TRAFFIC IMPACT STUDY

FOR THE

WHITEHALL MIXED-USE DEVELOPMENT

LOCATED
IN
BEAUFORT, SOUTH CAROLINA

Prepared For:
MidCity Real Estate Partners, Inc.

Prepared By:
Ramey Kemp & Associates, Inc.

October 2017
RKA Project #17242

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Prepared For:
MidCity Real Estate Partners, Inc.
5605 Glenridge Drive, One Premier Plaza Suite 605
Atlanta, Georgia 30342

Prepared By:
Ramey Kemp & Associates, Inc.
7301 Rivers Avenue, Suite 242
North Charleston, South Carolina 29406

October 2017
RKA Project #17242

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 27504
RICHARD M. REIFF

DocuSigned by:
Richard M. Reiff
Signature: C151A9E80D54411...

10/11/2017
Date

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EXECUTIVE SUMMARY

A traffic impact study was conducted for the proposed Whitehall mixed-use development in accordance with City of Beaufort and SCDOT guidelines. The proposed development is located in the southwest quadrant of the US 21 Business/Sea Island Parkway & Meridian Road intersection in the City of Beaufort, South Carolina and consists of 240 multi-family residential units, a 100-unit senior living complex, 6,200 square feet of specialty retail space, and 10,668 square-feet of restaurant space.

Access to the development is proposed to be provided through one existing full-access driveway along US 21 Business/Sea Island Parkway (North Project Driveway), one full-access driveway along Meridian Road (South Project Driveway), and an emergency access connection to Harborview Drive. A review of the driveway spacing for the project driveway indicates that no modifications to the project accesses are recommended.

The results of the analysis indicate that the project driveway intersections are projected to experience acceptable LOS conditions during the study peak hours. The results of the intersection analyses indicate that the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection currently experiences and is projected to continue experiencing undesirable delay on the side-street approaches during both the weekday AM and PM peak hours. This is due to the high volume of traffic along US 21 Business/Sea Island Parkway that operates in a nearly free-flow condition at the study intersection. Therefore, it is recommended that this intersection be signalized with the development of the proposed Whitehall mixed-use development to address the undesirable existing and projected delay; the signalized configuration of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection will result in acceptable operating conditions in the weekday AM and PM peak hours.

Based on the *Highway Design Manual* considerations, an exclusive northbound left-turn lane along Meridian Road at the South Project Driveway is not recommended. The existing two-way left-turn lane along US 21 Business/Sea Island Parkway will accommodate the westbound left-turn movement at the North Project Driveway intersection.

Based on the Highway Design Manual considerations, an exclusive eastbound right-turn lane along US 21 Business/Sea Island Parkway at the North Project Driveway intersection is recommended and an exclusive southbound right-turn lane along Meridian Road at the South Project Driveway is not recommended. Based upon the ARMS manual criteria, it is recommended that the eastbound right-turn lane be constructed with 100 feet of storage and a 150-foot taper for a total turn lane length of 250 feet.

1. INTRODUCTION

The purpose of this report is to document a traffic impact study for the proposed Whitehall mixed-use development in accordance with City of Beaufort and SCDOT guidelines. This report summarizes the procedures and findings of the traffic impact study.

1.1. Project Background

The proposed development is located in the southwest quadrant of the US 21 Business/Sea Island Parkway & Meridian Road intersection in the City of Beaufort, South Carolina and consists of 240 multi-family residential units, a 100-unit senior living complex, 6,200 square feet of specialty retail space, and 10,668 square-feet of restaurant space. Access to the development is proposed to be provided through one existing full-access driveway along US 21 Business/Sea Island Parkway (North Project Driveway), one full-access driveway along Meridian Road (South Project Driveway), and an emergency access connection to Harborview Drive.

The traffic impact study considers the weekday AM peak period (between 7:00 AM and 9:00 AM) and the weekday PM peak period (between 4:00 PM and 6:00 PM) as the study time frames. Based upon direction from Beaufort County staff, the extent of the existing roadway network to be studied consists the following six (6) intersections:

1) US 21 Business/Carteret Street & Bay Street;
2) US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway;
3) US 21 Business/Sea Island Parkway & Beaufort High School Driveway;
4) Meridian Road & Harborview Circle (north)/CNC Bank Driveway;
5) Meridian Road & Harborview Circle (south); and
6) US 21/Lady's Island Drive & Meridian Road.

The completion date for the proposed development is anticipated prior to 2020; therefore, future-year 2020 conditions were analyzed as the Build scenario. Figure 1 illustrates the location of the project site, including the adjacent public roadway network, and Figure 2 illustrates a conceptual site plan of the proposed development.


Project Site
Harborview Drive
Harborview Circle
BUSINESS
21
Beaufort High School Driveway
Sea Island Parkway
Meridian Road
Lady's Island Drive
21

STREET SECTIONS
(ALL STREETS ILLUSTRATED ARE SECONDARY STREETS)
LEGEND
C1 - COMMERCIAL / RETAIL USES
C2 - COMMERCIAL / RETAIL USES
C3 - COMMERCIAL / RETAIL USES
C4 - COMMERCIAL / RETAIL USES
C5 - COMMERCIAL / RETAIL USES
R1 - RESIDENTIAL / MULTI-FAMILY
R2 - RESIDENTIAL / MULTI-FAMILY
R3 - RESIDENTIAL / MULTI-FAMILY
R4 - RESIDENTIAL / MULTI-FAMILY
R5 - RESIDENTIAL / MULTI-FAMILY
R6 - RESIDENTIAL / MULTI-FAMILY
R7 - RESIDENTIAL / MULTI-FAMILY
R8 - GATHERING HALL / OFFICES AND POOL
IL - INDEPENDENT LIVING
*NOTE: BUILDING TYPES AND FOOTPRINTS MAY CHANGE AS PERMITTED BY THE ZONING DISTRICT
FACTORY CREEK
US HWY 21 / SEA ISLAND PARKWAY
MERIDIAN ROAD
EXISTING FULL ACCESS POINT
PROPOSED FULL ACCESS POINT
SCREEN WALL
MAIN STREET 1 AVENUE
MAIN STREET 2 AVENUE
MAIN STREET 3 AVENUE
MAIN STREET 4 AVENUE
COMMUNITY GARDENS
PARK
OPEN SPACE / PARK
EMERGENCY ACCESS
FUTURE CONNECTION TO BRIDGE
EXISTING DOCK
RIVER TRAIL
EXISTING LANDMARK TREE TO REMAIN, TYP.
BEAUFORT RIVER
5 MINUTE WALK (1/4 MILE/1320 LF)
660'
1320'
Scale 1" = 50'
TRADITIONAL NEIGHBORHOOD DEVELOPMENT OVERLAY DISTRICT
ILLUSTRATIVE MASTER PLAN
FOR
WHITEHALL
BEAUFORT, SC
MIDCITY
REAL ESTATE PARTNERS
OCTOBER 2017
Note: Plan is conceptual in nature and subject to change

1.2. Existing Roadway Conditions

Existing lane configurations, including number of traffic lanes on each intersection approach and other intersection and roadway information, was collected through field reconnaissance.

US 21 Business/Sea Island Parkway/Carteret Street is a two-lane to five-lane undivided minor arterial that serves as a connection between the City of Beaufort and the sea islands of Lady's Island, St. Helena Island, Hunting Island, and Fripp Island. The posted speed limit is 40 mph and the 2016 AADT was 18,800 vehicles per day (vpd). Based upon existing turning movement counts, the percentage of heavy vehicles along US 21 Business/Sea Island Parkway is less than 1.0%.

US 21/Lady's Island Drive is a four-lane divided to five-lane undivided minor arterial that primarily serves as a connection between the Town of Port Royal and Lady's Island. The posted speed limit is 55 mph and the 2016 AADT was 21,600 vpd. Based upon existing turning movement counts, the percentage of heavy vehicles along US 21/Lady's Island Drive is approximately 1.9%.

Meridian Road is a two-lane, undivided major collector that primarily serves residential land uses. The posted speed limit is 35 mph and the 2016 AADT was 1,750 vpd. Based upon existing turning movement counts, the percentage of heavy vehicles along Meridian Road is less than 1.0%.

Harborview Circle is a two-lane, undivided local roadway that primarily serves residential land uses. The posted speed limit is 25 mph. Based upon existing turning movement counts, the percentage of heavy vehicles along Harborview Circle is approximately 5.5%.

Harborview Drive is a two-lane, undivided local roadway that primarily serves residential land uses.

Bay Street is a two-lane, undivided minor arterial that serves as the main roadway through the historic district of the City of Beaufort. The posted speed limit is 30 mph and the 2016 AADT was 7,400 vpd. Based upon existing turning movement counts, the percentage of heavy vehicles along Bay Street is less than 1.0%.

1.3. Future Roadway Conditions

A corridor study was conducted for US 21 Business/Sea Island Parkway and US 21/Lady's Island Drive in 2017 by the City of Beaufort. The study identified various access management recommendations to be implemented along the corridors, including reconfiguration of the US 21 Business/Sea Island Parkway & Beaufort High School Driveway intersection. However, there is currently no funding for these projects, so the recommendations were not considered to be in place for future-year analyses.

2. DRIVEWAY SPACING REVIEW

Access to the development is proposed to be provided through one existing full-access driveway along US 21 Business/Sea Island Parkway (North Project Driveway), one full-access driveway along Meridian Road (South Project Driveway), and an emergency access connection to Harborview Drive. A review of the driveway spacing for the South Project Driveway was undertaken based upon information contained in SCDOT's *Access & Roadside Management Standards (ARMS)* manual.

Based upon the 35 mph posted speed limit, the 2016 AADT, and the driveway spacing criteria of *ARMS,* a minimum driveway spacing of 75 feet is required for driveways along Meridian Road. The proposed South Project Driveway is located approximately 160 feet south of the intersection with US 21 Business/Sea Island Parkway, approximately 190 feet north of the intersection with Harborview Circle (North), and approximately 20 feet north of the nearby CNC Bank Driveway. Given that the proposed intersection meets the driveway spacing criteria to the nearest roadway intersections and the proposed driveway is located at the southern extent of the property along Meridian Road, no modifications to this project access are recommended.

3. PROJECT TRAFFIC

Project traffic is defined as the vehicle trips expected to be generated by the Whitehall mixed-use development. The trips were distributed and assigned throughout the study roadway network.

3.1. Proposed Land Uses

The proposed development is anticipated to consist of 240 multi-family residential units, a 100-unit senior living complex, 6,200 square feet of specialty retail space, and 10,668 square-feet of restaurant space. The project site is currently vacant.

3.2. Trip Generation Estimates

The trip generation potential for the Whitehall mixed-use development was estimated using information contained in ITE's *Trip Generation Manual*, 9th Edition (2012) for land use codes (LUC) 220 – Apartment, (LUC) 252 – Senior Adult Housing-Attached, (LUC) 826 – Specialty Retail Center, and (LUC) 932 – High Turnover/Sit Down Restaurant. It should be noted that for the multi-family residential units, LUC (220) – Apartment was used because it results in a conservative (higher) estimate of the potential trip generation than LUC (230) – Residential Condominium/Townhouse. The weekday daily, the weekday AM peak hour of the adjacent street, and the weekday PM peak hour of the adjacent street time periods were considered in this review.

Due to the mixed-use nature of the development, internal and pass-by capture trips were also considered in the trip generation estimates. Internal capture considers interactions between multiple land uses within the same development. Pass-by capture is traffic attracted from existing traffic volumes on adjacent roadways, which reduces the overall new trip impacts of the development. Internal and pass-by capture traffic was estimated using information in ITE's *Trip Generation Handbook*, 3rd Edition (2012).

The trip generation estimates for the development are shown in Table 1 and documented in Appendix A.

Table 1 – Trip Generation Estimates

Land Use	ITE LUC	Size	Daily Traffic	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Apartment	220	240 units	1,578	24	97	121	98	52	150
Senior Adult Housing-Attached	252	100 units	320	7	13	20	14	12	26
Specialty Retail Center	826	6.2 ksf	304	18	11	29	16	20	36
High Turnover/Sit Down Restaurant	932	10.668 ksf	1,356	63	52	115	63	42	105
Gross Trips:			3,558	112	173	285	191	126	317
- Internal Capture Trips:			- 838	- 19	- 19	- 38	- 38	- 38	- 76
- Pass-by Trips:			- 454	- 26	- 25	- 51	- 19	- 18	- 37
New External Trips:			**2,266**	**67**	**129**	**196**	**134**	**70**	**204**

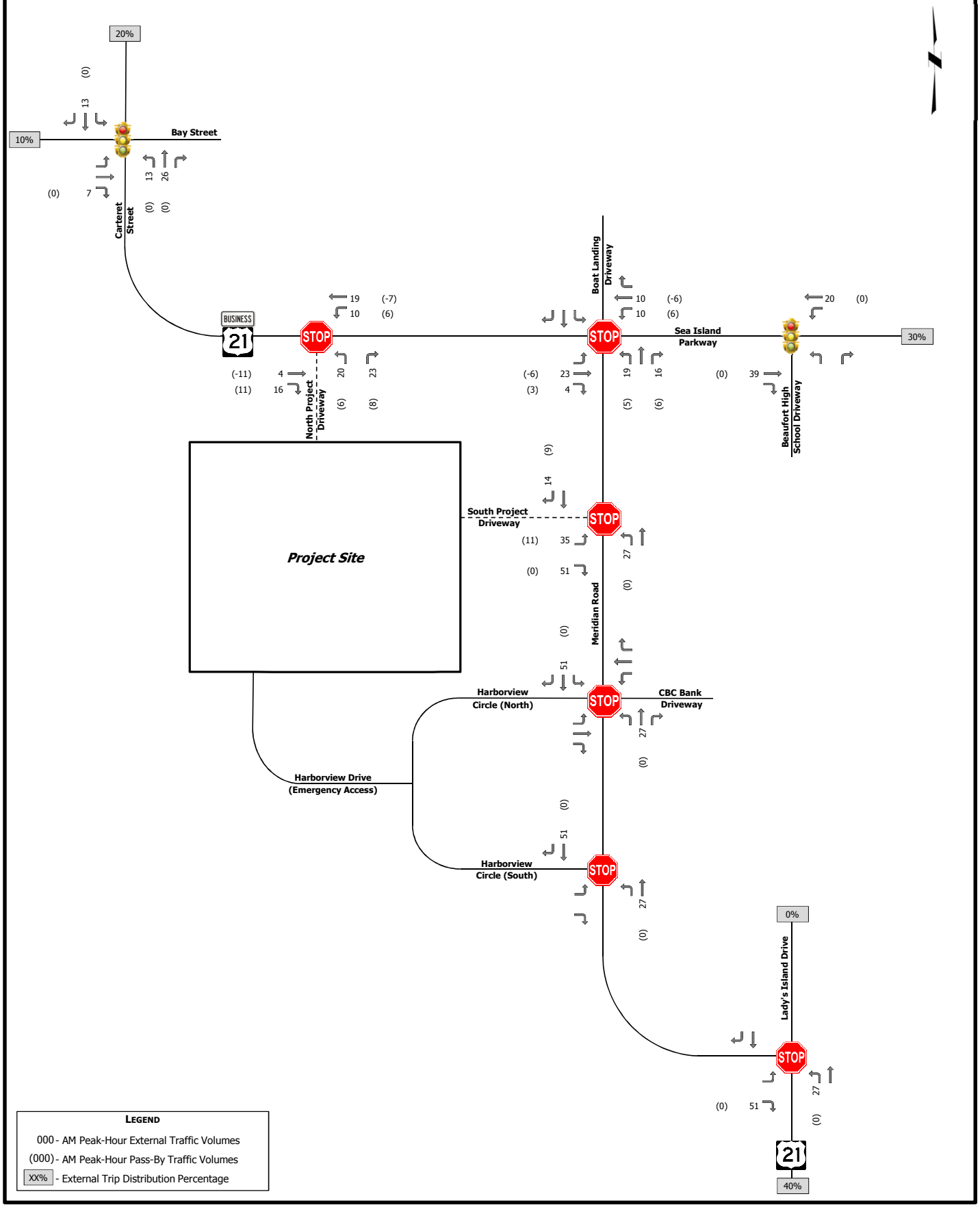
3.3 Trip Distribution & Assignment

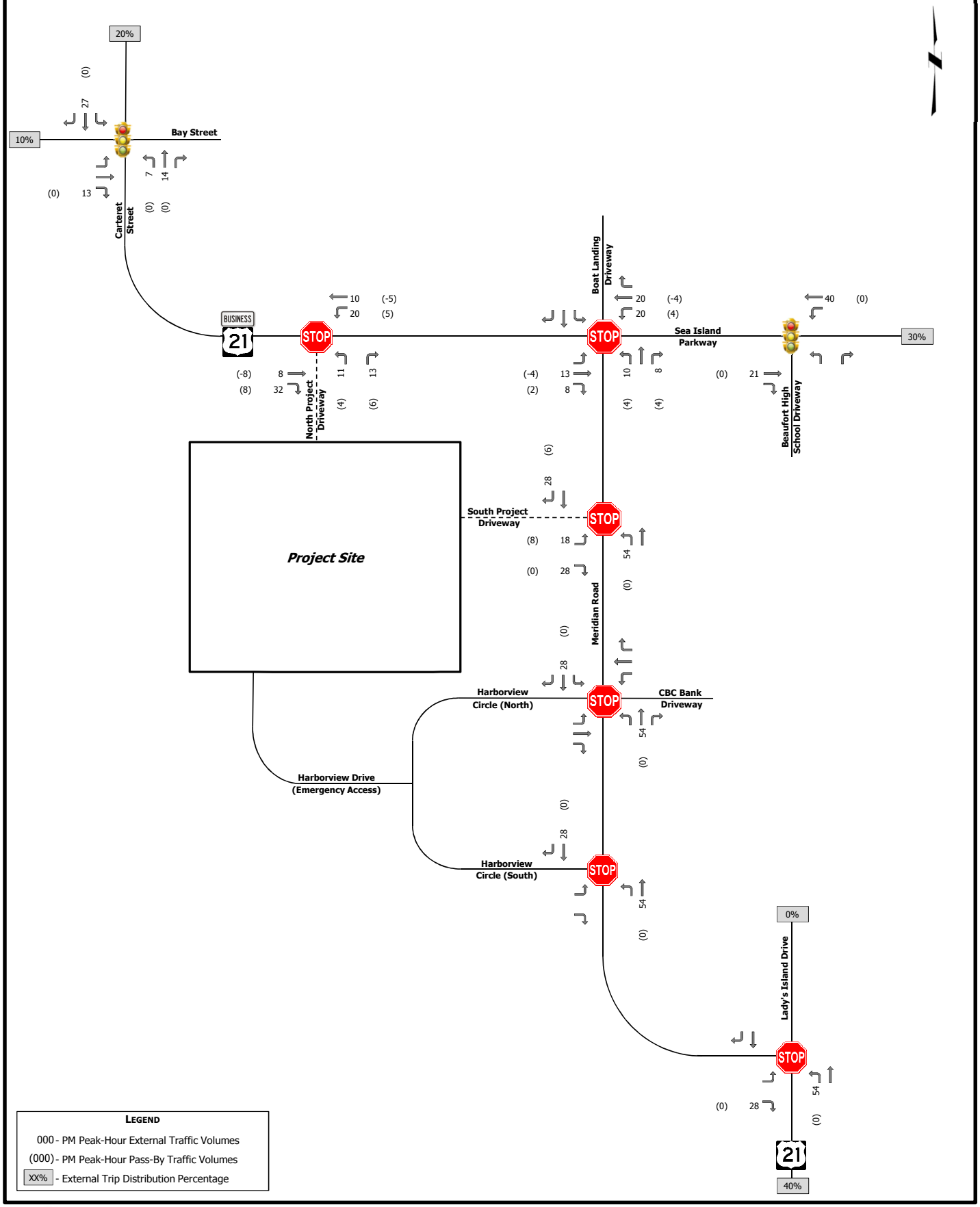
New external traffic expected to be generated by the Whitehall mixed-use development was distributed and assigned to the roadway network based upon existing travel patterns in the area and the location of nearby land uses. The general distribution of new external project trips was assumed to be:

- 20% to/from the north via US 21 Business/Carteret Street,
- 40% to/from the south via US 21/Lady's Island Drive,
- 30% to the east via US 21 Business/Sea Island Parkway; and
- 10% from the west via Bay Street.

Pass-by traffic expected to be generated by the Whitehall mixed-use development was distributed and assigned to the roadway network based upon existing travel patterns. The general distribution of pass-by trips was assumed to be 55% to/from eastbound US 21 Business/Sea Island Parkway and 45% to/from westbound US 21 Business/Sea Island Parkway.

The distribution and assignment of project traffic, in terms of new external and pass-by trips, is illustrated in Figure 3 for the AM peak hour and Figure 4 for the PM peak hour.


20%
10%
Bay Street
Carteret Street
BUSINESS
21
North Project Driveway
Boat Landing Driveway
Sea Island Parkway
30%
Beaufort High School Driveway
Project Site
South Project Driveway
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (Emergency Access)
Harborview Circle (South)
Lady's Island Drive
0%
40%
STOP
LEGEND
000 - AM Peak-Hour External Traffic Volumes
(000) - AM Peak-Hour Pass-By Traffic Volumes
XX% - External Trip Distribution Percentage


20%
10%
Bay Street
Carteret Street
BUSINESS
21
STOP
North Project Driveway
Boat Landing Driveway
Sea Island Parkway
30%
Beaufort High School Driveway
Project Site
South Project Driveway
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (Emergency Access)
Harborview Circle (South)
0%
Lady's Island Drive
40%
LEGEND
000 - PM Peak-Hour External Traffic Volumes
(000) - PM Peak-Hour Pass-By Traffic Volumes
XX% - External Trip Distribution Percentage

4. TRAFFIC VOLUME DEVELOPMENT

Existing 2017 traffic volumes were utilized in the analysis and future-year traffic volumes were developed for projected 2020 traffic conditions. The future-year volumes consisted of existing traffic volumes adjusted by an annual growth rate and the projected traffic volumes of the Whitehall mixed-use development.

