1870	1693	1737	1870	1870	1870	1752	1707	1870	1870
Adj Flow Rate, veh/h	241	4	0	23	20	35	456	670	11	7	430	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	20	2	14	11	2	2	2	10	13	2	2
Cap, veh/h	384	369		242	185	308	553	1818	759	30	1314	
Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.23	0.16	0.51	0.51	0.02	0.37	0.00
Sat Flow, veh/h	1349	1604	0	710	802	1336	3456	3554	1485	1626	3554	1585
Grp Volume(v), veh/h	241	4	0	43	0	35	456	670	11	7	430	0
Grp Sat Flow(s),veh/h/ln	1349	1604	0	1507	0	1340	1728	1777	1485	1626	1777	1585
Q Serve(g_s), s	12.2	0.1	0.0	0.0	0.0	1.5	9.0	8.0	0.3	0.3	6.1	0.0
Cycle Q Clear(g_c), s	13.7	0.1	0.0	1.4	0.0	1.5	9.0	8.0	0.3	0.3	6.1	0.0
Prop In Lane	1.00		0.00	0.54		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	369		425	0	309	553	1818	759	30	1314	
V/C Ratio(X)	0.63	0.01		0.10	0.00	0.11	0.82	0.37	0.01	0.24	0.33	
Avail Cap(c_a), veh/h	726	776		800	0	649	610	1818	759	241	1314	
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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.9	21.0	0.0	21.5	0.0	21.6	28.8	10.4	8.5	34.3	16.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.1	0.0	0.2	8.4	0.6	0.0	4.0	0.7	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	0.6	0.0	0.5	4.0	2.6	0.1	0.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	21.1	0.0	21.6	0.0	21.7	37.2	11.0	8.6	38.3	16.7	0.0
LnGrp LOS	C	C		C		C	D	B	A	D	B	
Approach Vol, veh/h		245			78			1137			437	
Approach Delay, s/veh		28.5			21.7			21.5			17.0	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	32.0		22.0	6.8	42.1		22.0				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	12.5	26.2		34.3	10.5	28.2		34.3				
Max Q Clear Time (g_c+I1), s	11.0	8.1		15.7	2.3	10.0		3.5				
Green Ext Time (p_c), s	0.3	4.6		0.7	0.0	7.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay, s/veh	21.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	90	1	105	8	3	6	1	172	713	4	3	2	452	78
Future Volume (veh/h)	90	1	105	8	3	6	1	172	713	4	3	2	452	78
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No				No				No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1841	1870	1870	1870		1870	1870	1870		1870	1856	1870
Adj Flow Rate, veh/h	101	1	118	9	3	7		193	801	4		2	508	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89		0.89	0.89	0.89		0.89	0.89	0.89
Percent Heavy Veh, %	2	2	4	2	2	2		2	2	2		2	3	2
Cap, veh/h	414	2	260	237	61	262		555	2022	902		375	1144	
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.12	0.57	0.57		0.32	0.32	0.00
Sat Flow, veh/h	1414	13	1574	612	367	1585		1781	3554	1585		677	3526	1585
Grp Volume(v), veh/h	101	0	119	12	0	7		193	801	4		2	508	0
Grp Sat Flow(s),veh/h/ln	1414	0	1587	979	0	1585		1781	1777	1585		677	1763	1585
Q Serve(g_s), s	0.0	0.0	3.1	0.0	0.0	0.2		3.1	5.8	0.1		0.1	5.3	0.0
Cycle Q Clear(g_c), s	2.3	0.0	3.1	3.2	0.0	0.2		3.1	5.8	0.1		0.1	5.3	0.0
Prop In Lane	1.00		0.99	0.75		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	414	0	262	298	0	262		555	2022	902		375	1144	
V/C Ratio(X)	0.24	0.00	0.45	0.04	0.00	0.03		0.35	0.40	0.00		0.01	0.44	
Avail Cap(c_a), veh/h	447	0	299	330	0	298		621	2229	994		390	1220	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	17.4	16.3	0.0	16.2		8.4	5.5	4.3		10.6	12.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.1	0.0	0.0		0.4	0.0	0.0		0.0	0.1	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.1	0.1	0.0	0.1		0.8	1.0	0.0		0.0	1.5	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	17.4	0.0	18.7	16.3	0.0	16.2		8.8	5.6	4.3		10.6	12.4	0.0
LnGrp LOS	B		B	B		B		A	A	A		B	B	
Approach Vol, veh/h	220				19				998				510	
Approach Delay, s/veh	18.1				16.3				6.2				12.4	
Approach LOS	B				B				A				B	
Timer - Assigned Phs	2		4		5	6	8							
Phs Duration (G+Y+Rc), s	32.3		13.9		11.3	21.0	13.9							
Change Period (Y+Rc), s	6.0		6.3		5.8	6.0	6.3							
Max Green Setting (Gmax), s	29.0		8.7		7.2	16.0	8.7							
Max Q Clear Time (g_c+l1), s	7.8		5.1		5.1	7.3	5.2							
Green Ext Time (p_c), s	9.6		0.2		0.1	3.4	0.0							

Intersection Summary

HCM 6th Ctrl Delay, s/veh 9.6

HCM 6th LOS A

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Existing PM (2024)
06/26/2024

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	277	826	891	14	13	340
Future Vol, veh/h	277	826	891	14	13	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	255	-	-	350	95	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	295	879	948	15	14	362
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	948	0	-	0	1978	474
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	1030	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	720	-	-	-	54	537
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	305	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	720	-	-	-	32	537
Mov Cap-2 Maneuver	-	-	-	-	32	-
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	305	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	3.4	0		30.3		
HCM LOS	D					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	720	-	-	-	32	537
HCM Lane V/C Ratio	0.409	-	-	-	0.432	0.674
HCM Control Delay (s/veh)	13.4	-	-	-	185.2	24.4
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile O (veh)	2	-	-	-	1.4	5

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	181	9	649	11	10	25	643	673	19	1	36	543
Future Volume (veh/h)	181	9	649	11	10	25	643	673	19	1	36	543
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	1856	1737	1870	1767	1752	1781	1870	1870	1870		1767	1870
Adj Flow Rate, veh/h	187	9	0	11	10	26	663	694	20		37	560
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97		0.97	0.97
Percent Heavy Veh, %	3	11	2	9	10	8	2	2	2		9	2
Cap, veh/h	335	318		204	158	248	645	1736	774		125	1337
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.19	0.49	0.49		0.07	0.38
Sat Flow, veh/h	1361	1737	0	668	864	1351	3456	3554	1585		1682	3554
Grp Volume(v), veh/h	187	9	0	21	0	26	663	694	20		37	560
Grp Sat Flow(s),veh/h/ln	1361	1737	0	1531	0	1351	1728	1777	1585		1682	1777
Q Serve(g_s), s	8.9	0.3	0.0	0.0	0.0	1.1	12.5	8.3	0.4		1.4	7.8
Cycle Q Clear(g_c), s	10.0	0.3	0.0	0.7	0.0	1.1	12.5	8.3	0.4		1.4	7.8
Prop In Lane	1.00		0.00	0.52		1.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	335	318		363	0	248	645	1736	774		125	1337
V/C Ratio(X)	0.56	0.03		0.06	0.00	0.11	1.03	0.40	0.03		0.30	0.42
Avail Cap(c_a), veh/h	600	656		653	0	510	645	1736	774		264	1337
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	26.9	22.5	0.0	22.6	0.0	22.8	27.2	10.9	8.9		29.3	15.5
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.1	0.0	0.2	42.8	0.7	0.1		1.3	1.0
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(50%),veh/ln	2.7	0.1	0.0	0.3	0.0	0.3	8.4	2.7	0.1		0.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.4	22.5	0.0	22.7	0.0	23.0	70.0	11.6	8.9		30.6	16.4
LnGrp LOS	C	C		C		C	F	B	A		C	B
Approach Vol, veh/h		196			47			1377				597
Approach Delay, s/veh		28.1			22.8			39.7				17.3
Approach LOS		C			C			D				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.0	31.0		18.0	10.5	38.5		18.0				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	12.5	25.2		25.3	10.5	27.2		25.3				
Max Q Clear Time (g_c+I1), s	14.5	9.8		12.0	3.4	10.3		3.1				
Green Ext Time (p_c), s	0.0	5.5		0.5	0.0	7.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			32.3									
HCM 6th LOS			C									
Notes												
User approved ignoring U-Turning movement.												
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	252
Future Volume (veh/h)	252
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	0
Peak Hour Factor	0.97
Percent Heavy Veh, %	2
Cap, veh/h	
Arrive On Green	0.00
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	
V/C Ratio(X)	
Avail Cap(c_a), veh/h	
HCM Platoon Ratio	1.00
Upstream Filter(l)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	183	0	195	3	0	1	4	295	576	5	6	7	630	150
Future Volume (veh/h)	183	0	195	3	0	1	4	295	576	5	6	7	630	150
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870	1870	1870
Adj Flow Rate, veh/h	193	0	205	3	0	1		311	606	5		7	663	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h	431	0	264	200	0	264		531	2057	918		400	1102	
Arrive On Green	0.17	0.00	0.17	0.17	0.00	0.17		0.15	0.58	0.58		0.31	0.31	0.00
Sat Flow, veh/h	1418	0	1585	304	0	1585		1781	3554	1585		810	3554	1585
Grp Volume(v), veh/h	193	0	205	3	0	1		311	606	5		7	663	0
Grp Sat Flow(s),veh/h/ln	1418	0	1585	304	0	1585		1781	1777	1585		810	1777	1585
Q Serve(g_s), s	0.0	0.0	6.0	0.1	0.0	0.0		5.5	4.2	0.1		0.3	7.7	0.0
Cycle Q Clear(g_c), s	4.9	0.0	6.0	6.1	0.0	0.0		5.5	4.2	0.1		0.3	7.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	431	0	264	200	0	264		531	2057	918		400	1102	
V/C Ratio(X)	0.45	0.00	0.78	0.02	0.00	0.00		0.59	0.29	0.01		0.02	0.60	
Avail Cap(c_a), veh/h	450	0	285	215	0	285		531	2131	950		417	1175	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	18.8	0.0	19.3	22.2	0.0	16.8		9.6	5.2	4.3		11.6	14.2	0.0
Incr Delay (d2), s/veh	0.7	0.0	11.8	0.0	0.0	0.0		1.7	0.0	0.0		0.0	0.5	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	2.8	0.0	0.0	0.0		1.6	0.8	0.0		0.0	2.4	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	19.6	0.0	31.0	22.2	0.0	16.8		11.3	5.2	4.3		11.6	14.6	0.0
LnGrp LOS	B		C	C		B		B	A	A		B	B	
Approach Vol, veh/h	398		4			922		670						
Approach Delay, s/veh	25.5		20.9			7.2		14.6						
Approach LOS	C		C			A		B						
Timer - Assigned Phs	2		4		5	6	8							
Phs Duration (G+Y+Rc), s	34.0		14.4		13.0	21.0	14.4							
Change Period (Y+Rc), s	6.0		6.3		5.8	6.0	6.3							
Max Green Setting (Gmax), s	29.0		8.7		7.2	16.0	8.7							
Max Q Clear Time (g_c+I1), s	6.2		8.0		7.5	9.7	8.1							
Green Ext Time (p_c), s	7.4		0.1		0.0	3.4	0.0							

Intersection Summary

HCM 6th Ctrl Delay, s/veh 13.4

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

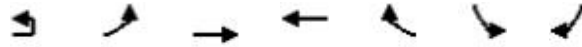
2024 EXISTING CONDITIONS

SYNCHRO LANES, VOLUMES, TIMINGS

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Existing AM (2024)
06/27/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰	↰↰	↰	↰	↰
Traffic Volume (vph)	1	188	1087	597	6	3	102
Future Volume (vph)	1	188	1087	597	6	3	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%	0%		0%	
Storage Length (ft)		255			350	95	0
Storage Lanes		1			1	1	1
Taper Length (ft)		100				40	
Satd. Flow (prot)	0	1753	3539	3539	1583	1770	1583
Flt Permitted		0.950				0.950	
Satd. Flow (perm)	0	1753	3539	3539	1583	1770	1583
Link Speed (mph)			45	45		25	
Link Distance (ft)			661	777		287	
Travel Time (s)			10.0	11.8		7.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%	0%		0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	210	1208	663	7	3	113
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	43.3%			ICU Level of Service A			
Analysis Period (min)	15						

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	4	859	22	19	33	429	630	10	7	404	155
Future Volume (vph)	227	4	859	22	19	33	429	630	10	7	404	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		275	0		75	275		275	175		200
Storage Lanes	1		0	0		1	2		1	1		1
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	1770	1584	0	0	3076	0	3433	3539	1468	1597	3539	1583
Flt Permitted	0.704				0.643		0.950			0.950		
Satd. Flow (perm)	1311	1584	0	0	2008	0	3433	3539	1468	1597	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		424			35				99			165
Link Speed (mph)		45			25			45			45	
Link Distance (ft)		724			496			696			1073	
Travel Time (s)		11.0			13.5			10.5			16.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	20%	2%	14%	11%	2%	2%	2%	10%	13%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	918	0	0	78	0	456	670	11	7	430	165
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Detector Phase	4	4		8	8		1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	15.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	30.8	30.8
Total Split (s)	40.0	40.0		40.0	40.0		18.0	34.0	34.0	16.0	32.0	32.0
Total Split (%)	44.4%	44.4%		44.4%	44.4%		20.0%	37.8%	37.8%	17.8%	35.6%	35.6%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	4.3	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8	5.5	5.8	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	34.3	34.3			34.3		12.5	41.1	41.1	10.0	26.2	26.2
Actuated g/C Ratio	0.38	0.38			0.38		0.14	0.46	0.46	0.11	0.29	0.29
v/c Ratio	0.48	1.06			0.09		0.95	0.41	0.01	0.03	0.41	0.28
Control Delay (s/veh)	25.1	64.7			11.5		72.0	18.5	0.0	36.4	27.2	5.5
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.1	64.7			11.5		72.0	18.5	0.0	36.4	27.2	5.5

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E			B		E	B	A	D	C	A
Approach Delay (s/veh)		56.5			11.5			39.8			21.4	
Approach LOS		E			B			D			C	
Queue Length 50th (ft)	102	~417			7		134	120	0	4	103	0
Queue Length 95th (ft)	173	#652			22		#228	224	0	17	146	45
Internal Link Dist (ft)		644			416			616			993	
Turn Bay Length (ft)							275		275	175		200
Base Capacity (vph)	499	866			786		476	1616	724	186	1030	577
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.06			0.10		0.96	0.41	0.02	0.04	0.42	0.29

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay (s/veh): 41.9

Intersection LOS: D

Intersection Capacity Utilization 93.3%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	90	1	105	8	3	6	1	172	713	4	3	2
Future Volume (vph)	90	1	105	8	3	6	1	172	713	4	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%				0%			
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1555	0	0	1796	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.750				0.704			0.465				0.349
Satd. Flow (perm)	1397	1555	0	0	1311	1583	0	866	3539	1583	0	650
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		118				192				72		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	119	0	0	12	7	0	194	801	4	0	5
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	15.0	15.0		15.0	15.0	15.0	13.0	13.0	35.0	35.0	22.0	22.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	26.0%	26.0%	70.0%	70.0%	44.0%	44.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead	Lag			
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.5	8.5			8.5	8.5		24.7	30.4	30.4		20.6
Actuated g/C Ratio	0.18	0.18			0.18	0.18		0.53	0.66	0.66		0.45
v/c Ratio	0.39	0.31			0.04	0.01		0.32	0.34	0.00		0.01
Control Delay (s/veh)	23.1	7.2			17.4	0.0		6.9	5.7	0.0		12.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	23.1	7.2			17.4	0.0		6.9	5.7	0.0		12.2

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	452	78
Future Volume (vph)	452	78
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3505	1583
Flt Permitted		
Satd. Flow (perm)	3505	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		199
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.89	0.89
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	508	88
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	22.0	22.0
Total Split (%)	44.0%	44.0%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	20.6	20.6
Actuated g/C Ratio	0.45	0.45
v/c Ratio	0.32	0.10
Control Delay (s/veh)	13.4	0.2
Queue Delay	0.0	0.0
Total Delay (s/veh)	13.4	0.2

ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	C	A			B	A		A	A	A		B
Approach Delay (s/veh)		14.5			11.0				5.9			
Approach LOS		B			B				A			
Queue Length 50th (ft)	26	0			3	0		22	56	0		1
Queue Length 95th (ft)	61	32			13	0		44	84	0		7
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	267	392			250	457		606	2390	1092		300
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.38	0.30			0.05	0.02		0.32	0.34	0.00		0.02

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 46.2

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay (s/veh): 8.8

Intersection LOS: A

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Existing AM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
LOS	B	A
Approach Delay (s/veh)	11.5	
Approach LOS	B	
Queue Length 50th (ft)	61	0
Queue Length 95th (ft)	95	0
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1620	838
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.31	0.11
Intersection Summary		

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Existing PM (2024)
06/27/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	277	826	891	14	13	340
Future Volume (vph)	277	826	891	14	13	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	255			350	95	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				40	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Link Speed (mph)		45	45		25	
Link Distance (ft)		661	777		287	
Travel Time (s)		10.0	11.8		7.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	879	948	15	14	362
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.3% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	181	9	649	11	10	25	643	673	19	1	36	543
Future Volume (vph)	181	9	649	11	10	25	643	673	19	1	36	543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	0		275	0		75	275		275		175	
Storage Lanes	1		0	0		1	2		1		1	
Taper Length (ft)	25			25			100				100	
Satd. Flow (prot)	1752	1585	0	0	3010	0	3433	3539	1583	0	1659	3539
Flt Permitted	0.725				0.686		0.950				0.678	
Satd. Flow (perm)	1337	1585	0	0	2090	0	3433	3539	1583	0	1184	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		394			26				112			
Link Speed (mph)		45			25			45				45
Link Distance (ft)		724			496			696				1073
Travel Time (s)		11.0			13.5			10.5				16.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	11%	2%	9%	10%	8%	2%	2%	2%	2%	9%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	678	0	0	47	0	663	694	20	0	38	560
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	custom	Prot	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8					6	5		
Detector Phase	4	4		8	8		1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	10.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	16.0	30.8
Total Split (s)	31.0	31.0		31.0	31.0		18.0	33.0	33.0	16.0	16.0	31.0
Total Split (%)	38.8%	38.8%		38.8%	38.8%		22.5%	41.3%	41.3%	20.0%	20.0%	38.8%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	3.2	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	2.3	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8		5.5	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	None	Max
Act Effect Green (s)	21.4	21.4			21.4		12.6	34.4	34.4		10.2	25.3
Actuated g/C Ratio	0.28	0.28			0.28		0.16	0.45	0.45		0.13	0.33
v/c Ratio	0.50	0.93			0.07		1.17	0.43	0.02		0.24	0.47
Control Delay (s/veh)	27.6	32.5			11.6		128.4	18.6	0.0		35.4	22.7
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	27.6	32.5			11.6		128.4	18.6	0.0		35.4	22.7