4.1. Existing Traffic Volumes

Vehicle turning movement counts were conducted during the weekday AM peak period (7:00 AM to 9:00 AM) and the weekday PM peak period (4:00 PM to 6:00 PM) at the six intersections of:

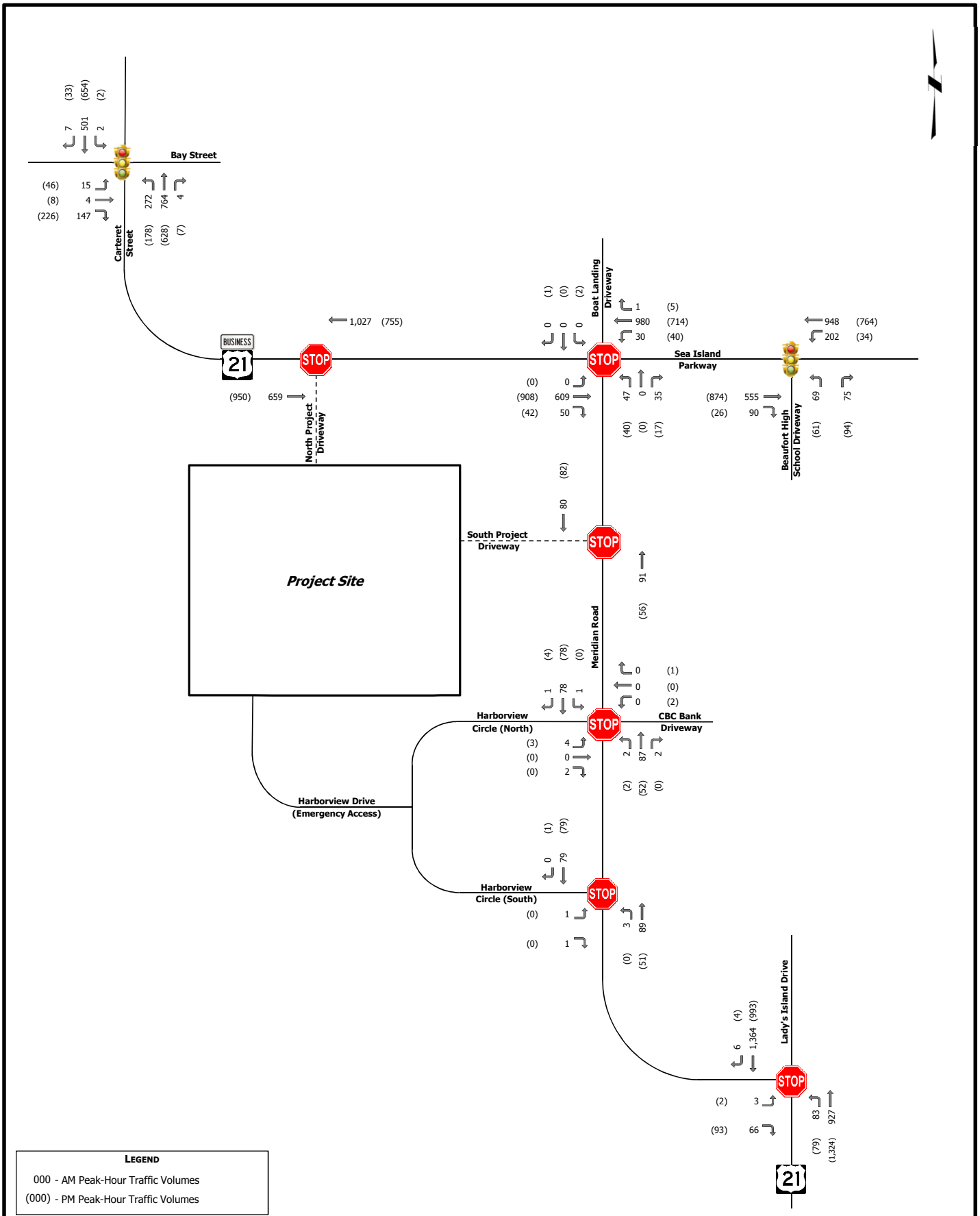
1) US 21 Business/Carteret Street & Bay Street;
2) US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway;
3) US 21 Business/Sea Island Parkway & Beaufort High School Driveway;
4) Meridian Road & Harborview Circle (north)/CNC Bank Driveway;
5) Meridian Road & Harborview Circle (south); and
6) US 21/Lady's Island Drive & Meridian Road.

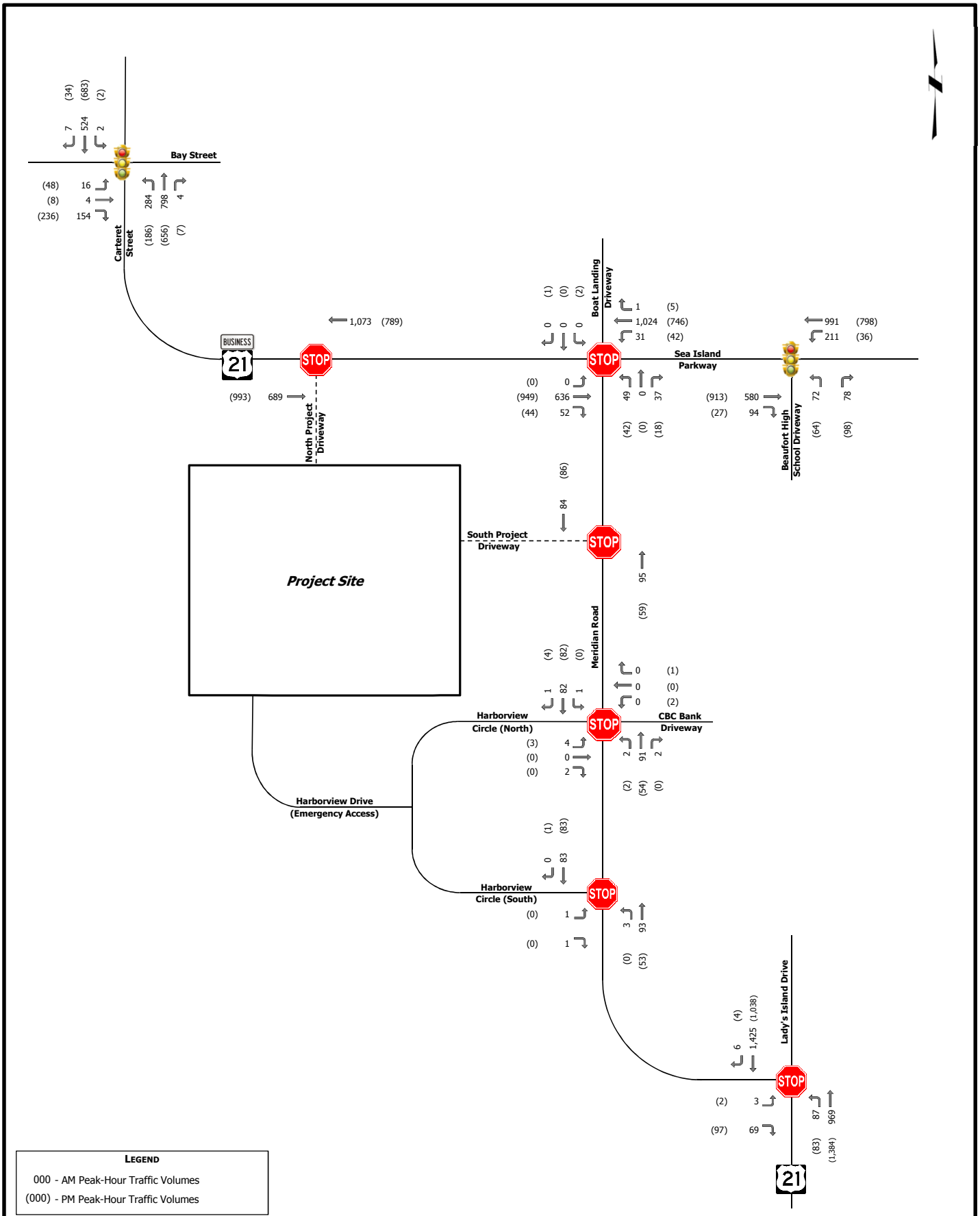
The counts were conducted in August 2017 while the local school district was in session. The raw traffic counts are provided in Appendix B and the 2017 existing traffic volumes are illustrated in Figure 5.

4.2 Future Traffic Volume Projections

To develop an annual background growth rate for use in the analysis, historical count data along US 21 Business/Sea Island Parkway (SCDOT count station #137), US 21/Lady's Island Drive (SCDOT count station #221), Bay Street (SCDOT count station #395), and Meridian Road (SCDOT count station #451) was reviewed over the past 10 years. It was determined that the roadways have collectively experienced negative annual growth over the past 10 years. However, over the past eight years, linear regression shows that US 21 Business/Sea Island Parkway (SCDOT count station #137) has experienced approximately 1.5% annual growth. Therefore, to provide a conservative analysis, a 1.5% annual growth rate was utilized on all study roadways to develop the 2020 No-Build traffic volumes, which are illustrated in Figure 6 and documented in Appendix C. Worksheets documenting the growth analysis is included in Appendix B.

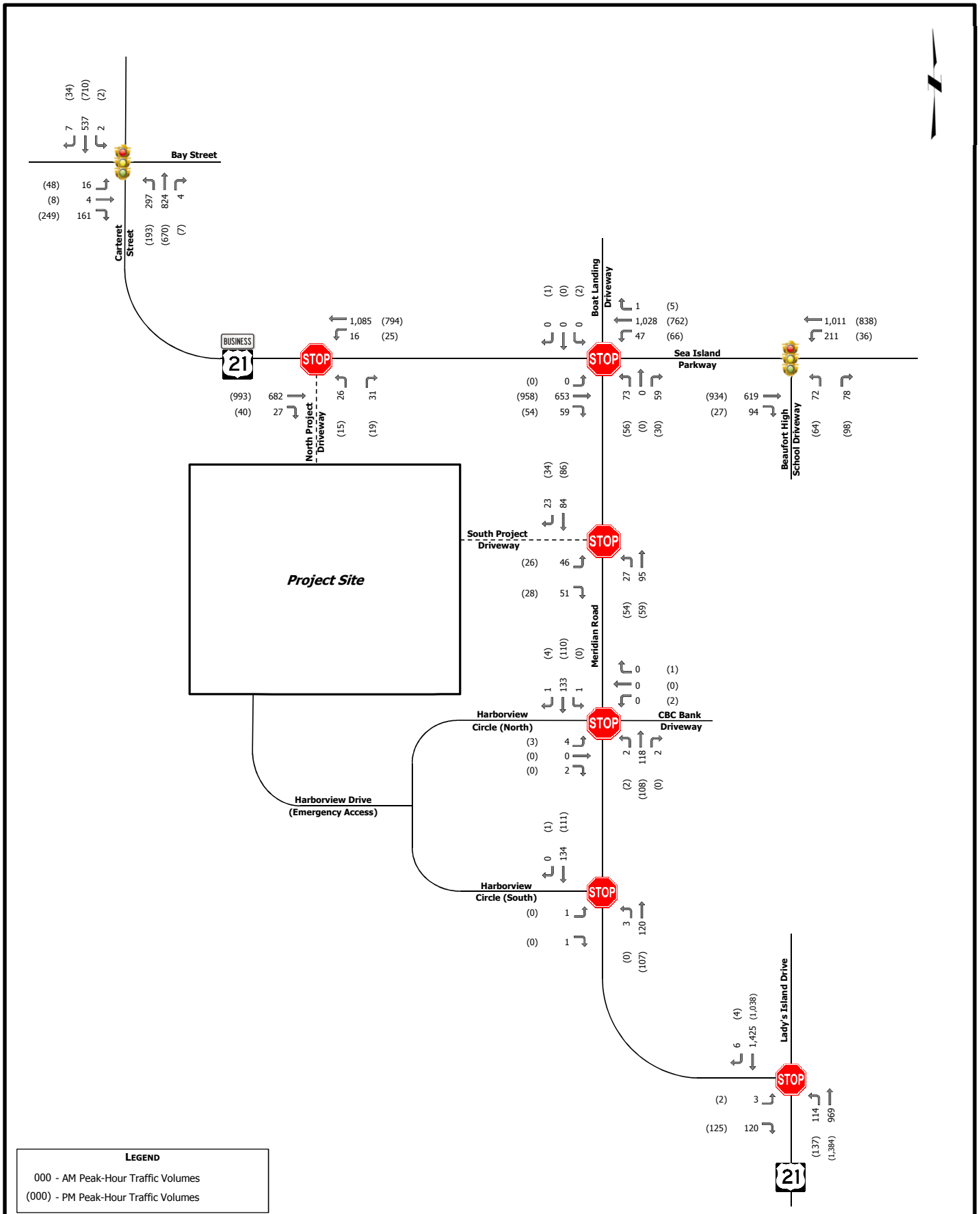
The Whitehall mixed-use development project traffic volumes were added to the 2020 No-Build traffic volumes to develop 2020 Build traffic volumes, which are illustrated in Figure 7 and documented in Appendix C.


Bay Street
Carteret Street
BUSINESS 21
STOP
1,027 (755)
(950) 659
North Project Driveway
Project Site
Boat Landing Driveway
Sea Island Parkway
948 (764)
202 (34)
(874) 555
(26) 90
Beaufort High School Driveway
South Project Driveway
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (Emergency Access)
Harborview Circle (South)
Lady's Island Drive
LEGEND
000 - AM Peak-Hour Traffic Volumes
(000) - PM Peak-Hour Traffic Volumes



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Whitehall Mixed-Use Development - Traffic Impact Study
Figure 6 - No-Build (2020) Peak-Hour Traffic Volumes


Bay Street
Carteret Street
BUSINESS 21
STOP
North Project Driveway
Boat Landing Driveway
Sea Island Parkway
Beaufort High School Driveway
South Project Driveway
Project Site
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (Emergency Access)
Harborview Circle (South)
Lady's Island Drive
LEGEND
000 - AM Peak-Hour Traffic Volumes
(000) - PM Peak-Hour Traffic Volumes

5. TRAFFIC IMPACT ANALYSIS

Using the existing and proposed traffic volumes previously discussed, intersection analyses and turn-lane warrant analyses were conducted.

5.1. Intersection LOS Analysis

Using the existing and proposed traffic volumes, intersection analyses were conducted for the study and project driveway intersections considering 2017 Existing conditions, 2020 No-Build conditions, and 2020 Build conditions. This analysis was conducted using the Transportation Research Board's *Highway Capacity Manual 2010 (HCM 2010)* methodologies of the *Synchro*, Version 9 software.

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, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. Table 2 summarizes the *HCM 2010* control delay thresholds associated with each LOS grade for unsignalized and signalized intersections.

Table 2 – *HCM 2010* LOS Criteria for Unsignalized & Signalized Intersections

Unsignalized Intersections	
LOS	**Control Delay per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Signalized Intersections	
LOS	**Control Delay per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 85

As part of the intersection analysis, SCDOT's default *Synchro* parameters were utilized. Existing peak-hour factors (PHF) were utilized in the analysis of existing conditions and a minimum PHF of 0.90 and a maximum PHF of 0.95 was utilized in the analysis of future conditions. Existing heavy vehicle percentages were utilized in the analysis, with a minimum percentage of 2% considered. Existing lane geometry was utilized for the analysis of the existing and future-year scenarios. Existing traffic signal timing and phasing plans were obtained from Beaufort County and utilized for all scenarios.

Using the *Synchro* software, intersection analyses were conducted for 2017 Existing conditions, 2020 No-Build conditions, and 2020 Build conditions for the weekday AM peak-hour and weekday PM peak-hour time periods. It should be noted that the signalized intersection of US 21 Business/Sea Island Parkway & Beaufort High School Driveway has an unsignalized southbound approach that provides access to a shopping center. Due to limitations of the *Synchro* software, this approach was removed from the analysis, but would likely have little to no effect on the overall results due to the low volume of traffic on the approach. The results of the intersection analyses are summarized in Table 3 for the unsignalized intersections and Table 4 for the signalized intersections.

Table 3 – Unsignalized Intersection Analysis Results

Intersection	Approach	LOS/Delay (seconds)					
		2017 Existing Conditions		2020 No-Build Conditions		2020 Build Conditions	
		AM	PM	AM	PM	AM	PM
US 21 Business/Sea Island Parkway & North Project Driveway	EB	- -	- -	- -	- -	A/0.0	A/0.0
	WB	- -	- -	- -	- -	A/0.1	A/0.3
	NB	- -	- -	- -	- -	C/23.5	D/25.6
US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway	EB	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0
	WB	A/0.3	A/0.6	A/0.3	A/0.6	A/0.4	A/0.9
	NB	F/110.5	F/134.2	F/180.9	F/203.4	F/426.5	F/411.5
	SB	A/0.0	F/53.7	A/0.0	F/63.2	A/0.0	F/77.2
Meridian Road & South Project Driveway	EB	- -	- -	- -	- -	B/10.1	B/10.0
	NB	- -	- -	- -	- -	A/1.7	A/3.6
	SB	- -	- -	- -	- -	A/0.0	A/0.0
Meridian Road & Harborview Circle (North)/CBC Bank Driveway	EB	A/9.4	A/9.6	A/9.5	A/9.5	B/10.1	B/10.2
	WB	A/0.0	A/9.2	A/0.0	A/9.2	A/0.0	A/9.7
	NB	A/0.2	A/0.3	A/0.2	A/0.3	A/0.1	A/0.1
	SB	A/0.1	A/0.0	A/0.1	A/0.0	A/0.1	A/0.0
Meridian Road & Harborview Circle (South)	EB	A/9.3	A/0.0	A/9.2	A/0.0	A/9.6	A/0.0
	NB	A/0.2	A/0.0	A/0.2	A/0.0	A/0.2	A/0.0
	SB	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0
US 21/Lady's Island Drive & Meridian Road	EB	D/25.1	C/15.6	D/27.8	C/17.1	D/33.0	C/18.6
	NB	A/1.2	A/0.6	A/1.3	A/0.7	A/1.8	A/1.1
	SB	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0

Table 4 – Signalized Intersection Analysis Results

Intersection	LOS/Delay (seconds)							
	2017 Existing Conditions		2020 No-Build Conditions		2020 Build Conditions		2020 Build + Improvement Conditions	
	AM	PM	AM	PM	AM	PM	AM	PM
US 21 Business/Carteret Street & Bay Street	B/11.9	B/19.5	B/12.5	C/20.5	B/13.1	C/21.7	- -	- -
US 21 Business/Sea Island Parkway & Beaufort High	B/10.5	B/13.0	B/10.9	B/13.4	B/11.1	B/13.7	- -	- -
US 21 Business/Sea Island Parkway Meridian Road/Boat Landing Driveway	- -	- -	- -	- -	- -	- -	B/11.4*	A/7.8*

*LOS considering signalization of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection.

The results of the analysis indicate that the project driveway intersections are projected to experience acceptable LOS conditions during the study peak hours.

The results of the intersection analyses indicate that the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection currently experiences and is projected to continue experiencing undesirable delay on the side-street approaches during both the weekday AM and PM peak hours. This is due to the high volume of traffic along US 21 Business/Sea Island Parkway that operates in a nearly free-flow condition at the study intersection. Therefore, it is recommended that this intersection be signalized with the development of the proposed Whitehall mixed-use development to address the undesirable existing and projected delay; the signalized configuration of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection will result in acceptable operating conditions in the weekday AM and PM peak hours.

Worksheets documenting the intersection analyses are provided in Appendix D for 2017 Existing conditions, Appendix E for 2020 No-Build conditions, and Appendix F for 2020 Build conditions and 2020 Build + Improvement conditions.

5.2. Turn Lane Analysis

An analysis was conducted to determine the potential need for exclusive turn lanes along US 21 Business/Sea Island Parkway and Meridian Road at the project driveway intersections. This analysis was conducted utilizing the criteria documented in SCDOT's *ARMS* manual and *Highway Design Manual* (2003).

The need for exclusive left-turn lanes is based upon the criteria documented in Section 15.5.1.2 of the *Highway Design Manual*, which consists of six considerations. These considerations and applications at the Meridian Road & South Project Driveway intersection are summarized below.

1) *at any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figures 15.5C, 15.5D, 15.5E, 15.5F, 15.5G;*

   The criteria are not applicable for Meridian Road as the speed limit is 35 mph.

2) *at any signalized intersection. At locations where you have 300 vehicles per hour, consider a traffic review to determine if dual left-turn lanes are required;*

   The project driveway intersections are not proposed to be signalized; therefore, this consideration is not applicable.

3) *at all entrances to major residential, commercial and industrial developments;*

   The development is not a major residential, commercial, or industrial development; therefore, this consideration is not applicable.

4) *at all median crossovers;*

   There is no median along Meridian Road; therefore, this consideration is not applicable.

5) *for uniformity of intersection design along the highway if other intersections have left-turn lanes (i.e., to satisfy driver expectancy); or*

   There are no left-turn lanes at other unsignalized intersections along Meridian Road; therefore, the criterion is not met for Meridian Road.

6) *at any intersection where crash experience, traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgment indicates a significant conflict related to left-turning vehicles.*

   There are no known issues with crashes, traffic operations, or sight distance along Meridian Road; therefore, this consideration is not applicable.

Based on the *Highway Design Manual* considerations, an exclusive northbound left-turn lane along Meridian Road at the South Project Driveway is not recommended. The existing two-way left-turn lane along US 21 Business/Sea Island Parkway will accommodate the westbound left-turn movement at the North Project Driveway intersection.

The need for exclusive right-turn lanes is based upon the criteria documented in Section 15.5.1.1 of the *Highway Design Manual*, which consists of seven considerations. These considerations and applications at the intersections of US 21 Business/Sea Island Parkway & North Project Driveway and Meridian Road & South Project Driveway are summarized below.

1) *at a free-flowing leg of any intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 15.5A;*

   The projected 2020 Build conditions PM peak hour traffic volumes at the US 21 Business/Sea Island Parkway & North Project Driveway intersection satisfy the criteria for *FIGURE 15.5A – GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS.*

   The projected 2020 Build conditions traffic volumes at the Meridian Road & South Project Driveway intersection do not satisfy the criteria for *FIGURE 15.5A – GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS.*

2) *at the free-flowing leg of any unsignalized intersection on a high-speed, four-lane urban or rural highway which satisfies the criteria in Figure 15.5B;*

   The criteria are not applicable as US 21 Business/Sea Island Parkway and Meridian Road are two-lane roadways.

3) *at any intersection where a capacity analysis determines a right-turn lane is necessary to meet the level-of-service criteria;*

   The US 21 Business/Sea Island Parkway & North Project Driveway and Meridian Road & South Project Driveway intersections are projected to operate at an acceptable LOS without exclusive right-turn lanes into the project site.

4) *at any signalized intersection where the projected right-turning volume is greater than 300 vehicles per hour and where there is greater than 300 vehicles per hour per lane on the mainline;*

   The project driveway intersections are not signalized and are not anticipated to experience greater than 300 right-turning vehicles per hour; therefore, this consideration is not applicable.

5) *for uniformity of intersection design along the highway if other intersections have right-turn lanes;*

   There are no exclusive right-turn lanes at other nearby unsignalized driveway intersections along US 21 Business/Sea Island Parkway or Meridian Road; therefore, the criterion is not met.

6) *at railroad crossings where the railroad is paralleled to the facility and is located close to the intersection and where a right-turn lane would be desirable to store queued vehicles avoiding interference with the movement of through traffic; or*

   The project driveway intersections are not located near railroad crossings; therefore, this consideration is not applicable.

7) at any intersection where the crash experience, existing traffic operations, sight distance restrictions, or engineering judgment indicates a significant conflict related to right turning vehicles.