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	252
Future Volume (vph)	252
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	200
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	260
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.97
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	260
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	30.8
Total Split (s)	31.0
Total Split (%)	38.8%
Yellow Time (s)	4.3
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.8
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	25.3
Actuated g/C Ratio	0.33
v/c Ratio	0.37
Control Delay (s/veh)	4.6
Queue Delay	0.0
Total Delay (s/veh)	4.6

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
LOS	C	C			B		F	B	A		D	C
Approach Delay (s/veh)		31.5			11.7			71.2				17.9
Approach LOS		C			B			E				B
Queue Length 50th (ft)	73	140			3		~214	146	0		17	118
Queue Length 95th (ft)	133	#364			15		#318	202	0		46	166
Internal Link Dist (ft)		644			416			616				993
Turn Bay Length (ft)							275		275		175	
Base Capacity (vph)	444	790			712		564	1591	773		163	1173
Starvation Cap Reductn	0	0			0		0	0	0		0	0
Spillback Cap Reductn	0	0			0		0	0	0		0	0
Storage Cap Reductn	0	0			0		0	0	0		0	0
Reduced v/c Ratio	0.42	0.86			0.07		1.18	0.44	0.03		0.23	0.48

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 76.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay (s/veh): 44.9

Intersection LOS: D

Intersection Capacity Utilization 88.2%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

	Ø1		Ø2		Ø4
18 s		31 s		31 s	
	Ø5		Ø6		Ø8
16 s		33 s		31 s	

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024



Lane Group	SBR
LOS	A
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	50
Internal Link Dist (ft)	
Turn Bay Length (ft)	200
Base Capacity (vph)	698
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.37
Intersection Summary	

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	183	0	195	3	0	1	4	295	576	5	6	7
Future Volume (vph)	183	0	195	3	0	1	4	295	576	5	6	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%		0%				0%					
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1583	0	0	1770	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.756				0.629			0.343				0.423
Satd. Flow (perm)	1408	1583	0	0	1172	1583	0	639	3539	1583	0	788
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		379				192				72		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	205	0	0	3	1	0	315	606	5	0	13
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	15.0	15.0		15.0	15.0	15.0	13.0	13.0	35.0	35.0	22.0	22.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	26.0%	26.0%	70.0%	70.0%	44.0%	44.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead	Lag			
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	8.6			8.6	8.6		22.6	28.2	28.2		15.2
Actuated g/C Ratio	0.18	0.18			0.18	0.18		0.46	0.57	0.57		0.31
v/c Ratio	0.78	0.34			0.01	0.00		0.68	0.29	0.00		0.05
Control Delay (s/veh)	46.1	1.6			17.3	0.0		16.0	5.8	0.0		12.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	46.1	1.6			17.3	0.0		16.0	5.8	0.0		12.6

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	630	150
Future Volume (vph)	630	150
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		199
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	2%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	663	158
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	22.0	22.0
Total Split (%)	44.0%	44.0%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	15.2	15.2
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.60	0.25
Control Delay (s/veh)	17.2	2.7
Queue Delay	0.0	0.0
Total Delay (s/veh)	17.2	2.7

ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	D	A			B	A		B	A	A		B
Approach Delay (s/veh)		23.2			13.0				9.3			
Approach LOS		C			B				A			
Queue Length 50th (ft)	53	0			1	0		40	40	0		3
Queue Length 95th (ft)	#144	0			6	0		#103	61	0		12
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	249	592			207	438		460	2091	965		257
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.78	0.35			0.01	0.00		0.68	0.29	0.01		0.05

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 49.1

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 13.8

Intersection LOS: B

Intersection Capacity Utilization 67.7%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Existing PM (2024)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
LOS	B	A
Approach Delay (s/veh)	14.4	
Approach LOS	B	
Queue Length 50th (ft)	83	0
Queue Length 95th (ft)	127	21
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1153	649
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.58	0.24
Intersection Summary		

ATTACHMENT 5

2027 NO BUILD CONDITIONS

HCM 6TH

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

No Build AM (2027)
06/26/2024

Intersection							
Int Delay, s/veh	1.8						
Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	1	218	1462	802	7	3	118
Future Vol, veh/h	1	218	1462	802	7	3	118
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	Yield	-	None
Storage Length	-	255	-	-	350	95	0
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	2	2	2	2	2
Mvmt Flow	1	242	1624	891	8	3	131
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	891	891	0	-	0	2189	446
Stage 1	-	-	-	-	-	891	-
Stage 2	-	-	-	-	-	1298	-
Critical Hdwy	6.44	4.16	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.23	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	390	750	-	-	-	39	560
Stage 1	-	-	-	-	-	361	-
Stage 2	-	-	-	-	-	220	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	745	745	-	-	-	26	560
Mov Cap-2 Maneuver	-	-	-	-	-	26	-
Stage 1	-	-	-	-	-	243	-
Stage 2	-	-	-	-	-	220	-
Approach	EB		WB		SB		
HCM Control Delay, s/v	1.6		0		17.1		
HCM LOS					C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	745	-	-	-	26	560	
HCM Lane V/C Ratio	0.327	-	-	-	0.128	0.234	
HCM Control Delay (s/veh)	12.2	-	-	-	162.9	13.4	
HCM Lane LOS	B	-	-	-	F	B	
HCM 95th %tile Q (veh)	1.4	-	-	-	0.4	0.9	

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	382	5	1079	25	22	38	546	793	12	8	521	241
Future Volume (veh/h)	382	5	1079	25	22	38	546	793	12	8	521	241
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1604	1870	1693	1737	1870	1870	1870	1752	1707	1870	1870
Adj Flow Rate, veh/h	406	5	0	27	23	40	581	844	13	9	554	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	20	2	14	11	2	2	2	10	13	2	2
Cap, veh/h	513	559		331	263	451	680	1614	674	36	994	
Arrive On Green	0.35	0.35	0.00	0.35	0.35	0.35	0.20	0.45	0.45	0.02	0.28	0.00
Sat Flow, veh/h	1339	1604	0	783	754	1293	3456	3554	1485	1626	3554	1585
Grp Volume(v), veh/h	406	5	0	48	0	42	581	844	13	9	554	0
Grp Sat Flow(s),veh/h/ln	1339	1604	0	1482	0	1348	1728	1777	1485	1626	1777	1585
Q Serve(g_s), s	28.4	0.2	0.0	0.3	0.0	2.0	15.8	16.5	0.5	0.5	12.9	0.0
Cycle Q Clear(g_c), s	30.5	0.2	0.0	1.9	0.0	2.0	15.8	16.5	0.5	0.5	12.9	0.0
Prop In Lane	1.00		0.00	0.56		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	513	559		575	0	470	680	1614	674	36	994	
V/C Ratio(X)	0.79	0.01		0.08	0.00	0.09	0.85	0.52	0.02	0.25	0.56	
Avail Cap(c_a), veh/h	1165	1340		1290	0	1127	870	1614	674	176	994	
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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.5	20.7	0.0	21.2	0.0	21.3	37.7	19.0	14.6	46.8	29.9	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.1	0.0	0.1	6.7	1.2	0.1	3.5	2.3	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.1	0.0	0.8	0.0	0.7	7.0	6.5	0.2	0.2	5.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.3	20.7	0.0	21.3	0.0	21.4	44.5	20.2	14.7	50.3	32.2	0.0
LnGrp LOS	C	C		C		C	D	C	B	D	C	
Approach Vol, veh/h	411			90			1438			563		
Approach Delay, s/veh	34.1			21.3			30.0			32.4		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.6	33.0		39.6	7.7	50.0		39.6				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	24.5	27.2		81.3	10.5	41.2		81.3				
Max Q Clear Time (g_c+I1), s	17.8	14.9		32.5	2.5	18.5		4.0				
Green Ext Time (p_c), s	1.4	4.7		1.5	0.0	10.5		0.3				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 30.9

HCM 6th LOS C

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	104	1	122	9	3	7	1	199	1008	5	3	2	638	90
Future Volume (veh/h)	104	1	122	9	3	7	1	199	1008	5	3	2	638	90
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1841	1870	1870	1870		1870	1870	1870		1870	1856	1870
Adj Flow Rate, veh/h	116	1	136	10	3	8		221	1120	6		2	709	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90
Percent Heavy Veh, %	2	2	4	2	2	2		2	2	2		2	3	2
Cap, veh/h	420	2	263	229	52	265		484	2021	901		316	1137	
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.12	0.57	0.57		0.32	0.32	0.00
Sat Flow, veh/h	1414	12	1575	551	309	1585		1781	3554	1585		500	3526	1585
Grp Volume(v), veh/h	116	0	137	13	0	8		221	1120	6		2	709	0
Grp Sat Flow(s),veh/h/ln	1414	0	1587	860	0	1585		1781	1777	1585		500	1763	1585
Q Serve(g_s), s	0.0	0.0	3.7	0.0	0.0	0.2		3.7	9.2	0.1		0.1	7.9	0.0
Cycle Q Clear(g_c), s	2.7	0.0	3.7	3.7	0.0	0.2		3.7	9.2	0.1		0.1	7.9	0.0
Prop In Lane	1.00		0.99	0.77		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	420	0	265	281	0	265		484	2021	901		316	1137	
V/C Ratio(X)	0.28	0.00	0.52	0.05	0.00	0.03		0.46	0.55	0.01		0.01	0.62	
Avail Cap(c_a), veh/h	479	0	331	337	0	330		581	2521	1124		359	1440	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	17.3	0.0	17.7	16.4	0.0	16.2		9.2	6.3	4.3		10.7	13.4	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.6	0.1	0.0	0.0		0.7	0.1	0.0		0.0	0.2	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.3	0.1	0.0	0.1		1.0	1.7	0.0		0.0	2.3	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	17.6	0.0	19.2	16.4	0.0	16.3		9.9	6.4	4.3		10.7	13.6	0.0
LnGrp LOS	B		B	B		B		A	A	A		B	B	
Approach Vol, veh/h	253				21				1347				711	
Approach Delay, s/veh	18.5				16.4				7.0				13.6	
Approach LOS	B				B				A				B	
Timer - Assigned Phs	2		4		5		6		8					
Phs Duration (G+Y+Rc), s	32.5		14.1		11.5		21.0		14.1					
Change Period (Y+Rc), s	6.0		6.3		5.8		6.0		6.3					
Max Green Setting (Gmax), s	33.0		9.7		8.2		19.0		9.7					
Max Q Clear Time (g_c+I1), s	11.2		5.7		5.7		9.9		5.7					
Green Ext Time (p_c), s	13.7		0.3		0.2		4.8		0.0					

Intersection Summary

HCM 6th Ctrl Delay, s/veh 10.3

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

No Build PM (2027)
06/26/2024

Intersection						
Int Delay, s/veh	21.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	321	1101	1236	16	15	394
Future Vol, veh/h	321	1101	1236	16	15	394
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	255	-	-	350	95	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	341	1171	1315	17	16	419
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1315	0	-	0	2583	658
Stage 1	-	-	-	-	1315	-
Stage 2	-	-	-	-	1268	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	522	-	-	-	21 ~ 407	
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	228	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	522	-	-	-	~ 7 ~ 407	
Mov Cap-2 Maneuver	-	-	-	-	~ 7	-
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	228	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	5.4	0		140		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	522	-	-	-	7	407
HCM Lane V/C Ratio	0.654	-	-	-	2.28	1.03
HCM Control Delay (s/veh)	24	-	-	-	\$ 1588.5	84.9
HCM Lane LOS	C	-	-	-	F	F
HCM 95th %tile Q (veh)	4.7	-	-	-	3.1	13.3
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	325	10	784	13	12	29	794	839	22	1	42	699
Future Volume (veh/h)	325	10	784	13	12	29	794	839	22	1	42	699
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	1856	1737	1870	1767	1752	1781	1870	1870	1870		1767	1870
Adj Flow Rate, veh/h	342	11	0	14	13	31	836	883	23		44	736
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95
Percent Heavy Veh, %	3	11	2	9	10	8	2	2	2		9	2
Cap, veh/h	446	499		268	228	388	793	1592	710		125	1042
Arrive On Green	0.29	0.29	0.00	0.29	0.29	0.29	0.23	0.45	0.45		0.07	0.29
Sat Flow, veh/h	1351	1737	0	719	794	1351	3456	3554	1585		1682	3554
Grp Volume(v), veh/h	342	11	0	27	0	31	836	883	23		44	736
Grp Sat Flow(s),veh/h/ln	1351	1737	0	1513	0	1351	1728	1777	1585		1682	1777
Q Serve(g_s), s	22.1	0.4	0.0	0.0	0.0	1.5	20.5	16.3	0.7		2.2	16.5
Cycle Q Clear(g_c), s	23.6	0.4	0.0	1.0	0.0	1.5	20.5	16.3	0.7		2.2	16.5
Prop In Lane	1.00		0.00	0.52		1.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	446	499		496	0	388	793	1592	710		125	1042
V/C Ratio(X)	0.77	0.02		0.05	0.00	0.08	1.05	0.55	0.03		0.35	0.71
Avail Cap(c_a), veh/h	456	511		506	0	398	793	1592	710		235	1042
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	31.8	22.8	0.0	23.1	0.0	23.2	34.4	18.1	13.8		39.3	28.2
Incr Delay (d2), s/veh	7.5	0.0	0.0	0.0	0.0	0.1	47.4	1.4	0.1		1.7	4.0
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(50%),veh/ln	7.6	0.2	0.0	0.4	0.0	0.5	13.2	6.3	0.3		0.9	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.4	22.9	0.0	23.1	0.0	23.3	81.8	19.5	13.9		41.0	32.2
LnGrp LOS	D	C		C		C	F	B	B		D	C
Approach Vol, veh/h		353			58			1742				780
Approach Delay, s/veh		38.8			23.2			49.4				32.7
Approach LOS		D			C			D				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	32.0		31.4	12.1	45.9		31.4				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	20.5	26.2		26.3	12.5	34.2		26.3				
Max Q Clear Time (g_c+I1), s	22.5	18.5		25.6	4.2	18.3		3.5				
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	8.7		0.1				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 43.1

HCM 6th LOS D

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/26/2024

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	447
Future Volume (veh/h)	447
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	0
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	
Arrive On Green	0.00
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	
V/C Ratio(X)	
Avail Cap(c_a), veh/h	
HCM Platoon Ratio	1.00
Upstream Filter(l)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	212	0	226	3	0	1	5	341	842	6	7	8	954	174
Future Volume (veh/h)	212	0	226	3	0	1	5	341	842	6	7	8	954	174
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870	1870	1870
Adj Flow Rate, veh/h	223	0	238	3	0	1		359	886	6		8	1004	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h	433	0	291	165	0	291		461	2176	970		342	1269	
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18		0.16	0.61	0.61		0.36	0.36	0.00
Sat Flow, veh/h	1418	0	1585	245	0	1585		1781	3554	1585		624	3554	1585
Grp Volume(v), veh/h	223	0	238	3	0	1		359	886	6		8	1004	0
Grp Sat Flow(s),veh/h/ln	1418	0	1585	245	0	1585		1781	1777	1585		624	1777	1585
Q Serve(g_s), s	0.0	0.0	8.7	0.2	0.0	0.0		7.4	7.8	0.1		0.5	15.3	0.0
Cycle Q Clear(g_c), s	7.0	0.0	8.7	8.8	0.0	0.0		7.4	7.8	0.1		0.5	15.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	433	0	291	165	0	291		461	2176	970		342	1269	
V/C Ratio(X)	0.51	0.00	0.82	0.02	0.00	0.00		0.78	0.41	0.01		0.02	0.79	
Avail Cap(c_a), veh/h	471	0	334	195	0	334		509	2358	1052		357	1356	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	23.0	0.0	23.6	27.9	0.0	20.1		12.2	6.0	4.5		12.6	17.4	0.0
Incr Delay (d2), s/veh	0.9	0.0	13.1	0.0	0.0	0.0		6.9	0.0	0.0		0.0	2.7	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	4.1	0.0	0.0	0.0		2.9	1.7	0.0		0.1	5.5	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	23.9	0.0	36.7	27.9	0.0	20.1		19.1	6.1	4.5		12.6	20.1	0.0
LnGrp LOS	C		D	C		C		B	A	A		B	C	
Approach Vol, veh/h	461				4				1251				1012	
Approach Delay, s/veh	30.5				26.0				9.8				20.0	
Approach LOS	C				C				A				C	
Timer - Assigned Phs	2		4		5		6		8					
Phs Duration (G+Y+Rc), s	42.9		17.4		15.4		27.5		17.4					
Change Period (Y+Rc), s	6.0		6.3		5.8		6.0		6.3					
Max Green Setting (Gmax), s	40.0		12.7		11.2		23.0		12.7					
Max Q Clear Time (g_c+I1), s	9.8		10.7		9.4		17.3		10.8					
Green Ext Time (p_c), s	13.0		0.4		0.2		4.3		0.0					

Intersection Summary

HCM 6th Ctrl Delay, s/veh 17.1

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

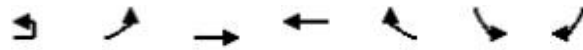
2027 NO BUILD CONDITIONS

SYNCHRO LANES, VOLUMES, TIMINGS

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

No Build AM (2027)
06/27/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰	↰↰	↰	↰	↰
Traffic Volume (vph)	1	218	1462	802	7	3	118
Future Volume (vph)	1	218	1462	802	7	3	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%	0%		0%	
Storage Length (ft)		255			350	95	0
Storage Lanes		1			1	1	1
Taper Length (ft)		100				40	
Satd. Flow (prot)	0	1752	3539	3539	1583	1770	1583
Flt Permitted		0.950				0.950	
Satd. Flow (perm)	0	1752	3539	3539	1583	1770	1583
Link Speed (mph)			45	45		25	
Link Distance (ft)			661	777		287	
Travel Time (s)			10.0	11.8		7.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%	0%		0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	243	1624	891	8	3	131
Sign Control			Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 51.6% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	5	1079	25	22	38	546	793	12	8	521	241
Future Volume (vph)	382	5	1079	25	22	38	546	793	12	8	521	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		275	0		75	275		275	175		200
Storage Lanes	1		0	0		1	2		1	1		1
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	1770	1584	0	0	3075	0	3433	3539	1468	1597	3539	1583
Flt Permitted	0.696				0.608		0.950			0.950		
Satd. Flow (perm)	1296	1584	0	0	1898	0	3433	3539	1468	1597	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		459			40				60			231
Link Speed (mph)		45			25			45			45	
Link Distance (ft)		724			496			696			1073	
Travel Time (s)		11.0			13.5			10.5			16.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	20%	2%	14%	11%	2%	2%	2%	10%	13%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	406	1153	0	0	90	0	581	844	13	9	554	256
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Detector Phase	4	4		8	8		1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	15.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	30.8	30.8
Total Split (s)	87.0	87.0		87.0	87.0		30.0	47.0	47.0	16.0	33.0	33.0
Total Split (%)	58.0%	58.0%		58.0%	58.0%		20.0%	31.3%	31.3%	10.7%	22.0%	22.0%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	4.3	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8	5.5	5.8	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	81.3	81.3			81.3		24.5	54.1	54.1	10.0	27.2	27.2
Actuated g/C Ratio	0.54	0.54			0.54		0.16	0.36	0.36	0.07	0.18	0.18
v/c Ratio	0.57	1.07			0.08		1.03	0.66	0.02	0.08	0.86	0.53
Control Delay (s/veh)	27.0	72.5			9.6		107.7	44.1	0.0	67.7	74.1	13.4
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.0	72.5			9.6		107.7	44.1	0.0	67.7	74.1	13.4

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E			A		F	D	A	E	E	B
Approach Delay (s/veh)		60.7			9.7			69.4			55.1	
Approach LOS		E			A			E			E	
Queue Length 50th (ft)	258	~1038			11		~314	351	0	8	280	21
Queue Length 95th (ft)	367	#1308			26		#436	499	0	28	#372	108
Internal Link Dist (ft)		644			416			616			993	
Turn Bay Length (ft)							275		275	175		200
Base Capacity (vph)	702	1068			1047		560	1276	567	111	641	476
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	1.08			0.09		1.04	0.66	0.02	0.08	0.86	0.54

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay (s/veh): 61.6

Intersection LOS: E

Intersection Capacity Utilization 111.5%

ICU Level of Service H

Analysis Period (min) 15

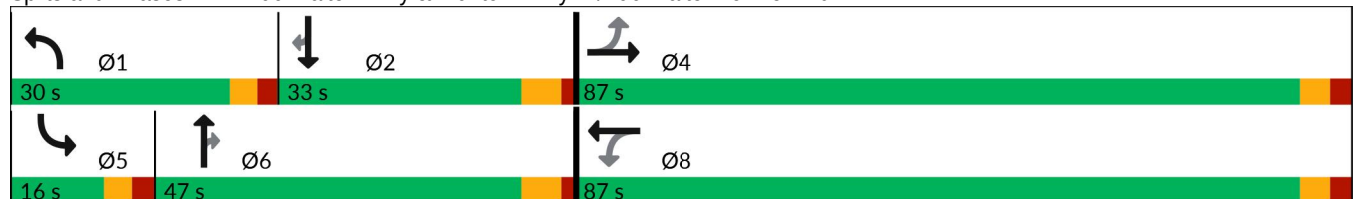
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	104	1	122	9	3	7	1	199	1008	5	3	2
Future Volume (vph)	104	1	122	9	3	7	1	199	1008	5	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1555	0	0	1794	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.749				0.688			0.341				0.254
Satd. Flow (perm)	1395	1555	0	0	1282	1583	0	635	3539	1583	0	473
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		136				175				65		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	137	0	0	13	8	0	222	1120	6	0	5
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	16.0	16.0		16.0	16.0	16.0	14.0	14.0	39.0	39.0	25.0	25.0
Total Split (%)	29.1%	29.1%		29.1%	29.1%	29.1%	25.5%	25.5%	70.9%	70.9%	45.5%	45.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	9.1	9.1			9.1	9.1		25.8	31.7	31.7		21.4
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.54	0.66	0.66		0.45
v/c Ratio	0.43	0.33			0.05	0.01		0.42	0.47	0.00		0.02
Control Delay (s/veh)	25.0	7.3			18.5	0.1		8.2	6.7	0.0		13.0
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	25.0	7.3			18.5	0.1		8.2	6.7	0.0		13.0

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	638	90
Future Volume (vph)	638	90
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3505	1583
Flt Permitted		
Satd. Flow (perm)	3505	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		180
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.90	0.90
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	709	100
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	25.0	25.0
Total Split (%)	45.5%	45.5%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	21.4	21.4
Actuated g/C Ratio	0.45	0.45
v/c Ratio	0.45	0.12
Control Delay (s/veh)	15.0	0.8
Queue Delay	0.0	0.0
Total Delay (s/veh)	15.0	0.8

ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	C	A			B	A		A	A	A		B
Approach Delay (s/veh)		15.4			11.6				7.0			
Approach LOS		B			B				A			
Queue Length 50th (ft)	31	0			3	0		27	93	0		1
Queue Length 95th (ft)	76	38			15	0		53	137	0		7
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	291	432			267	469		546	2515	1144		235
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.40	0.32			0.05	0.02		0.41	0.45	0.01		0.02

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 47.7

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay (s/veh): 10.0

Intersection LOS: B

Intersection Capacity Utilization 75.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

No Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
LOS	B	A
Approach Delay (s/veh)	13.3	
Approach LOS	B	
Queue Length 50th (ft)	96	0
Queue Length 95th (ft)	144	7
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1744	878
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.41	0.11
Intersection Summary		

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

No Build PM (2027)
06/27/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	321	1101	1236	16	15	394
Future Volume (vph)	321	1101	1236	16	15	394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	255			350	95	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				40	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Link Speed (mph)		45	45		25	
Link Distance (ft)		661	777		287	
Travel Time (s)		10.0	11.8		7.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	341	1171	1315	17	16	419
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 65.3%						
ICU Level of Service C						
Analysis Period (min) 15						

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	325	10	784	13	12	29	794	839	22	1	42	699
Future Volume (vph)	325	10	784	13	12	29	794	839	22	1	42	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	0		275	0		75	275		275		175	
Storage Lanes	1		0	0		1	2		1		1	
Taper Length (ft)	25			25			100				100	
Satd. Flow (prot)	1752	1585	0	0	3019	0	3433	3539	1583	0	1658	3539
Flt Permitted	0.717				0.674		0.950				0.533	
Satd. Flow (perm)	1323	1585	0	0	2060	0	3433	3539	1583	0	930	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		420			31				99			
Link Speed (mph)		45			25			45				45
Link Distance (ft)		724			496			696				1073
Travel Time (s)		11.0			13.5			10.5				16.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	11%	2%	9%	10%	8%	2%	2%	2%	2%	9%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	836	0	0	58	0	836	883	23	0	45	736
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	custom	Prot	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8					6	5		
Detector Phase	4	4		8	8		1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	10.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	16.0	30.8
Total Split (s)	32.0	32.0		32.0	32.0		26.0	40.0	40.0	18.0	18.0	32.0
Total Split (%)	35.6%	35.6%		35.6%	35.6%		28.9%	44.4%	44.4%	20.0%	20.0%	35.6%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	3.2	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	2.3	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8		5.5	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	None	Max
Act Effect Green (s)	26.3	26.3			26.3		20.5	41.4	41.4		11.5	26.2
Actuated g/C Ratio	0.29	0.29			0.29		0.23	0.46	0.46		0.13	0.29
v/c Ratio	0.88	1.10			0.09		1.07	0.54	0.02		0.37	0.71
Control Delay (s/veh)	56.9	81.0			13.7		87.5	20.8	0.0		45.3	33.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	56.9	81.0			13.7		87.5	20.8	0.0		45.3	33.1

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	447
Future Volume (vph)	447
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	200
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	471
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.95
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	471
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	30.8
Total Split (s)	32.0
Total Split (%)	35.6%
Yellow Time (s)	4.3
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.8
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	26.2
Actuated g/C Ratio	0.29
v/c Ratio	0.59
Control Delay (s/veh)	5.9
Queue Delay	0.0
Total Delay (s/veh)	5.9

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
LOS	E	F			B		F	C	A		D	C
Approach Delay (s/veh)		74.0			13.8			52.6				23.4
Approach LOS		E			B			D				C
Queue Length 50th (ft)	185	~361			5		~274	214	0		23	196
Queue Length 95th (ft)	#344	#590			20		#389	280	0		58	261
Internal Link Dist (ft)		644			416			616				993
Turn Bay Length (ft)							275		275		175	
Base Capacity (vph)	386	760			623		781	1627	781		129	1030
Starvation Cap Reductn	0	0			0		0	0	0		0	0
Spillback Cap Reductn	0	0			0		0	0	0		0	0
Storage Cap Reductn	0	0			0		0	0	0		0	0
Reduced v/c Ratio	0.89	1.10			0.09		1.07	0.54	0.03		0.35	0.71

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay (s/veh): 49.4

Intersection LOS: D

Intersection Capacity Utilization 105.2%

ICU Level of Service G

Analysis Period (min) 15

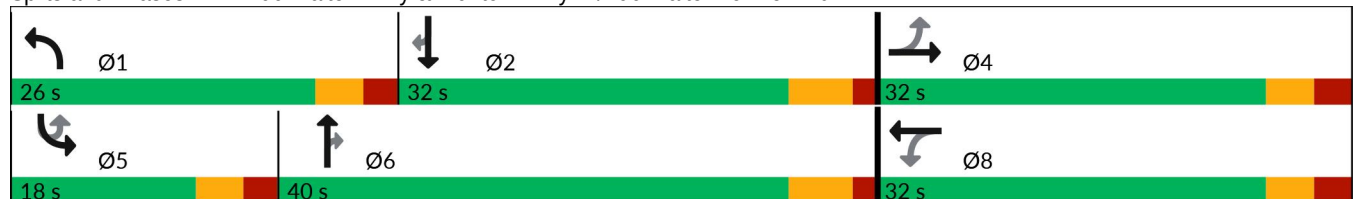
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/27/2024



Lane Group	SBR
LOS	A
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	72
Internal Link Dist (ft)	
Turn Bay Length (ft)	200
Base Capacity (vph)	794
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.59
Intersection Summary	

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	212	0	226	3	0	1	5	341	842	6	7	8
Future Volume (vph)	212	0	226	3	0	1	5	341	842	6	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1583	0	0	1770	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.756				0.548			0.196				0.321
Satd. Flow (perm)	1408	1583	0	0	1021	1583	0	365	3539	1583	0	598
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		364				148				55		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	238	0	0	3	1	0	364	886	6	0	15
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	19.0	19.0		19.0	19.0	19.0	17.0	17.0	46.0	46.0	29.0	29.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	26.2%	26.2%	70.8%	70.8%	44.6%	44.6%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	12.1	12.1			12.1	12.1		31.6	37.2	37.2		20.4
Actuated g/C Ratio	0.20	0.20			0.20	0.20		0.51	0.60	0.60		0.33
v/c Ratio	0.80	0.39			0.01	0.00		0.83	0.41	0.00		0.07
Control Delay (s/veh)	49.5	2.3			21.3	0.0		31.5	7.1	0.0		15.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	49.5	2.3			21.3	0.0		31.5	7.1	0.0		15.2

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	954	174
Future Volume (vph)	954	174
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		183
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	2%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1004	183
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	29.0	29.0
Total Split (%)	44.6%	44.6%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	20.4	20.4
Actuated g/C Ratio	0.33	0.33
v/c Ratio	0.86	0.28
Control Delay (s/veh)	28.2	4.0
Queue Delay	0.0	0.0
Total Delay (s/veh)	28.2	4.0

ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	D	A			C	A		C	A	A		B
Approach Delay (s/veh)		25.1			16.0				14.2			
Approach LOS		C			B				B			
Queue Length 50th (ft)	85	0			1	0		74	82	0		4
Queue Length 95th (ft)	#193	7			7	0		#216	114	0		16
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	292	616			211	445		445	2310	1052		224
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.76	0.39			0.01	0.00		0.82	0.38	0.01		0.07

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 61.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 20.1

Intersection LOS: C

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

No Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/27/2024



Lane Group	SBT	SBR
LOS	C	A
Approach Delay (s/veh)	24.4	
Approach LOS	C	
Queue Length 50th (ft)	184	0
Queue Length 95th (ft)	#255	36
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1328	708
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.76	0.26
Intersection Summary		

ATTACHMENT 5

2027 BUILD CONDITIONS

HCM 6TH

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build AM (2027)
06/28/2024

Intersection							
Int Delay, s/veh	9						
Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↱	↕↕	↕↕	↱	↱	↱
Traffic Vol, veh/h	1	261	1462	820	20	27	121
Future Vol, veh/h	1	261	1462	820	20	27	121
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	Yield	-	None
Storage Length	-	255	-	-	350	95	0
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	2	2	2	2	2
Mvmt Flow	1	290	1624	911	22	30	134
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	911	911	0	-	0	2305	456
Stage 1	-	-	-	-	-	911	-
Stage 2	-	-	-	-	-	1394	-
Critical Hdwy	6.44	4.16	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.23	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	379	737	-	-	-	32	551
Stage 1	-	-	-	-	-	352	-
Stage 2	-	-	-	-	-	195	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	733	733	-	-	-	~ 19	551
Mov Cap-2 Maneuver	-	-	-	-	-	~ 19	-
Stage 1	-	-	-	-	-	212	-
Stage 2	-	-	-	-	-	195	-
Approach	EB		WB		SB		
HCM Control Delay, s/v	2		0		141.4		
HCM LOS					F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	733	-	-	-	19	551	
HCM Lane V/C Ratio	0.397	-	-	-	1.579	0.244	
HCM Control Delay (s/veh)	13.1	-	-	-	\$ 714.1	13.6	
HCM Lane LOS	B	-	-	-	F	B	
HCM 95th %tile Q (veh)	1.9	-	-	-	4.1	1	
Notes							
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon							

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1474	858	50	0	18
Future Vol, veh/h	0	1474	858	50	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1638	953	56	0	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	505
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	512
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		12.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	512		
HCM Lane V/C Ratio	-	-	-	0.039		
HCM Control Delay (s/veh)	-	-	-	12.3		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q (veh)	-	-	-	0.1		

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build AM (2027)
06/28/2024

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	27	16	225	56	19	122
Future Vol, veh/h	27	16	225	56	19	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	2	2	2
Mvmt Flow	30	18	250	62	21	136
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	459	281	0	0	312	0
Stage 1	281	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	560	758	-	-	1248	-
Stage 1	767	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	550	758	-	-	1248	-
Mov Cap-2 Maneuver	550	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	11.4	0	1.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	613	1248	-	
HCM Lane V/C Ratio	-	-	0.078	0.017	-	
HCM Control Delay (s/veh)	-	-	11.4	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q (veh)	-	-	0.3	0.1	-	

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	5	1100	25	22	38	590	793	12	8	521	260
Future Volume (veh/h)	385	5	1100	25	22	38	590	793	12	8	521	260
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1604	1870	1693	1737	1870	1870	1870	1752	1707	1870	1870
Adj Flow Rate, veh/h	410	5	0	27	23	40	628	844	13	9	554	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	20	2	14	11	2	2	2	10	13	2	2
Cap, veh/h	516	563		332	264	454	730	1614	674	36	943	
Arrive On Green	0.35	0.35	0.00	0.35	0.35	0.35	0.21	0.45	0.45	0.02	0.27	0.00
Sat Flow, veh/h	1339	1604	0	784	753	1293	3456	3554	1485	1626	3554	1585
Grp Volume(v), veh/h	410	5	0	48	0	42	628	844	13	9	554	0
Grp Sat Flow(s),veh/h/ln	1339	1604	0	1482	0	1348	1728	1777	1485	1626	1777	1585
Q Serve(g_s), s	29.2	0.2	0.0	0.3	0.0	2.0	17.3	16.8	0.5	0.5	13.4	0.0
Cycle Q Clear(g_c), s	31.2	0.2	0.0	1.9	0.0	2.0	17.3	16.8	0.5	0.5	13.4	0.0
Prop In Lane	1.00		0.00	0.56		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	563		577	0	474	730	1614	674	36	943	
V/C Ratio(X)	0.80	0.01		0.08	0.00	0.09	0.86	0.52	0.02	0.25	0.59	
Avail Cap(c_a), veh/h	1134	1304		1256	0	1096	927	1614	674	173	943	
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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.9	20.8	0.0	21.4	0.0	21.4	37.5	19.3	14.8	47.5	31.6	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.1	0.0	0.1	6.8	1.2	0.1	3.6	2.7	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.1	0.0	0.8	0.0	0.7	7.6	6.6	0.2	0.2	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.7	20.8	0.0	21.4	0.0	21.5	44.3	20.5	14.9	51.0	34.2	0.0
LnGrp LOS	C	C		C		C	D	C	B	D	C	
Approach Vol, veh/h	415			90			1485			563		
Approach Delay, s/veh	34.5			21.5			30.5			34.5		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.3	32.0		40.4	7.7	50.7		40.4				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	26.5	26.2		80.3	10.5	42.2		80.3				
Max Q Clear Time (g_c+I1), s	19.3	15.4		33.2	2.5	18.8		4.0				
Green Ext Time (p_c), s	1.5	4.3		1.5	0.0	10.7		0.3				