There are no known issues with crashes, traffic operations, or sight distance along US 21 Business/Sea Island Parkway or Meridian Road; therefore, this consideration is not applicable.

Based on the *Highway Design Manual* considerations, an exclusive eastbound right-turn lane along US 21 Business/Sea Island Parkway at the North Project Driveway intersection is recommended. An exclusive southbound right-turn lane along Meridian Road at the South Project Driveway is not recommended. Based upon the *ARMS* manual criteria, it is recommended that the eastbound right-turn lane be constructed with 100 feet of storage and a 150-foot taper for a total turn lane length of 250 feet. A worksheet documenting the right-turn lane warrant analysis is provided in Appendix G.

6. SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact study was conducted for the proposed Whitehall mixed-use development in accordance with City of Beaufort and SCDOT guidelines. The proposed development is located in the southwest quadrant of the US 21 Business/Sea Island Parkway & Meridian Road intersection in the City of Beaufort, South Carolina and consists of 240 multi-family residential units, a 100-unit senior living complex, 6,200 square feet of specialty retail space, and 10,668 square-feet of restaurant space.

Access to the development is proposed to be provided through one existing full-access driveway along US 21 Business/Sea Island Parkway (North Project Driveway), one full-access driveway along Meridian Road (South Project Driveway), and an emergency access connection to Harborview Drive. A review of the driveway spacing for the project driveway indicates that no modifications to the project accesses are recommended.

The results of the analysis indicate that the project driveway intersections are projected to experience acceptable LOS conditions during the study peak hours. The results of the intersection analyses indicate that the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection currently experiences and is projected to continue experiencing undesirable delay on the side-street approaches during both the weekday AM and PM peak hours. This is due to the high volume of traffic along US 21 Business/Sea Island Parkway that operates in a nearly free-flow condition at the study intersection. Therefore, it is recommended that this intersection be signalized with the development of the proposed Whitehall mixed-use development to address the undesirable existing and projected delay; the signalized configuration of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection will result in acceptable operating conditions in the weekday AM and PM peak hours.

Based on the *Highway Design Manual* considerations, an exclusive northbound left-turn lane along Meridian Road at the South Project Driveway is not recommended. The existing two-way left-turn lane along US 21 Business/Sea Island Parkway will accommodate the westbound left-turn movement at the North Project Driveway intersection.

Based on the Highway Design Manual considerations, an exclusive eastbound right-turn lane along US 21 Business/Sea Island Parkway at the North Project Driveway intersection is recommended and an exclusive southbound right-turn lane along Meridian Road at the South Project Driveway is not recommended. Based upon the ARMS manual criteria, it is recommended that the eastbound right-turn lane be constructed with 100 feet of storage and a 150-foot taper for a total turn lane length of 250 feet.

APPENDIX A

Trip Generation Worksheet

WHITEHALL PLANTATION MIXED-USE DEVELOPMENT
TRIP GENERATION ESTIMATES

Daily Trips

Land Use	ITE LUC Code	Size	Unit	Equation					Directional Distribution		Gross Trips			Internal Capture				External Trips			Pass By				New External Trips		
									In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	In	Out	Total	In	Out	Total
Apartment	220	240	DU	T=	6.06	(X)	+	123.56	50%	50%	789	789	1,578	13.3%	105	105	210	684	684	1,368	0%	0	0	0	684	684	1,368
Senior Adult Housing- Attached	252	100	DU	T=	2.98	(X)	+	21.05	50%	50%	160	160	320	15.4%	25	25	50	135	135	270	0%	0	0	0	135	135	270
Specialty Retail Center	826	6.2	ksf	T=	42.78	(X)	+	37.66	50%	50%	152	152	304	58.3%	89	89	178	63	63	126	34%	21	21	42	42	42	84
High Turnover/Sit Down Rest	932	10.668	ksf	T=	127.15	(X)	+	0	50%	50%	678	678	1,356	29.5%	200	200	400	478	478	956	43%	206	206	412	272	272	544
										Total:	1,779	1,779	3,558	23.6%	419	419	838	1,360	1,360	2,720	13%	227	227	454	**1,133**	**1,133**	**2,266**

AM Peak Hour Trips

Land Use	ITE LUC Code	Size	Unit	Equation					Directional Distribution		Gross Trips			Internal Capture				External Trips			Pass By				New External Trips		
									In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	In	Out	Total	In	Out	Total
Apartment	220	240	DU	T=	0.49	(X)	+	3.73	20%	80%	24	97	121	12.4%	3	12	15	21	85	106	0%	0	0	0	21	85	106
Senior Adult Housing- Attached	252	100	DU	T=	0.2	(X)	-	0.13	34%	66%	7	13	20	10.0%	0	2	2	7	11	18	0%	0	0	0	7	11	18
Shopping Center	820	6.2	ksf	Ln(T)=	0.61	Ln(X)	+	2.24	62%	38%	18	11	29	13.8%	2	2	4	16	9	25	34%	5	4	9	11	5	16
High Turnover/Sit Down Rest	932	10.668	ksf	T=	10.81	(X)	+	0	55%	45%	63	52	115	14.8%	14	3	17	49	49	98	43%	21	21	42	28	28	56
										Total:	112	173	285	13.3%	19	19	38	93	154	247	18%	26	25	51	**67**	**129**	**196**

PM Peak Hour Trips

Land Use	ITE LUC Code	Size	Unit	Equation					Directional Distribution		Gross Trips			Internal Capture				External Trips			Pass By				New External Trips		
									In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	In	Out	Total	In	Out	Total
Apartment	220	240	DU	T=	0.55	(X)	+	17.65	65%	35%	98	52	150	13.3%	11	9	20	87	43	130	0%	0	0	0	87	43	130
Senior Adult Housing- Attached	252	100	DU	T=	0.24	(X)	+	1.64	54%	46%	14	12	26	15.4%	2	2	4	12	10	22	0%	0	0	0	12	10	22
Specialty Retail Center	826	6.2	ksf	T=	2.4	(X)	+	21.48	44%	56%	16	20	36	58.3%	10	11	21	6	9	15	34%	3	2	5	3	7	10
High Turnover/Sit Down Rest	932	10.668	ksf	T=	9.85	(X)	+	0	60%	40%	63	42	105	29.5%	15	16	31	48	26	74	43%	16	16	32	32	10	42
										Total:	191	126	317	24.0%	38	38	76	153	88	241	12%	19	18	37	**134**	**70**	**204**

APPENDIX B

Traffic Count Data

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : Hwy 21 Bus @ Bay St
Site Code :
Start Date : 8/24/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Hwy 21 Bus (Carteret St) Southbound				Bay St Westbound				Hwy 21 Bus (Carteret St) Northbound				Bay St Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	78	3	1	0	0	0	0	28	150	0	2	1	0	10	0	273
07:15	0	111	1	0	0	0	0	0	51	163	0	0	1	0	35	2	364
07:30	0	122	1	1	0	0	0	0	65	191	0	1	2	0	28	0	411
07:45	0	136	3	0	0	0	0	0	81	214	1	2	4	1	40	0	482
Total	0	447	8	2	0	0	0	0	225	718	1	5	8	1	113	2	1530
08:00	0	124	1	1	0	0	0	0	68	170	1	4	4	1	38	1	413
08:15	2	119	2	0	0	0	0	1	58	189	2	6	5	2	41	2	429
08:30	0	117	8	1	0	0	0	0	43	159	2	4	4	1	41	2	382
08:45	2	115	7	0	0	0	0	0	38	135	5	5	6	3	31	0	347
Total	4	475	18	2	0	0	0	1	207	653	10	19	19	7	151	5	1571
16:00	0	165	9	4	0	0	0	1	63	173	0	2	8	0	69	3	497
16:15	1	169	9	6	0	0	0	0	41	169	5	1	12	3	60	3	479
16:30	1	153	4	3	0	0	0	0	33	135	1	2	13	1	51	9	406
16:45	0	167	11	6	0	0	1	1	41	151	1	1	13	4	46	4	447
Total	2	654	33	19	0	0	1	2	178	628	7	6	46	8	226	19	1829
17:00	0	157	6	0	0	0	0	0	36	132	1	7	11	1	85	5	441
17:15	3	194	7	5	0	0	0	1	30	176	2	3	6	1	56	6	490
17:30	0	188	12	1	0	0	0	0	37	139	3	1	9	0	49	0	439
17:45	1	168	8	6	0	0	0	1	36	161	2	2	13	4	52	2	456
Total	4	707	33	12	0	0	0	2	139	608	8	13	39	6	242	13	1826
Grand Total	10	2283	92	35	0	0	1	5	749	2607	26	43	112	22	732	39	6756
Apprch %	0.4	94.3	3.8	1.4	0	0	16.7	83.3	21.9	76.1	0.8	1.3	12.4	2.4	80.9	4.3	
Total %	0.1	33.8	1.4	0.5	0	0	0	0.1	11.1	38.6	0.4	0.6	1.7	0.3	10.8	0.6	
Passenger Vehicles	10	2262	91	35	0	0	1	5	745	2587	26	43	110	22	725	39	6701
% Passenger Vehicles	100	99.1	98.9	100	0	0	100	100	99.5	99.2	100	100	98.2	100	99	100	99.2
Heavy Vehicles	0	14	1	0	0	0	0	0	4	17	0	0	2	0	4	0	42
% Heavy Vehicles	0	0.6	1.1	0	0	0	0	0	0.5	0.7	0	0	1.8	0	0.5	0	0.6
Buses	0	7	0	0	0	0	0	0	0	3	0	0	0	0	3	0	13
% Buses	0	0.3	0	0	0	0	0	0	0	0.1	0	0	0	0	0.4	0	0.2

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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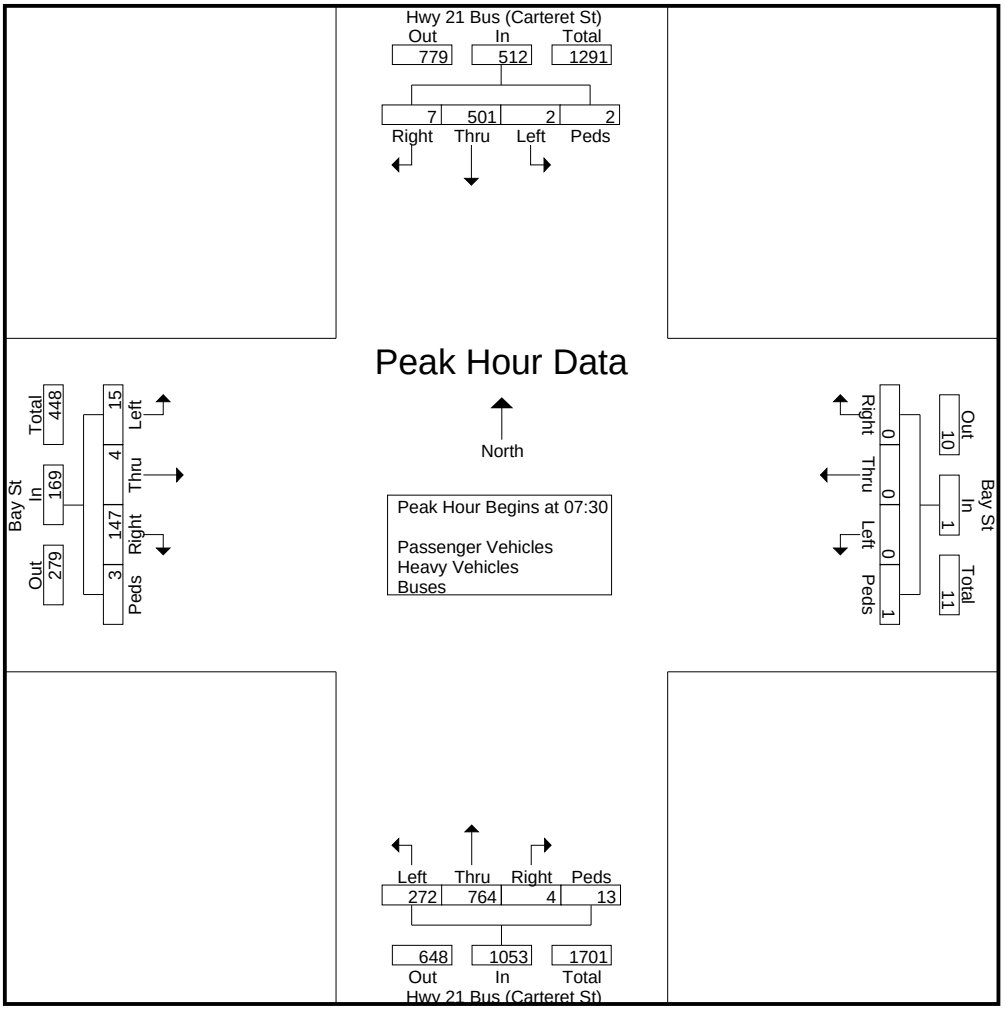
File Name : Hwy 21 Bus @ Bay St
Site Code :
Start Date : 8/24/2017
Page No : 3

	Hwy 21 Bus (Carteret St) Southbound					Bay St Westbound					Hwy 21 Bus (Carteret St) Northbound					Bay St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	122	1	**1**	124	0	0	0	0	0	65	191	0	1	257	2	0	28	0	30	411
07:45	0	**136**	**3**	0	**139**	0	0	0	0	0	**81**	**214**	1	2	**298**	4	1	40	0	45	**482**
08:00	0	124	1	1	126	0	0	0	0	0	68	170	1	4	243	4	1	38	1	44	413
08:15	**2**	119	2	0	123	0	0	0	**1**	**1**	58	189	**2**	**6**	255	**5**	**2**	**41**	**2**	**50**	429
Total Volume	2	501	7	2	512	0	0	0	1	1	272	764	4	13	1053	15	4	147	3	169	1735
% App. Total	0.4	97.9	1.4	0.4		0	0	0	100		25.8	72.6	0.4	1.2		8.9	2.4	87	1.8		
PHF	.250	.921	.583	.500	.921	.000	.000	.000	.250	.250	.840	.893	.500	.542	.883	.750	.500	.896	.375	.845	.900



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735 Maryland St
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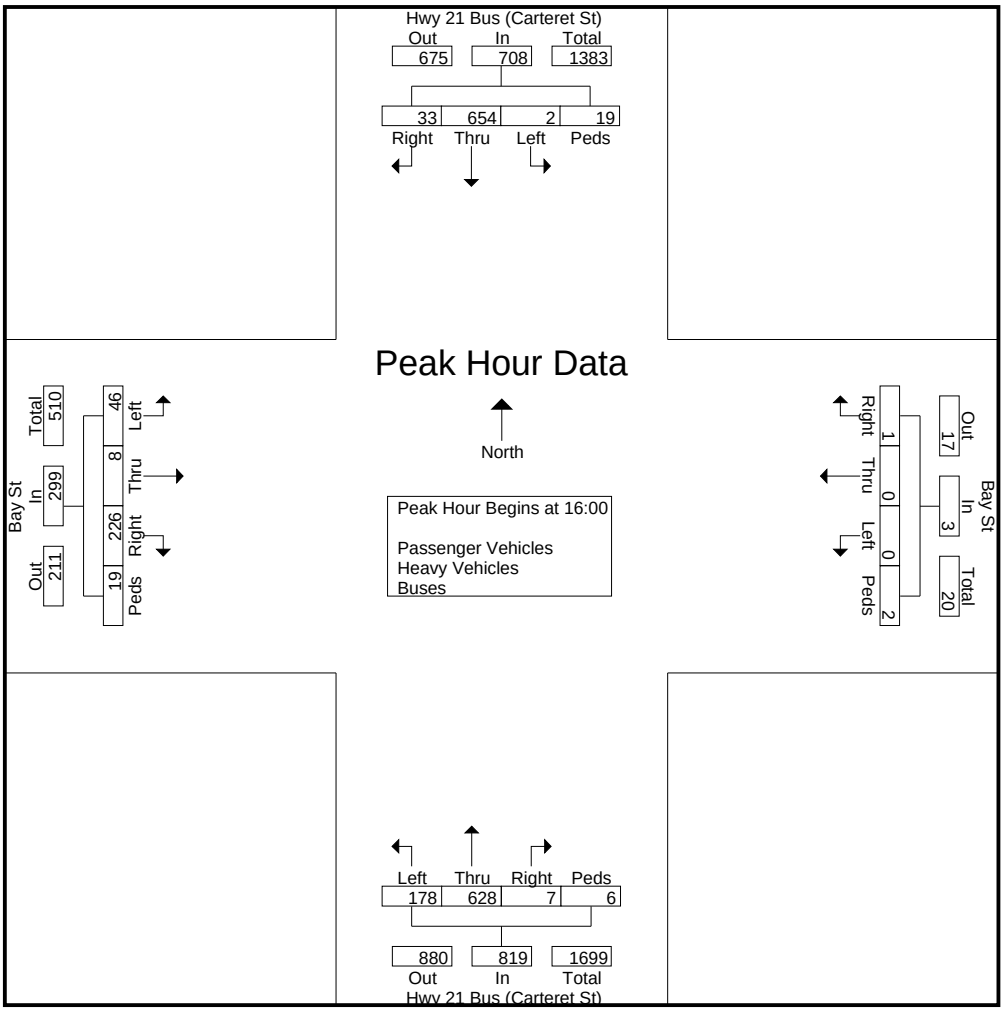
Start Date : 8/24/2017
Page No : 4

	Hwy 21 Bus (Carteret St) Southbound					Bay St Westbound					Hwy 21 Bus (Carteret St) Northbound					Bay St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	165	9	4	178	0	0	0	**1**	1	**63**	**173**	0	**2**	**238**	8	0	**69**	3	**80**	**497**
16:15	**1**	**169**	9	**6**	**185**	0	0	0	0	0	41	169	**5**	1	216	12	3	60	3	78	479
16:30	1	153	4	3	161	0	0	0	0	0	33	135	1	2	171	**13**	1	51	**9**	74	406
16:45	0	167	**11**	6	184	0	0	**1**	1	**2**	41	151	1	1	194	13	**4**	46	4	67	447
Total Volume	2	654	33	19	708	0	0	1	2	3	178	628	7	6	819	46	8	226	19	299	1829
% App. Total	0.3	92.4	4.7	2.7		0	0	33.3	66.7		21.7	76.7	0.9	0.7		15.4	2.7	75.6	6.4		
PHF	.500	.967	.750	.792	.957	.000	.000	.250	.500	.375	.706	.908	.350	.750	.860	.885	.500	.819	.528	.934	.920



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Then Click the Comments Tab

File Name : Meridian Rd @ Sea Island Pkwy
Site Code :
Start Date : 8/24/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Parking Southbound				Sea Island Pkwy Westbound				Meridian Rd Northbound				Sea Island Pkwy Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	0	0	1	2	200	1	0	7	0	3	0	0	90	4	0	309
07:15	0	0	1	2	7	210	1	0	11	0	4	2	1	138	5	0	382
07:30	0	0	0	0	9	267	0	0	13	0	3	1	0	150	5	0	448
07:45	0	0	0	0	8	261	1	0	7	0	5	0	0	160	13	0	455
Total	1	0	1	3	26	938	3	0	38	0	15	3	1	538	27	0	1594
08:00	0	0	0	1	7	235	0	0	16	0	13	1	0	146	13	0	432
08:15	0	0	0	0	6	217	0	0	11	0	14	1	0	153	19	0	421
08:30	1	0	0	0	6	169	0	0	13	0	11	0	0	136	10	0	346
08:45	1	0	0	0	8	169	0	0	10	0	4	0	0	139	13	0	344
Total	2	0	0	1	27	790	0	0	50	0	42	2	0	574	55	0	1543
16:00	2	0	1	0	13	210	0	0	12	0	7	1	0	215	18	0	479
16:15	0	0	0	0	9	184	0	0	0	0	5	0	0	220	9	0	427
16:30	0	0	1	0	3	185	1	0	7	0	2	0	0	191	19	0	409
16:45	0	0	0	0	8	170	1	0	4	0	3	0	0	203	9	0	398
Total	2	0	2	0	33	749	2	0	23	0	17	1	0	829	55	0	1713
17:00	0	0	0	0	11	173	3	0	9	0	6	0	0	242	11	0	455
17:15	1	0	1	0	10	179	1	0	7	0	3	2	0	247	10	0	461
17:30	0	0	0	0	14	179	1	0	11	0	4	0	0	237	7	0	453
17:45	1	0	0	0	5	183	0	0	13	0	4	0	0	182	14	0	402
Total	2	0	1	0	40	714	5	0	40	0	17	2	0	908	42	0	1771
Grand Total	7	0	4	4	126	3191	10	0	151	0	91	8	1	2849	179	0	6621
Apprch %	46.7	0	26.7	26.7	3.8	95.9	0.3	0	60.4	0	36.4	3.2	0	94.1	5.9	0	
Total %	0.1	0	0.1	0.1	1.9	48.2	0.2	0	2.3	0	1.4	0.1	0	43	2.7	0	
Passenger Vehicles	6	0	4	4	123	3177	9	0	151	0	89	8	1	2825	177	0	6574
% Passenger Vehicles	85.7	0	100	100	97.6	99.6	90	0	100	0	97.8	100	100	99.2	98.9	0	99.3
Heavy Vehicles	1	0	0	0	3	9	1	0	0	0	2	0	0	14	0	0	30
% Heavy Vehicles	14.3	0	0	0	2.4	0.3	10	0	0	0	2.2	0	0	0.5	0	0	0.5
Buses	0	0	0	0	0	5	0	0	0	0	0	0	0	10	2	0	17
% Buses	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.4	1.1	0	0.3

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735 Maryland St
Columbia, SC 29201