Intersection Summary

HCM 6th Ctrl Delay, s/veh

31.7

HCM 6th LOS

C

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	120	1	122	9	3	7	1	199	1011	5	3	2	657	109
Future Volume (veh/h)	120	1	122	9	3	7	1	199	1011	5	3	2	657	109
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1841	1870	1870	1870		1870	1870	1870		1870	1856	1870
Adj Flow Rate, veh/h	133	1	136	10	3	8		221	1123	6		2	730	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90
Percent Heavy Veh, %	2	2	4	2	2	2		2	2	2		2	3	2
Cap, veh/h	421	2	264	229	52	266		476	2020	901		315	1138	
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.12	0.57	0.57		0.32	0.32	0.00
Sat Flow, veh/h	1414	12	1575	554	309	1585		1781	3554	1585		499	3526	1585
Grp Volume(v), veh/h	133	0	137	13	0	8		221	1123	6		2	730	0
Grp Sat Flow(s),veh/h/ln	1414	0	1587	863	0	1585		1781	1777	1585		499	1763	1585
Q Serve(g_s), s	0.0	0.0	3.7	0.0	0.0	0.2		3.7	9.3	0.1		0.1	8.2	0.0
Cycle Q Clear(g_c), s	3.1	0.0	3.7	3.7	0.0	0.2		3.7	9.3	0.1		0.1	8.2	0.0
Prop In Lane	1.00		0.99	0.77		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	421	0	266	281	0	266		476	2020	901		315	1138	
V/C Ratio(X)	0.32	0.00	0.51	0.05	0.00	0.03		0.46	0.56	0.01		0.01	0.64	
Avail Cap(c_a), veh/h	478	0	330	336	0	330		574	2516	1122		358	1437	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	17.5	0.0	17.7	16.4	0.0	16.2		9.3	6.3	4.4		10.7	13.5	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.1	0.0	0.0		0.7	0.1	0.0		0.0	0.3	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.3	0.1	0.0	0.1		1.0	1.7	0.0		0.0	2.4	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	17.9	0.0	19.2	16.4	0.0	16.3		10.0	6.4	4.4		10.7	13.8	0.0
LnGrp LOS	B		B	B		B		A	A	A		B	B	
Approach Vol, veh/h	270		21			1350			732					
Approach Delay, s/veh	18.6		16.4			7.0			13.7					
Approach LOS	B		B			A			B					
Timer - Assigned Phs	2		4		5	6	8							
Phs Duration (G+Y+Rc), s	32.5		14.1		11.5	21.0	14.1							
Change Period (Y+Rc), s	6.0		6.3		5.8	6.0	6.3							
Max Green Setting (Gmax), s	33.0		9.7		8.2	19.0	9.7							
Max Q Clear Time (g_c+I1), s	11.3		5.7		5.7	10.2	5.7							
Green Ext Time (p_c), s	13.7		0.3		0.2	4.8	0.0							

Intersection Summary

HCM 6th Ctrl Delay, s/veh 10.5

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build PM (2027)
06/28/2024

Intersection						
Int Delay, s/veh	141.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	342	1101	1270	22	60	400
Future Vol, veh/h	342	1101	1270	22	60	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	255	-	-	350	95	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	364	1171	1351	23	64	426
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1351	0	-	0	2665	676
Stage 1	-	-	-	-	1351	-
Stage 2	-	-	-	-	1314	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	505	-	-	-	~ 18	~ 396
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	216	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	505	-	-	-	~ 5	~ 396
Mov Cap-2 Maneuver	-	-	-	-	~ 5	-
Stage 1	-	-	-	-	~ 57	-
Stage 2	-	-	-	-	216	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	6.7	0		\$ 961.7		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	505	-	-	-	5	396
HCM Lane V/C Ratio	0.72	-	-	-	12.766	1.075
HCM Control Delay (s/veh)	28.4	-	-	-	\$ 6710.7	99.3
HCM Lane LOS	D	-	-	-	F	F
HCM 95th %tile Q (veh)	5.8	-	-	-	9.8	14.6
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1159	1264	24	0	34
Future Vol, veh/h	0	1159	1264	24	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1288	1404	27	0	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	716
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	373
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	373		
HCM Lane V/C Ratio	-	-	-	0.101		
HCM Control Delay (s/veh)	-	-	-	15.7		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q (veh)	-	-	-	0.3		

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build PM (2027)
06/28/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	51	28	337	27	10	409
Future Vol, veh/h	51	28	337	27	10	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	31	374	30	11	454
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	865	389	0	0	404	0
Stage 1	389	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	324	659	-	-	1155	-
Stage 1	685	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	659	-	-	1155	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	16.9	0	0.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	391	1155	-	
HCM Lane V/C Ratio	-	-	0.224	0.01	-	
HCM Control Delay (s/veh)	-	-	16.9	8.1	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.8	0	-	

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	331	10	823	13	12	29	815	839	22	1	42	699
Future Volume (veh/h)	331	10	823	13	12	29	815	839	22	1	42	699
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	1856	1737	1870	1767	1752	1781	1870	1870	1870		1767	1870
Adj Flow Rate, veh/h	348	11	0	14	13	31	858	883	23		44	736
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95
Percent Heavy Veh, %	3	11	2	9	10	8	2	2	2		9	2
Cap, veh/h	450	510		270	231	397	883	1624	724		121	971
Arrive On Green	0.29	0.29	0.00	0.29	0.29	0.29	0.26	0.46	0.46		0.07	0.27
Sat Flow, veh/h	1351	1737	0	724	787	1351	3456	3554	1585		1682	3554
Grp Volume(v), veh/h	348	11	0	27	0	31	858	883	23		44	736
Grp Sat Flow(s),veh/h/ln	1351	1737	0	1511	0	1351	1728	1777	1585		1682	1777
Q Serve(g_s), s	24.0	0.4	0.0	0.0	0.0	1.6	23.6	17.2	0.8		2.4	18.2
Cycle Q Clear(g_c), s	25.6	0.4	0.0	1.1	0.0	1.6	23.6	17.2	0.8		2.4	18.2
Prop In Lane	1.00		0.00	0.52		1.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	450	510		501	0	397	883	1624	724		121	971
V/C Ratio(X)	0.77	0.02		0.05	0.00	0.08	0.97	0.54	0.03		0.36	0.76
Avail Cap(c_a), veh/h	508	585		565	0	455	883	1624	724		290	971
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	33.7	24.1	0.0	24.3	0.0	24.5	35.3	18.8	14.3		42.4	31.9
Incr Delay (d2), s/veh	6.5	0.0	0.0	0.0	0.0	0.1	23.4	1.3	0.1		1.8	5.5
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(50%),veh/ln	8.2	0.2	0.0	0.4	0.0	0.5	12.1	6.7	0.3		1.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.2	24.1	0.0	24.3	0.0	24.6	58.8	20.1	14.4		44.2	37.4
LnGrp LOS	D	C		C		C	E	C	B		D	D
Approach Vol, veh/h		359			58			1764				780
Approach Delay, s/veh		39.7			24.4			38.8				37.8
Approach LOS		D			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	32.0		33.9	12.4	49.6		33.9				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	24.5	26.2		32.3	16.5	34.2		32.3				
Max Q Clear Time (g_c+I1), s	25.6	20.2		27.6	4.4	19.2		3.6				
Green Ext Time (p_c), s	0.0	3.5		0.5	0.1	8.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			38.4									
HCM 6th LOS			D									
Notes												
User approved ignoring U-Turning movement.												
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024



Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	456
Future Volume (veh/h)	456
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	0
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	
Arrive On Green	0.00
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	
V/C Ratio(X)	
Avail Cap(c_a), veh/h	
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	240	0	226	3	0	1	5	341	848	6	7	8	963	184
Future Volume (veh/h)	240	0	226	3	0	1	5	341	848	6	7	8	963	184
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No				No				No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870	1870	1870
Adj Flow Rate, veh/h	253	0	238	3	0	1		359	893	6		8	1014	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h	432	0	296	164	0	296		459	2193	978		343	1307	
Arrive On Green	0.19	0.00	0.19	0.19	0.00	0.19		0.16	0.62	0.62		0.37	0.37	0.00
Sat Flow, veh/h	1418	0	1585	262	0	1585		1781	3554	1585		619	3554	1585
Grp Volume(v), veh/h	253	0	238	3	0	1		359	893	6		8	1014	0
Grp Sat Flow(s),veh/h/ln	1418	0	1585	262	0	1585		1781	1777	1585		619	1777	1585
Q Serve(g_s), s	0.0	0.0	9.0	0.2	0.0	0.0		7.5	8.1	0.1		0.5	15.8	0.0
Cycle Q Clear(g_c), s	8.4	0.0	9.0	9.2	0.0	0.0		7.5	8.1	0.1		0.5	15.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	432	0	296	164	0	296		459	2193	978		343	1307	
V/C Ratio(X)	0.58	0.00	0.80	0.02	0.00	0.00		0.78	0.41	0.01		0.02	0.78	
Avail Cap(c_a), veh/h	500	0	372	219	0	372		526	2438	1087		362	1417	
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	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	24.4	28.8	0.0	20.8		12.5	6.1	4.6		12.7	17.5	0.0
Incr Delay (d2), s/veh	1.3	0.0	9.8	0.0	0.0	0.0		6.7	0.0	0.0		0.0	2.2	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	4.0	0.0	0.0	0.0		3.0	1.9	0.0		0.1	5.7	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	25.5	0.0	34.3	28.8	0.0	20.8		19.1	6.2	4.6		12.7	19.8	0.0
LnGrp LOS	C		C	C		C		B	A	A		B	B	
Approach Vol, veh/h	491				4				1258				1022	
Approach Delay, s/veh	29.7				26.8				9.9				19.7	
Approach LOS	C				C				A				B	
Timer - Assigned Phs	2		4		5		6		8					
Phs Duration (G+Y+Rc), s	44.7		18.0		15.6		29.1		18.0					
Change Period (Y+Rc), s	6.0		6.3		5.8		6.0		6.3					
Max Green Setting (Gmax), s	43.0		14.7		12.2		25.0		14.7					
Max Q Clear Time (g_c+l1), s	10.1		11.0		9.5		17.8		11.2					
Green Ext Time (p_c), s	13.6		0.7		0.3		5.2		0.0					

Intersection Summary

HCM 6th Ctrl Delay, s/veh 17.0

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

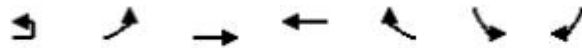
2027 BUILD CONDITIONS

SYNCHRO LANES, VOLUMES, TIMINGS

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build AM (2027)
06/28/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↶↶	↶↶	↶	↶	↶
Traffic Volume (vph)	1	261	1462	820	20	27	121
Future Volume (vph)	1	261	1462	820	20	27	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%	0%		0%	
Storage Length (ft)		255			350	95	0
Storage Lanes		1			1	1	1
Taper Length (ft)		100				40	
Satd. Flow (prot)	0	1752	3539	3539	1583	1770	1583
Flt Permitted		0.950				0.950	
Satd. Flow (perm)	0	1752	3539	3539	1583	1770	1583
Link Speed (mph)			45	45		25	
Link Distance (ft)			661	777		287	
Travel Time (s)			10.0	11.8		7.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%	0%		0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	291	1624	911	22	30	134
Sign Control			Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 54.7% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	1474	858	50	0	18
Future Volume (vph)	0	1474	858	50	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3539	3511	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	3511	0	0	1611
Link Speed (mph)		45	45		30	
Link Distance (ft)		777	724		360	
Travel Time (s)		11.8	10.9		6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1638	1009	0	0	20
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 44.1% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build AM (2027)
06/28/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	16	225	56	19	122
Future Volume (vph)	27	16	225	56	19	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1715	0	1798	0	0	1850
Flt Permitted	0.970					0.993
Satd. Flow (perm)	1715	0	1798	0	0	1850
Link Speed (mph)	30		25			25
Link Distance (ft)	413		287			453
Travel Time (s)	9.4		7.9			13.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	312	0	0	157
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 32.5%			ICU Level of Service A			
Analysis Period (min) 15						

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	5	1100	25	22	38	590	793	12	8	521	260
Future Volume (vph)	385	5	1100	25	22	38	590	793	12	8	521	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		275	0		75	275		275	175		200
Storage Lanes	1		0	0		1	2		1	1		1
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	1770	1584	0	0	3075	0	3433	3539	1468	1597	3539	1583
Flt Permitted	0.696				0.607		0.950			0.950		
Satd. Flow (perm)	1296	1584	0	0	1895	0	3433	3539	1468	1597	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		493			40				60			248
Link Speed (mph)		45			25			45			45	
Link Distance (ft)		724			496			696			1073	
Travel Time (s)		11.0			13.5			10.5			16.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	20%	2%	14%	11%	2%	2%	2%	10%	13%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	410	1175	0	0	90	0	628	844	13	9	554	277
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Detector Phase	4	4		8	8		1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	15.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	30.8	30.8
Total Split (s)	86.0	86.0		86.0	86.0		32.0	48.0	48.0	16.0	32.0	32.0
Total Split (%)	57.3%	57.3%		57.3%	57.3%		21.3%	32.0%	32.0%	10.7%	21.3%	21.3%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	4.3	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8	5.5	5.8	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	80.3	80.3			80.3		26.5	55.1	55.1	10.0	26.2	26.2
Actuated g/C Ratio	0.54	0.54			0.54		0.18	0.37	0.37	0.07	0.17	0.17
v/c Ratio	0.59	1.09			0.08		1.03	0.64	0.02	0.08	0.89	0.57
Control Delay (s/veh)	28.1	76.1			9.9		105.1	43.1	0.0	67.7	78.6	14.3
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.1	76.1			9.9		105.1	43.1	0.0	67.7	78.6	14.3

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E			A		F	D	A	E	E	B
Approach Delay (s/veh)		63.7			9.9			69.0			57.3	
Approach LOS		E			A			E			E	
Queue Length 50th (ft)	266	~1055			12		~339	347	0	8	282	24
Queue Length 95th (ft)	380	#1325			26		#463	494	0	28	#385	117
Internal Link Dist (ft)		644			416			616			993	
Turn Bay Length (ft)							275		275	175		200
Base Capacity (vph)	693	1077			1033		606	1300	577	111	618	481
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.09			0.09		1.04	0.65	0.02	0.08	0.90	0.58

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay (s/veh): 63.1

Intersection LOS: E

Intersection Capacity Utilization 113.8%

ICU Level of Service H

Analysis Period (min) 15

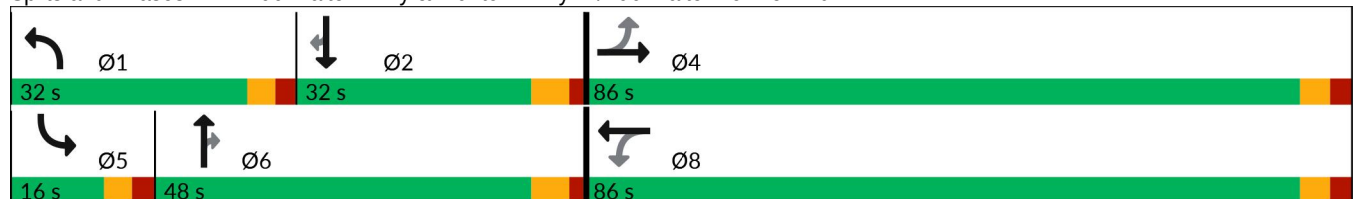
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	120	1	122	9	3	7	1	199	1011	5	3	2
Future Volume (vph)	120	1	122	9	3	7	1	199	1011	5	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1555	0	0	1794	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.749				0.688			0.328				0.254
Satd. Flow (perm)	1395	1555	0	0	1282	1583	0	611	3539	1583	0	473
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		136				175				65		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	137	0	0	13	8	0	222	1123	6	0	5
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	16.0	16.0		16.0	16.0	16.0	14.0	14.0	39.0	39.0	25.0	25.0
Total Split (%)	29.1%	29.1%		29.1%	29.1%	29.1%	25.5%	25.5%	70.9%	70.9%	45.5%	45.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	9.3	9.3			9.3	9.3		25.7	31.5	31.5		21.4
Actuated g/C Ratio	0.20	0.20			0.20	0.20		0.54	0.66	0.66		0.45
v/c Ratio	0.48	0.33			0.05	0.01		0.42	0.47	0.00		0.02
Control Delay (s/veh)	26.8	7.2			18.7	0.1		8.3	6.8	0.0		13.0
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	26.8	7.2			18.7	0.1		8.3	6.8	0.0		13.0

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	657	109
Future Volume (vph)	657	109
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3505	1583
Flt Permitted		
Satd. Flow (perm)	3505	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		180
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.90	0.90
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	730	121
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	25.0	25.0
Total Split (%)	45.5%	45.5%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	21.4	21.4
Actuated g/C Ratio	0.45	0.45
v/c Ratio	0.46	0.14
Control Delay (s/veh)	15.1	1.5
Queue Delay	0.0	0.0
Total Delay (s/veh)	15.1	1.5

ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	C	A			B	A		A	A	A		B
Approach Delay (s/veh)		16.9			11.7				7.0			
Approach LOS		B			B				A			
Queue Length 50th (ft)	36	0			3	0		28	96	0		1
Queue Length 95th (ft)	#95	38			16	0		53	137	0		7
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	296	437			272	474		539	2521	1146		234
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.45	0.31			0.05	0.02		0.41	0.45	0.01		0.02

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 47.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay (s/veh): 10.3

Intersection LOS: B

Intersection Capacity Utilization 75.2%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Build AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024

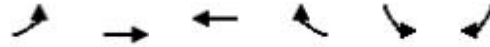


Lane Group	SBT	SBR
LOS	B	A
Approach Delay (s/veh)	13.2	
Approach LOS	B	
Queue Length 50th (ft)	101	0
Queue Length 95th (ft)	149	13
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1735	874
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.42	0.14
Intersection Summary		

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build PM (2027)
06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	342	1101	1270	22	60	400
Future Volume (vph)	342	1101	1270	22	60	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	255			350	95	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				40	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Link Speed (mph)		45	45		25	
Link Distance (ft)		661	777		287	
Travel Time (s)		10.0	11.8		7.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	1171	1351	23	64	426
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 67.4% ICU Level of Service C

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	1159	1264	24	0	34
Future Volume (vph)	0	1159	1264	24	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3539	3529	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	3529	0	0	1611
Link Speed (mph)		45	45		30	
Link Distance (ft)		777	724		346	
Travel Time (s)		11.8	10.9		6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1288	1431	0	0	38
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 45.7% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build PM (2027)
06/28/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	28	337	27	10	409
Future Volume (vph)	51	28	337	27	10	409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1718	0	1844	0	0	1861
Flt Permitted	0.969					0.999
Satd. Flow (perm)	1718	0	1844	0	0	1861
Link Speed (mph)	30		25			25
Link Distance (ft)	413		287			453
Travel Time (s)	9.4		7.9			13.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	404	0	0	465
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.8%			ICU Level of Service A		
Analysis Period (min)	15					

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	331	10	823	13	12	29	815	839	22	1	42	699
Future Volume (vph)	331	10	823	13	12	29	815	839	22	1	42	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	0		275	0		75	275		275		175	
Storage Lanes	1		0	0		1	2		1		1	
Taper Length (ft)	25			25			100				100	
Satd. Flow (prot)	1752	1585	0	0	3019	0	3433	3539	1583	0	1658	3539
Flt Permitted	0.717				0.685		0.950				0.320	
Satd. Flow (perm)	1323	1585	0	0	2093	0	3433	3539	1583	0	559	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		473			31				89			
Link Speed (mph)		45			25			45				45
Link Distance (ft)		724			496			696				1073
Travel Time (s)		11.0			13.5			10.5				16.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	11%	2%	9%	10%	8%	2%	2%	2%	2%	9%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	877	0	0	58	0	858	883	23	0	45	736
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	custom	Prot	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8					6	5		
Detector Phase	4	4		8	8		1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	10.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	16.0	30.8
Total Split (s)	38.0	38.0		38.0	38.0		30.0	40.0	40.0	22.0	22.0	32.0
Total Split (%)	38.0%	38.0%		38.0%	38.0%		30.0%	40.0%	40.0%	22.0%	22.0%	32.0%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	3.2	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	2.3	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8		5.5	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	None	Max
Act Effect Green (s)	32.3	32.3			32.3		24.5	39.3	39.3		14.5	26.2
Actuated g/C Ratio	0.32	0.32			0.32		0.25	0.39	0.39		0.15	0.26
v/c Ratio	0.81	1.05			0.08		1.02	0.63	0.03		0.55	0.79
Control Delay (s/veh)	48.1	63.4			13.8		74.4	28.7	0.0		65.5	41.7
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	48.1	63.4			13.8		74.4	28.7	0.0		65.5	41.7

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	456
Future Volume (vph)	456
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	200
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	480
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.95
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	480
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	30.8
Total Split (s)	32.0
Total Split (%)	32.0%
Yellow Time (s)	4.3
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.8
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	26.2
Actuated g/C Ratio	0.26
v/c Ratio	0.62
Control Delay (s/veh)	6.9
Queue Delay	0.0
Total Delay (s/veh)	6.9

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
LOS	D	E			B		E	C	A		E	D
Approach Delay (s/veh)		59.1			13.8			50.6				29.4
Approach LOS		E			B			D				C
Queue Length 50th (ft)	202	~394			6		~292	256	0		26	230
Queue Length 95th (ft)	#354	#632			21		#420	330	0		#72	301
Internal Link Dist (ft)		644			416			616				993
Turn Bay Length (ft)							275		275		175	
Base Capacity (vph)	427	832			697		841	1390	675		92	927
Starvation Cap Reductn	0	0			0		0	0	0		0	0
Spillback Cap Reductn	0	0			0		0	0	0		0	0
Storage Cap Reductn	0	0			0		0	0	0		0	0
Reduced v/c Ratio	0.81	1.05			0.08		1.02	0.64	0.03		0.49	0.79

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay (s/veh): 46.3

Intersection LOS: D

Intersection Capacity Utilization 108.2%

ICU Level of Service G

Analysis Period (min) 15

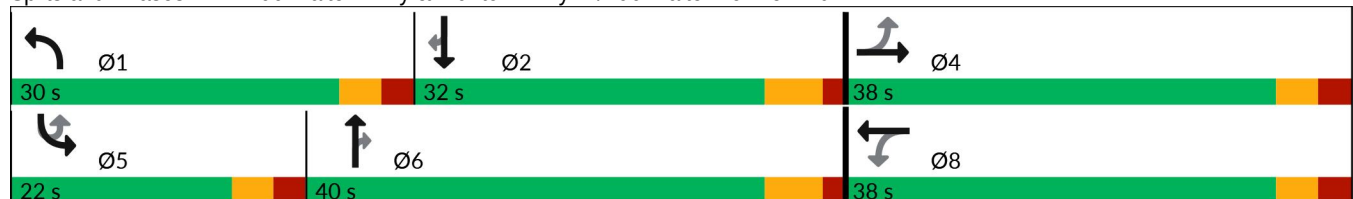
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024



Lane Group	SBR
LOS	A
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	81
Internal Link Dist (ft)	
Turn Bay Length (ft)	200
Base Capacity (vph)	768
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.63
Intersection Summary	

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	240	0	226	3	0	1	5	341	848	6	7	8
Future Volume (vph)	240	0	226	3	0	1	5	341	848	6	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%		0%				0%					
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1583	0	0	1770	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.756				0.542			0.183				0.319
Satd. Flow (perm)	1408	1583	0	0	1010	1583	0	341	3539	1583	0	594
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		364				137				51		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	238	0	0	3	1	0	364	893	6	0	15
Turn Type	Perm	NA		Perm	NA	Perm	custom	D,P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	21.0	21.0		21.0	21.0	21.0	18.0	18.0	49.0	49.0	31.0	31.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	25.7%	25.7%	70.0%	70.0%	44.3%	44.3%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead	Lag			
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	14.1	14.1			14.1	14.1		33.9	39.5	39.5		21.8
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.51	0.60	0.60		0.33
v/c Ratio	0.84	0.38			0.01	0.00		0.84	0.42	0.00		0.07
Control Delay (s/veh)	53.4	2.0			22.3	0.0		33.7	7.7	0.0		16.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	53.4	2.0			22.3	0.0		33.7	7.7	0.0		16.2

Bluffton Community Hospital
Kimley-Horn

Synchro 12 Report

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	963	184
Future Volume (vph)	963	184
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		194
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	2%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1014	194
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	31.0	31.0
Total Split (%)	44.3%	44.3%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	21.8	21.8
Actuated g/C Ratio	0.33	0.33
v/c Ratio	0.86	0.29
Control Delay (s/veh)	30.1	4.1
Queue Delay	0.0	0.0
Total Delay (s/veh)	30.1	4.1

ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	D	A			C	A		C	A	A		B
Approach Delay (s/veh)		28.5			16.8				15.3			
Approach LOS		C			B				B			
Queue Length 50th (ft)	106	0			1	0		90	92	0		4
Queue Length 95th (ft)	#229	5			7	0		#231	125	0		16
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	316	637			227	461		443	2326	1058		227
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.80	0.37			0.01	0.00		0.82	0.38	0.01		0.07

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay (s/veh): 21.8

Intersection LOS: C

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Build PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
LOS	C	A
Approach Delay (s/veh)	25.9	
Approach LOS	C	
Queue Length 50th (ft)	202	0
Queue Length 95th (ft)	276	38
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1352	725
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.75	0.27
Intersection Summary		

ATTACHMENT 5

2027 BUILD CONDITIONS

SIM Traffic

ATTACHMENT 5

Queuing and Blocking Report
Build AM (2027)

Bluffton Community Hospital
Build AM (2027)

Intersection: 1: Bluffton Parkway & Innovation Drive

Movement	EB	EB	WB	SB	SB
Directions Served	UL	T	T	L	R
Maximum Queue (ft)	138	6	2	108	139
Average Queue (ft)	62	0	0	41	52
95th Queue (ft)	111	3	2	102	117
Link Distance (ft)		639	720		221
Upstream Blk Time (%)					2
Queuing Penalty (veh)					3
Storage Bay Dist (ft)	255			95	
Storage Blk Time (%)				13	1
Queuing Penalty (veh)				17	0

Intersection: 2: Bluffton Pkwy N./Bluffton Parkway & Access #1

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	13	43	2	9	39
Average Queue (ft)	0	2	0	0	13
95th Queue (ft)	12	21	2	7	38
Link Distance (ft)	720	720	637	637	318
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Innovation Drive & Access #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	90	115
Average Queue (ft)	29	13
95th Queue (ft)	75	85
Link Distance (ft)	368	419
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

ATTACHMENT 5

Queuing and Blocking Report
Build AM (2027)

Bluffton Community Hospital
Build AM (2027)

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	365	356	84	52	315	355	352	281	31	47	227	227
Average Queue (ft)	212	18	25	17	189	240	138	117	4	6	130	127
95th Queue (ft)	321	148	63	42	299	337	300	239	20	28	206	201
Link Distance (ft)	637	637	428				661	661			999	999
Upstream Blk Time (%)							1					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)				75	275	275			275	175		
Storage Blk Time (%)			1	0	1	5	0	0			3	1
Queuing Penalty (veh)			0	0	3	19	2	0			0	3

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	SB
Directions Served	R
Maximum Queue (ft)	78
Average Queue (ft)	4
95th Queue (ft)	52
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	UL	T	T	R	UL	T	T
Maximum Queue (ft)	127	90	27	19	134	144	164	28	26	155	152
Average Queue (ft)	57	41	6	3	61	59	78	2	3	76	67
95th Queue (ft)	106	73	23	14	107	115	133	13	16	130	124
Link Distance (ft)	746	746	470				999	999		909	909
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)				50	275			250	250		
Storage Blk Time (%)				0							
Queuing Penalty (veh)				0							

Network Summary

Network wide Queuing Penalty: 48

ATTACHMENT 5

Queuing and Blocking Report
Build PM (2027)

Bluffton Community Hospital
Build PM (2027)

Intersection: 1: Bluffton Parkway & Innovation Drive

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	T	L	R
Maximum Queue (ft)	252	75	2	135	242
Average Queue (ft)	117	5	0	124	221
95th Queue (ft)	206	64	2	158	255
Link Distance (ft)		639	720		221
Upstream Blk Time (%)					72
Queuing Penalty (veh)					335
Storage Bay Dist (ft)	255			95	
Storage Blk Time (%)	1	0		86	37
Queuing Penalty (veh)	3	0		346	22

Intersection: 2: Bluffton Pkwy N./Bluffton Parkway & Access #1

Movement	SB
Directions Served	R
Maximum Queue (ft)	66
Average Queue (ft)	24
95th Queue (ft)	53
Link Distance (ft)	304
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Innovation Drive & Access #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	394	467
Average Queue (ft)	306	390
95th Queue (ft)	498	584
Link Distance (ft)	368	419
Upstream Blk Time (%)	69	82
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

ATTACHMENT 5

Queuing and Blocking Report
Build PM (2027)

Bluffton Community Hospital
Build PM (2027)

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	299	79	63	51	325	374	650	435	32	96	239	235
Average Queue (ft)	180	10	17	14	262	314	247	149	8	39	145	147
95th Queue (ft)	277	52	47	38	355	401	556	314	28	81	211	212
Link Distance (ft)	638	638	428				661	661			999	999
Upstream Blk Time (%)							2					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)				75	275	275			275	175		
Storage Blk Time (%)			0	0	3	19	0	0			3	2
Queuing Penalty (veh)			0	0	13	79	3	0			1	7

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	SB
Directions Served	R
Maximum Queue (ft)	243
Average Queue (ft)	46
95th Queue (ft)	176
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	1
Queuing Penalty (veh)	3

Intersection: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	LT	R	UL	T	T	R	UL	T	T	R
Maximum Queue (ft)	212	133	18	13	246	178	172	23	38	305	369	227
Average Queue (ft)	112	65	1	1	122	67	83	2	9	174	209	20
95th Queue (ft)	181	111	10	6	208	137	143	13	30	278	330	147
Link Distance (ft)	746	746	470			999	999			909	909	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				50	275			250	250			225
Storage Blk Time (%)			0		0	0	0			2	9	
Queuing Penalty (veh)			0		1	0	0			0	16	

Network Summary

Network wide Queuing Penalty: 831

ATTACHMENT 5

2027 BUILD IMPROVED CONDITIONS

HCM 6TH

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement AM (2027)

06/28/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	262	1462	820	20	27	121
Future Volume (veh/h)	262	1462	820	20	27	121
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	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	291	1624	911	0	30	134
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	2	2	2	2	2
Cap, veh/h	508	2416	1578		181	361
Arrive On Green	0.13	0.68	0.44	0.00	0.10	0.10
Sat Flow, veh/h	1767	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	291	1624	911	0	30	134
Grp Sat Flow(s),veh/h/ln	1767	1777	1777	1585	1781	1585
Q Serve(g_s), s	4.6	14.8	10.5	0.0	0.8	3.9
Cycle Q Clear(g_c), s	4.6	14.8	10.5	0.0	0.8	3.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	508	2416	1578		181	361
V/C Ratio(X)	0.57	0.67	0.58		0.17	0.37
Avail Cap(c_a), veh/h	639	2527	1578		292	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	5.2	11.4	0.0	22.5	17.9
Incr Delay (d2), s/veh	1.0	0.7	0.5	0.0	0.4	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.2	3.1	0.0	0.4	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.0	5.8	11.9	0.0	23.0	18.5
LnGrp LOS	A	A	B		C	B
Approach Vol, veh/h		1915	911		164	
Approach Delay, s/veh		6.3	11.9		19.3	
Approach LOS		A	B		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.9	30.4			43.3	11.6
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	11.0	22.0			39.0	9.0
Max Q Clear Time (g_c+I1), s	6.6	12.5			16.8	5.9
Green Ext Time (p_c), s	0.4	6.9			20.5	0.1

Intersection Summary

HCM 6th Ctrl Delay, s/veh	8.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1474	858	50	0	18
Future Vol, veh/h	0	1474	858	50	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1638	953	56	0	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	505
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	512
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		12.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	512		
HCM Lane V/C Ratio	-	-	-	0.039		
HCM Control Delay (s/veh)	-	-	-	12.3		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q (veh)	-	-	-	0.1		

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build Improvement AM (2027)
06/28/2024

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	27	16	225	56	19	122
Future Vol, veh/h	27	16	225	56	19	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	2	2	2
Mvmt Flow	30	18	250	62	21	136
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	459	281	0	0	312	0
Stage 1	281	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	560	758	-	-	1248	-
Stage 1	767	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	550	758	-	-	1248	-
Mov Cap-2 Maneuver	550	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	11.4	0	1.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	613	1248	-	
HCM Lane V/C Ratio	-	-	0.078	0.017	-	
HCM Control Delay (s/veh)	-	-	11.4	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q (veh)	-	-	0.3	0.1	-	

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	5	1100	25	22	38	590	793	12	8	521	260
Future Volume (veh/h)	385	5	1100	25	22	38	590	793	12	8	521	260
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1604	1870	1693	1737	1870	1870	1870	1752	1707	1870	1870
Adj Flow Rate, veh/h	410	5	0	27	23	40	628	844	13	9	554	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	20	2	14	11	2	2	2	10	13	2	2
Cap, veh/h	516	564		333	265	454	726	1613	674	36	945	
Arrive On Green	0.35	0.35	0.00	0.35	0.35	0.35	0.21	0.45	0.45	0.02	0.27	0.00
Sat Flow, veh/h	1339	1604	0	784	753	1293	3456	3554	1485	1626	3554	1585
Grp Volume(v), veh/h	410	5	0	48	0	42	628	844	13	9	554	0
Grp Sat Flow(s),veh/h/ln	1339	1604	0	1482	0	1348	1728	1777	1485	1626	1777	1585
Q Serve(g_s), s	29.1	0.2	0.0	0.3	0.0	2.0	17.3	16.8	0.5	0.5	13.4	0.0
Cycle Q Clear(g_c), s	31.1	0.2	0.0	1.9	0.0	2.0	17.3	16.8	0.5	0.5	13.4	0.0
Prop In Lane	1.00		0.00	0.56		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	564		578	0	474	726	1613	674	36	945	
V/C Ratio(X)	0.79	0.01		0.08	0.00	0.09	0.87	0.52	0.02	0.25	0.59	
Avail Cap(c_a), veh/h	1150	1323		1274	0	1112	894	1613	674	173	945	
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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.8	20.8	0.0	21.3	0.0	21.4	37.6	19.3	14.8	47.4	31.4	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.1	0.0	0.1	7.5	1.2	0.1	3.6	2.7	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.1	0.0	0.8	0.0	0.7	7.7	6.6	0.2	0.2	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.6	20.8	0.0	21.4	0.0	21.5	45.1	20.5	14.9	50.9	34.1	0.0
LnGrp LOS	C	C		C		C	D	C	B	D	C	
Approach Vol, veh/h	415			90			1485			563		
Approach Delay, s/veh	34.5			21.4			30.8			34.4		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.2	32.0		40.3	7.7	50.5		40.3				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	25.5	26.2		81.3	10.5	41.2		81.3				
Max Q Clear Time (g_c+I1), s	19.3	15.4		33.1	2.5	18.8		4.0				
Green Ext Time (p_c), s	1.4	4.3		1.5	0.0	10.5		0.3				