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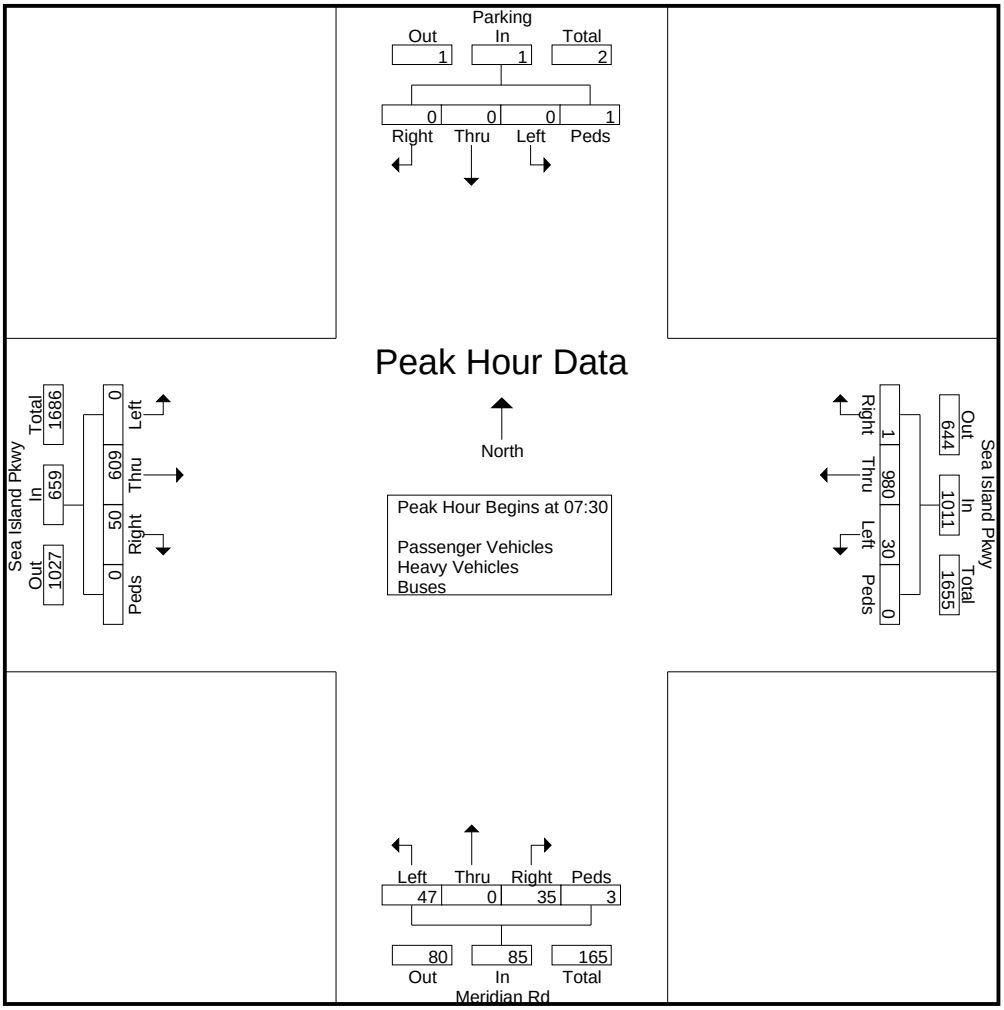
File Name : Meridian Rd @ Sea Island Pkwy
Site Code :
Start Date : 8/24/2017
Page No : 3

	Parking Southbound					Sea Island Pkwy Westbound					Meridian Rd Northbound					Sea Island Pkwy Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	**9**	**267**	0	0	**276**	13	0	3	**1**	17	0	150	5	0	155	448
07:45	0	0	0	0	0	8	261	**1**	0	270	7	0	5	0	12	0	**160**	13	0	**173**	**455**
08:00	0	0	0	**1**	**1**	7	235	0	0	242	**16**	0	13	1	**30**	0	146	13	0	159	432
08:15	0	0	0	0	0	6	217	0	0	223	11	0	**14**	1	26	0	153	**19**	0	172	421
Total Volume	0	0	0	1	1	30	980	1	0	1011	47	0	35	3	85	0	609	50	0	659	1756
% App. Total	0	0	0	100		3	96.9	0.1	0		55.3	0	41.2	3.5		0	92.4	7.6	0		
PHF	.000	.000	.000	.250	.250	.833	.918	.250	.000	.916	.734	.000	.625	.750	.708	.000	.952	.658	.000	.952	.965



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File Name : Meridian Rd @ Sea Island Pkwy
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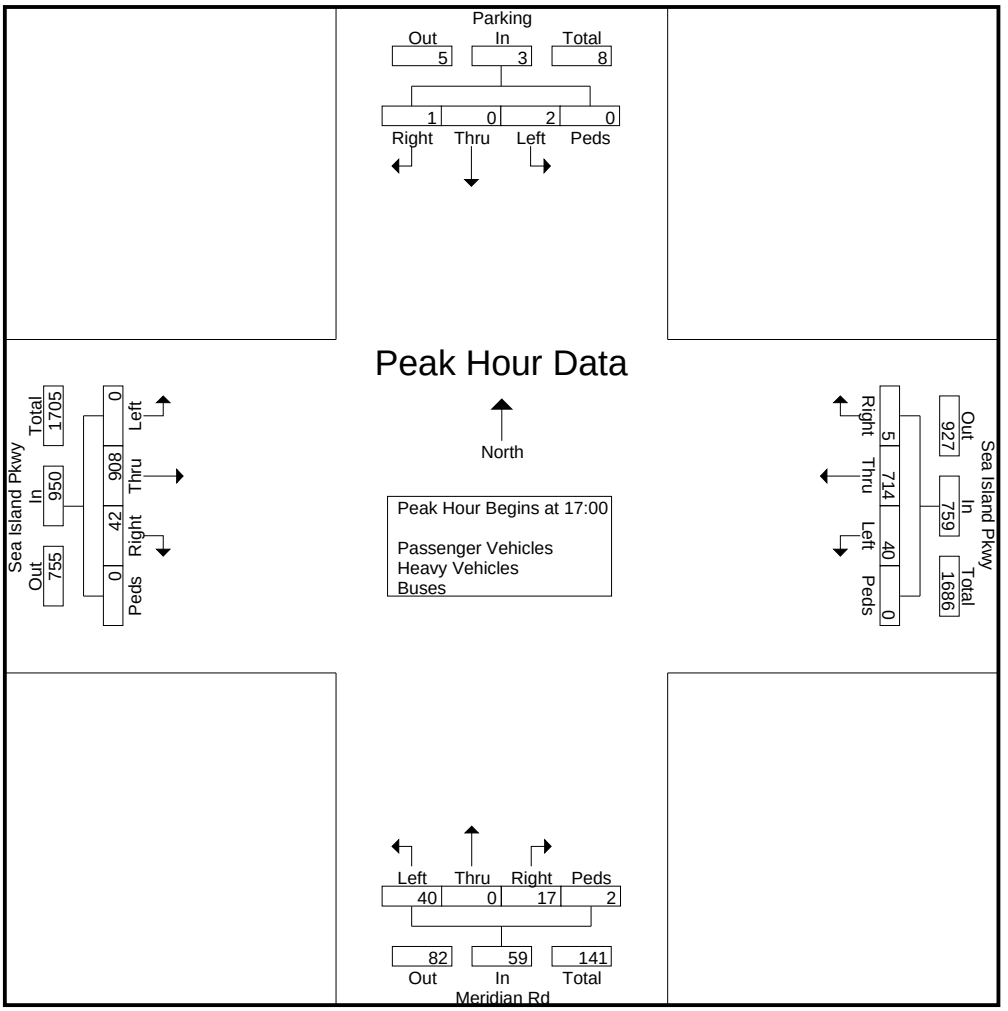
	Parking Southbound					Sea Island Pkwy Westbound					Meridian Rd Northbound					Sea Island Pkwy Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	11	173	**3**	0	187	9	0	**6**	0	15	0	242	11	0	253	455
17:15	**1**	0	**1**	0	**2**	10	179	1	0	190	7	0	3	**2**	12	0	**247**	10	0	**257**	**461**
17:30	0	0	0	0	0	**14**	179	1	0	**194**	11	0	4	0	15	0	237	7	0	244	453
17:45	1	0	0	0	1	5	**183**	0	0	188	**13**	0	4	0	**17**	0	182	**14**	0	196	402
Total Volume	2	0	1	0	3	40	714	5	0	759	40	0	17	2	59	0	908	42	0	950	1771
% App. Total	66.7	0	33.3	0		5.3	94.1	0.7	0		67.8	0	28.8	3.4		0	95.6	4.4	0		
PHF	.500	.000	.250	.000	.375	.714	.975	.417	.000	.978	.769	.000	.708	.250	.868	.000	.919	.750	.000	.924	.960



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735 Maryland St
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File Name : Sea Island Pkwy @ High School Entrance
Site Code :
Start Date : 8/24/2017
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Business Access Southbound				Sea Island Pkwy Westbound				High School Entrance (Geechie Rd) Northbound				Sea Island Pkwy Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	1	0	9	203	2	0	1	0	3	3	0	85	2	0	309
07:15	2	0	2	0	10	218	3	0	2	0	2	0	1	136	4	0	380
07:30	1	0	3	1	12	271	2	0	7	0	2	0	0	141	7	0	447
07:45	0	0	1	1	34	260	2	1	12	0	11	2	0	164	19	0	507
Total	3	0	7	2	65	952	9	1	22	0	18	5	1	526	32	0	1643
08:00	0	0	0	0	61	223	0	1	23	0	19	0	0	138	20	0	485
08:15	0	0	1	0	95	194	2	1	27	0	43	1	0	112	44	0	520
08:30	0	0	1	3	53	150	0	0	23	1	47	0	0	138	25	0	441
08:45	0	0	2	1	14	173	1	0	7	0	11	1	1	127	6	0	344
Total	0	0	4	4	223	740	3	2	80	1	120	2	1	515	95	0	1790
16:00	0	0	1	0	16	205	2	0	32	0	49	0	0	217	8	0	530
16:15	0	0	1	0	6	189	1	0	11	0	21	0	0	246	6	0	481
16:30	0	0	0	0	6	185	0	0	12	0	10	1	0	202	4	0	420
16:45	0	0	0	0	6	185	1	0	6	0	14	0	0	209	8	0	429
Total	0	0	2	0	34	764	4	0	61	0	94	1	0	874	26	0	1860
17:00	0	0	1	1	15	180	0	0	10	0	10	0	1	245	6	0	469
17:15	1	0	0	2	18	196	0	1	3	0	11	0	0	248	5	0	485
17:30	0	0	2	0	9	188	3	0	11	0	16	0	0	234	8	0	471
17:45	0	0	0	0	14	188	1	0	5	0	9	0	0	204	11	0	432
Total	1	0	3	3	56	752	4	1	29	0	46	0	1	931	30	0	1857
Grand Total	4	0	16	9	378	3208	20	4	192	1	278	8	3	2846	183	0	7150
Apprch %	13.8	0	55.2	31	10.5	88.9	0.6	0.1	40.1	0.2	58	1.7	0.1	93.9	6	0	
Total %	0.1	0	0.2	0.1	5.3	44.9	0.3	0.1	2.7	0	3.9	0.1	0	39.8	2.6	0	
Passenger Vehicles	4	0	16	9	378	3184	20	4	192	1	278	8	3	2809	181	0	7087
% Passenger Vehicles	100	0	100	100	100	99.3	100	100	100	100	100	100	100	98.7	98.9	0	99.1
Heavy Vehicles	0	0	0	0	0	21	0	0	0	0	0	0	0	27	1	0	49
% Heavy Vehicles	0	0	0	0	0	0.7	0	0	0	0	0	0	0	0.9	0.5	0	0.7
Buses	0	0	0	0	0	3	0	0	0	0	0	0	0	10	1	0	14
% Buses	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.4	0.5	0	0.2

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File Name : Sea Island Pkwy @ High School Entrance
Site Code :
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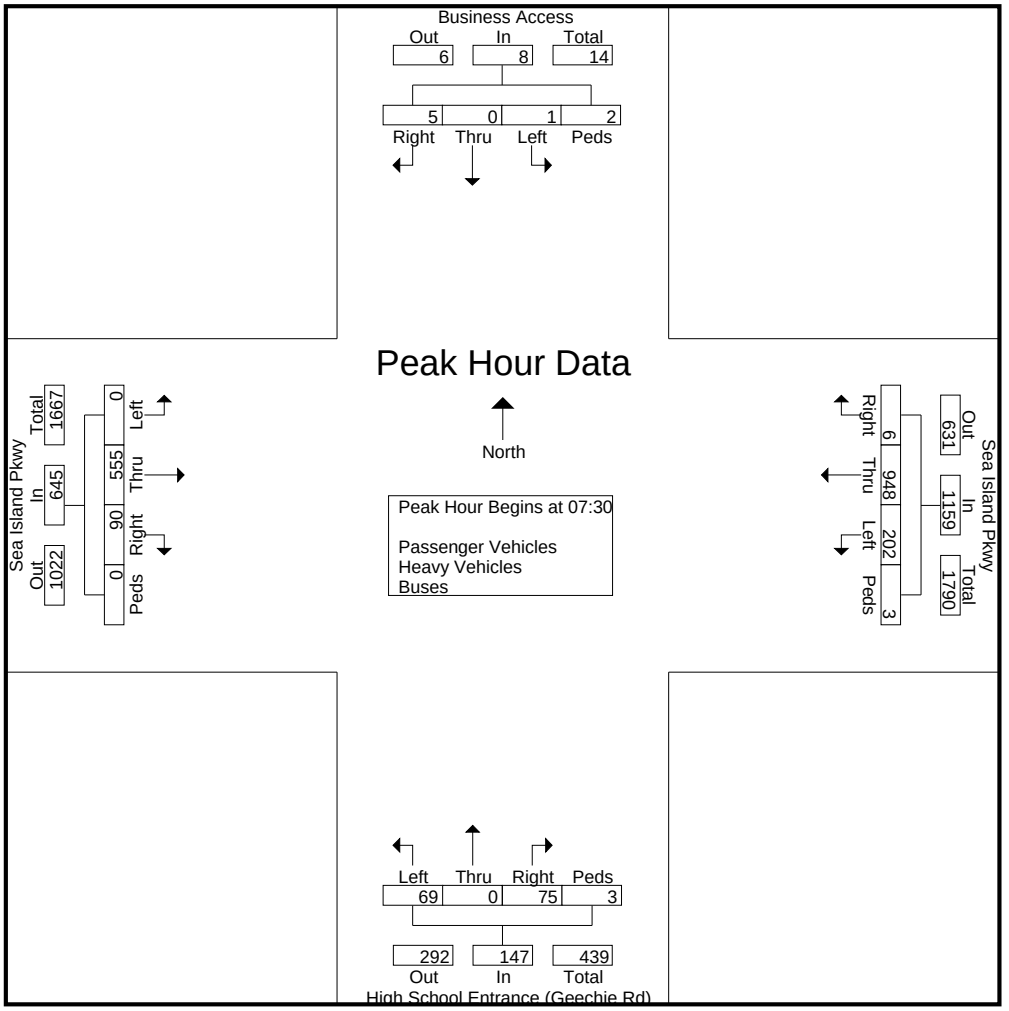
	Business Access Southbound					Sea Island Pkwy Westbound					High School Entrance (Geechie Rd) Northbound					Sea Island Pkwy Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**1**	0	**3**	**1**	**5**	12	**271**	**2**	0	285	7	0	2	0	9	0	141	7	0	148	447
07:45	0	0	1	1	2	34	260	2	**1**	**297**	12	0	11	**2**	25	0	**164**	19	0	**183**	507
08:00	0	0	0	0	0	61	223	0	1	285	23	0	19	0	42	0	138	20	0	158	485
08:15	0	0	1	0	1	**95**	194	2	1	292	**27**	0	**43**	1	**71**	0	112	**44**	0	156	**520**
Total Volume	1	0	5	2	8	202	948	6	3	1159	69	0	75	3	147	0	555	90	0	645	1959
% App. Total	12.5	0	62.5	25		17.4	81.8	0.5	0.3		46.9	0	51	2		0	86	14	0		
PHF	.250	.000	.417	.500	.400	.532	.875	.750	.750	.976	.639	.000	.436	.375	.518	.000	.846	.511	.000	.881	.942



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We can't say we're the Best, but you Can!

File Name : Sea Island Pkwy @ High School Entrance
Site Code :
Start Date : 8/24/2017
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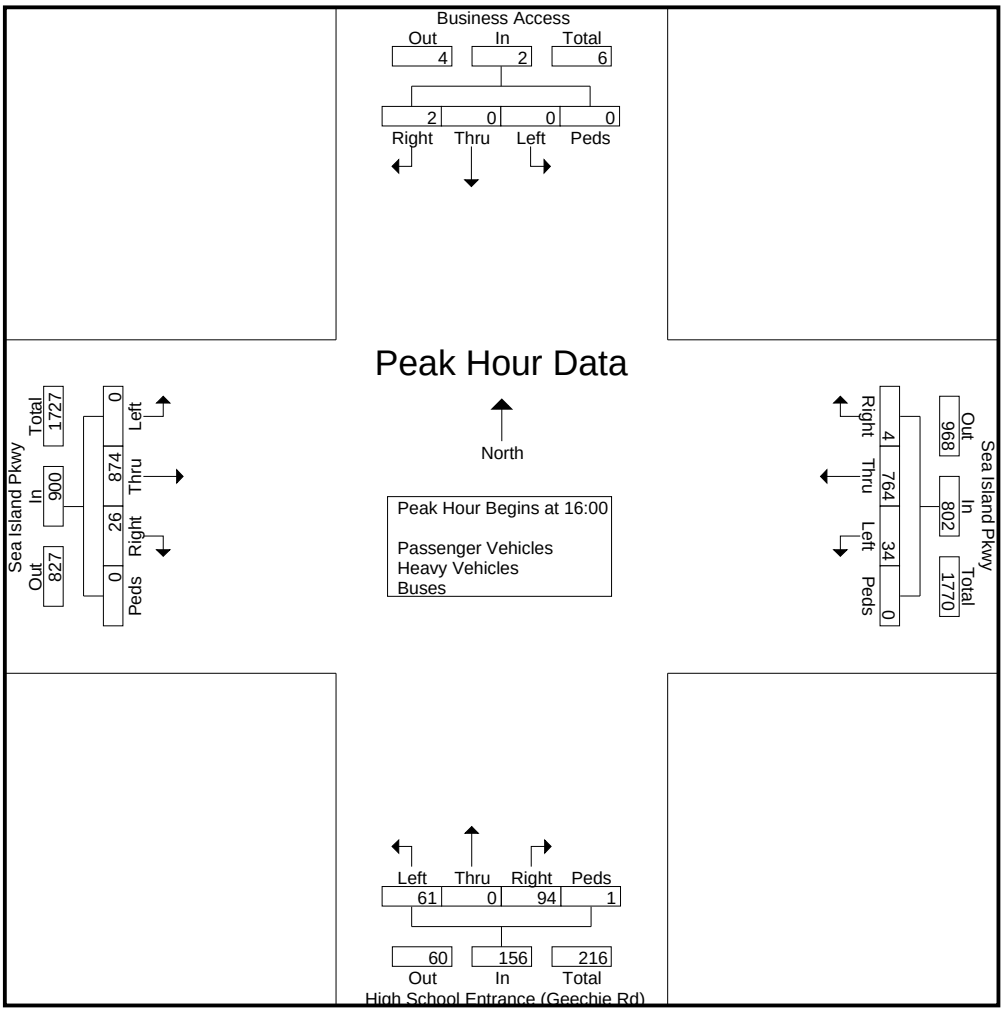
	Business Access Southbound					Sea Island Pkwy Westbound					High School Entrance (Geechie Rd) Northbound					Sea Island Pkwy Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	0	**1**	0	**1**	**16**	**205**	**2**	0	**223**	**32**	0	**49**	0	**81**	0	217	**8**	0	225	**530**
16:15	0	0	1	0	1	6	189	1	0	196	11	0	21	0	32	0	**246**	6	0	**252**	481
16:30	0	0	0	0	0	6	185	0	0	191	12	0	10	**1**	23	0	202	4	0	206	420
16:45	0	0	0	0	0	6	185	1	0	192	6	0	14	0	20	0	209	8	0	217	429
Total Volume	0	0	2	0	2	34	764	4	0	802	61	0	94	1	156	0	874	26	0	900	1860
% App. Total	0	0	100	0		4.2	95.3	0.5	0		39.1	0	60.3	0.6		0	97.1	2.9	0		
PHF	.000	.000	.500	.000	.500	.531	.932	.500	.000	.899	.477	.000	.480	.250	.481	.000	.888	.813	.000	.893	.877



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File Name : Meridian Rd @ Harborview Cir North
Site Code :
Start Date : 8/24/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Meridian Rd Southbound				Bank Access Westbound				Meridian Rd Northbound				Harborview Cir North Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	6	2	0	0	0	0	0	0	10	0	0	0	0	0	0	18
07:15	0	12	0	0	0	0	0	0	0	13	0	0	1	0	0	0	26
07:30	1	12	1	0	0	0	0	0	0	16	0	0	0	0	1	0	31
07:45	0	20	1	0	0	0	0	0	1	9	0	0	3	0	0	1	35
Total	1	50	4	0	0	0	0	0	1	48	0	0	4	0	1	1	110
08:00	0	18	0	0	0	0	0	0	0	29	0	0	0	0	1	0	48
08:15	1	23	0	0	0	0	0	0	0	25	1	0	0	0	0	0	50
08:30	0	17	0	1	0	0	0	0	1	24	1	0	1	0	1	1	47
08:45	1	18	0	0	0	0	0	0	0	11	0	0	1	0	0	0	31
Total	2	76	0	1	0	0	0	0	1	89	2	0	2	0	2	1	176
16:00	0	29	3	0	2	0	0	0	1	16	2	0	2	0	0	0	55
16:15	0	13	2	0	0	0	0	0	0	4	0	0	1	0	0	0	20
16:30	1	17	1	0	0	0	0	0	1	7	0	0	1	0	0	0	28
16:45	0	17	0	0	0	0	0	0	0	7	0	0	0	0	0	0	24
Total	1	76	6	0	2	0	0	0	2	34	2	0	4	0	0	0	127
17:00	0	24	1	1	2	0	1	1	1	13	0	0	0	0	0	0	44
17:15	0	17	1	0	0	0	0	0	1	11	0	0	1	0	0	0	31
17:30	0	18	1	0	0	0	0	0	0	13	0	0	0	0	0	0	32
17:45	0	19	1	0	0	0	0	0	0	15	0	0	2	0	0	0	37
Total	0	78	4	1	2	0	1	1	2	52	0	0	3	0	0	0	144
Grand Total	4	280	14	2	4	0	1	1	6	223	4	0	13	0	3	2	557
Apprch %	1.3	93.3	4.7	0.7	66.7	0	16.7	16.7	2.6	95.7	1.7	0	72.2	0	16.7	11.1	
Total %	0.7	50.3	2.5	0.4	0.7	0	0.2	0.2	1.1	40	0.7	0	2.3	0	0.5	0.4	
Passenger Vehicles	4	275	13	2	4	0	1	1	5	221	4	0	13	0	3	2	548
% Passenger Vehicles	100	98.2	92.9	100	100	0	100	100	83.3	99.1	100	0	100	0	100	100	98.4
Heavy Vehicles	0	3	1	0	0	0	0	0	1	2	0	0	0	0	0	0	7
% Heavy Vehicles	0	1.1	7.1	0	0	0	0	0	16.7	0.9	0	0	0	0	0	0	1.3
Buses	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4