Intersection Summary

HCM 6th Ctrl Delay, s/veh	31.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	120	1	122	9	3	7	1	199	1011	5	3	2	657	109
Future Volume (veh/h)	120	1	122	9	3	7	1	199	1011	5	3	2	657	109
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No				No				No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1841	1870	1870	1870		1870	1870	1870		1870	1856	1870
Adj Flow Rate, veh/h	133	1	136	10	3	8		221	1123	6		2	730	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90
Percent Heavy Veh, %	2	2	4	2	2	2		2	2	2		2	3	2
Cap, veh/h	421	2	264	230	52	266		476	2019	900		315	1136	
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.12	0.57	0.57		0.32	0.32	0.00
Sat Flow, veh/h	1414	12	1575	554	309	1585		1781	3554	1585		499	3526	1585
Grp Volume(v), veh/h	133	0	137	13	0	8		221	1123	6		2	730	0
Grp Sat Flow(s),veh/h/ln	1414	0	1587	863	0	1585		1781	1777	1585		499	1763	1585
Q Serve(g_s), s	0.0	0.0	3.7	0.0	0.0	0.2		3.7	9.3	0.1		0.1	8.2	0.0
Cycle Q Clear(g_c), s	3.1	0.0	3.7	3.7	0.0	0.2		3.7	9.3	0.1		0.1	8.2	0.0
Prop In Lane	1.00		0.99	0.77		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	421	0	266	282	0	266		476	2019	900		315	1136	
V/C Ratio(X)	0.32	0.00	0.51	0.05	0.00	0.03		0.46	0.56	0.01		0.01	0.64	
Avail Cap(c_a), veh/h	448	0	296	307	0	296		535	2213	987		326	1211	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	17.4	0.0	17.7	16.3	0.0	16.2		9.3	6.4	4.4		10.7	13.5	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.1	0.0	0.0		0.7	0.1	0.0		0.0	0.8	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.3	0.1	0.0	0.1		1.0	1.7	0.0		0.0	2.5	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	17.9	0.0	19.2	16.4	0.0	16.3		10.0	6.5	4.4		10.7	14.3	0.0
LnGrp LOS	B		B	B		B		A	A	A		B	B	
Approach Vol, veh/h	270				21				1350				732	
Approach Delay, s/veh	18.5				16.3				7.0				14.2	
Approach LOS	B				B				A				B	
Timer - Assigned Phs	2		4		5		6		8					
Phs Duration (G+Y+Rc), s	32.5		14.1		11.5		21.0		14.1					
Change Period (Y+Rc), s	6.0		6.3		5.8		6.0		6.3					
Max Green Setting (Gmax), s	29.0		8.7		7.2		16.0		8.7					
Max Q Clear Time (g_c+I1), s	11.3		5.7		5.7		10.2		5.7					
Green Ext Time (p_c), s	11.8		0.3		0.1		3.4		0.0					

Intersection Summary

HCM 6th Ctrl Delay, s/veh 10.6

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement PM (2027)
06/28/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	342	1101	1270	22	60	400
Future Volume (veh/h)	342	1101	1270	22	60	400
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	364	1171	1351	0	64	426
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	413	2212	1292		374	610
Arrive On Green	0.18	0.62	0.36	0.00	0.21	0.21
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	364	1171	1351	0	64	426
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	10.1	13.3	26.0	0.0	2.1	15.0
Cycle Q Clear(g_c), s	10.1	13.3	26.0	0.0	2.1	15.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	413	2212	1292		374	610
V/C Ratio(X)	0.88	0.53	1.05		0.17	0.70
Avail Cap(c_a), veh/h	499	2385	1292		374	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	7.6	22.8	0.0	23.2	18.5
Incr Delay (d2), s/veh	14.7	0.2	37.9	0.0	0.2	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.5	16.0	0.0	0.9	6.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	32.7	7.8	60.7	0.0	23.4	22.0
LnGrp LOS	C	A	F		C	C
Approach Vol, veh/h		1535	1351		490	
Approach Delay, s/veh		13.7	60.7		22.2	
Approach LOS		B	E		C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.5	32.0			50.5	21.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	16.0	26.0			48.0	15.0
Max Q Clear Time (g_c+I1), s	12.1	28.0			15.3	17.0
Green Ext Time (p_c), s	0.5	0.0			23.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			33.7			
HCM 6th LOS			C			

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1159	1264	24	0	34
Future Vol, veh/h	0	1159	1264	24	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1288	1404	27	0	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	716
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	373
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	373		
HCM Lane V/C Ratio	-	-	-	0.101		
HCM Control Delay (s/veh)	-	-	-	15.7		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q (veh)	-	-	-	0.3		

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build Improvement PM (2027)
06/28/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	51	28	337	27	10	409
Future Vol, veh/h	51	28	337	27	10	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	31	374	30	11	454
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	865	389	0	0	404	0
Stage 1	389	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	324	659	-	-	1155	-
Stage 1	685	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	659	-	-	1155	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	16.9	0	0.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	391	1155	-	
HCM Lane V/C Ratio	-	-	0.224	0.01	-	
HCM Control Delay (s/veh)	-	-	16.9	8.1	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.8	0	-	

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	331	10	823	13	12	29	815	839	22	1	42	699
Future Volume (veh/h)	331	10	823	13	12	29	815	839	22	1	42	699
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	1856	1737	1870	1767	1752	1781	1870	1870	1870		1767	1870
Adj Flow Rate, veh/h	348	11	0	14	13	31	858	883	23		44	736
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95
Percent Heavy Veh, %	3	11	2	9	10	8	2	2	2		9	2
Cap, veh/h	451	505		270	231	393	789	1584	706		125	1036
Arrive On Green	0.29	0.29	0.00	0.29	0.29	0.29	0.23	0.45	0.45		0.07	0.29
Sat Flow, veh/h	1351	1737	0	720	793	1351	3456	3554	1585		1682	3554
Grp Volume(v), veh/h	348	11	0	27	0	31	858	883	23		44	736
Grp Sat Flow(s),veh/h/ln	1351	1737	0	1512	0	1351	1728	1777	1585		1682	1777
Q Serve(g_s), s	22.6	0.4	0.0	0.0	0.0	1.5	20.5	16.5	0.7		2.2	16.6
Cycle Q Clear(g_c), s	24.1	0.4	0.0	1.0	0.0	1.5	20.5	16.5	0.7		2.2	16.6
Prop In Lane	1.00		0.00	0.52		1.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	451	505		501	0	393	789	1584	706		125	1036
V/C Ratio(X)	0.77	0.02		0.05	0.00	0.08	1.09	0.56	0.03		0.35	0.71
Avail Cap(c_a), veh/h	453	509		504	0	396	789	1584	706		234	1036
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	31.9	22.7	0.0	22.9	0.0	23.1	34.7	18.4	14.0		39.5	28.4
Incr Delay (d2), s/veh	8.0	0.0	0.0	0.0	0.0	0.1	58.7	1.4	0.1		1.7	4.1
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(50%),veh/ln	7.8	0.2	0.0	0.4	0.0	0.5	14.4	6.3	0.3		0.9	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.8	22.7	0.0	23.0	0.0	23.2	93.3	19.8	14.1		41.2	32.5
LnGrp LOS	D	C		C		C	F	B	B		D	C
Approach Vol, veh/h		359			58			1764				780
Approach Delay, s/veh		39.3			23.1			55.5				33.0
Approach LOS		D			C			E				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	32.0		31.8	12.2	45.8		31.8				
Change Period (Y+Rc), s	5.5	5.8		5.7	5.5	5.8		5.7				
Max Green Setting (Gmax), s	20.5	26.2		26.3	12.5	34.2		26.3				
Max Q Clear Time (g_c+I1), s	22.5	18.6		26.1	4.2	18.5		3.5				
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	8.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			47.0									
HCM 6th LOS			D									
Notes												
User approved ignoring U-Turning movement.												
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	456
Future Volume (veh/h)	456
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	0
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	
Arrive On Green	0.00
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	
V/C Ratio(X)	
Avail Cap(c_a), veh/h	
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	240	0	226	3	0	1	5	341	848	6	7	8	963	184
Future Volume (veh/h)	240	0	226	3	0	1	5	341	848	6	7	8	963	184
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach	No			No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870	1870	1870
Adj Flow Rate, veh/h	253	0	238	3	0	1		359	893	6		8	1014	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h	433	0	292	165	0	292		458	2177	971		341	1272	
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18		0.16	0.61	0.61		0.36	0.36	0.00
Sat Flow, veh/h	1418	0	1585	247	0	1585		1781	3554	1585		619	3554	1585
Grp Volume(v), veh/h	253	0	238	3	0	1		359	893	6		8	1014	0
Grp Sat Flow(s),veh/h/ln	1418	0	1585	247	0	1585		1781	1777	1585		619	1777	1585
Q Serve(g_s), s	0.0	0.0	8.7	0.2	0.0	0.0		7.4	7.9	0.1		0.5	15.5	0.0
Cycle Q Clear(g_c), s	8.2	0.0	8.7	8.9	0.0	0.0		7.4	7.9	0.1		0.5	15.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	433	0	292	165	0	292		458	2177	971		341	1272	
V/C Ratio(X)	0.58	0.00	0.82	0.02	0.00	0.00		0.78	0.41	0.01		0.02	0.80	
Avail Cap(c_a), veh/h	470	0	333	194	0	333		506	2352	1049		355	1352	
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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00
Uniform Delay (d), s/veh	23.5	0.0	23.7	27.9	0.0	20.1		12.2	6.1	4.6		12.6	17.4	0.0
Incr Delay (d2), s/veh	1.6	0.0	13.1	0.0	0.0	0.0		7.2	0.0	0.0		0.0	2.9	0.0
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	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	4.1	0.0	0.0	0.0		3.0	1.8	0.0		0.1	5.6	0.0
Unsig. Movement Delay, s/veh														
LnGrp Delay(d), s/veh	25.0	0.0	36.7	28.0	0.0	20.1		19.5	6.1	4.6		12.6	20.4	0.0
LnGrp LOS	C		D	C		C		B	A	A		B	C	
Approach Vol, veh/h	491				4				1258				1022	
Approach Delay, s/veh	30.7				26.0				9.9				20.3	
Approach LOS	C				C				A				C	
Timer - Assigned Phs	2		4		5		6		8					
Phs Duration (G+Y+Rc), s	43.0		17.4		15.4		27.6		17.4					
Change Period (Y+Rc), s	6.0		6.3		5.8		6.0		6.3					
Max Green Setting (Gmax), s	40.0		12.7		11.2		23.0		12.7					
Max Q Clear Time (g_c+I1), s	9.9		10.7		9.4		17.5		10.9					
Green Ext Time (p_c), s	13.1		0.4		0.2		4.1		0.0					

Intersection Summary

HCM 6th Ctrl Delay, s/veh 17.4

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

ATTACHMENT 5

2027 BUILD IMPROVED CONDITIONS

SYNCHRO LANES, VOLUMES, TIMINGS

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement AM (2027)

06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	262	1462	820	20	27	121
Future Volume (vph)	262	1462	820	20	27	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	255			350	95	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				40	
Satd. Flow (prot)	1752	3539	3539	1583	1770	1583
Flt Permitted	0.255				0.950	
Satd. Flow (perm)	470	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				22		38
Link Speed (mph)		45	45		25	
Link Distance (ft)		661	777		287	
Travel Time (s)		10.0	11.8		7.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	291	1624	911	22	30	134
Turn Type	D.P+P	NA	NA	Perm	Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	2			2		8
Detector Phase	1	6	2	2	8	1
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	22.0	22.0	22.0	15.0	15.0
Total Split (s)	17.0	45.0	28.0	28.0	15.0	17.0
Total Split (%)	28.3%	75.0%	46.7%	46.7%	25.0%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag		Lead
Lead-Lag Optimize?						
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	23.6	35.2	15.0	15.0	6.9	12.5
Actuated g/C Ratio	0.58	0.86	0.37	0.37	0.17	0.31
v/c Ratio	0.53	0.53	0.69	0.03	0.10	0.26
Control Delay (s/veh)	9.2	4.1	15.5	6.1	20.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	4.1	15.5	6.1	20.8	9.1

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement AM (2027)
06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	A	A	B	A	C	A
Approach Delay (s/veh)		5.0	15.3		11.3	
Approach LOS		A	B		B	
Queue Length 50th (ft)	0	0	61	0	4	13
Queue Length 95th (ft)	77	218	198	12	30	49
Internal Link Dist (ft)		581	697		207	
Turn Bay Length (ft)	255			350	95	
Base Capacity (vph)	697	3089	2116	955	433	646
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.53	0.43	0.02	0.07	0.21

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 40.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay (s/veh): 8.5

Intersection LOS: A

Intersection Capacity Utilization 56.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Bluffton Parkway & Innovation Drive



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	1474	858	50	0	18
Future Volume (vph)	0	1474	858	50	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3539	3511	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	3511	0	0	1611
Link Speed (mph)		45	45		30	
Link Distance (ft)		777	724		360	
Travel Time (s)		11.8	10.9		6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1638	1009	0	0	20
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 44.1% ICU Level of Service A

Analysis Period (min) 15

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build Improvement AM (2027)
06/28/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	16	225	56	19	122
Future Volume (vph)	27	16	225	56	19	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1715	0	1798	0	0	1850
Flt Permitted	0.970					0.993
Satd. Flow (perm)	1715	0	1798	0	0	1850
Link Speed (mph)	30		25			25
Link Distance (ft)	413		287			453
Travel Time (s)	9.4		7.9			13.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	312	0	0	157
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.5%			ICU Level of Service A		
Analysis Period (min)	15					

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	5	1100	25	22	38	590	793	12	8	521	260
Future Volume (vph)	385	5	1100	25	22	38	590	793	12	8	521	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%			0%			0%			0%		
Storage Length (ft)	0		275	0		75	275		275	175		200
Storage Lanes	1		0	0		1	2		1	1		1
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	1770	1584	0	0	3075	0	3433	3539	1468	1597	3539	1583
Flt Permitted	0.696				0.608		0.950			0.950		
Satd. Flow (perm)	1296	1584	0	0	1898	0	3433	3539	1468	1597	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		480			40				60			248
Link Speed (mph)		45			25			45			45	
Link Distance (ft)		724			496			696			1073	
Travel Time (s)		11.0			13.5			10.5			16.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	20%	2%	14%	11%	2%	2%	2%	10%	13%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	410	1175	0	0	90	0	628	844	13	9	554	277
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Detector Phase	4	4		8	8		1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	15.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	30.8	30.8
Total Split (s)	87.0	87.0		87.0	87.0		31.0	47.0	47.0	16.0	32.0	32.0
Total Split (%)	58.0%	58.0%		58.0%	58.0%		20.7%	31.3%	31.3%	10.7%	21.3%	21.3%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	4.3	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8	5.5	5.8	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	81.3	81.3			81.3		25.5	54.1	54.1	10.0	26.2	26.2
Actuated g/C Ratio	0.54	0.54			0.54		0.17	0.36	0.36	0.07	0.17	0.17
v/c Ratio	0.58	1.08			0.08		1.07	0.66	0.02	0.08	0.89	0.57
Control Delay (s/veh)	27.2	75.8			9.6		116.8	44.1	0.0	67.7	78.6	14.3
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.2	75.8			9.6		116.8	44.1	0.0	67.7	78.6	14.3

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E			A		F	D	A	E	E	B
Approach Delay (s/veh)		63.3			9.7			74.5			57.3	
Approach LOS		E			A			E			E	
Queue Length 50th (ft)	261	~1063			11		~351	351	0	8	282	24
Queue Length 95th (ft)	374	#1333			26		#475	499	0	28	#385	117
Internal Link Dist (ft)		644			416			616			993	
Turn Bay Length (ft)							275		275	175		200
Base Capacity (vph)	702	1078			1047		583	1276	567	111	618	481
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	1.09			0.09		1.08	0.66	0.02	0.08	0.90	0.58

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay (s/veh): 65.0

Intersection LOS: E

Intersection Capacity Utilization 113.8%

ICU Level of Service H

Analysis Period (min) 15

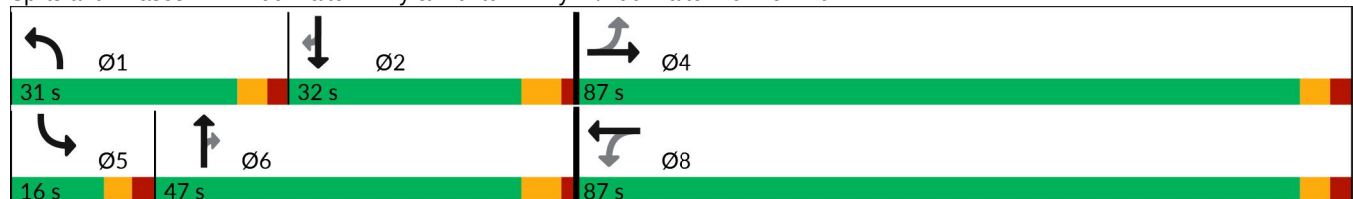
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	120	1	122	9	3	7	1	199	1011	5	3	2
Future Volume (vph)	120	1	122	9	3	7	1	199	1011	5	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1555	0	0	1794	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.749				0.688			0.332				0.254
Satd. Flow (perm)	1395	1555	0	0	1282	1583	0	618	3539	1583	0	473
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		136				192				72		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	137	0	0	13	8	0	222	1123	6	0	5
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	15.0	15.0		15.0	15.0	15.0	13.0	13.0	35.0	35.0	22.0	22.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	26.0%	26.0%	70.0%	70.0%	44.0%	44.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	8.6	8.6			8.6	8.6		24.9	30.7	30.7		20.8
Actuated g/C Ratio	0.18	0.18			0.18	0.18		0.54	0.66	0.66		0.45
v/c Ratio	0.51	0.34			0.05	0.01		0.44	0.48	0.00		0.02
Control Delay (s/veh)	27.6	7.3			17.8	0.1		8.4	6.7	0.0		12.5
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	27.6	7.3			17.8	0.1		8.4	6.7	0.0		12.5

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	657	109
Future Volume (vph)	657	109
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3505	1583
Flt Permitted		
Satd. Flow (perm)	3505	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		199
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.90	0.90
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	730	121
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	22.0	22.0
Total Split (%)	44.0%	44.0%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	20.8	20.8
Actuated g/C Ratio	0.45	0.45
v/c Ratio	0.46	0.14
Control Delay (s/veh)	14.6	1.2
Queue Delay	0.0	0.0
Total Delay (s/veh)	14.6	1.2

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	C	A			B	A		A	A	A		B
Approach Delay (s/veh)		17.3			11.1				7.0			
Approach LOS		B			B				A			
Queue Length 50th (ft)	35	0			3	0		26	90	0		1
Queue Length 95th (ft)	#92	36			15	0		51	132	0		7
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	264	405			243	456		512	2378	1087		217
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.50	0.34			0.05	0.02		0.43	0.47	0.01		0.02

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 46.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay (s/veh): 10.1

Intersection LOS: B

Intersection Capacity Utilization 75.2%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement AM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
LOS	B	A
Approach Delay (s/veh)	12.7	
Approach LOS	B	
Queue Length 50th (ft)	94	0
Queue Length 95th (ft)	142	10
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1613	836
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.45	0.14
Intersection Summary		

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement PM (2027)
06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	342	1101	1270	22	60	400
Future Volume (vph)	342	1101	1270	22	60	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	255			350	95	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				40	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.150				0.950	
Satd. Flow (perm)	279	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				23		5
Link Speed (mph)		45	45		25	
Link Distance (ft)		661	777		287	
Travel Time (s)		10.0	11.8		7.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	1171	1351	23	64	426
Turn Type	D.P+P	NA	NA	Perm	Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	2			2		8
Detector Phase	1	6	2	2	8	1
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	22.0	22.0	22.0	15.0	15.0
Total Split (s)	22.0	54.0	32.0	32.0	21.0	22.0
Total Split (%)	29.3%	72.0%	42.7%	42.7%	28.0%	29.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag		Lead
Lead-Lag Optimize?						
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	42.0	51.0	26.5	26.5	7.8	23.6
Actuated g/C Ratio	0.67	0.82	0.42	0.42	0.13	0.38
v/c Ratio	0.65	0.40	0.89	0.03	0.29	0.70
Control Delay (s/veh)	19.3	4.0	29.6	6.7	30.3	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.3	4.0	29.6	6.7	30.3	22.5

ATTACHMENT 5

Bluffton Community Hospital
1: Bluffton Parkway & Innovation Drive

Build Improvement PM (2027)
06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	B	A	C	A	C	C
Approach Delay (s/veh)		7.7	29.3		23.6	
Approach LOS		A	C		C	
Queue Length 50th (ft)	82	88	285	0	25	128
Queue Length 95th (ft)	#207	143	#464	13	58	213
Internal Link Dist (ft)		581	697		207	
Turn Bay Length (ft)	255			350	95	
Base Capacity (vph)	581	2855	1504	686	434	624
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.41	0.90	0.03	0.15	0.68

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 62.4

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay (s/veh): 18.7

Intersection LOS: B

Intersection Capacity Utilization 73.2%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Bluffton Parkway & Innovation Drive



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

2: Bluffton Pkwy N./Bluffton Parkway & Access #1

06/28/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Volume (vph)	0	1159	1264	24	0	34
Future Volume (vph)	0	1159	1264	24	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3539	3529	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	3529	0	0	1611
Link Speed (mph)		45	45		30	
Link Distance (ft)		777	724		360	
Travel Time (s)		11.8	10.9		6.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1288	1431	0	0	38
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 45.7%						
ICU Level of Service A						
Analysis Period (min) 15						

ATTACHMENT 5

Bluffton Community Hospital
3: Innovation Drive & Access #2

Build Improvement PM (2027)
06/28/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	28	337	27	10	409
Future Volume (vph)	51	28	337	27	10	409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1718	0	1844	0	0	1861
Flt Permitted	0.969					0.999
Satd. Flow (perm)	1718	0	1844	0	0	1861
Link Speed (mph)	30		25			25
Link Distance (ft)	413		287			453
Travel Time (s)	9.4		7.9			13.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	404	0	0	465
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.8%			ICU Level of Service A		
Analysis Period (min)	15					

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	331	10	823	13	12	29	815	839	22	1	42	699
Future Volume (vph)	331	10	823	13	12	29	815	839	22	1	42	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	0		275	0		75	275		275		175	
Storage Lanes	1		0	0		1	2		1		1	
Taper Length (ft)	25			25			100				100	
Satd. Flow (prot)	1752	1585	0	0	3019	0	3433	3539	1583	0	1658	3539
Flt Permitted	0.717				0.674		0.950				0.533	
Satd. Flow (perm)	1323	1585	0	0	2060	0	3433	3539	1583	0	930	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		420			31				99			
Link Speed (mph)		45			25			45				45
Link Distance (ft)		724			496			696				1073
Travel Time (s)		11.0			13.5			10.5				16.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	11%	2%	9%	10%	8%	2%	2%	2%	2%	9%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	877	0	0	58	0	858	883	23	0	45	736
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	custom	Prot	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8					6	5		
Detector Phase	4	4		8	8		1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	15.0	15.0	10.0	10.0	15.0
Minimum Split (s)	31.0	31.0		31.0	31.0		16.0	30.8	30.8	16.0	16.0	30.8
Total Split (s)	32.0	32.0		32.0	32.0		26.0	40.0	40.0	18.0	18.0	32.0
Total Split (%)	35.6%	35.6%		35.6%	35.6%		28.9%	44.4%	44.4%	20.0%	20.0%	35.6%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	4.3	4.3	3.2	3.2	4.3
All-Red Time (s)	2.5	2.5		2.5	2.5		2.3	1.5	1.5	2.3	2.3	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7			5.7		5.5	5.8	5.8		5.5	5.8
Lead/Lag							Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	Max	Max	None	None	Max
Act Effect Green (s)	26.3	26.3			26.3		20.5	41.4	41.4		11.5	26.2
Actuated g/C Ratio	0.29	0.29			0.29		0.23	0.46	0.46		0.13	0.29
v/c Ratio	0.90	1.15			0.09		1.09	0.54	0.02		0.37	0.71
Control Delay (s/veh)	59.3	102.0			13.7		96.8	20.8	0.0		45.3	33.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	59.3	102.0			13.7		96.8	20.8	0.0		45.3	33.1

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	456
Future Volume (vph)	456
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	200
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	480
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.95
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	480
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	30.8
Total Split (s)	32.0
Total Split (%)	35.6%
Yellow Time (s)	4.3
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.8
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	26.2
Actuated g/C Ratio	0.29
v/c Ratio	0.59
Control Delay (s/veh)	6.0
Queue Delay	0.0
Total Delay (s/veh)	6.0

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
LOS	E	F			B		F	C	A		D	C
Approach Delay (s/veh)		89.9			13.8			57.6				23.3
Approach LOS		F			B			E				C
Queue Length 50th (ft)	189	~411			5		~287	214	0		23	196
Queue Length 95th (ft)	#352	#643			20		#404	280	0		58	261
Internal Link Dist (ft)		644			416			616				993
Turn Bay Length (ft)							275		275		175	
Base Capacity (vph)	386	760			623		781	1627	781		129	1030
Starvation Cap Reductn	0	0			0		0	0	0		0	0
Spillback Cap Reductn	0	0			0		0	0	0		0	0
Storage Cap Reductn	0	0			0		0	0	0		0	0
Reduced v/c Ratio	0.90	1.15			0.09		1.10	0.54	0.03		0.35	0.71

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay (s/veh): 56.2

Intersection LOS: E

Intersection Capacity Utilization 108.2%

ICU Level of Service G

Analysis Period (min) 15

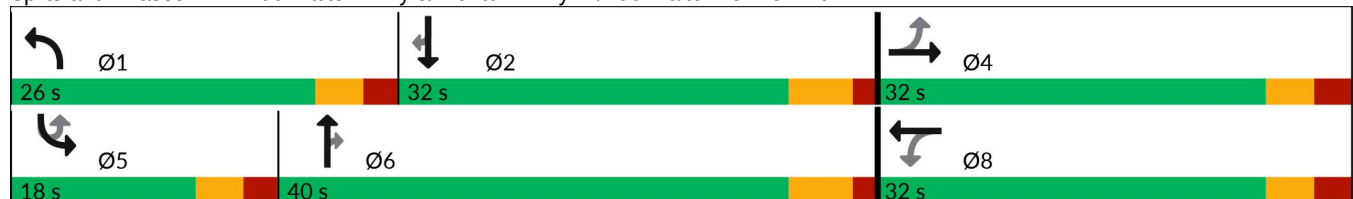
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

06/28/2024



Lane Group	SBR
LOS	A
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	72
Internal Link Dist (ft)	
Turn Bay Length (ft)	200
Base Capacity (vph)	801
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.60
Intersection Summary	

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	240	0	226	3	0	1	5	341	848	6	7	8
Future Volume (vph)	240	0	226	3	0	1	5	341	848	6	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%		0%				0%					
Storage Length (ft)	0		0	0		50		275		250		250
Storage Lanes	1		0	0		1		1		1		1
Taper Length (ft)	100			100				125				125
Satd. Flow (prot)	1770	1583	0	0	1770	1583	0	1770	3539	1583	0	1770
Flt Permitted	0.756				0.550			0.195				0.319
Satd. Flow (perm)	1408	1583	0	0	1025	1583	0	363	3539	1583	0	594
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		363				148				55		
Link Speed (mph)		30			30				45			
Link Distance (ft)		786			524				1073			
Travel Time (s)		17.9			11.9				16.3			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	238	0	0	3	1	0	364	893	6	0	15
Turn Type	Perm	NA		Perm	NA	Perm	custom	D.P+P	NA	Perm	Perm	Perm
Protected Phases		4			8			5	2			
Permitted Phases	4			8		8	5	6		2	6	6
Detector Phase	4	4		8	8	8	5	5	2	2	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	14.3	14.3		14.3	14.3	14.3	11.8	11.8	21.0	21.0	21.0	21.0
Total Split (s)	19.0	19.0		19.0	19.0	19.0	17.0	17.0	46.0	46.0	29.0	29.0
Total Split (%)	29.2%	29.2%		29.2%	29.2%	29.2%	26.2%	26.2%	70.8%	70.8%	44.6%	44.6%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5	4.2	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	6.3	6.3			6.3	6.3		5.8	6.0	6.0		6.0
Lead/Lag							Lead	Lead	Lag			
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	12.8	12.8			12.8	12.8		31.7	37.3	37.3		20.4
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.51	0.60	0.60		0.33
v/c Ratio	0.88	0.38			0.01	0.00		0.84	0.42	0.00		0.07
Control Delay (s/veh)	59.0	2.2			21.3	0.0		32.5	7.3	0.0		15.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)	59.0	2.2			21.3	0.0		32.5	7.3	0.0		15.2

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	963	184
Future Volume (vph)	963	184
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	12
Grade (%)	0%	
Storage Length (ft)		225
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		194
Link Speed (mph)	45	
Link Distance (ft)	945	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	2%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1014	194
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	15.0	15.0
Minimum Split (s)	21.0	21.0
Total Split (s)	29.0	29.0
Total Split (%)	44.6%	44.6%
Yellow Time (s)	4.2	4.2
All-Red Time (s)	1.8	1.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	20.4	20.4
Actuated g/C Ratio	0.33	0.33
v/c Ratio	0.87	0.29
Control Delay (s/veh)	29.6	4.0
Queue Delay	0.0	0.0
Total Delay (s/veh)	29.6	4.0

ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
LOS	E	A			C	A		C	A	A		B
Approach Delay (s/veh)		31.5			16.0				14.6			
Approach LOS		C			B				B			
Queue Length 50th (ft)	99	0			1	0		79	83	0		4
Queue Length 95th (ft)	#225	7			7	0		#216	115	0		16
Internal Link Dist (ft)		706			444				993			
Turn Bay Length (ft)						50		275		250		250
Base Capacity (vph)	287	612			209	441		438	2277	1038		220
Starvation Cap Reductn	0	0			0	0		0	0	0		0
Spillback Cap Reductn	0	0			0	0		0	0	0		0
Storage Cap Reductn	0	0			0	0		0	0	0		0
Reduced v/c Ratio	0.88	0.39			0.01	0.00		0.83	0.39	0.01		0.07

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 62.4

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 21.8

Intersection LOS: C

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway



ATTACHMENT 5

Bluffton Community Hospital

Build Improvement PM (2027)

5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

06/28/2024



Lane Group	SBT	SBR
LOS	C	A
Approach Delay (s/veh)	25.4	
Approach LOS	C	
Queue Length 50th (ft)	186	0
Queue Length 95th (ft)	#262	37
Internal Link Dist (ft)	865	
Turn Bay Length (ft)		225
Base Capacity (vph)	1309	708
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.77	0.27
Intersection Summary		

ATTACHMENT 5

2027 BUILD IMPROVED CONDITIONS

SIM Traffic

ATTACHMENT 5

Queuing and Blocking Report Build Improvement AM (2027)

Bluffton Community Hospital
Build Improvement AM (2027)

Intersection: 1: Bluffton Parkway & Innovation Drive

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	L	R
Maximum Queue (ft)	129	164	218	181	199	61	80
Average Queue (ft)	59	30	55	82	89	19	38
95th Queue (ft)	104	103	162	151	161	50	66
Link Distance (ft)		639	639	720	720		221
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	255					95	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 2: Bluffton Pkwy N./Bluffton Parkway & Access #1

Movement	EB	EB	WB	SB
Directions Served	T	T	TR	R
Maximum Queue (ft)	5	33	5	37
Average Queue (ft)	0	1	0	14
95th Queue (ft)	5	20	6	38
Link Distance (ft)	720	720	637	318
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Innovation Drive & Access #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	60	2	56
Average Queue (ft)	23	0	7
95th Queue (ft)	49	2	34
Link Distance (ft)	368	221	419
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

ATTACHMENT 5

Queuing and Blocking Report Build Improvement AM (2027)

Bluffton Community Hospital
Build Improvement AM (2027)

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	372	352	87	57	322	368	369	265	42	50	235	232
Average Queue (ft)	212	22	29	16	202	252	131	120	4	8	134	132
95th Queue (ft)	325	164	70	41	314	346	263	216	23	32	209	206
Link Distance (ft)	637	637	428				661	661			999	999
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				75	275	275			275	175		
Storage Blk Time (%)			2	0	0	5	0	0			3	1
Queuing Penalty (veh)			1	0	1	21	1	0			0	4

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	SB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	2
95th Queue (ft)	29
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	UL	T	T	R	UL	T	T
Maximum Queue (ft)	122	87	31	19	126	154	151	22	24	159	138
Average Queue (ft)	59	41	6	4	58	61	80	2	3	75	66
95th Queue (ft)	100	73	24	15	98	120	133	13	14	131	119
Link Distance (ft)	746	746	470			999	999			909	909
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)				50	275			250	250		
Storage Blk Time (%)			0								
Queuing Penalty (veh)			0								

Network Summary

Network wide Queuing Penalty: 28

ATTACHMENT 5

Queuing and Blocking Report Build Improvement PM (2027)

Bluffton Community Hospital
Build Improvement PM (2027)

Intersection: 1: Bluffton Parkway & Innovation Drive

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	L	R
Maximum Queue (ft)	180	123	159	445	470	134	214
Average Queue (ft)	97	40	60	270	273	49	113
95th Queue (ft)	163	88	128	432	444	105	194
Link Distance (ft)		639	639	720	720		221
Upstream Blk Time (%)							0
Queuing Penalty (veh)							1
Storage Bay Dist (ft)	255					95	
Storage Blk Time (%)					5	0	11
Queuing Penalty (veh)					1	1	7

Intersection: 2: Bluffton Pkwy N./Bluffton Parkway & Access #1

Movement	SB
Directions Served	R
Maximum Queue (ft)	68
Average Queue (ft)	24
95th Queue (ft)	54
Link Distance (ft)	318
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Innovation Drive & Access #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	73	7	59
Average Queue (ft)	33	0	9
95th Queue (ft)	61	4	40
Link Distance (ft)	368	221	419
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

ATTACHMENT 5

Queuing and Blocking Report Build Improvement PM (2027)

Bluffton Community Hospital
Build Improvement PM (2027)

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	259	43	66	90	325	375	661	568	30	155	238	218
Average Queue (ft)	172	5	13	20	286	340	358	210	10	36	128	129
95th Queue (ft)	246	25	44	53	359	415	733	491	32	95	195	195
Link Distance (ft)	637	637	428				661	661			999	999
Upstream Blk Time (%)							6	0				
Queuing Penalty (veh)							0	0				
Storage Bay Dist (ft)				75	275	275			275	175		
Storage Blk Time (%)			0	0	10	34	0	0			2	0
Queuing Penalty (veh)			0	0	41	142	2	0			1	2

Intersection: 4: Buckwalter Pkwy & Bluffton Pkwy N./Buckwalter Towne Blvd.