SHORT COUNTS, LLC

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File Name : Meridian Rd @ Harborview Cir North
Site Code :
Start Date : 8/24/2017
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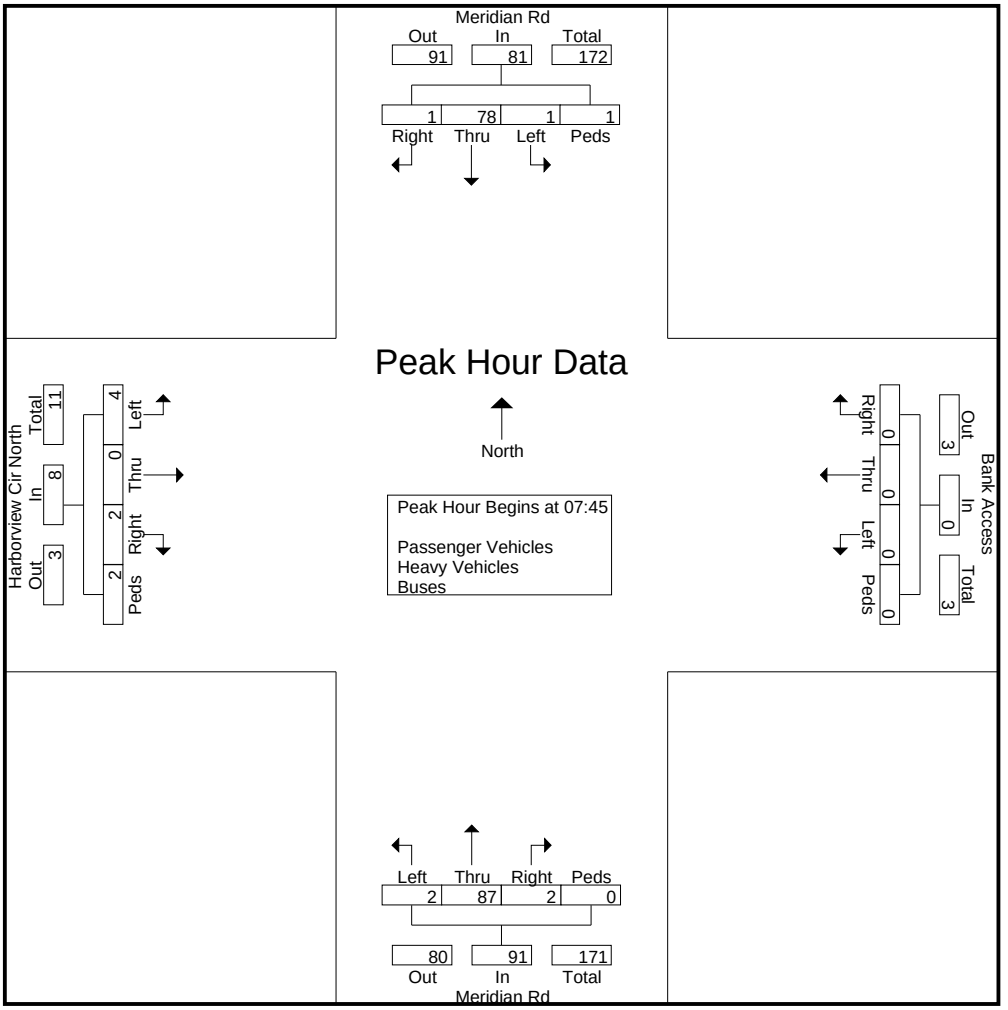
	Meridian Rd Southbound					Bank Access Westbound					Meridian Rd Northbound					Harborview Cir North Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	20	**1**	0	21	0	0	0	0	0	**1**	9	0	0	10	**3**	0	0	**1**	**4**	35
08:00	0	18	0	0	18	0	0	0	0	0	0	**29**	0	0	**29**	0	0	**1**	0	1	48
08:15	**1**	**23**	0	0	**24**	0	0	0	0	0	0	25	**1**	0	26	0	0	0	0	0	**50**
08:30	0	17	0	**1**	18	0	0	0	0	0	1	24	1	0	26	1	0	1	1	3	47
Total Volume	1	78	1	1	81	0	0	0	0	0	2	87	2	0	91	4	0	2	2	8	180
% App. Total	1.2	96.3	1.2	1.2		0	0	0	0		2.2	95.6	2.2	0		50	0	25	25		
PHF	.250	.848	.250	.250	.844	.000	.000	.000	.000	.000	.500	.750	.500	.000	.784	.333	.000	.500	.500	.500	.900



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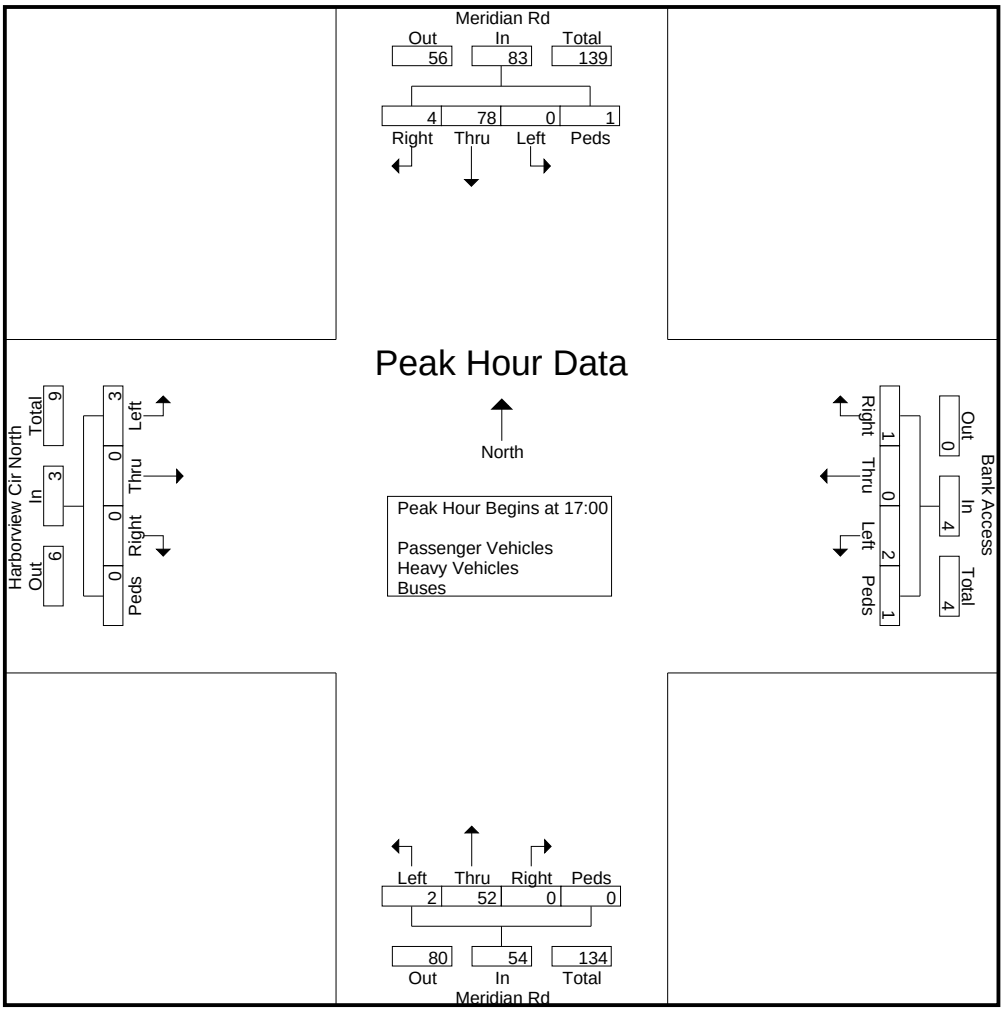
We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Harborview Cir North
Site Code :
Start Date : 8/24/2017
Page No : 4

	Meridian Rd Southbound					Bank Access Westbound					Meridian Rd Northbound					Harborview Cir North Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	**24**	**1**	**1**	**26**	**2**	0	**1**	**1**	**4**	**1**	13	0	0	14	0	0	0	0	0	**44**
17:15	0	17	1	0	18	0	0	0	0	0	1	11	0	0	12	1	0	0	0	1	31
17:30	0	18	1	0	19	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	32
17:45	0	19	1	0	20	0	0	0	0	0	0	**15**	0	0	**15**	**2**	0	0	0	**2**	37
Total Volume	0	78	4	1	83	2	0	1	1	4	2	52	0	0	54	3	0	0	0	3	144
% App. Total	0	94	4.8	1.2		50	0	25	25		3.7	96.3	0	0		100	0	0	0		
PHF	.000	.813	1.00	.250	.798	.250	.000	.250	.250	.250	.500	.867	.000	.000	.900	.375	.000	.000	.000	.375	.818



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File Name : Meridian Rd @ Harborview Cir South
Site Code :
Start Date : 8/24/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Meridian Rd Southbound				Westbound				Meridian Rd Northbound				Harborview Cir South Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	7	0	0	0	0	0	0	0	11	0	0	0	0	0	0	18
07:15	0	12	0	0	0	0	0	0	0	11	0	0	0	0	0	0	23
07:30	0	12	0	0	0	0	0	0	0	17	0	0	0	0	1	0	30
07:45	0	16	0	0	0	0	0	0	0	11	0	0	0	0	0	0	27
Total	0	47	0	0	0	0	0	0	0	50	0	0	0	0	1	0	98
08:00	0	24	0	0	0	0	0	0	0	24	0	0	0	0	0	0	48
08:15	0	21	0	0	0	0	0	0	0	31	0	0	0	0	1	0	53
08:30	0	19	0	0	0	0	0	0	0	23	0	0	0	0	0	0	42
08:45	0	15	0	0	0	0	0	0	3	11	0	0	1	0	0	0	30
Total	0	79	0	0	0	0	0	0	3	89	0	0	1	0	1	0	173
16:00	0	28	0	0	0	0	0	0	1	18	0	0	0	0	0	0	47
16:15	0	14	0	0	0	0	0	0	0	3	0	0	1	0	1	0	19
16:30	0	17	0	0	0	0	0	0	0	5	0	0	0	0	1	0	23
16:45	0	14	0	0	0	0	0	0	0	9	0	0	0	0	0	0	23
Total	0	73	0	0	0	0	0	0	1	35	0	0	1	0	2	0	112
17:00	0	26	0	0	0	0	0	0	0	13	0	0	0	0	0	0	39
17:15	0	20	0	0	0	0	0	0	0	10	0	0	0	0	0	0	30
17:30	0	14	1	0	0	0	0	0	0	13	0	1	0	0	0	0	29
17:45	0	19	0	0	0	0	0	0	0	15	0	1	0	0	0	0	35
Total	0	79	1	0	0	0	0	0	0	51	0	2	0	0	0	0	133
Grand Total	0	278	1	0	0	0	0	0	4	225	0	2	2	0	4	0	516
Apprch %	0	99.6	0.4	0	0	0	0	0	1.7	97.4	0	0.9	33.3	0	66.7	0	
Total %	0	53.9	0.2	0	0	0	0	0	0.8	43.6	0	0.4	0.4	0	0.8	0	
Passenger Vehicles	0	273	1	0	0	0	0	0	4	221	0	2	2	0	2	0	505
% Passenger Vehicles	0	98.2	100	0	0	0	0	0	100	98.2	0	100	100	0	50	0	97.9
Heavy Vehicles	0	3	0	0	0	0	0	0	0	4	0	0	0	0	2	0	9
% Heavy Vehicles	0	1.1	0	0	0	0	0	0	0	1.8	0	0	0	0	50	0	1.7
Buses	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4

SHORT COUNTS, LLC

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File Name : Meridian Rd @ Harborview Cir South
Site Code :
Start Date : 8/24/2017
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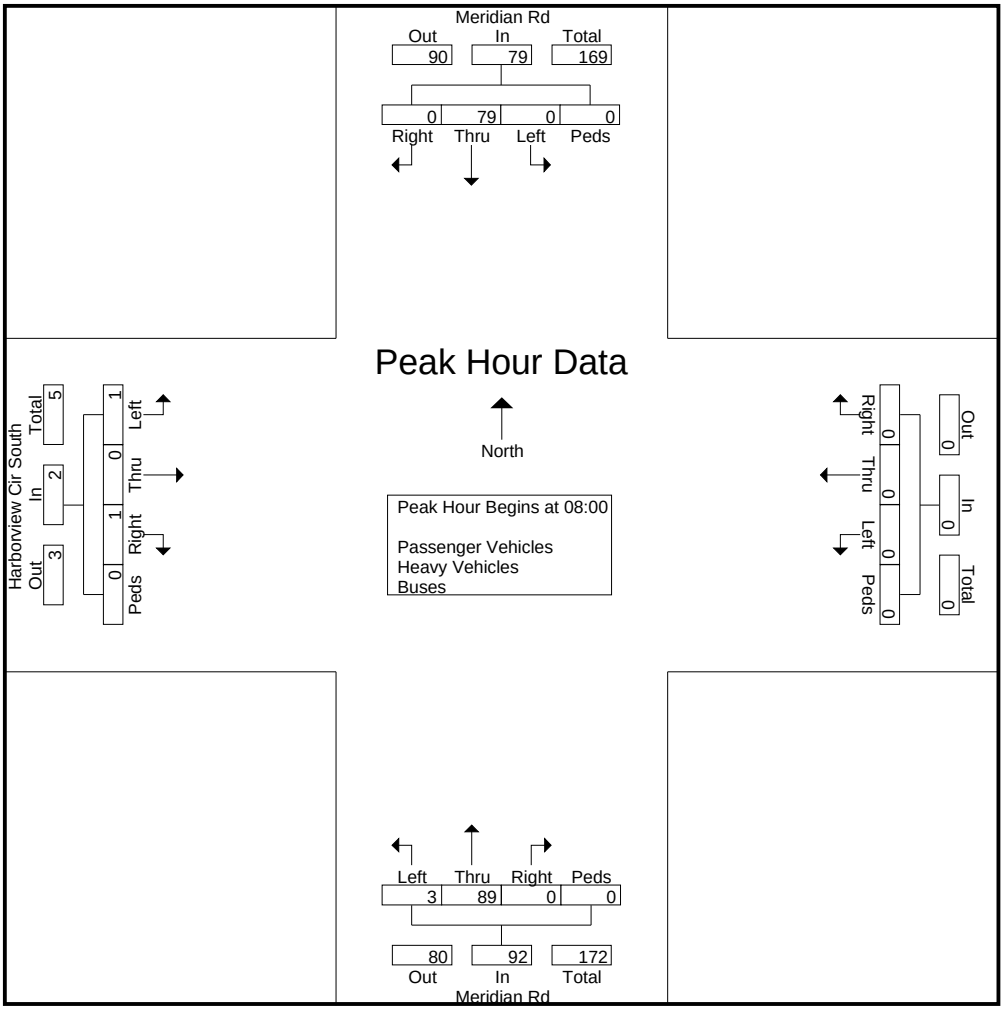
	Meridian Rd Southbound					Westbound					Meridian Rd Northbound					Harborview Cir South Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	**24**	0	0	**24**	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	48
08:15	0	21	0	0	21	0	0	0	0	0	0	**31**	0	0	**31**	0	0	**1**	0	**1**	**53**
08:30	0	19	0	0	19	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	42
08:45	0	15	0	0	15	0	0	0	0	0	**3**	11	0	0	14	**1**	0	0	0	1	30
Total Volume	0	79	0	0	79	0	0	0	0	0	3	89	0	0	92	1	0	1	0	2	173
% App. Total	0	100	0	0		0	0	0	0		3.3	96.7	0	0		50	0	50	0		
PHF	.000	.823	.000	.000	.823	.000	.000	.000	.000	.000	.250	.718	.000	.000	.742	.250	.000	.250	.000	.500	.816



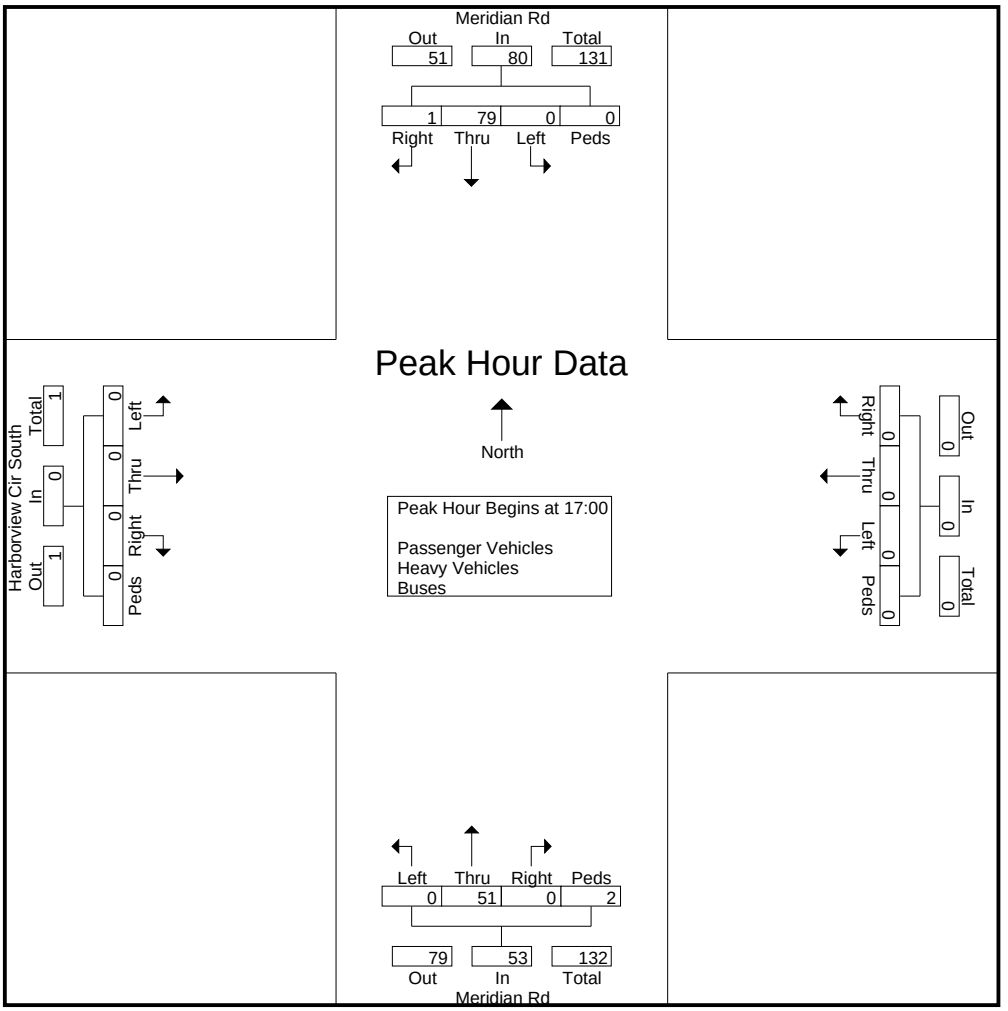
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Harborview Cir South
Site Code :
Start Date : 8/24/2017
Page No : 4

	Meridian Rd Southbound					Westbound					Meridian Rd Northbound					Harborview Cir South Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	**26**	0	0	**26**	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	**39**
17:15	0	20	0	0	20	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	30
17:30	0	14	**1**	0	15	0	0	0	0	0	0	13	0	**1**	14	0	0	0	0	0	29
17:45	0	19	0	0	19	0	0	0	0	0	0	**15**	0	1	**16**	0	0	0	0	0	35
Total Volume	0	79	1	0	80	0	0	0	0	0	0	51	0	2	53	0	0	0	0	0	133
% App. Total	0	98.8	1.2	0		0	0	0	0		0	96.2	0	3.8		0	0	0	0		
PHF	.000	.760	.250	.000	.769	.000	.000	.000	.000	.000	.000	.850	.000	.500	.828	.000	.000	.000	.000	.000	.853



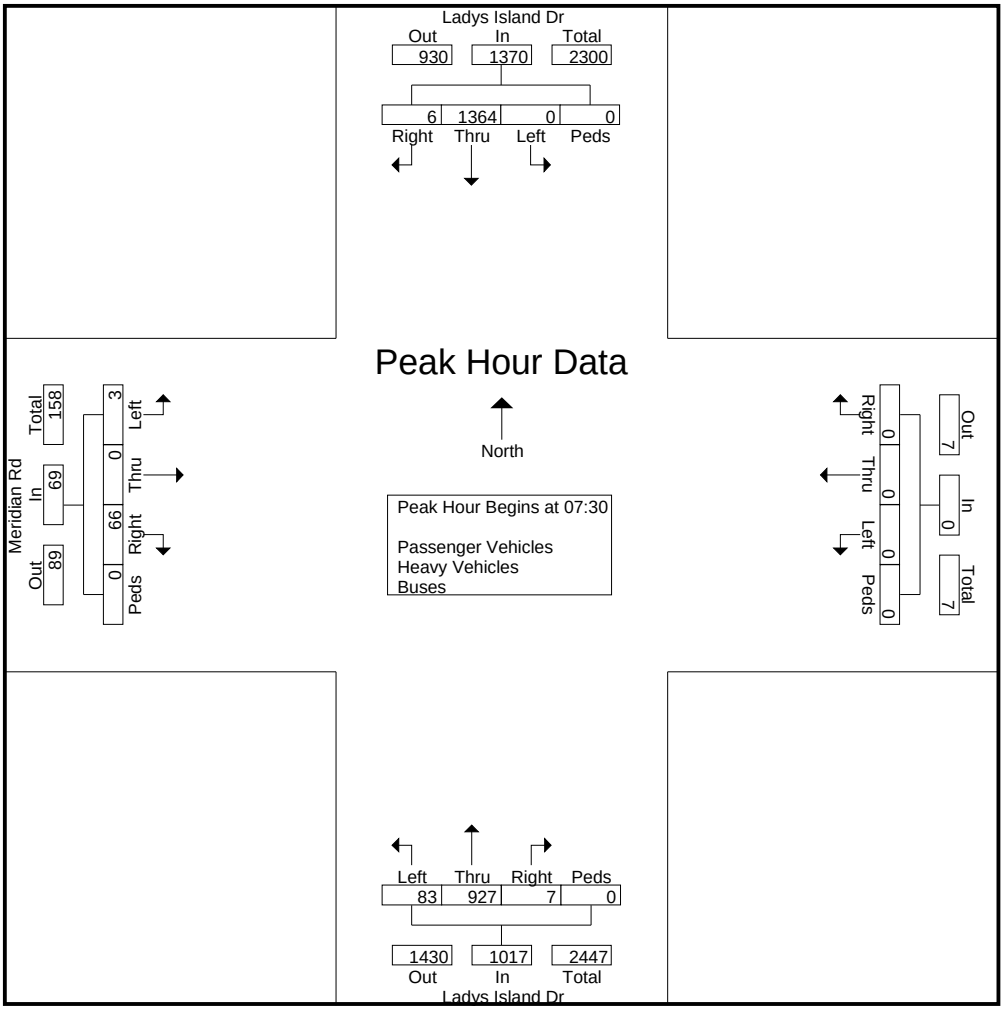
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Ladys Island Dr
Site Code :
Start Date : 8/24/2017
Page No : 3

	Ladys Island Dr Southbound					Westbound					Ladys Island Dr Northbound					Meridian Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	339	0	0	339	0	0	0	0	0	15	216	1	0	232	1	0	13	0	14	585
07:45	0	**371**	1	0	**372**	0	0	0	0	0	14	**252**	1	0	267	**2**	0	17	0	**19**	**658**
08:00	0	366	**3**	0	369	0	0	0	0	0	26	219	**3**	0	248	0	0	17	0	17	634
08:15	0	288	2	0	290	0	0	0	0	0	**28**	240	2	0	**270**	0	0	**19**	0	19	579
Total Volume	0	1364	6	0	1370	0	0	0	0	0	83	927	7	0	1017	3	0	66	0	69	2456
% App. Total	0	99.6	0.4	0		0	0	0	0		8.2	91.2	0.7	0		4.3	0	95.7	0		
PHF	.000	.919	.500	.000	.921	.000	.000	.000	.000	.000	.741	.920	.583	.000	.942	.375	.000	.868	.000	.908	.933



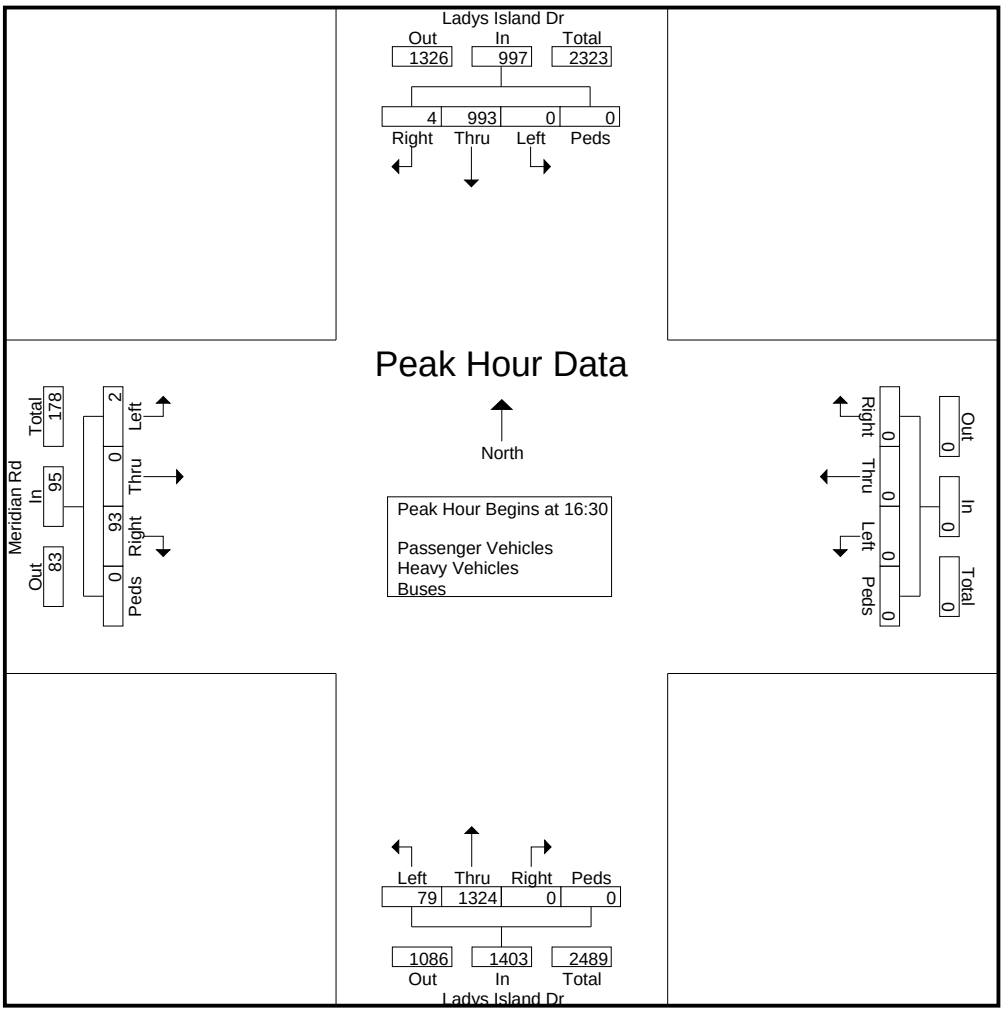
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Ladys Island Dr PM
Site Code :
Start Date : 8/29/2017
Page No : 2

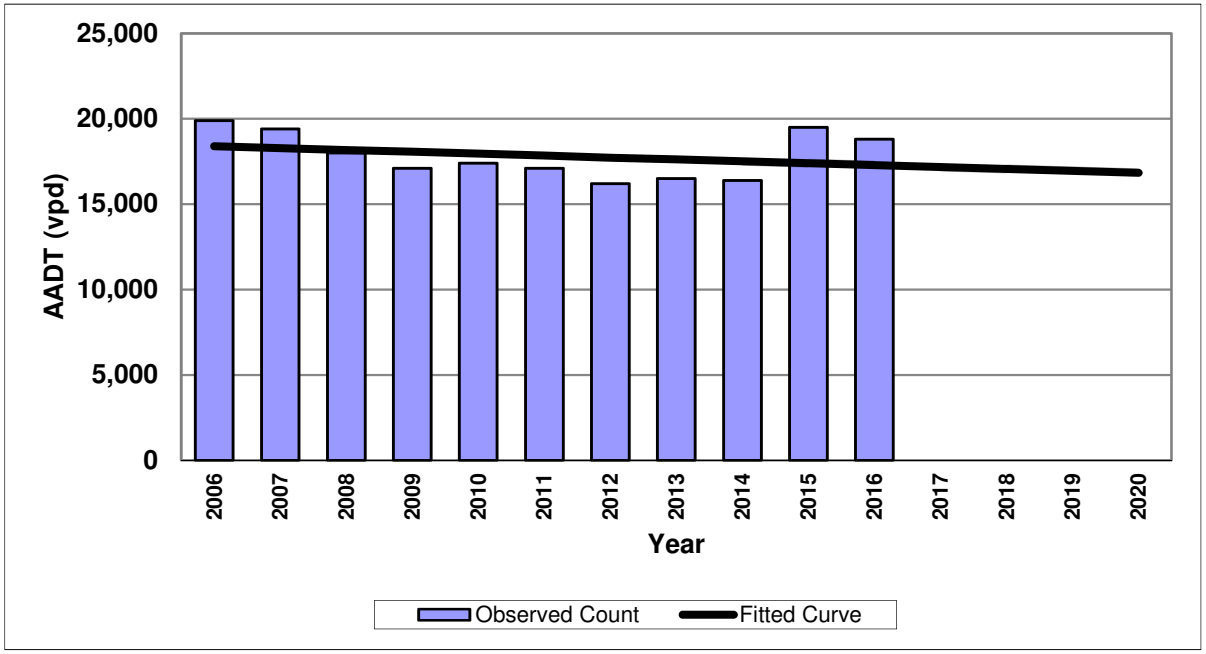
	Ladys Island Dr Southbound					Westbound					Ladys Island Dr Northbound					Meridian Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	222	1	0	223	0	0	0	0	0	21	321	0	0	342	0	0	**30**	0	**30**	595
16:45	0	235	**2**	0	237	0	0	0	0	0	16	**353**	0	0	**369**	0	0	24	0	24	630
17:00	0	265	1	0	266	0	0	0	0	0	19	327	0	0	346	**1**	0	20	0	21	633
17:15	0	**271**	0	0	**271**	0	0	0	0	0	**23**	323	0	0	346	1	0	19	0	20	**637**
Total Volume	0	993	4	0	997	0	0	0	0	0	79	1324	0	0	1403	2	0	93	0	95	2495
% App. Total	0	99.6	0.4	0		0	0	0	0		5.6	94.4	0	0		2.1	0	97.9	0		
PHF	.000	.916	.500	.000	.920	.000	.000	.000	.000	.000	.859	.938	.000	.000	.951	.500	.000	.775	.000	.792	.979



TRAFFIC TRENDS

US 21 Business/Sea Island Parkway

County:	Beaufort
Station #(s):	137
Highway(s):	US 21 Business/Sea Island Parkway



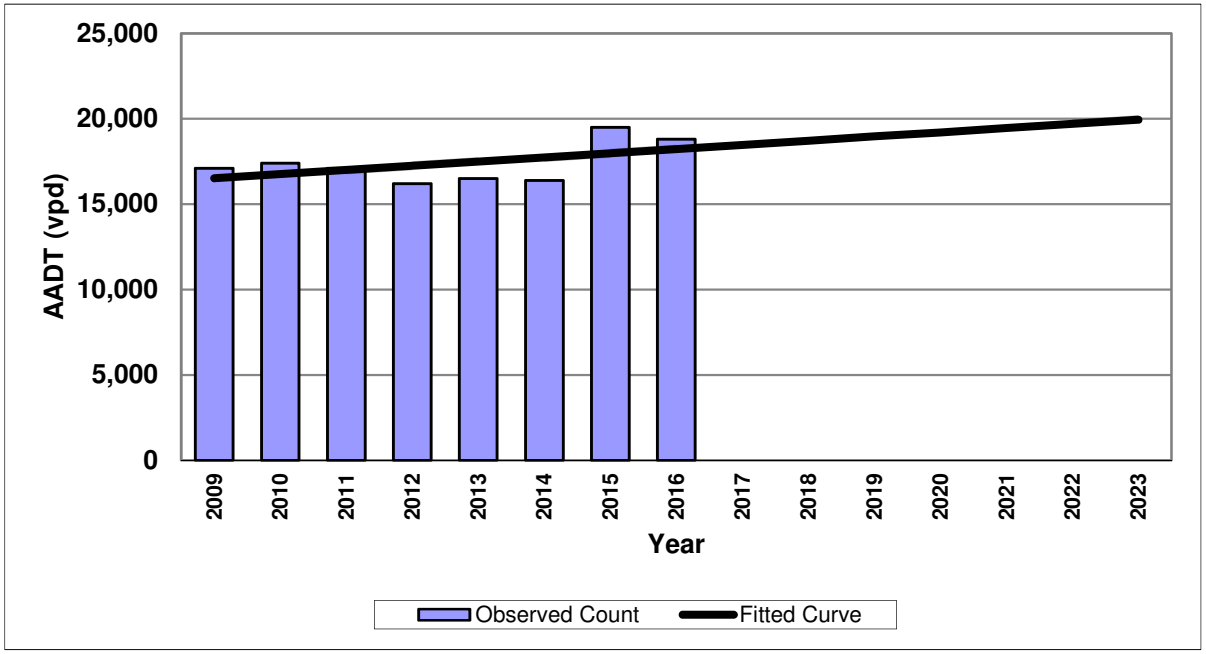
Year	Traffic (ADT/AADT)	
	Average Count	**Trend****
2006	19,900	18,400
2007	19,400	18,290
2008	18,000	18,180
2009	17,100	18,070
2010	17,400	17,960
2011	17,100	17,850
2012	16,200	17,730
2013	16,500	17,620
2014	16,400	17,510
2015	19,500	17,400
2016	18,800	17,290
2017		17,170
2018		17,060
2019		16,950
2020		16,840
2020 Opening Year Trend		
2020	N/A	16,840

**** Annual Trend Increase:**	-112
Trend Annual Historic Growth Rate:	-0.60%
Linear Growth Option	

TRAFFIC TRENDS

US 21 Business/Sea Island Parkway

County:	Beaufort
Station #(s):	137
Highway(s):	US 21 Business/Sea Island Parkway



Year	Traffic (ADT/AADT)	
	Average Count	**Trend****
2009	17,100	16,520
2010	17,400	16,760
2011	17,100	17,010
2012	16,200	17,250
2013	16,500	17,500
2014	16,400	17,740
2015	19,500	17,990
2016	18,800	18,230
2017		18,480
2018		18,720
2019		18,970
2020		19,210
2021		19,460
2022		19,700
2023		19,950
2020 Opening Year Trend		
2020	N/A	19,210

**** Annual Trend Increase:**	245
Trend Annual Historic Growth Rate:	1.48%
Linear Growth Option	

APPENDIX C

Traffic Volume Development Worksheets

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21 Business/Carteret Street & Bay Street

TRAFFIC CONTROL: Signalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**15**	**4**	**147**				**272**	**764**	**4**	**2**	**501**	**7**
Years To Buildout (2020)	3	3	3				3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%				1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	1	0	7				12	34	0	0	23	0
2020 NO-BUILD TRAFFIC VOLUMES	**16**	**4**	**154**				**284**	**798**	**4**	**2**	**524**	**7**
New Project Traffic			7				13	26			13	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**16**	**4**	**161**				**297**	**824**	**4**	**2**	**537**	**7**

PM PEAK HOUR (4:00-5:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**46**	**8**	**226**				**178**	**628**	**7**	**2**	**654**	**33**
Years To Buildout (2020)	3	3	3				3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%				1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	2	0	10				8	28	0	0	29	1
2020 NO-BUILD TRAFFIC VOLUMES	**48**	**8**	**236**				**186**	**656**	**7**	**2**	**683**	**34**
New Project Traffic			13				7	14			27	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**48**	**8**	**249**				**193**	**670**	**7**	**2**	**710**	**34**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21 Business/Sea Island Parkway & North Project Driveway

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES		**659**	**0**	**0**	**1,027**		**0**		**0**			
Years To Buildout (2020)		3	3	3	3		3		3			
Yearly Growth Rate		1.5%	1.5%	1.5%	1.5%		1.5%		1.5%			
Background Traffic Growth		30	0	0	46		0		0			
2020 NO-BUILD TRAFFIC VOLUMES		**689**	**0**	**0**	**1,073**		**0**		**0**			
New Project Traffic		4	16	10	19		20		23			
Pass-By Project Traffic		-11	11	6	-7		6		8			
2020 BUILD TRAFFIC VOLUMES		**682**	**27**	**16**	**1,085**		**26**		**31**			

PM PEAK HOUR (5:00-6:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES		**950**	**0**	**0**	**755**		**0**		**0**			
Years To Buildout (2020)		3	3	3	3		3		3			
Yearly Growth Rate		1.5%	1.5%	1.5%	1.5%		1.5%		1.5%			
Background Traffic Growth		43	0	0	34		0		0			
2020 NO-BUILD TRAFFIC VOLUMES		**993**	**0**	**0**	**789**		**0**		**0**			
New Project Traffic		8	32	20	10		11		13			
Pass-By Project Traffic		-8	8	5	-5		4		6			
2020 BUILD TRAFFIC VOLUMES		**993**	**40**	**25**	**794**		**15**		**19**			

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21 Business/Sea Island Parkway & Meridian Road

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**	**609**	**50**	**30**	**980**	**1**	**47**	**0**	**35**	**0**	**0**	**0**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	27	2	1	44	0	2	0	2	0	0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**	**636**	**52**	**31**	**1,024**	**1**	**49**	**0**	**37**	**0**	**0**	**0**
New Project Traffic		23	4	10	10		19		16			
Pass-By Project Traffic		-6	3	6	-6		5		6			
2020 BUILD TRAFFIC VOLUMES	**0**	**653**	**59**	**47**	**1,028**	**1**	**73**	**0**	**59**	**0**	**0**	**0**

PM PEAK HOUR (5:00-6:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**	**908**	**42**	**40**	**714**	**5**	**40**	**0**	**17**	**2**	**0**	**1**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	41	2	2	32	0	2	0	1	0	0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**	**949**	**44**	**42**	**746**	**5**	**42**	**0**	**18**	**2**	**0**	**1**
New Project Traffic		13	8	20	20		10		8			
Pass-By Project Traffic		-4	2	4	-4		4		4			
2020 BUILD TRAFFIC VOLUMES	**0**	**958**	**54**	**66**	**762**	**5**	**56**	**0**	**30**	**2**	**0**	**1**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21 Business/Sea Island Parkway & Beaufort High School Driveway

TRAFFIC CONTROL: Signalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**	**555**	**90**	**202**	**948**	**6**	**69**	**0**	**75**	**1**	**0**	**5**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	25	4	9	43	0	3	0	3	0	0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**	**580**	**94**	**211**	**991**	**6**	**72**	**0**	**78**	**1**	**0**	**5**
New Project Traffic		39			20							
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**	**619**	**94**	**211**	**1,011**	**6**	**72**	**0**	**78**	**1**	**0**	**5**

PM PEAK HOUR (4:00-5:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**	**874**	**26**	**34**	**764**	**4**	**61**	**0**	**94**	**0**	**0**	**2**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	39	1	2	34	0	3	0	4	0	0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**	**913**	**27**	**36**	**798**	**4**	**64**	**0**	**98**	**0**	**0**	**2**
New Project Traffic		21			40							
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**	**934**	**27**	**36**	**838**	**4**	**64**	**0**	**98**	**0**	**0**	**2**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

Meridian Road & South Project Driveway

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**		**0**				**0**	**91**			**80**	**0**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		0				0	4			4	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**95**			**84**	**0**
New Project Traffic	35		51				27					14
Pass-By Project Traffic	11											9
2020 BUILD TRAFFIC VOLUMES	**46**		**51**				**27**	**95**			**84**	**23**

PM PEAK HOUR (5:00-6:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**		**0**				**0**	**56**			**82**	**0**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		0				0	3			4	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**59**			**86**	**0**
New Project Traffic	18		28				54					28
Pass-By Project Traffic	8											6
2020 BUILD TRAFFIC VOLUMES	**26**		**28**				**54**	**59**			**86**	**34**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

Meridian Road & Harborview Circle (North)

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:45-8:45 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**4**	**0**	**2**	**0**	**0**	**0**	**2**	**87**	**2**	**1**	**78**	**1**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	0	0	0	0	0	0	4	0	0	4	0
2020 NO-BUILD TRAFFIC VOLUMES	**4**	**0**	**2**	**0**	**0**	**0**	**2**	**91**	**2**	**1**	**82**	**1**
New Project Traffic								27			51	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**4**	**0**	**2**	**0**	**0**	**0**	**2**	**118**	**2**	**1**	**133**	**1**

PM PEAK HOUR (5:00-6:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**3**	**0**	**0**	**2**	**0**	**1**	**2**	**52**	**0**	**0**	**78**	**4**
Years To Buildout (2020)	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Background Traffic Growth	0	0	0	0	0	0	0	2	0	0	4	0
2020 NO-BUILD TRAFFIC VOLUMES	**3**	**0**	**0**	**2**	**0**	**1**	**2**	**54**	**0**	**0**	**82**	**4**
New Project Traffic								54			28	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**3**	**0**	**0**	**2**	**0**	**1**	**2**	**108**	**0**	**0**	**110**	**4**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

Meridian Road & Harborview Circle (South)

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (8:00-9:00 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**1**		**1**				**3**	**89**			**79**	**0**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		0				0	4			4	0
2020 NO-BUILD TRAFFIC VOLUMES	**1**		**1**				**3**	**93**			**83**	**0**
New Project Traffic								27			51	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**1**		**1**				**3**	**120**			**134**	**0**

PM PEAK HOUR (5:00-6:00 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**		**0**				**0**	**51**			**79**	**1**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		0				0	2			4	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**53**			**83**	**1**
New Project Traffic								54			28	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**107**			**111**	**1**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21/Lady's Island Drive & Meridian Road

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Thursday, August 24, 2017

AM PEAK HOUR (7:30-8:30 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**3**		**66**				**83**	**927**			**1,364**	**6**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		3				4	42			61	0
2020 NO-BUILD TRAFFIC VOLUMES	**3**		**69**				**87**	**969**			**1,425**	**6**
New Project Traffic			51				27					
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**3**		**120**				**114**	**969**			**1,425**	**6**

PM PEAK HOUR (4:30-5:30 PM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**2**		**93**				**79**	**1,324**			**993**	**4**
Years To Buildout (2020)	3		3				3	3			3	3
Yearly Growth Rate	1.5%		1.5%				1.5%	1.5%			1.5%	1.5%
Background Traffic Growth	0		4				4	60			45	0
2020 NO-BUILD TRAFFIC VOLUMES	**2**		**97**				**83**	**1,384**			**1,038**	**4**
New Project Traffic			28				54					
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**2**		**125**				**137**	**1,384**			**1,038**	**4**

APPENDIX D

Synchro Analysis Worksheets (2017 Existing Conditions)

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	609	50	30	980	1	47	0	35	0	0	0
Future Vol, veh/h	0	609	50	30	980	1	47	0	35	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	628	52	31	1010	1	48	0	36	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1011	0	0	679	0	0	1727	1727	654	1745	1752	1011
Stage 1	-	-	-	-	-	-	654	654	-	1073	1073	-
Stage 2	-	-	-	-	-	-	1073	1073	-	672	679	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	686	-	-	913	-	-	70	89	467	68	85	291
Stage 1	-	-	-	-	-	-	456	463	-	267	297	-
Stage 2	-	-	-	-	-	-	267	297	-	445	451	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	686	-	-	913	-	-	68	86	467	61	82	291
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	86	-	61	82	-
Stage 1	-	-	-	-	-	-	456	463	-	267	287	-
Stage 2	-	-	-	-	-	-	258	287	-	411	451	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	110.5	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	686	-	-	913	-	-	-
HCM Lane V/C Ratio	0.79	-	-	-	0.034	-	-	-
HCM Control Delay (s)	110.5	0	-	-	9.1	-	-	0
HCM Lane LOS	F	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	4.4	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	2	0	0	0	2	87	2	1	78	1
Future Vol, veh/h	4	0	2	0	0	0	2	87	2	1	78	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	2	0	0	0	2	97	2	1	87	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	191	192	87	193	192	98	88	0	0	99	0	0
Stage 1	89	89	-	102	102	-	-	-	-	-	-	-
Stage 2	102	103	-	91	90	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	760	696	961	767	703	958	1508	-	-	1494	-	-
Stage 1	909	813	-	904	811	-	-	-	-	-	-	-
Stage 2	894	802	-	916	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	759	695	961	764	702	958	1508	-	-	1494	-	-
Mov Cap-2 Maneuver	759	695	-	764	702	-	-	-	-	-	-	-
Stage 1	908	812	-	903	810	-	-	-	-	-	-	-
Stage 2	893	801	-	913	819	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	0	0.2	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	816	-	1494	-	-
HCM Lane V/C Ratio	0.001	-	-	0.008	-	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.4	0	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	3	89	79	0
Future Vol, veh/h	1	1	3	89	79	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	1	1	4	109	96	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	212	96	96	0	-	0
Stage 1	96	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	767	950	1498	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	765	950	1498	-	-	-
Mov Cap-2 Maneuver	765	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	848	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

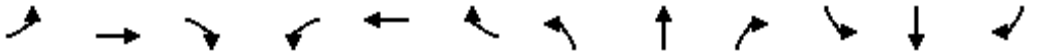
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	66	83	927	1364	6
Future Vol, veh/h	3	66	83	927	1364	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	71	89	997	1467	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2147	737	1473	0	-	0
Stage 1	1470	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	41	361	454	-	-	-
Stage 1	178	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	33	361	454	-	-	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	178	-	-	-	-	-
Stage 2	375	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	1.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	454	-	252	-	-
HCM Lane V/C Ratio	0.197	-	0.294	-	-
HCM Control Delay (s)	14.9	-	25.1	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	1.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	4	147	0	0	0	272	764	4	2	501	7
Future Volume (veh/h)	15	4	147	0	0	0	272	764	4	2	501	7
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	17	4	163				302	849	4	2	557	8
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	165	39	296				613	1443	7	31	1213	1032
Arrive On Green	0.11	0.11	0.11				0.07	0.78	0.78	0.65	0.65	0.65
Sat Flow, veh/h	1449	341	1583				1774	1852	9	1	1860	1583
Grp Volume(v), veh/h	21	0	163				302	0	853	559	0	8
Grp Sat Flow(s),veh/h/ln	1790	0	1583				1774	0	1861	1861	0	1583
Q Serve(g_s), s	1.3	0.0	11.3				6.4	0.0	22.6	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.3	0.0	11.3				6.4	0.0	22.6	18.0	0.0	0.2
Prop In Lane	0.81		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	204	0	296				613	0	1449	1243	0	1032
V/C Ratio(X)	0.10	0.00	0.55				0.49	0.00	0.59	0.45	0.00	0.01
Avail Cap(c_a), veh/h	388	0	459				711	0	1552	1243	0	1032
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	44.6				7.5	0.0	5.5	10.5	0.0	7.4
Incr Delay (d2), s/veh	0.2	0.0	1.6				0.5	0.0	0.5	1.2	0.0	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
%ile BackOfQ(50%),veh/ln	0.6	0.0	5.1				3.2	0.0	11.6	9.6	0.0	0.1
LnGrp Delay(d),s/veh	48.3	0.0	46.2				7.9	0.0	6.0	11.6	0.0	7.4
LnGrp LOS	D		D				A		A	B		A
Approach Vol, veh/h		184						1155			567	
Approach Delay, s/veh		46.4						6.5			11.6	
Approach LOS		D						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.3	85.0				100.3		20.5
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 79				* 1E2		26.2
Max Q Clear Time (g_c+I1), s	8.4	20.0				24.6		13.3
Green Ext Time (p_c), s	0.4	16.9				17.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.9
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	555	90	202	948	69	75
Future Volume (veh/h)	555	90	202	948	69	75
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	590	96	215	1009	73	80
Adj No. of Lanes	1	0	1	1	1	1
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	1212	197	607	1589	118	105
Arrive On Green	0.77	0.77	0.04	0.85	0.07	0.07
Sat Flow, veh/h	1563	254	1774	1863	1774	1583
Grp Volume(v), veh/h	0	686	215	1009	73	80
Grp Sat Flow(s),veh/h/ln	0	1818	1774	1863	1774	1583
Q Serve(g_s), s	0.0	19.2	3.3	24.4	5.6	7.0
Cycle Q Clear(g_c), s	0.0	19.2	3.3	24.4	5.6	7.0
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1409	607	1589	118	105
V/C Ratio(X)	0.00	0.49	0.35	0.63	0.62	0.76
Avail Cap(c_a), veh/h	0	1409	910	1589	362	323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.7	4.5	3.3	63.9	64.5
Incr Delay (d2), s/veh	0.0	0.4	0.3	1.9	5.2	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.7	1.8	12.9	2.9	3.4
LnGrp Delay(d),s/veh	0.0	6.1	4.8	5.3	69.1	75.1
LnGrp LOS		A	A	A	E	E
Approach Vol, veh/h	686			1224	153	
Approach Delay, s/veh	6.1			5.2	72.2	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	115.0				126.0		14.7
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	30.0	85.0				120.0		28.7
Max Q Clear Time (g_c+I1), s	5.3	21.2				26.4		9.0
Green Ext Time (p_c), s	0.4	33.0				38.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	908	42	40	714	5	40	0	17	2	0	1
Future Vol, veh/h	0	908	42	40	714	5	40	0	17	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	946	44	42	744	5	42	0	18	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	749	0	0	990	0	0	1798	1800	968	1807	1820	746
Stage 1	-	-	-	-	-	-	968	968	-	830	830	-
Stage 2	-	-	-	-	-	-	830	832	-	977	990	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	860	-	-	698	-	-	62	80	308	61	78	413
Stage 1	-	-	-	-	-	-	305	332	-	364	385	-
Stage 2	-	-	-	-	-	-	364	384	-	302	324	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	860	-	-	698	-	-	59	75	308	55	73	413
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	75	-	55	73	-
Stage 1	-	-	-	-	-	-	305	332	-	364	362	-
Stage 2	-	-	-	-	-	-	341	361	-	285	324	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	134.2	53.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	78	860	-	-	698	-	-	77
HCM Lane V/C Ratio	0.761	-	-	-	0.06	-	-	0.041
HCM Control Delay (s)	134.2	0	-	-	10.5	-	-	53.7
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.7	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	0	2	0	1	2	52	0	0	78	4
Future Vol, veh/h	3	0	0	2	0	1	2	52	0	0	78	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	0	2	0	1	2	63	0	0	95	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	167	166	98	166	168	63	100	0	0	63	0	0
Stage 1	98	98	-	68	68	-	-	-	-	-	-	-
Stage 2	69	68	-	98	100	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	788	719	947	798	725	1002	1493	-	-	1540	-	-
Stage 1	899	806	-	942	838	-	-	-	-	-	-	-
Stage 2	931	830	-	908	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	786	718	947	797	724	1002	1493	-	-	1540	-	-
Mov Cap-2 Maneuver	786	718	-	797	724	-	-	-	-	-	-	-
Stage 1	898	806	-	941	837	-	-	-	-	-	-	-
Stage 2	929	829	-	908	812	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9.2	0.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	786	855	1540	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.004	-	-	-
HCM Control Delay (s)	7.4	0	-	9.6	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	51	79	1
Future Vol, veh/h	0	0	0	51	79	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	0	0	0	60	93	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	154	94	94	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	828	952	1500	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	828	952	1500	-	-	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	952	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

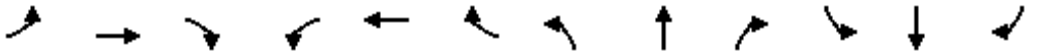
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	93	79	1324	993	4
Future Vol, veh/h	2	93	79	1324	993	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	95	81	1351	1013	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1852	509	1017	0	-	0
Stage 1	1015	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	66	509	678	-	-	-
Stage 1	311	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	58	509	678	-	-	-
Mov Cap-2 Maneuver	58	-	-	-	-	-
Stage 1	311	-	-	-	-	-
Stage 2	339	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	678	-	437	-	-
HCM Lane V/C Ratio	0.119	-	0.222	-	-
HCM Control Delay (s)	11	-	15.6	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.8	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	8	226	0	0	0	178	628	7	2	654	33
Future Volume (veh/h)	46	8	226	0	0	0	178	628	7	2	654	33
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	50	9	246				193	683	8	2	711	36
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	246	44	336				450	1375	16	25	1216	1035
Arrive On Green	0.16	0.16	0.16				0.05	0.75	0.75	0.65	0.65	0.65
Sat Flow, veh/h	1514	273	1583				1774	1837	22	1	1861	1583
Grp Volume(v), veh/h	59	0	246				193	0	691	713	0	36
Grp Sat Flow(s),veh/h/ln	1787	0	1583				1774	0	1859	1862	0	1583
Q Serve(g_s), s	4.2	0.0	21.1				5.0	0.0	21.7	0.0	0.0	1.2
Cycle Q Clear(g_c), s	4.2	0.0	21.1				5.0	0.0	21.7	31.2	0.0	1.2
Prop In Lane	0.85		1.00				1.00		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	290	0	336				450	0	1391	1241	0	1035
V/C Ratio(X)	0.20	0.00	0.73				0.43	0.00	0.50	0.57	0.00	0.03
Avail Cap(c_a), veh/h	347	0	386				551	0	1391	1241	0	1035
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	53.4				11.7	0.0	7.3	14.1	0.0	8.9
Incr Delay (d2), s/veh	0.3	0.0	6.0				0.5	0.0	1.3	1.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	9.8				2.5	0.0	11.4	16.7	0.0	0.5
LnGrp Delay(d),s/veh	53.1	0.0	59.4				12.2	0.0	8.6	16.1	0.0	9.0
LnGrp LOS	D		E				B		A	B		A
Approach Vol, veh/h		305						884			749	
Approach Delay, s/veh		58.2						9.4			15.7	
Approach LOS		E						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.8	101.2				115.0		30.4
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 87				* 1.1E2		28.2
Max Q Clear Time (g_c+I1), s	7.0	33.2				23.7		23.1
Green Ext Time (p_c), s	0.3	16.1				17.2		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	874	26	34	764	61	94
Future Volume (veh/h)	874	26	34	764	61	94
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	993	30	39	868	69	107
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1361	41	367	1544	151	135
Arrive On Green	0.76	0.76	0.03	0.83	0.09	0.09
Sat Flow, veh/h	1799	54	1774	1863	1774	1583
Grp Volume(v), veh/h	0	1023	39	868	69	107
Grp Sat Flow(s),veh/h/ln	0	1853	1774	1863	1774	1583
Q Serve(g_s), s	0.0	39.5	0.6	19.6	4.9	8.7
Cycle Q Clear(g_c), s	0.0	39.5	0.6	19.6	4.9	8.7
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1402	367	1544	151	135
V/C Ratio(X)	0.00	0.73	0.11	0.56	0.46	0.79
Avail Cap(c_a), veh/h	0	1402	481	1544	401	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.7	9.6	3.6	57.3	59.0
Incr Delay (d2), s/veh	0.0	2.1	0.1	1.5	2.2	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.7	0.5	10.5	2.5	4.2
LnGrp Delay(d),s/veh	0.0	10.8	9.7	5.1	59.4	69.1
LnGrp LOS		B	A	A	E	E
Approach Vol, veh/h	1023			907	176	
Approach Delay, s/veh	10.8			5.3	65.3	
Approach LOS	B			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.6	105.4				115.0		16.5
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	13.6	91.0				109.0		29.7
Max Q Clear Time (g_c+I1), s	2.6	41.5				21.6		10.7
Green Ext Time (p_c), s	0.0	33.5				46.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

APPENDIX E

Synchro Analysis Worksheets (2020 No-Build Conditions)

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	636	52	31	1024	1	49	0	37	0	0	0
Future Vol, veh/h	0	636	52	31	1024	1	49	0	37	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	669	55	33	1078	1	52	0	39	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1079	0	0	724	0	0	1841	1841	697	1860	1868	1078
Stage 1	-	-	-	-	-	-	697	697	-	1144	1144	-
Stage 2	-	-	-	-	-	-	1144	1144	-	716	724	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	646	-	-	879	-	-	58	75	441	56	72	266
Stage 1	-	-	-	-	-	-	431	443	-	243	275	-
Stage 2	-	-	-	-	-	-	243	275	-	421	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	646	-	-	879	-	-	56	72	441	50	69	266
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	72	-	50	69	-
Stage 1	-	-	-	-	-	-	431	443	-	243	265	-
Stage 2	-	-	-	-	-	-	234	265	-	384	430	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	180.9	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	90	646	-	-	879	-	-	-
HCM Lane V/C Ratio	1.006	-	-	-	0.037	-	-	-
HCM Control Delay (s)	180.9	0	-	-	9.3	-	-	0
HCM Lane LOS	F	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	5.9	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	2	0	0	0	2	91	2	1	82	1
Future Vol, veh/h	4	0	2	0	0	0	2	91	2	1	82	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	2	0	0	0	2	101	2	1	91	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	201	202	92	202	201	102	92	0	0	103	0	0
Stage 1	94	94	-	107	107	-	-	-	-	-	-	-
Stage 2	107	108	-	95	94	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	749	687	954	756	695	953	1503	-	-	1489	-	-
Stage 1	903	809	-	898	807	-	-	-	-	-	-	-
Stage 2	889	798	-	912	817	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	748	686	954	753	694	953	1503	-	-	1489	-	-
Mov Cap-2 Maneuver	748	686	-	753	694	-	-	-	-	-	-	-
Stage 1	902	808	-	897	806	-	-	-	-	-	-	-
Stage 2	888	797	-	909	816	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	0	0.2	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	806	-	1489	-	-
HCM Lane V/C Ratio	0.001	-	-	0.008	-	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.5	0	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	3	93	83	0
Future Vol, veh/h	1	1	3	93	83	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	1	1	3	103	92	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	202	92	92	0	-	0
Stage 1	92	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	778	954	1503	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	776	954	1503	-	-	-
Mov Cap-2 Maneuver	776	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	856	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

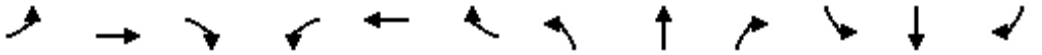
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	69	87	969	1425	6
Future Vol, veh/h	3	69	87	969	1425	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	74	94	1042	1532	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2243	769	1539	0	-	0
Stage 1	1535	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	36	344	428	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	28	344	428	-	-	-
Mov Cap-2 Maneuver	28	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	350	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.8	1.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	428	-	234	-	-
HCM Lane V/C Ratio	0.219	-	0.331	-	-
HCM Control Delay (s)	15.7	-	27.8	-	-
HCM Lane LOS	C	-	D	-	-
HCM 95th %tile Q(veh)	0.8	-	1.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	4	154	0	0	0	284	798	4	2	524	7
Future Volume (veh/h)	16	4	154	0	0	0	284	798	4	2	524	7
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	18	4	171				316	887	4	2	582	8
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	173	38	308				593	1437	6	30	1201	1023
Arrive On Green	0.12	0.12	0.12				0.08	0.78	0.78	0.65	0.65	0.65
Sat Flow, veh/h	1464	325	1583				1774	1853	8	1	1860	1583
Grp Volume(v), veh/h	22	0	171				316	0	891	584	0	8
Grp Sat Flow(s),veh/h/ln	1790	0	1583				1774	0	1861	1861	0	1583
Q Serve(g_s), s	1.3	0.0	11.9				6.9	0.0	25.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.3	0.0	11.9				6.9	0.0	25.1	19.7	0.0	0.2
Prop In Lane	0.82		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	211	0	308				593	0	1444	1231	0	1023
V/C Ratio(X)	0.10	0.00	0.56				0.53	0.00	0.62	0.47	0.00	0.01
Avail Cap(c_a), veh/h	384	0	461				683	0	1538	1231	0	1023
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	44.4				8.2	0.0	5.9	11.1	0.0	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.6				0.6	0.0	0.7	1.3	0.0	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
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.3				3.4	0.0	12.9	10.5	0.0	0.1
LnGrp Delay(d),s/veh	48.3	0.0	46.0				8.8	0.0	6.6	12.5	0.0	7.7
LnGrp LOS	D		D				A		A	B		A
Approach Vol, veh/h		193						1207			592	
Approach Delay, s/veh		46.2						7.2			12.4	
Approach LOS		D						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.8	85.0				100.8		21.2
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 79				* 1E2		26.2
Max Q Clear Time (g_c+I1), s	8.9	21.7				27.1		13.9
Green Ext Time (p_c), s	0.4	18.3				19.2		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	580	94	211	991	72	78
Future Volume (veh/h)	580	94	211	991	72	78
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	617	100	224	1054	77	83
Adj No. of Lanes	1	0	1	1	1	1
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	1210	196	584	1586	122	109
Arrive On Green	0.77	0.77	0.04	0.85	0.07	0.07
Sat Flow, veh/h	1564	254	1774	1863	1774	1583
Grp Volume(v), veh/h	0	717	224	1054	77	83
Grp Sat Flow(s),veh/h/ln	0	1818	1774	1863	1774	1583
Q Serve(g_s), s	0.0	20.8	3.5	27.3	6.0	7.3
Cycle Q Clear(g_c), s	0.0	20.8	3.5	27.3	6.0	7.3
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1406	584	1586	122	109
V/C Ratio(X)	0.00	0.51	0.38	0.66	0.63	0.76
Avail Cap(c_a), veh/h	0	1406	886	1586	361	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	5.0	3.6	63.9	64.5
Incr Delay (d2), s/veh	0.0	0.4	0.3	2.2	5.3	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.5	2.0	14.7	3.1	3.5
LnGrp Delay(d),s/veh	0.0	6.4	5.3	5.8	69.3	75.1
LnGrp LOS		A	A	A	E	E
Approach Vol, veh/h	717			1278	160	
Approach Delay, s/veh	6.4			5.7	72.3	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	115.0				126.0		15.0
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	30.0	85.0				120.0		28.7
Max Q Clear Time (g_c+I1), s	5.5	22.8				29.3		9.3
Green Ext Time (p_c), s	0.4	35.5				42.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	949	44	42	746	5	42	0	18	2	0	1
Future Vol, veh/h	0	949	44	42	746	5	42	0	18	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	999	46	44	785	5	44	0	19	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	791	0	0	1045	0	0	1899	1901	1022	1908	1921	788
Stage 1	-	-	-	-	-	-	1022	1022	-	876	876	-
Stage 2	-	-	-	-	-	-	877	879	-	1032	1045	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	829	-	-	666	-	-	53	69	287	52	67	391
Stage 1	-	-	-	-	-	-	285	313	-	344	367	-
Stage 2	-	-	-	-	-	-	343	365	-	281	306	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	829	-	-	666	-	-	50	64	287	46	63	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	50	64	-	46	63	-
Stage 1	-	-	-	-	-	-	285	313	-	344	343	-
Stage 2	-	-	-	-	-	-	319	341	-	262	306	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	203.4	63.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	66	829	-	-	666	-	-	65
HCM Lane V/C Ratio	0.957	-	-	-	0.066	-	-	0.049
HCM Control Delay (s)	203.4	0	-	-	10.8	-	-	63.2
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.7	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	0	2	0	1	2	54	0	0	82	4
Future Vol, veh/h	3	0	0	2	0	1	2	54	0	0	82	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	0	2	0	1	2	60	0	0	91	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	158	157	93	157	160	60	96	0	0	60	0	0
Stage 1	93	93	-	64	64	-	-	-	-	-	-	-
Stage 2	65	64	-	93	96	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	799	728	953	809	732	1005	1498	-	-	1544	-	-
Stage 1	904	810	-	947	842	-	-	-	-	-	-	-
Stage 2	936	834	-	914	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	798	727	953	808	731	1005	1498	-	-	1544	-	-
Mov Cap-2 Maneuver	798	727	-	808	731	-	-	-	-	-	-	-
Stage 1	903	810	-	946	841	-	-	-	-	-	-	-
Stage 2	934	833	-	914	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.2	0.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	798	864	1544	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.004	-	-	-
HCM Control Delay (s)	7.4	0	-	9.5	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	53	83	1
Future Vol, veh/h	0	0	0	53	83	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	0	0	0	59	92	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	152	93	93	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	830	953	1501	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	830	953	1501	-	-	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	953	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1501	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

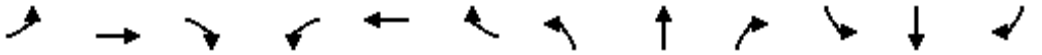
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	97	83	1384	1038	4
Future Vol, veh/h	2	97	83	1384	1038	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	102	87	1457	1093	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1998	548	1097	0	-	0
Stage 1	1095	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	52	480	632	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	45	480	632	-	-	-
Mov Cap-2 Maneuver	45	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	307	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	632	-	402	-	-
HCM Lane V/C Ratio	0.138	-	0.259	-	-
HCM Control Delay (s)	11.6	-	17.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	8	236	0	0	0	186	656	7	2	683	34
Future Volume (veh/h)	48	8	236	0	0	0	186	656	7	2	683	34
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	52	9	257				202	713	8	2	742	37
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	256	44	349				426	1366	15	25	1203	1023
Arrive On Green	0.17	0.17	0.17				0.05	0.74	0.74	0.65	0.65	0.65
Sat Flow, veh/h	1523	264	1583				1774	1838	21	1	1861	1583
Grp Volume(v), veh/h	61	0	257				202	0	721	744	0	37
Grp Sat Flow(s),veh/h/ln	1787	0	1583				1774	0	1859	1862	0	1583
Q Serve(g_s), s	4.3	0.0	22.1				5.4	0.0	23.8	0.0	0.0	1.2
Cycle Q Clear(g_c), s	4.3	0.0	22.1				5.4	0.0	23.8	34.4	0.0	1.2
Prop In Lane	0.85		1.00				1.00		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	300	0	349				426	0	1382	1228	0	1023
V/C Ratio(X)	0.20	0.00	0.74				0.47	0.00	0.52	0.61	0.00	0.04
Avail Cap(c_a), veh/h	344	0	388				521	0	1382	1228	0	1023
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	53.1				13.2	0.0	7.9	15.2	0.0	9.4
Incr Delay (d2), s/veh	0.3	0.0	6.4				0.6	0.0	1.4	2.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	10.3				2.9	0.0	12.6	18.3	0.0	0.6
LnGrp Delay(d),s/veh	52.8	0.0	59.5				13.8	0.0	9.3	17.5	0.0	9.4
LnGrp LOS	D		E				B		A	B		A
Approach Vol, veh/h		318						923			781	
Approach Delay, s/veh		58.3						10.3			17.1	
Approach LOS		E						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.2	100.8				115.0		31.4
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 87				* 1.1E2		28.2
Max Q Clear Time (g_c+I1), s	7.4	36.4				25.8		24.1
Green Ext Time (p_c), s	0.3	17.2				18.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	913	27	36	798	64	98
Future Volume (veh/h)	913	27	36	798	64	98
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1014	30	40	887	71	109
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1359	40	353	1542	153	137
Arrive On Green	0.75	0.75	0.04	0.83	0.09	0.09
Sat Flow, veh/h	1800	53	1774	1863	1774	1583
Grp Volume(v), veh/h	0	1044	40	887	71	109
Grp Sat Flow(s),veh/h/ln	0	1853	1774	1863	1774	1583
Q Serve(g_s), s	0.0	41.6	0.6	20.6	5.0	8.9
Cycle Q Clear(g_c), s	0.0	41.6	0.6	20.6	5.0	8.9
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1399	353	1542	153	137
V/C Ratio(X)	0.00	0.75	0.11	0.58	0.46	0.80
Avail Cap(c_a), veh/h	0	1399	466	1542	400	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	10.4	3.7	57.2	59.0
Incr Delay (d2), s/veh	0.0	2.4	0.1	1.6	2.2	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	21.8	0.5	11.0	2.6	4.3
LnGrp Delay(d),s/veh	0.0	11.5	10.5	5.3	59.4	69.1
LnGrp LOS		B	B	A	E	E
Approach Vol, veh/h	1044			927	180	
Approach Delay, s/veh	11.5			5.5	65.3	
Approach LOS	B			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.6	105.4				115.0		16.7
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	13.6	91.0				109.0		29.7
Max Q Clear Time (g_c+I1), s	2.6	43.6				22.6		10.9
Green Ext Time (p_c), s	0.0	33.5				48.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

APPENDIX F

Synchro Analysis Worksheets (2020 Build Conditions)

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	682	27	16	1085	26	31
Future Vol, veh/h	682	27	16	1085	26	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
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	758	30	18	1206	29	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	788	0	2014	773
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	1241	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	831	-	65	399
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	273	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	831	-	64	399
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	267	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	257	-	-	831	-
HCM Lane V/C Ratio	0.246	-	-	0.021	-
HCM Control Delay (s)	23.5	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	29.5

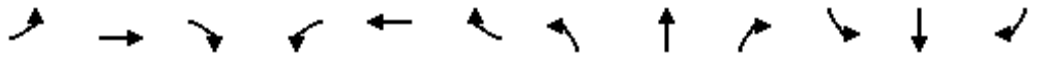
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	653	59	47	1028	1	73	0	59	0	0	0
Future Vol, veh/h	0	653	59	47	1028	1	73	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	687	62	49	1082	1	77	0	62	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1083	0	0	749	0	0	1900	1900	718	1931	1931	1083
Stage 1	-	-	-	-	-	-	718	718	-	1182	1182	-
Stage 2	-	-	-	-	-	-	1182	1182	-	749	749	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	644	-	-	860	-	-	~ 53	69	429	50	66	264
Stage 1	-	-	-	-	-	-	420	433	-	231	263	-
Stage 2	-	-	-	-	-	-	231	263	-	404	419	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	644	-	-	860	-	-	~ 51	65	429	41	62	264
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 51	65	-	41	62	-
Stage 1	-	-	-	-	-	-	420	433	-	231	248	-
Stage 2	-	-	-	-	-	-	218	248	-	346	419	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	$ 426.5	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	84	644	-	-	860	-	-	-
HCM Lane V/C Ratio	1.654	-	-	-	0.058	-	-	-
HCM Control Delay (s)	$ 426.5	0	-	-	9.4	-	-	0
HCM Lane LOS	F	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	11.4	0	-	-	0.2	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	653	59	47	1028	1	73	0	59	0	0	0
Future Volume (veh/h)	0	653	59	47	1028	1	73	0	59	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	687	62	49	1082	1	77	0	62	0	0	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	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	49	1373	124	537	1517	1	123	5	72	0	201	0
Arrive On Green	0.00	0.82	0.82	0.82	0.82	0.82	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	519	1684	152	710	1861	2	785	43	667	0	1863	0
Grp Volume(v), veh/h	0	0	749	49	0	1083	139	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	519	0	1836	710	0	1862	1494	0	0	0	1863	0
Q Serve(g_s), s	0.0	0.0	18.8	3.4	0.0	37.8	12.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	18.8	22.2	0.0	37.8	13.4	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.00	0.55		0.45	0.00		0.00
Lane Grp Cap(c), veh/h	49	0	1497	537	0	1518	200	0	0	0	201	0
V/C Ratio(X)	0.00	0.00	0.50	0.09	0.00	0.71	0.70	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	49	0	1497	537	0	1518	328	0	0	0	363	0
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)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	4.2	7.7	0.0	6.0	64.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.3	0.0	2.9	4.3	0.0	0.0	0.0	0.0	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	0.0	0.0	9.5	0.7	0.0	20.2	5.8	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	4.5	8.0	0.0	8.9	68.8	0.0	0.0	0.0	0.0	0.0
LnGrp LOS			A	A		A	E					
Approach Vol, veh/h		749			1132			139			0	
Approach Delay, s/veh		4.5			8.9			68.8			0.0	
Approach LOS		A			A			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		126.0		21.2		126.0		21.2
Change Period (Y+Rc), s		6.0		* 5.3		6.0		* 5.3
Max Green Setting (Gmax), s		85.0		* 29		120.0		* 29
Max Q Clear Time (g_c+I1), s		20.8		0.0		39.8		15.4
Green Ext Time (p_c), s		26.1		0.0		27.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	51	27	95	84	23
Future Vol, veh/h	46	51	27	95	84	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	51	57	30	106	93	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	272	106	119	0	-	0
Stage 1	106	-	-	-	-	-
Stage 2	166	-	-	-	-	-
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	717	948	1469	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	701	948	1469	-	-	-
Mov Cap-2 Maneuver	701	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	812	-	-
HCM Lane V/C Ratio	0.02	-	0.133	-	-
HCM Control Delay (s)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	2	0	0	0	2	118	2	1	133	1
Future Vol, veh/h	4	0	2	0	0	0	2	118	2	1	133	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	2	0	0	0	2	131	2	1	148	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	288	289	148	289	288	132	149	0	0	133	0	0
Stage 1	151	151	-	137	137	-	-	-	-	-	-	-
Stage 2	137	138	-	152	151	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	656	614	888	663	622	917	1432	-	-	1452	-	-
Stage 1	842	765	-	866	783	-	-	-	-	-	-	-
Stage 2	857	775	-	850	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	655	612	888	660	620	917	1432	-	-	1452	-	-
Mov Cap-2 Maneuver	655	612	-	660	620	-	-	-	-	-	-	-
Stage 1	840	764	-	864	781	-	-	-	-	-	-	-
Stage 2	855	773	-	847	771	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	0	0.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1432	-	-	718	-	1452	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	-	0.001	-	-
HCM Control Delay (s)	7.5	0	-	10.1	0	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	3	120	134	0
Future Vol, veh/h	1	1	3	120	134	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	1	1	3	133	149	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	289	149	149	0	-	0
Stage 1	149	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	693	887	1432	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	692	887	1432	-	-	-
Mov Cap-2 Maneuver	692	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1432	-	777	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

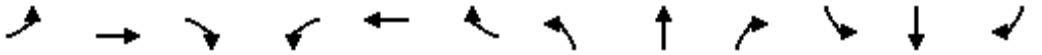
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	120	114	969	1425	6
Future Vol, veh/h	3	120	114	969	1425	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	129	123	1042	1532	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2301	769	1539	0	-	0
Stage 1	1535	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	32	344	428	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	344	428	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33	1.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	428	-	257	-	-
HCM Lane V/C Ratio	0.286	-	0.515	-	-
HCM Control Delay (s)	16.8	-	33	-	-
HCM Lane LOS	C	-	D	-	-
HCM 95th %tile Q(veh)	1.2	-	2.7	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	4	161	0	0	0	297	824	4	2	537	7
Future Volume (veh/h)	16	4	161	0	0	0	297	824	4	2	537	7
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	18	4	179				330	916	4	2	597	8
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	179	40	320				581	1432	6	30	1190	1013
Arrive On Green	0.12	0.12	0.12				0.08	0.77	0.77	0.64	0.64	0.64
Sat Flow, veh/h	1464	325	1583				1774	1853	8	1	1860	1583
Grp Volume(v), veh/h	22	0	179				330	0	920	599	0	8
Grp Sat Flow(s),veh/h/ln	1790	0	1583				1774	0	1861	1861	0	1583
Q Serve(g_s), s	1.3	0.0	12.5				7.4	0.0	27.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.3	0.0	12.5				7.4	0.0	27.4	21.0	0.0	0.2
Prop In Lane	0.82		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	218	0	320				581	0	1438	1220	0	1013
V/C Ratio(X)	0.10	0.00	0.56				0.57	0.00	0.64	0.49	0.00	0.01
Avail Cap(c_a), veh/h	381	0	463				662	0	1523	1220	0	1013
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	44.2				8.9	0.0	6.3	11.8	0.0	8.0
Incr Delay (d2), s/veh	0.2	0.0	1.5				0.7	0.0	0.8	1.4	0.0	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
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.6				3.7	0.0	14.1	11.1	0.0	0.1
LnGrp Delay(d),s/veh	48.3	0.0	45.8				9.6	0.0	7.1	13.2	0.0	8.1
LnGrp LOS	D		D				A		A	B		A
Approach Vol, veh/h		201						1250			607	
Approach Delay, s/veh		46.0						7.8			13.1	
Approach LOS		D						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.4	85.0				101.4		21.8
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 79				* 1E2		26.2
Max Q Clear Time (g_c+I1), s	9.4	23.0				29.4		14.5
Green Ext Time (p_c), s	0.4	19.4				20.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	619	94	211	1011	72	78
Future Volume (veh/h)	619	94	211	1011	72	78
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	659	100	224	1076	77	83
Adj No. of Lanes	1	0	1	1	1	1
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	1222	185	556	1586	122	109
Arrive On Green	0.77	0.77	0.04	0.85	0.07	0.07
Sat Flow, veh/h	1581	240	1774	1863	1774	1583
Grp Volume(v), veh/h	0	759	224	1076	77	83
Grp Sat Flow(s),veh/h/ln	0	1820	1774	1863	1774	1583
Q Serve(g_s), s	0.0	22.9	3.5	28.7	6.0	7.3
Cycle Q Clear(g_c), s	0.0	22.9	3.5	28.7	6.0	7.3
Prop In Lane		0.13	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1408	556	1586	122	109
V/C Ratio(X)	0.00	0.54	0.40	0.68	0.63	0.76
Avail Cap(c_a), veh/h	0	1408	858	1586	361	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.2	5.5	3.7	63.9	64.5
Incr Delay (d2), s/veh	0.0	0.5	0.3	2.4	5.3	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.6	2.3	15.4	3.1	3.5
LnGrp Delay(d),s/veh	0.0	6.8	5.9	6.1	69.3	75.1
LnGrp LOS		A	A	A	E	E
Approach Vol, veh/h	759			1300	160	
Approach Delay, s/veh	6.8			6.0	72.3	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	115.0				126.0		15.0
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	30.0	85.0				120.0		28.7
Max Q Clear Time (g_c+I1), s	5.5	24.9				30.7		9.3
Green Ext Time (p_c), s	0.4	36.9				45.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	993	40	25	794	15	19
Future Vol, veh/h	993	40	25	794	15	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
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	1103	44	28	882	17	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1148	0	2064	1126
Stage 1	-	-	-	-	1126	-
Stage 2	-	-	-	-	938	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	609	-	60	249
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	381	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	609	-	57	249
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	25.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	609	-
HCM Lane V/C Ratio	0.178	-	-	0.046	-
HCM Control Delay (s)	25.6	-	-	11.2	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	18.8

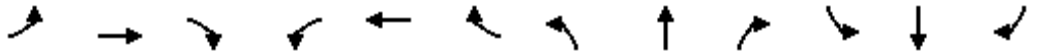
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	958	54	66	762	5	56	0	30	2	0	1
Future Vol, veh/h	0	958	54	66	762	5	56	0	30	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	300	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1008	57	69	802	5	59	0	32	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	807	0	0	1065	0	0	1981	1983	1037	1997	2009	805
Stage 1	-	-	-	-	-	-	1037	1037	-	944	944	-
Stage 2	-	-	-	-	-	-	944	946	-	1053	1065	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	818	-	-	654	-	-	~ 46	61	281	45	59	382
Stage 1	-	-	-	-	-	-	279	308	-	315	341	-
Stage 2	-	-	-	-	-	-	315	340	-	274	299	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	818	-	-	654	-	-	~ 42	55	281	37	53	382
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 42	55	-	37	53	-
Stage 1	-	-	-	-	-	-	279	308	-	315	305	-
Stage 2	-	-	-	-	-	-	281	304	-	243	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	$ 411.5	77.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	60	818	-	-	654	-	-	53
HCM Lane V/C Ratio	1.509	-	-	-	0.106	-	-	0.06
HCM Control Delay (s)	$ 411.5	0	-	-	11.2	-	-	77.2
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	8	0	-	-	0.4	-	-	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	958	54	66	762	5	56	0	30	2	0	1
Future Volume (veh/h)	0	958	54	66	762	5	56	0	30	2	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	0	1008	57	69	802	5	59	0	32	2	0	1
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	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	55	1462	83	380	1548	10	114	4	40	115	9	39
Arrive On Green	0.00	0.84	0.84	0.84	0.84	0.84	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	672	1747	99	528	1849	12	905	55	521	902	118	510
Grp Volume(v), veh/h	0	0	1065	69	0	807	91	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	672	0	1845	528	0	1861	1481	0	0	1530	0	0
Q Serve(g_s), s	0.0	0.0	28.9	7.5	0.0	16.2	7.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.9	36.5	0.0	16.2	7.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.65		0.35	0.67		0.33
Lane Grp Cap(c), veh/h	55	0	1545	380	0	1558	158	0	0	162	0	0
V/C Ratio(X)	0.00	0.00	0.69	0.18	0.00	0.52	0.58	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	55	0	1545	380	0	1558	381	0	0	381	0	0
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)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	4.1	11.1	0.0	3.0	59.2	0.0	0.0	55.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	1.0	0.0	1.2	3.3	0.0	0.0	0.0	0.0	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	0.0	0.0	15.1	1.2	0.0	8.6	3.4	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	5.4	12.2	0.0	4.3	62.4	0.0	0.0	55.7	0.0	0.0
LnGrp LOS			A	B		A	E			E		
Approach Vol, veh/h		1065			876			91			3	
Approach Delay, s/veh		5.4			4.9			62.4			55.7	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		115.0		15.2		115.0		15.2
Change Period (Y+Rc), s		6.0		* 5.3		6.0		* 5.3
Max Green Setting (Gmax), s		109.0		* 30		109.0		* 30
Max Q Clear Time (g_c+I1), s		30.9		2.2		38.5		9.9
Green Ext Time (p_c), s		30.0		0.5		29.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	28	54	59	86	34
Future Vol, veh/h	26	28	54	59	86	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	29	31	60	66	96	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	300	114	133	0	-	0
Stage 1	114	-	-	-	-	-
Stage 2	186	-	-	-	-	-
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	691	939	1452	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	661	939	1452	-	-	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	3.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1452	-	781	-	-
HCM Lane V/C Ratio	0.041	-	0.077	-	-
HCM Control Delay (s)	7.6	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	0	2	0	1	2	108	0	0	110	4
Future Vol, veh/h	3	0	0	2	0	1	2	108	0	0	110	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	0	2	0	1	2	120	0	0	122	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	249	248	124	248	251	120	127	0	0	120	0	0
Stage 1	124	124	-	124	124	-	-	-	-	-	-	-
Stage 2	125	124	-	124	127	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	696	648	916	706	652	931	1459	-	-	1468	-	-
Stage 1	870	786	-	880	793	-	-	-	-	-	-	-
Stage 2	869	786	-	880	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	695	647	916	705	651	931	1459	-	-	1468	-	-
Mov Cap-2 Maneuver	695	647	-	705	651	-	-	-	-	-	-	-
Stage 1	869	786	-	879	792	-	-	-	-	-	-	-
Stage 2	867	785	-	880	791	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.7	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1459	-	-	695	767	1468	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.004	-	-	-
HCM Control Delay (s)	7.5	0	-	10.2	9.7	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	107	111	1
Future Vol, veh/h	0	0	0	107	111	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	6	2	2	2	2
Mvmt Flow	0	0	0	119	123	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	243	124	124	0	-	0
Stage 1	124	-	-	-	-	-
Stage 2	119	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	737	916	1463	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	737	916	1463	-	-	-
Mov Cap-2 Maneuver	737	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	896	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

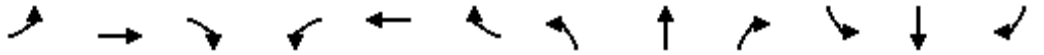
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	125	137	1384	1038	4
Future Vol, veh/h	2	125	137	1384	1038	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	132	144	1457	1093	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2112	548	1097	0	-	0
Stage 1	1095	-	-	-	-	-
Stage 2	1017	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	44	480	632	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	34	480	632	-	-	-
Mov Cap-2 Maneuver	34	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	239	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	632	-	398	-	-
HCM Lane V/C Ratio	0.228	-	0.336	-	-
HCM Control Delay (s)	12.4	-	18.6	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.9	-	1.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	8	249	0	0	0	193	670	7	2	710	34
Future Volume (veh/h)	48	8	249	0	0	0	193	670	7	2	710	34
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	52	9	271				210	728	8	2	772	37
Adj No. of Lanes	0	1	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	267	46	364				402	1355	15	25	1187	1010
Arrive On Green	0.18	0.18	0.18				0.05	0.74	0.74	0.64	0.64	0.64
Sat Flow, veh/h	1523	264	1583				1774	1839	20	1	1861	1583
Grp Volume(v), veh/h	61	0	271				210	0	736	774	0	37
Grp Sat Flow(s),veh/h/ln	1787	0	1583				1774	0	1859	1862	0	1583
Q Serve(g_s), s	4.3	0.0	23.5				5.8	0.0	25.5	0.0	0.0	1.3
Cycle Q Clear(g_c), s	4.3	0.0	23.5				5.8	0.0	25.5	38.0	0.0	1.3
Prop In Lane	0.85		1.00				1.00		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	313	0	364				402	0	1370	1212	0	1010
V/C Ratio(X)	0.20	0.00	0.74				0.52	0.00	0.54	0.64	0.00	0.04
Avail Cap(c_a), veh/h	341	0	389				491	0	1370	1212	0	1010
HCM Platoon Ratio	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	0.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	52.8				15.1	0.0	8.5	16.5	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	7.1				0.8	0.0	1.5	2.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.0				3.4	0.0	13.5	20.2	0.0	0.6
LnGrp Delay(d),s/veh	52.3	0.0	60.0				15.9	0.0	10.0	19.1	0.0	10.0
LnGrp LOS	D		E				B		A	B		A
Approach Vol, veh/h		332						946			811	
Approach Delay, s/veh		58.6						11.3			18.7	
Approach LOS		E						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.6	100.4				115.0		32.6
Change Period (Y+Rc), s	6.5	* 6.2				* 6.2		6.8
Max Green Setting (Gmax), s	15.5	* 87				* 1.1E2		28.2
Max Q Clear Time (g_c+I1), s	7.8	40.0				27.5		25.5
Green Ext Time (p_c), s	0.3	17.8				20.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	934	27	36	838	64	98
Future Volume (veh/h)	934	27	36	838	64	98
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1038	30	40	931	71	109
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1360	39	339	1542	153	137
Arrive On Green	0.75	0.75	0.04	0.83	0.09	0.09
Sat Flow, veh/h	1801	52	1774	1863	1774	1583
Grp Volume(v), veh/h	0	1068	40	931	71	109
Grp Sat Flow(s),veh/h/ln	0	1854	1774	1863	1774	1583
Q Serve(g_s), s	0.0	43.9	0.6	22.6	5.0	8.9
Cycle Q Clear(g_c), s	0.0	43.9	0.6	22.6	5.0	8.9
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1399	339	1542	153	137
V/C Ratio(X)	0.00	0.76	0.12	0.60	0.46	0.80
Avail Cap(c_a), veh/h	0	1399	452	1542	400	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.3	11.2	3.9	57.2	59.0
Incr Delay (d2), s/veh	0.0	2.7	0.1	1.8	2.2	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	23.0	0.6	12.1	2.6	4.3
LnGrp Delay(d),s/veh	0.0	12.1	11.3	5.7	59.4	69.1
LnGrp LOS		B	B	A	E	E
Approach Vol, veh/h	1068			971	180	
Approach Delay, s/veh	12.1			5.9	65.3	
Approach LOS	B			A	E	

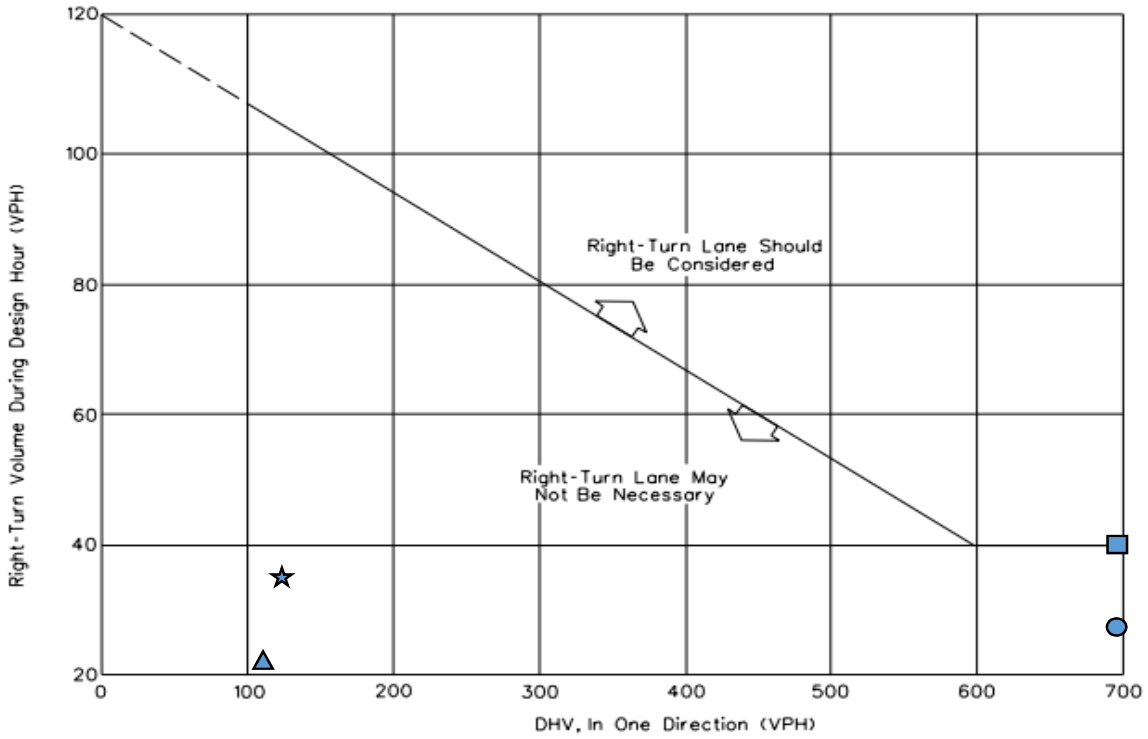
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.6	105.4				115.0		16.7
Change Period (Y+Rc), s	5.0	6.0				6.0		5.3
Max Green Setting (Gmax), s	13.6	91.0				109.0		29.7
Max Q Clear Time (g_c+I1), s	2.6	45.9				24.6		10.9
Green Ext Time (p_c), s	0.0	33.8				51.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

APPENDIX G

Turn-Lane Analysis Worksheet

May 2003 INTERSECTIONS 15.5(3)



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.

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

Figure 15.5A

FUTURE-YEAR SCENARIO: 2020 Build Conditions

Movement & Intersection	SCENARIO	Design Hour Volume	Right Turn Volume	Symbol
EBR @ US 21 Business/Sea Island Parkway & North Project Driveway	AM Build	709	27	●
	PM Build	1033	40	■
SBR @ Meridian Road & South Project Driveway	AM Build	107	23	▲
	PM Build	120	34	★

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