Movement	SB
Directions Served	R
Maximum Queue (ft)	216
Average Queue (ft)	23
95th Queue (ft)	123
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	0
Queuing Penalty (veh)	2

Intersection: 5: Buckwalter Parkway & Buckwalter Place Boulevard/Church Driveway

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	R	UL	T	T	R	UL	T	T	R
Maximum Queue (ft)	198	125	12	235	128	139	18	47	342	376	217
Average Queue (ft)	108	62	1	122	59	84	1	12	151	182	12
95th Queue (ft)	174	105	6	200	116	134	7	34	247	299	111
Link Distance (ft)	746	746			999	999			909	909	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			50	275			250	250			225
Storage Blk Time (%)				0					1	5	
Queuing Penalty (veh)				0					0	9	

Network Summary

Network wide Queuing Penalty: 208

ATTACHMENT 5



*Bluffton Community Hospital Development
Traffic Impact Study*

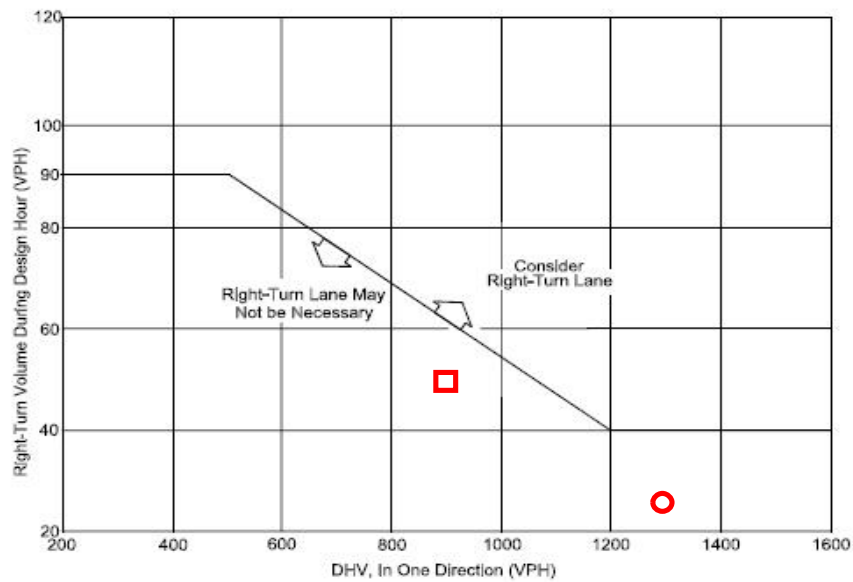
Appendix E – Turn Lane Warrant Analyses

ATTACHMENT 5

March 2017

INTERSECTIONS

9.5-3



Note: Figure is only applicable on highways with a design speed of 50 miles per hour or greater.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS
ON FOUR-LANE HIGHWAYS
Figure 9.5-B

Bluffton Pkwy at Access #1

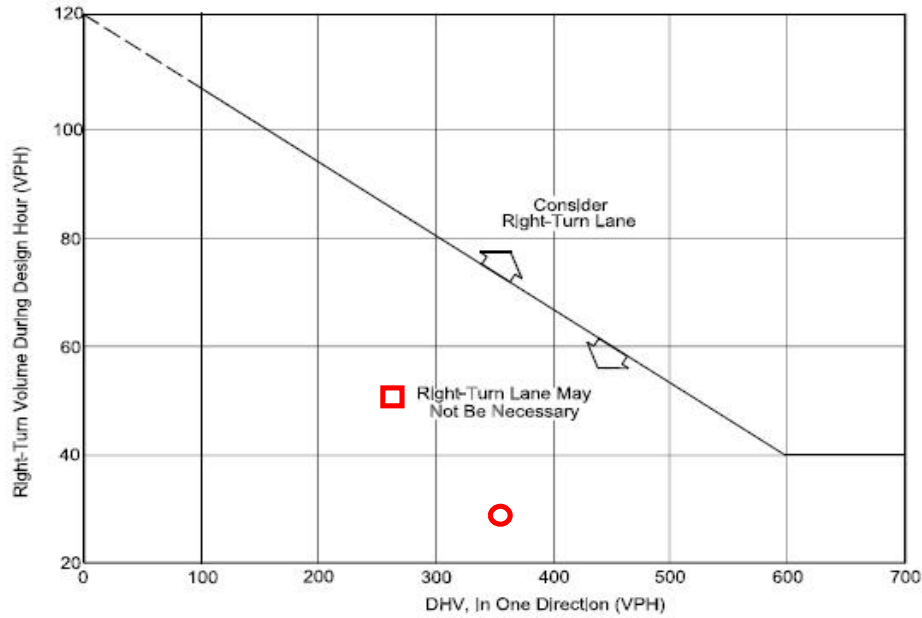
Westbound	Scenario	DHV	RTs	Warranted?
□	2027 Build AM	908	50	No
○	2027 Build PM	1288	24	No

ATTACHMENT 5

9.5-2

INTERSECTIONS

March 2017



Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 miles per hour
 DHV = 250 vehicles per hour
 Right Turns = 100 vehicles per hour

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS Figure 9.5-A

Innovation Dr at Access #2

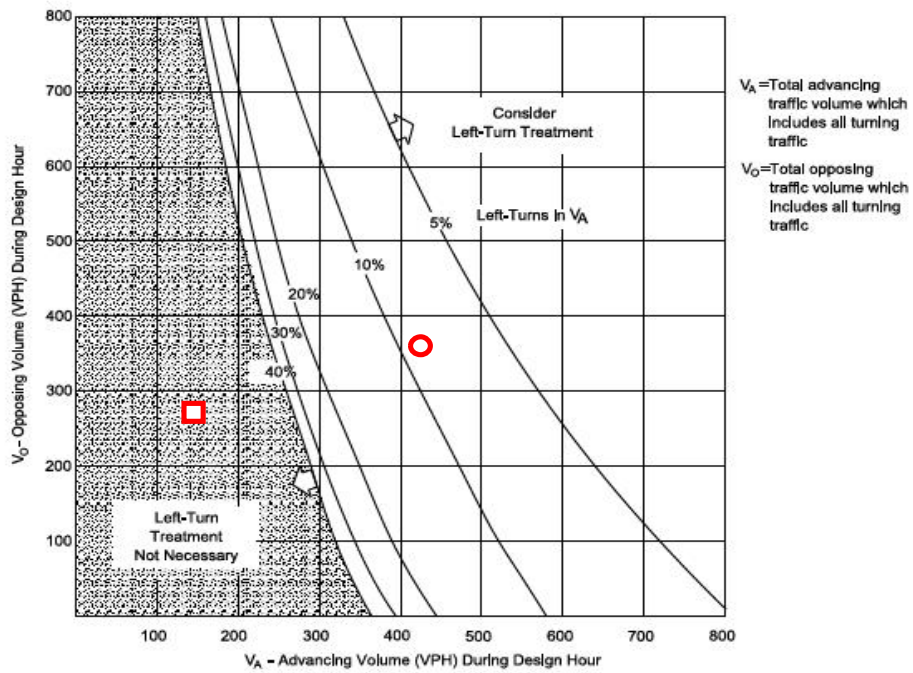
Northbound	Scenario	DHV	RTs	Warranted?
□	2027 Build AM	281	56	No
○	2027 Build PM	364	27	No

ATTACHMENT 5

March 2017

INTERSECTIONS

9.5-9



Instructions:

1. The family of curves represents the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G

Innovation Dr at Access #2

Southbound	Scenario	V_A	V_O	LTs	LT %	Warranted?
□	2027 Build AM	141	281	19	13.5%	No
○	2027 Build PM	419	364	10	2.4%	No

ATTACHMENT 5



*Bluffton Community Hospital Development
Traffic Impact Study*

Appendix F – Traffic Signal Warrant Analysis

ATTACHMENT 5

TRAFFIC SIGNAL WARRANT ANALYSIS

City/County:	Beaufort County	85th-percentile speed on the major street exceeds 40 mph? (Y or N)	Y	Analyzed by:	DWL	
State:	South Carolina	Isolated community with a population of less than 10,000? (Y or N)	N		Analyzed by:	KIMLEY-HORN
Date:	6/25/2024	Apply 56% warrant to Warrant 1, Combination Warrant? (Y or N)	N			
Major Street:	Bluffton Pkwy	Approach Lanes - Major? (1 or 2)	2			
Minor Street:	Innovation Dr	Approach Lanes - Minor? (1 or 2)	2			

24-Hour Volume Summary			Major Street Total of Both Approaches	Minor Street Higher Volume Approach	Warrant 1, Condition A		Warrant 1, Condition B		Warrant 1, Combination Warrant				Warrant 2		Warrant 3, Condition A			Warrant 3, Condition B	
					Major Street	Minor Street	Major Street	Minor Street	80% of 1A		80% of 1B				Minor Delay	Minor Volume	Total Intrscn		
									Major Street	Minor Street	Major Street	Minor Street							
12:00 AM	TO	01:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
01:00 AM	TO	02:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
02:00 AM	TO	03:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
03:00 AM	TO	04:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
04:00 AM	TO	05:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
05:00 AM	TO	06:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
06:00 AM	TO	07:00 AM	505	8	120%	6%	80%	11%	105%	5%	70%	10%	4%					2%	
07:00 AM	TO	08:00 AM	1,541	34	367%	24%	245%	48%	321%	21%	214%	42%	42%					34%	
08:00 AM	TO	09:00 AM	1,888	53	450%	38%	300%	76%	393%	33%	262%	66%	66%					53%	
09:00 AM	TO	10:00 AM	1,249	86	297%	61%	198%	122%	260%	53%	173%	107%	107%					86%	
10:00 AM	TO	11:00 AM	1,150	95	274%	68%	183%	135%	240%	59%	160%	118%	118%					86%	
11:00 AM	TO	12:00 PM	1,294	120	308%	86%	205%	171%	270%	75%	180%	150%	150%					120%	
12:00 PM	TO	01:00 PM	1,350	142	321%	101%	214%	203%	281%	89%	188%	178%	178%					142%	
01:00 PM	TO	02:00 PM	1,313	138	313%	98%	208%	196%	274%	86%	182%	172%	172%					138%	
02:00 PM	TO	03:00 PM	1,447	151	345%	108%	230%	215%	301%	94%	201%	188%	188%					151%	
03:00 PM	TO	04:00 PM	1,804	158	430%	113%	286%	226%	376%	99%	251%	198%	198%					158%	
04:00 PM	TO	05:00 PM	2,011	183	479%	131%	319%	261%	419%	114%	279%	229%	229%					183%	
05:00 PM	TO	06:00 PM	1,722	176	410%	126%	273%	251%	359%	110%	239%	220%	220%					176%	
06:00 PM	TO	07:00 PM	1,345	147	320%	105%	213%	210%	280%	92%	187%	184%	184%					147%	
07:00 PM	TO	08:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
08:00 PM	TO	09:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
09:00 PM	TO	10:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
10:00 PM	TO	11:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
11:00 PM	TO	12:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
Source:			MUTCD, 2009 Edition		Threshold		Threshold		Threshold		Threshold		MUTCD Figure		Warranting Volumes			MUTCD Figure	
Created By:			Kimley-Horn and Associates, Inc.		420 140		630 70		480 160		720 80		4C-1 and 4C-2					4C-3 and 4C-4	
					Summary		Summary		Summary		Summary		Summary					Summary	
					TOTAL 6		TOTAL 10		TOTAL 2		TOTAL 10		TOTAL 10					TOTAL 8	
					Met? NO		Met? YES		TOTAL 2		Met? NO		Met? Yes					Met? Yes	

COMMENTS/NOTES:	COMMENTS/NOTES:

ATTACHMENT 5

TRAFFIC SIGNAL WARRANT ANALYSIS

City/County:	Beaufort County	85th-percentile speed on the major street exceeds 40 mph? (Y or N)	Y	Analyzed by:	DWL	
State:	South Carolina	Isolated community with a population of less than 10,000? (Y or N)	N		Analyzed by:	KIMLEY-HORN
Date:	6/25/2024	Apply 56% warrant to Warrant 1, Combination Warrant? (Y or N)	N			
Major Street:	Bluffton Pkwy	Approach Lanes - Major? (1 or 2)	2			
Minor Street:	Innovation Dr	Approach Lanes - Minor? (1 or 2)	2			

24-Hour Volume Summary			Major Street Total of Both Approaches	Minor Street Higher Volume Approach	Warrant 1, Condition A		Warrant 1, Condition B		Warrant 1, Combination Warrant				Warrant 2		Warrant 3, Condition A			Warrant 3, Condition B	
					Major Street	Minor Street	Major Street	Minor Street	80% of 1A Major Street	80% of 1A Minor Street	80% of 1B Major Street	80% of 1B Minor Street			Minor Delay	Minor Volume	Total Intrscn		
12:00 AM	TO	01:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
01:00 AM	TO	02:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
02:00 AM	TO	03:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
03:00 AM	TO	04:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
04:00 AM	TO	05:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
05:00 AM	TO	06:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
06:00 AM	TO	07:00 AM	738	37	176%	26%	117%	53%	154%	23%	103%	46%	29%					15%	
07:00 AM	TO	08:00 AM	2066	109	492%	78%	328%	156%	430%	68%	287%	136%	136%					109%	
08:00 AM	TO	09:00 AM	2521	160	600%	114%	400%	229%	525%	100%	350%	200%	200%					160%	
09:00 AM	TO	10:00 AM	1686	226	401%	161%	268%	323%	351%	141%	234%	283%	283%					226%	
10:00 AM	TO	11:00 AM	1558	262	371%	187%	247%	374%	325%	164%	216%	328%	328%					262%	
11:00 AM	TO	12:00 PM	1747	317	416%	226%	277%	453%	364%	198%	243%	396%	396%					317%	
12:00 PM	TO	01:00 PM	1837	391	437%	279%	292%	559%	383%	244%	255%	489%	489%					391%	
01:00 PM	TO	02:00 PM	1773	371	422%	265%	281%	530%	369%	232%	246%	464%	464%					371%	
02:00 PM	TO	03:00 PM	1940	394	462%	281%	308%	563%	404%	246%	269%	493%	493%					394%	
03:00 PM	TO	04:00 PM	2404	431	572%	308%	382%	616%	501%	269%	334%	539%	539%					431%	
04:00 PM	TO	05:00 PM	2660	486	633%	347%	422%	694%	554%	304%	369%	608%	608%					486%	
05:00 PM	TO	06:00 PM	2279	463	543%	331%	362%	661%	475%	289%	317%	579%	579%					463%	
06:00 PM	TO	07:00 PM	1796	385	428%	275%	285%	550%	374%	241%	249%	481%	481%					385%	
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08:00 PM	TO	09:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
09:00 PM	TO	10:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
10:00 PM	TO	11:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
11:00 PM	TO	12:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!					#VALUE!	
Source: MUTCD, 2009 Edition					Threshold		Threshold		Threshold		Threshold		MUTCD Figure		Warranting Volumes			MUTCD Figure	
Created By: Kimley-Horn and Associates, Inc.					420 140		630 70		480 160		720 80		4C-1 and 4C-2					4C-3 and 4C-4	
					Summary		Summary		Summary		Summary		Summary					Summary	
					TOTAL 11		TOTAL 12		TOTAL 11		TOTAL 12		TOTAL 12					TOTAL 12	
					Met? YES		Met? YES		Met? YES		Met? YES		Met? Yes					Met? Yes	

COMMENTS/NOTES:	COMMENTS/NOTES:

ATTACHMENT 5

TRAFFIC SIGNAL WARRANT ANALYSIS

MINOR STREET REDUCTION = 90%

City/County:	Beaufort County	85th-percentile speed on the major street exceeds 40 mph? (Y or N)	Y	Analyzed by:	DWL
State:	South Carolina	Isolated community with a population of less than 10,000? (Y or N)	N		KIMLEY-HORN
Date:	6/25/2024	Apply 56% warrant to Warrant 1, Combination Warrant? (Y or N)	N		
Major Street:	Bluffton Pkwy	Approach Lanes - Major? (1 or 2)	2		
Minor Street:	Innovation Dr	Approach Lanes - Minor? (1 or 2)	2		

24-Hour Volume Summary			Major Street	Minor Street	Warrant 1, Condition A		Warrant 1, Condition B		Warrant 1, Combination Warrant				Warrant 2	Warrant 3, Condition A			Warrant 3, Condition B
			Total of Both Approaches	Higher Volume Approach	Major Street	Minor Street	Major Street	Minor Street	80% of 1A	80% of 1B	Major Street	Minor Street		Minor Delay	Minor Volume	Total Intrscn	
12:00 AM	TO	01:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
01:00 AM	TO	02:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
02:00 AM	TO	03:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
03:00 AM	TO	04:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
04:00 AM	TO	05:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
05:00 AM	TO	06:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
06:00 AM	TO	07:00 AM	738	20	176%	14%	117%	29%	154%	13%	103%	25%	16%				8%
07:00 AM	TO	08:00 AM	2066	46	492%	33%	328%	66%	430%	29%	287%	58%	58%				46%
08:00 AM	TO	09:00 AM	2521	60	600%	43%	400%	86%	525%	38%	350%	75%	75%				60%
09:00 AM	TO	10:00 AM	1686	71	401%	51%	268%	101%	351%	44%	234%	89%	89%				71%
10:00 AM	TO	11:00 AM	1558	84	371%	60%	247%	120%	325%	53%	216%	105%	105%				84%
11:00 AM	TO	12:00 PM	1747	101	416%	72%	277%	144%	364%	63%	243%	126%	126%				101%
12:00 PM	TO	01:00 PM	1837	109	437%	78%	292%	156%	383%	68%	255%	136%	136%				109%
01:00 PM	TO	02:00 PM	1773	105	422%	75%	281%	150%	369%	66%	246%	131%	131%				105%
02:00 PM	TO	03:00 PM	1940	101	462%	72%	308%	144%	404%	63%	269%	126%	126%				101%
03:00 PM	TO	04:00 PM	2404	129	572%	92%	382%	184%	501%	81%	334%	161%	161%				129%
04:00 PM	TO	05:00 PM	2660	131	633%	94%	422%	187%	554%	82%	369%	164%	164%				131%
05:00 PM	TO	06:00 PM	2279	121	543%	86%	362%	173%	475%	76%	317%	151%	151%				121%
06:00 PM	TO	07:00 PM	1796	95	428%	68%	285%	136%	374%	59%	249%	119%	119%				95%
07:00 PM	TO	08:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
08:00 PM	TO	09:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
09:00 PM	TO	10:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
10:00 PM	TO	11:00 PM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
11:00 PM	TO	12:00 AM			0%	0%	0%	0%	0%	0%	0%	0%	#VALUE!				#VALUE!
Source:			MUTCD, 2009 Edition		Threshold		Threshold		Threshold		Threshold		MUTCD Figure	Warranting Volumes			MUTCD Figure
Created By:			Kimley-Horn and Associates, Inc.		420 140		630 70		480 160		720 80		4C-1 and 4C-2				4C-3 and 4C-4
					Summary		Summary		Summary		Summary			Summary			Summary
					TOTAL 0		TOTAL 10		TOTAL 0		TOTAL 9		TOTAL 9	TOTAL			TOTAL 7
					Met? NO		Met? YES		TOTAL 0		Met? NO		Met? Yes	Met?			Met? Yes

COMMENTS/NOTES:	COMMENTS/NOTES: