BEAUFORT–PORT ROYAL
METROPOLITAN PLANNING COMMISSION
AGENDA

1911 Boundary Street, Beaufort, SC 29902
Phone: 843-525-7011 ~ Fax: 843-986-5606

Monday, July 20, 2020, 5:00 P.M.

~~**City Hall, Planning Conference Room – 1911 Boundary Street, Beaufort, SC**~~

Please click the link below to join the webinar:
https://us02web.zoom.us/j/89376000812?pwd=V3QwcUlxczVxSGkxVXpDd0orSmFwQT09
Password: 070925 Meeting ID: 893 7600 0812 Call in Phone #: 1 929 205 6099

STATEMENT OF MEDIA NOTIFICATION: "In accordance with South Carolina Code of Laws, 1976, Section 30-4-80(d), as amended, all local media were duly notified of the time, date, place and agenda of this meeting."

I. Call to Order

II. Pledge of Allegiance

III. Review Commission Meeting Minutes:

A. May 18, 2020 Regular Meeting Minutes

IV. Questions Relating to Military Operations

V. Flight Operations Presentation – Kim Fleming, Director, Government & External Relations

VI. Review of Projects for the City of Beaufort:

A. Salem Farms Sketch Plan. The applicant, Pulte Homes Company, LLC, has requested a major subdivision of approximately 94.94 acres located at Salem Road (Salem Farms Subdivision). The property is further identified as District R120, Map 29, Parcels 105, 105A, 105B, and 105C.

B. Annexation and rezoning of approximately 19 acres at 14 FC Carter Drive. The property is further identified as District R100, Map 29, Parcel 45. The current zoning is Regional Center Mixed-Use. The requested zoning is T4-N. Applicant: Robert Sample for Broad River Place, LLC.

C. Text Amendment. The applicant, Robert Sample for Broad River Place, LLC, has requested an amendment to The Beaufort Code to revise Section 2.6.2.C.1 to reduce the minimum elevation requirement from 2 feet to 12 inches (1 ft.) to make housing products more affordable for the market.

D. Whitehall Sketch Plan. The applicant, Whitehall Point Holdings, LLC, has requested a major subdivision of approximately 10.1 acres located at 4 Harborview Circle (Whitehall) The property is further identified as District R123, Map 14, Parcel 149. The subdivision will result in 2 lots (8.4 ac and 1.6 ac) and no new streets.

E. **Update of Council Actions**

F. **Update of pending applications/status of approved projects.**

VII. Review of Projects for the Town of Port Royal:

A. **Town of Port Royal – Rezoning Request.** Rezone 2.96 acres at 4 Sundown Bend. The property is further identified as District 112, Map 30, Parcel 4. The current zoning is T4 Neighborhood Center. The requested zoning is T4 Neighborhood Center - Open.

B. **Update of Council Actions**

VIII. Review of Projects for Beaufort County:

A. **None**

IX. Adjournment

Note: If you have special needs due to a physical challenge, please call Julie Bachety at (843) 525-7011.

Metropolitan Planning Commission
Meeting Minutes – May 18, 2020

1. CALL TO ORDER 1:28

A meeting of the Metropolitan Planning Commission was held via Zoom on May 18, 2020.

2. ATTENDEES

Attendees included Michael Tomy (Chairman), James Crower (Vice-Chair), Judy Alling, Bill Bardenwerper, Caroline Fermin, and Jason Hincher, city staff, David Prichard and Town of Port Royal Staff, Linda Bridges.

3. NEW BUSINESS 2:11

City of Beaufort Agenda Items:

A. Whitehall Point Holdings, LLC removed their application for approval of a subdivision sketch plan for parcel R123 014 000 0149 0000 (4 Harborview Circle) comprising approximately 10.01 acres and situated across the Beaufort River from downtown Beaufort. The property is zoned T4-Neighborhood, which is general urban.

B. Wood Timber, LLC had requested that the parcel R100 025 000 012B 0000 (3484 Trask Pkwy) comprising approximately 2 acres be annexed into the City of Beaufort and be zoned RMX. A public hearing on the zoning request, contingent of annexation, was held April 28, 2020 – there had been no comments then from the public.

The chairman, Mike Tomy, invited the public to comment. **25:11**

Motion: Mr. Crower made a motion, seconded by Ms. Alling, to approve the annexation. The motion passed unanimously.

Motion: Ms. Alling made a motion, seconded by Mr. Cromer, to accept the rezoning request. The motion passed unanimously.

A. Update on Council Actions.

4. REVIEW OF MINUTES 33:28

Motion: Mr. Hincher made a motion, seconded by Mr. Crower, to approve the March 15, 2020 minutes as submitted. The motion passed unanimously.

DRAFT

5. NEW BUSINESS CONTINUED 35:22

Town of Port Royal Agenda Items:

A. Michael Brock had applied for an amendment to Article 4, Specific Use, of the Port Royal Code. The amendment would allow Campground Recreation Facilities in the T4 Neighborhood Center transect district.

Motion: Ms. Alling made a motion to not recommend the amendment.

Motion failed due to a lack of a second.

Motion #2: Mr. Bardenwerper made a motion to defer this back to staff to give further study whether this is the correct zoning district and if there might be alternative zoning districts and also might be some additional criteria that would be added to make it even more restrictive than presently proposed, so if it comes back it would come back as a "staff" proposal and not an "applicant" proposal.

Motion failed due to a lack of a second.

Motion #3: Mr. Bardenwerper made a motion to recommend that the Port Royal Planning staff talk with the City Manager about whether he feels it's appropriate to further investigate this particular use in order to see if there is an appropriate zoning district together with a set of criteria so staff can bring a proposal to us working with the applicant to withdraw its first application. Mr. Hincher seconded the motion. The motion passed unanimously.

The chairman, Mike Tomy, stated he skipped over the agenda item, Questions Relating to Military Operations. There was one public comment regarding the most recent fight schedules and the impacts it is having. **1:30:08**

The chairman asked if there was a military advocate or a liaison who could provide an update of the MCAS runway schedule. Mr. Prichard said he would check into this.

B. Michael Brock had applied requesting to rezone 13.964 acres at 1 Hamrick Dr. The property is further identified as R122, Map 33B, Parcels 90A, 138 and a portion of 137. The current zoning is T3 Sub-Urban Neighborhood. The requested zoning is T4 Neighborhood Center-Open.

The chairman, Mike Tomy, invited public comment. **1:56:04**

Motion: Mr. Bardenwerper made a motion that to recommend to the Port Royal Town Council the rezoning that's been requested based on the testimony and evidence today, the staff report, specifically as respects the intended use, which this motion deems as having

addressed the concerns the commission raised last time and that the commission recommend approval based on the City Council working out in a form of substance satisfactory in its legal counsel a deed restriction limiting this use to church-use and that the deed restriction be imposed prior to the final zoning decision. Mr. Bardenwerper stated that this then protects the neighbors if the sale and construction of a church doesn't take place. The deed needs to be running in favor with Town of Port Royal as the enforcing entity.

Mr. Tomy suggested adding to the motion, *that testimony today from the neighborhood has been all positive that I've heard and seen versus the testimony from the last application.*

Mr. Bardenwerper said when he mentioned "based on testimony and evidence today" that included neighbors.

Ms. Alling seconded the amended motion. The motion passed unanimously.

C. Update of Council Actions.

Ms. Bridges went over the updates from Council meetings.

6. ADJOURN 2:18:14

Mr. Crower made a motion to adjourn the meeting; seconded by Ms. Alling. The motion passed unanimously.

CITY OF BEAUFORT

Major Subdivision – Salem Road

District 120, Map 29, Parcel 105, 105A, 105B and 105C

MAJOR SUBDIVISION PROCESS
CONCEPTUAL / PRELIMINARY PLAT APPLICATION

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: $0

OFFICE USE ONLY: **Date Filed:** 5/19 **Application #:** 20619 **Zoning District:** T3-N
Site Area: 111 **Meeting Date:** July 20, 2020

Schedule: The Metropolitan Planning Commission (MPC) typically meets the 3rd Monday of each month at 5:30pm. The complete schedule, along with the list of deadlines, may be found here - http://www.cityofbeaufort.org/metropolitan-planning-commission.aspx

Review Request: ☑ Conceptual ☐ Preliminary

Submittal Requirements: 7 hard copies and 1 digital copy of all forms and information are required. In addition to a complete application form, applicants are required to submit the following information. Additional information, such as traffic studies, stormwater concepts/calculations, arborist report, may be required.

Conceptual Request: Sketch Plan as described in Section 9.3.1.B, Conceptual Plat showing lots, roads and street sections, sidewalks, existing/proposed trees, open space.

Preliminary Request: Site Plan for Preliminary Plat as described in Section 9.3.1.C

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? ☑ Yes ☐ No

Applicant, Property, and Project Information

Applicant Name: Pulte Homes Company, LLC

Applicant Address: 127 Sun City Blvd, Bluffton, SC 29909

Applicant E-mail: Douglas.Hill@PulteGroup.com Applicant Phone Number: (828) 384-5655

Applicant Title: ☐ Homeowner ☐ Tenant ☐ Architect ☐ Engineer ☑ Developer ☐ Contractor

Owner (if other than the Applicant): Salem Farms of Beaufort LLC

Owner Address: 4310 Valley View Rd, Middletown, MD 21769

Project Name: Salem Farms Subdivision

Property Address: East side of Salem Road

Property Identification Number (s):*(Tax Map & Parcel Number)*: See Project Narrative Notes for full list

Meeting Date Requested: June 18, 2020

Certification of Correctness: I/we certify that the information in this application is correct.

Applicant's Signature: Douglas Hill Date: 05/18/20

MAJOR SUBDIVISION PROCESS

CONCEPTUAL / PRELIMINARY PLAT APPLICATION

Department of Planning & Development Services
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: $0

Required Project Information

Project Name: _____

Site Area in Acres: 94.94 Zoning District: T3-N

Proposed Allocations (in acres and gross %):

Developed Area: 72% Civic/Open Space: 28%

Provide a brief Project Narrative:

Complete list of Tax Map Numbers:

R120 029 000 0105 0000

R120 029 000 105A 0000

R120 029 000 105B 0000

R120 029 000 105C 0000

See attached Cover Letter for additional information regarding project narrative.

CONTACT INFORMATION – Application form & supplementary information may be submitted via email:

Attention: Julie A. Bachety, Administrative Assistant II

City of Beaufort Department of Planning & Development Services

1911 Boundary Street, Beaufort, South Carolina 29902

E-Mail: jbachety@cityofbeaufort.org | Phone: (843) 525-7011 | Fax: (843) 986-5606

May 19, 2020

Mr. David Prichard
Community & Economic Dev. Dir.
City of Beaufort
1911 Boundary Street
Beaufort, SC 29902

Subject: Metropolitan Planning Commission Conceptual Request
Salem Farms Subdivision
Ward Edwards Project Number: 190296

Mr. Prichard,

On behalf of the Applicant, Pulte Group, we respectfully submit the following documents for a June Meeting of the Metropolitan Planning Commission:

Enclosures

1. Major Subdivision Application
2. Sketch Plan prepared by Witmer Jones Keefer
3. Open Space Plan prepared by Witmer Jones Keefer
4. Traffic Memo prepared by Ridgeway Consulting
5. ALTA Survey prepared by Atlas Surveying
6. Boundary, Recombination, & Wetland Plat prepared by Atlas Surveying
7. Tree & Topographic Survey prepared by Atlas Surveying
8. Conceptual Exhibits of Water, Sewer, & Stormwater prepared by Ward Edwards Engineering

Background

Salem Farms is a proposed single-family detached subdivision located on an approximate 94.94 acre parcel. The proposed subdivision covers 5 existing parcels which will be combined into a single parcel prior to creation of the individual lots.

The parcels are presently zoned T3N, and are proposed to be built under the requirements of this zoning classification. The homes will be designed in the Lowcountry Vernacular, with front porches/stoops addressing the primary streets.

Along with review of the attached documents, the following items are requested endorsement review by the Metropolitan Planning Commission:

1. **Vehicular Circulation**
   The applicant is proposing to construct two new full-service access points along Salem Road, with the northern access being the primary entrance and southern entrance considered secondary. Salem Road is presently operated by SCDOT, so all improvements within the Salem

Road right-of-way will be required to meet current SCDOT standards, to include sight distance, markings, signage, and materials.

The internal road network will be interconnected, to include access to all lots, along with a proposed amenity area. The roads and rights-of-way will be proposed to be dedicated to the City of Beaufort following construction completion.

Rights-of-way are proposed at 50-foot width, with two unmarked 12-foot travel lanes and curbing. This may be widened near the access points to accommodate additional lanes, if warranted by the traffic study.

2. **Pedestrian Circulation**
Depending on Street Classification (Neighborhood Street 1 – General or Neighborhood Street 2 – Yield), sidewalks are required on either one or both sides of the street. However, isolating sidewalks to one side of the street will allow for greater flexibility for tree preservation within the rights-of-way and at front of the home sites.

If Street Classification warrants sidewalks on both sides, the applicant respectfully requests a waiver to allow sidewalks only on one side of the proposed streets. In addition, the applicant respectfully requests the sidewalks in front of home construction to be built in conjunction with home construction.

Separate from sidewalks within the rights-of-way, a pervious path is proposed for the open space parallel to Battery Creek. Future pedestrian connections would be accessible from Salem Road.

3. **Tree Preservation, Tree Removal, and Proposed Street Trees**
The applicant has obtained a tree survey for all trees greater than 8" Diameter at Breast Height (DBH) on the property. Road layout and lot lines have been adjusted to accommodate specimen Live Oak trees, to the greatest extent practicable.

The applicant will work with City Staff and a certified arborist to conduct a field assessment of existing specimen trees qualified to remain. The applicant will also submit a tree protection and preservation plan during development plan review. Trees proposed for removal will be indicated on the tree protection and preservation plan.

The tree protection and preservation plan will include locations for all trees to be preserved within the rights-of-way and open spaces adjacent to the street. If trees are preserved within the right-of-way or adjacent open spaces, the applicant is requesting a waiver to work with City

Staff to reduce the number of required street trees. Otherwise, the applicant has proposed planting live oak street trees at 40' to 50' on center, depending on driveway, utility, and drainage infrastructure.

4. **Open Space**
In accordance with Section 7.4.2.A, parcels with greater than 40 acres in the ***T3N*** zoning district shall provide minimum 20% Open/Civic Space. As shown on the attached Open Space Plan, the current plan exceeds the minimum requirements of open space. The proposed open spaces areas will consist of Battery Creek Frontage, Amenity Areas, Wetlands, Tree Preservation Areas (to be determined), and Stormwater Management areas.

5. **Waterfront Access**
In accordance with Section 7.4.3.B, developments that contain waterfront access should include some type of common access to at least 25% of the waterfront. As shown on the attached Open Space Plan, the current plan exceeds the minimum requirements of waterfront access. These areas are identified proposed waterfront areas available for common access.

6. **Lot Sizes**
The proposed lots will follow the Lot Configuration as specified in Section 2.4.1.A. for the T3-N zoning district. This includes 4,000 square foot minimum lot sizes, with roof coverage not to exceed 45% of lot area. Lot sizes will vary to accommodate specimen trees and building types.

7. **Building Setbacks**
Proposed building setbacks will be based upon Section 2.4.1.B. and 2.4.1.C. for the T3-N zoning district.

8. **Utilities**
Potable water and public gravity sewer owned and operated by BJWSA are existing within the Salem Road right-of-way. In order to achieve maximum hydrant flows and system pressures, two connections to the existing water system are proposed.

For gravity sewer, a pumping station was installed along the western side of Salem Road, with gravity sewer extending south along the Salem Road right-of-way. This existing sewer system appears to have sufficient depth to provide gravity sewer to proposed homes and amenities within Salem Farms.

Electrical service will be provided Dominion Energy, along with street lights, if desired.

Telecommunications will be provided by either Hargray Communications or Spectrum. If both are available, then residents will have the opportunity to choose their service provider.

9. **Stormwater**
   The parcels comprising Salem Farms naturally fall east to west, with a ridgeline near the proposed easternmost roadway. Existing runoff generated by the site flows west towards low pockets, an isolated wetland near Salem Road, and two existing fingers of Battery Creek. Following development of the site, runoff generated by the proposed improvements will be utilize side yard swales and be collected in a series of grate inlets, ultimately conveyed to newly constructed onsite wet detention facilities. The wet detention facilities will be interconnected, with ultimate outfalls following treatment to the two existing fingers of Battery Creek.

   The drainage design will be submitted to the City of Beaufort for review and approval as well as to the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management.

10. **Phasing**
    Salem Farms roadways and infrastructure will be built in multiple phases based on market conditions. Any proposed phasing will be included in the final development plans.

11. **Site Maintenance**
    Following completion of road construction, the rights-of-way will be dedicated to the City of Beaufort for patrolling, maintenance, and operation. The development will establish a Property Owners' Association in order to provide operation and maintenance of common and open space areas.

If you have any questions or comments during your review, please do not hesitate to contact me at 843.384.2944 or wpowell@wardedwards.com.

Sincerely,
Ward Edwards Engineering

Willy Powell, PE
Project Manager

SALEM FARMS

SKETCH MASTER PLAN

DATE: 19 MAY 2020

LOCATION: BEAUFORT, SC

NOTE: PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

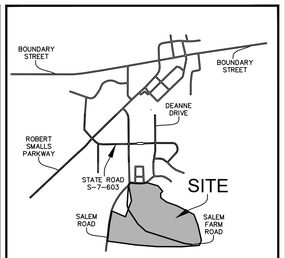
Ward Edwards ENGINEERING

Witmer·Jones·Keefer Ltd.
landscape architecture
land planning

CONNECTION TO EXISTING WATERLINE

CONNECTION TO EXISTING WATERLINE

FIRE HYDRANT ASSEMBLY DESIGN DETAILS TBD



VICINITY MAP
Not To Scale

CONCEPTUAL WATER MASTERPLAN

SALEM FARMS SUBDIVISION

CITY OF BEAUFORT, SOUTH CAROLINA

PREPARED FOR:

PULTE GROUP

DOCUMENT IS CONCEPTUAL AND SUBJECT TO CHANGE. WARD EDWARDS INC. ASSUMES NO LIABILITY FOR ACCURACY OR DECISIONS MADE BY THE USER BASED UPON INFORMATION CONTAINED HEREIN.

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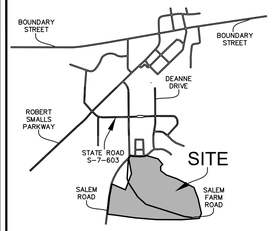
SCALE: 1"= 100 '

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

PROJECT #:	190296
DATE:	05/20/20
PREPARED BY:	JCH
SHEET NUMBER:	1 OF 3

CONNECTION TO EXISTING SEWER

CONNECTION TO EXISTING SEWER



VICINITY MAP
Not To Scale

CONCEPTUAL SEWER MASTERPLAN

SALEM FARMS SUBDIVISION

CITY OF BEAUFORT, SOUTH CAROLINA

PREPARED FOR:

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PROJECT #:	190296
DATE:	05/20/20
PREPARED BY:	JCH
SHEET NUMBER:	2 OF 3

OUTFALL LOCATION

OUTFALL LOCATION

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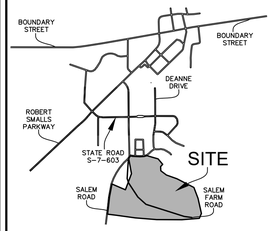

VICINITY MAP

Not To Scale

CONCEPTUAL STORMWATER MASTERPLAN

SALEM FARMS SUBDIVISION

CITY OF BEAUFORT, SOUTH CAROLINA

PREPARED FOR:

PULTE GROUP

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SCALE: 1" = 100 '

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WWW.WARDEDWARDS.COM

PROJECT #:	190296
DATE:	05/20/20
PREPARED BY:	JCH
SHEET NUMBER:	3 OF 3

LINE TABLE		
LABEL	BEARING	DISTANCE
L1	S31°51'04"W	21.92'
L2	S68°00'49"W	13.52'
L3	N73°38'09"W	12.29'
L4	N80°23'25"W	17.50'
L5	S15°42'30"W	20.45'
L6	N79°09'45"W	11.80'
L7	S50°13'11"W	14.85'
L8	S75°07'02"W	19.65'
L9	S30°24'35"W	21.37'
L10	S80°56'39"W	23.02'
L11	N60°22'12"W	20.39'
L12	S74°51'24"W	27.81'
L13	S59°37'23"W	18.80'
L14	N42°08'22"W	9.39'
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L17	N23°31'14"E	13.58'
L18	N66°14'41"W	24.40'
L19	N61°50'01"W	27.86'
L20	S12°19'00"W	30.40'
L21	S44°26'19"W	25.48'
L22	S37°11'39"W	13.82'
L23	S51°54'56"W	17.17'
L24	N17°28'27"W	11.96'
L25	S77°09'22"W	18.54'
L26	S17°03'59"E	26.04'
L27	N76°03'48"W	16.87'
L28	S61°18'44"W	26.54'
L29	S33°00'25"W	22.82'
L30	S55°45'14"E	23.75'
L31	S43°54'55"W	20.77'
L32	S72°28'50"W	34.86'
L33	N24°33'11"W	11.13'
L34	N54°18'28"E	27.55'
L35	N14°26'06"W	12.37'
L36	N55°17'03"W	19.37'
L37	S67°38'46"W	15.35'
L38	S08°56'11"E	17.82'
L39	S24°32'16"W	15.04'
L40	S08°46'27"W	12.08'
L41	S42°08'48"W	19.70'
L42	S86°30'28"W	30.09'
L43	S86°42'03"W	36.54'
L44	S89°21'27"W	46.64'
L45	N55°01'06"W	5.03'
L46	N09°08'42"W	5.58'
L47	N36°04'02"E	11.92'
L48	N18°20'14"E	17.24'
L49	N57°05'47"W	10.85'
L50	N14°42'46"W	6.84'
L51	N11°12'55"E	40.77'
L52	N14°20'45"W	28.37'
L53	N11°38'44"E	19.05'
L54	N10°02'56"W	19.14'
L55	N26°38'27"E	41.93'
L56	N05°03'53"E	11.87'
L57	N00°14'50"W	1.39'
L58	N31°22'48"E	9.16'
L59	N05°00'10"W	14.52'
L60	S86°05'01"W	12.52'
L61	S07°43'57"W	37.11'
L62	S37°36'17"W	19.79'
L63	S12°25'21"W	22.30'
L64	S07°00'14"W	27.33'
L65	S04°14'00"E	25.41'
L66	S08°04'26"W	33.15'
L67	S07°20'56"W	26.83'
L68	S06°06'37"W	29.71'
L69	S03°21'44"E	14.54'
L70	S34°09'45"W	8.68'
L71	S57°48'32"W	5.85'
L72	N78°27'37"W	20.26'
L73	N61°49'33"W	6.43'
L74	N71°12'17"W	8.05'
L75	S05°51'48"W	73.37'
L76	N57°41'21"E	11.83'
L77	N04°54'36"E	31.22'
L78	N41°01'05"E	15.48'
L79	S75°48'26"E	16.16'
L80	S34°40'28"E	11.03'
L81	S23°07'33"E	9.61'
L82	S17°00'14"W	7.67'
L83	S55°45'18"E	8.05'
L84	N83°11'26"E	9.95'
L85	S71°43'38"E	7.37'
L86	S37°16'19"E	10.32'
L87	S82°06'31"E	15.75'
L88	S48°54'53"E	15.59'
L89	S12°09'22"E	6.72'
L90	N63°27'27"W	24.00'
L91	S03°19'01"W	17.71'
L92	N74°49'03"W	18.21'
L93	S13°20'04"W	8.10'
L94	S59°17'09"E	18.71'
L95	S71°34'02"E	40.24'
L96	N80°20'27"E	22.92'
L97	S13°49'58"W	20.69'
L98	S06°13'04"W	24.27'
L99	S47°17'59"W	25.66'
L100	S70°56'51"W	40.13'
L101	S01°06'05"W	31.73'
L102	S23°08'38"E	21.75'
L103	S47°06'33"W	14.45'
L104	S64°41'49"E	18.15'
L105	S07°15'36"W	35.51'
L106	S24°31'36"W	36.35'
L107	S85°00'02"E	29.85'
L108	N27°49'15"E	44.67'
L109	N15°07'25"W	28.91'
L110	N07°59'58"E	13.76'
L111	N65°57'04"E	10.38'
L112	N28°00'54"E	31.79'
L113	N24°22'08"E	34.20'
L114	S62°43'16"E	6.17'
L115	S11°47'14"E	12.62'
L116	S10°42'18"E	19.03'
L117	S76°07'08"E	10.12'
L118	N33°15'25"E	38.88'
L119	N56°50'32"W	25.02'
L120	N21°40'47"E	14.53'
L121	N05°01'12"E	29.91'
L122	S53°17'46"E	11.80'
L123	S33°29'17"E	34.06'
L124	N31°39'35"E	35.29'
L125	N75°05'59"W	15.65'
L126	N05°44'16"W	13.22'
L127	N49°03'21"E	8.23'
L128	S76°01'32"E	24.55'
L129	N69°45'53"E	24.88'
L130	S40°43'17"E	10.25'
L131	N30°48'23"E	6.87'
L132	N06°56'16"W	10.32'
L133	N20°00'55"E	27.66'
L134	N82°02'03"E	14.45'
L135	N43°37'02"E	21.59'
L136	N13°58'00"W	15.80'
L137	N45°12'05"E	21.53'
L138	S82°24'11"E	19.38'
L139	N19°25'05"W	2.75'
L140	N29°21'45"W	12.49'
L141	S57°20'56"E	12.89'
L142	S77°31'03"E	13.16'
L143	S20°03'32"E	9.51'
L144	N89°56'57"E	16.93'
L145	N64°25'44"E	19.36'
L146	N57°19'01"E	27.49'
L147	S09°40'23"E	13.14'
L148	N81°22'34"E	7.09'
L149	N29°39'25"E	13.51'
L150	S85°16'43"E	17.77'

LINE TABLE		
LABEL	BEARING	DISTANCE
L151	N80°40'03"E	20.56'
L152	S53°11'30"E	11.33'
L153	S33°15'00"W	21.45'
L154	S50°38'01"E	33.82'
L155	N04°23'31"W	15.83'
L156	N88°34'32"E	12.19'
L157	S38°56'48"E	21.86'
L158	S09°55'14"E	19.65'
L159	S76°46'07"E	6.89'
L160	N32°56'05"E	21.06'
L161	N28°12'04"E	44.89'
L162	N83°15'10"E	36.75'
L163	N80°25'18"E	31.37'
L164	S36°49'22"E	20.68'
L165	S13°59'33"W	14.31'
L166	N76°33'14"E	11.61'
L167	N13°27'32"E	19.04'
L168	S73°12'37"E	34.64'
L169	N76°58'34"E	16.52'
L170	S71°55'32"E	19.60'
L171	S06°48'40"W	29.36'
L172	S48°43'44"E	12.10'
L173	N32°40'33"E	39.90'
L174	S66°35'50"E	54.68'
L175	S13°48'05"W	46.61'
L176	S65°04'23"E	26.50'
L177	N00°10'45"E	41.23'
L178	N44°28'24"E	8.77'
L179	S84°12'37"E	16.50'
L180	S63°56'11"E	29.69'
L181	S21°34'35"E	89.36'
L182	S08°02'46"E	24.99'
L183	S59°43'00"W	31.92'
L184	S46°16'47"W	34.82'
L185	N79°07'22"W	9.61'
L186	S22°37'18"W	22.92'
L187	S80°54'45"W	17.86'
L188	S54°50'37"W	21.86'
L189	S49°14'11"W	15.88'
L190	S14°29'21"W	15.22'
L191	S69°09'06"W	7.43'
L192	S17°47'00"W	37.91'
L193	S09°23'53"W	50.84'
L194	S02°35'36"E	33.77'
L195	S61°34'18"W	17.87'
L196	S58°51'47"E	22.66'
L197	S67°11'47"E	8.21'
L198	S23°06'56"W	2.36'
L199	S32°24'11"W	11.69'
L200	S04°30'43"E	21.15'
L201	S11°50'47"E	15.54'
L202	S15°57'36"W	20.45'
L203	S09°11'58"E	30.02'
L204	N38°54'38"E	20.06'
L205	N19°55'15"E	26.46'
L206	N31°06'52"E	5.81'
L207	N11°11'17"E	11.08'
L208	N20°19'02"W	19.96'
L209	N02°29'47"E	8.59'
L210	N38°45'38"E	13.42'
L211	S86°10'49"E	10.37'
L212	N57°16'16"E	14.55'
L213	N48°41'27"W	33.82'
L214	N62°13'00"E	14.15'
L215	N18°07'40"W	14.56'
L216	N10°58'43"E	43.92'
L217	N62°15'00"E	34.51'
L218	N22°52'49"E	13.95'
L219	S16°41'19"E	31.68'
L220	S79°22'56"E	18.28'
L221	S09°26'10"W	19.05'
L222	N77°53'59"E	18.44'
L223	N06°41'10"E	32.31'
L224	N31°06'16"W	30.11'
L225	N71°49'44"E	29.26'
L226	N84°11'33"E	28.97'
L227	N77°54'00"E	54.09'
L228	N89°43'35"E	67.00'
L229	S50°23'22"E	18.74'
L230	S60°16'16"E	35.00'
L231	N09°57'13"E	28.59'
L232	S77°51'44"E	71.23'
L233	S59°02'17"E	21.81'
L234	S78°22'55"E	10.62'
L235	S51°02'14"E	75.92'
L236	S79°31'00"E	55.97'
L237	S66°45'58"E	36.27'
L238	S30°11'19"E	54.11'
L239	S36°53'26"E	57.82'
L240	S40°04'57"E	52.03'
L241	S48°54'43"E	57.08'
L242	S46°07'41"E	19.22'
L243	S65°13'03"E	47.21'
L244	S65°15'14"E	34.32'
L245	S70°16'51"E	54.25'
L246	S71°58'37"E	48.51'
L247	S70°20'13"E	30.27'
L248	S65°25'20"E	38.99'
L249	S69°53'50"E	51.19'
L250	S58°23'38"E	40.88'
L251	S63°26'22"E	22.29'
L252	N76°16'06"E	10.13'
L253	S48°21'26"E	34.76'
L254	S40°00'43"E	28.72'
L255	N67°19'28"E	14.23'
L256	S58°48'00"E	17.43'
L257	S51°01'45"E	33.03'
L258	N54°37'09"E	6.33'
L259	S50°02'36"E	10.44'
L260	S30°58'07"E	13.87'
L261	S71°07'37"E	16.92'
L262	S06°45'08"E	17.94'
L263	S48°27'54"E	42.31'
L264	S18°29'07"E	17.97'
L265	N56°27'56"E	10.41'
L266	N74°07'35"E	9.43'
L267	S76°31'57"E	22.46'
L268	S86°31'54"E	8.02'
L269	S47°26'54"E	21.78'
L270	S57°53'25"E	48.56'
L271	S61°04'25"E	25.58'
L272	S57°58'14"E	52.61'
L273	S44°18'19"E	25.02'
L274	S26°35'08"E	27.50'
L275	S14°21'14"W	41.01'
L276	S07°11'20"W	66.37'
L277	S04°33'08"E	76.39'
L278	S03°53'48"E	55.95'
L279	S00°02'20"W	45.78'
L280	S06°53'45"E	54.11'
L281	S06°04'19"W	42.59'
L282	S04°51'38"W	53.31'
L283	S08°07'05"W	46.88'
L284	S19°26'15"W	49.77'
L285	S32°57'03"W	70.38'
L286	S31°25'06"W	34.13'
L287	S55°29'59"W	19.63'
L288	S22°11'49"W	30.85'
L289	S42°52'48"W	50.73'
L290	S37°59'10"W	46.01'
L291	S24°35'11"W	17.71'
L292	N87°42'59"W	6.00'
L293	S25°52'35"W	38.92'
L294	S46°28'04"W	19.54'
L295	S57°59'56"W	39.15'
L296	S54°01'58"W	67.98'
L297	S60°19'17"W	60.24'
L298	S65°09'21"W	46.39'
L299	S70°33'26"W	49.44'
L300	S38°15'31"W	16.02'

LINE TABLE		
LABEL	BEARING	DISTANCE
L301	S61°22'17"W	3.29'
L302	N77°44'52"W	24.37'
L303	S57°03'55"W	21.31'
L304	S13°43'29"W	23.02'
L305	S61°20'22"W	34.44'
L306	S28°42'51"W	18.53'
L307	S75°46'00"W	48.15'
L308	S60°47'27"W	47.52'
L309	S55°19'32"W	50.37'
L310	S58°53'35"W	55.63'
L311	S63°58'44"W	26.48'
L312	S55°36'00"W	49.13'
L313	S37°10'19"W	6.30'
L314	S73°32'17"W	29.35'
L315	S43°30'26"W	40.47'
L316	N77°49'02"W	10.00'
L317	N75°36'55"W	14.77'
L318	N81°55'39"E	32.18'
L319	N39°50'10"E	117.16'
L320	N05°48'18"E	3.33'
L321	N12°08'59"E	33.13'
L322	N01°07'33"W	37.66'
L323	N66°42'12"E	92.95'
L324	N05°41'01"W	52.87'
L325	N28°07'06"E	42.48'
L326	N65°49'19"E	65.48'
L327	N69°16'50"E	45.69'
L328	S63°03'23"E	55.11'
L329	S30°53'59"E	45.25'
L330	S06°34'40"E	64.21'
L331	S15°15'39"W	35.23'
L332	S20°18'34"W	50.42'
L333	S78°17'49"W	55.39'
L334	N78°03'06"W	57.44'
L335	N37°23'49"W	39.74'
L336	N39°16'39"W	56.29'
L337	S76°13'54"E	3.61'
L338	S07°53'57"W	52.71'
L339	N78°39'10"W	66.21'

CURVE TABLE					
LABEL	RADIUS	ARC	CHORD	CHORD BEARING	DELTA
C1	1828.87'	126.04'	126.02'	N05°48'17"E	3°56'55"

ACREAGE CHART

TMS # R120 029 000 0105 0000

PARCEL A	74,051.93 Sq.Ft.	1.700 Ac.
PARCEL B	744,459.33 Sq.Ft.	17.090 Ac.
TOTAL	818,511.26 Sq.Ft.	18.790 Ac.

TMS # R120 029 000 105A 0000

UPLAND	1,332,698.99 Sq.Ft.	30.595 Ac.
TOTAL	1,332,698.99 Sq.Ft.	30.595 Ac.

TMS # R120 029 000 105B 0000

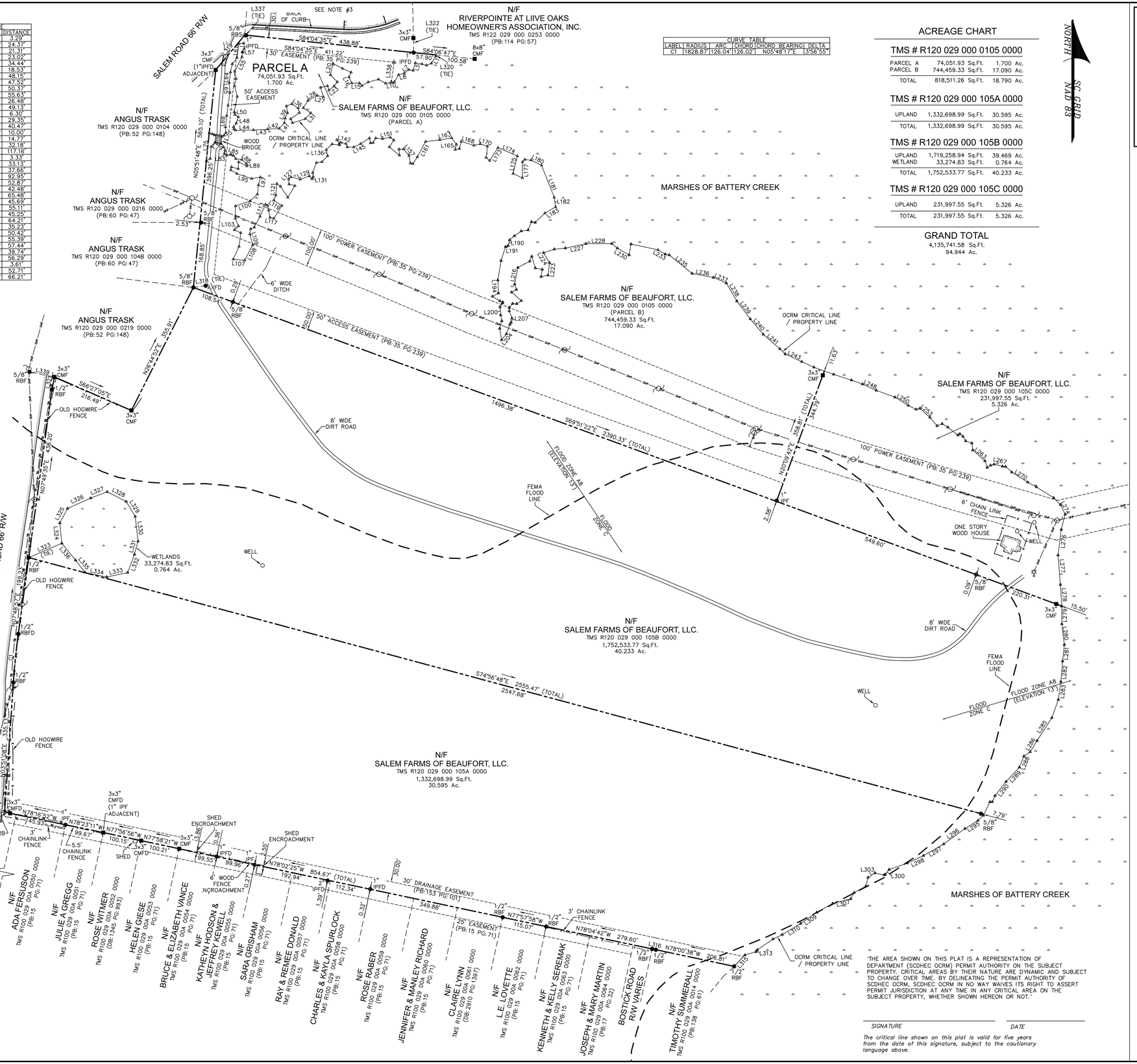
UPLAND	1,719,258.94 Sq.Ft.	39.469 Ac.
WETLAND	33,274.83 Sq.Ft.	0.764 Ac.
TOTAL	1,752,533.77 Sq.Ft.	40.233 Ac.

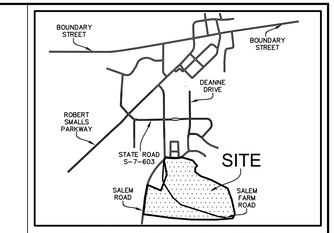
TMS # R120 029 000 105C 0000

UPLAND	231,997.55 Sq.Ft.	5.326 Ac.
TOTAL	231,997.55 Sq.Ft.	5.326 Ac.

GRAND TOTAL

4,135,741.58 Sq.Ft.
94.944 Ac.





VICINITY MAP NOT TO SCALE

LEGEND

⚠	CALC POINT – CORNER NOT SET
CMF ■	CONC. MONUMENT FOUND
CMFD ■	CONC. MONUMENT FOUND DISTURBED
RBF ●	IRON REBAR FOUND
IPFD ●	OPEN TOP PIPE DISTURBED
AXFD ■	AXLE FOUND DISTURBED
RBS ○	IRON REBAR SET
	GUY WIRE
	LIGHT POLE
	POWER POLE
	WETLAND FLAG
	MARSHGRASS
TB	TOP OF BANK
OHP	OVERHEAD POWER LINE
	BRICK
	CONCRETE
	EDGE OF PAVEMENT
OCRM	OCEAN & COASTAL RESOURCE MANAGEMENT

NOTES

1. THIS PARCEL APPEARS TO LIE IN DUAL FLOOD ZONES C AND A8 ELEVATION 13', FIRM PANEL 0065–D COMMUNITY 450025.
2. HORIZONTAL DATUM IS SOUTH CAROLINA STATE PLANE GRID (NAD 83).
3. NOW OR FORMERLY, RIVERPOINTE AT LIIVE OAKS HOMEOWNER'S ASSOCIATION, INC. TMS R120 029 000 0466 0000 PB:120 PG:99
4. 100' POWER EASEMENT IS CENTERED ALONG EXISTING POWER LINE.
5. 30' EASEMENT ALONG THE NORTHERN LINE OF PARCEL B WAS SCALED IN PER REFERENCE #3.

REFERENCES

1. PB: 35 PG: 214
2. PB: 35 PG: 215
3. PB: 35 PG: 239
4. PB: 35 PG: 240
5. PB: 11 PG: 11
6. DB: 3243 PG: 1608
7. DB: 3243 PG: 1621

PREPARED FOR:
PULTE GROUP, INC.

A BOUNDARY / RECOMBINATION & WETLAND PLAT OF

TAX PARCEL No's.
R120 029 000 0105 0000
R120 029 000 105A 0000
R120 029 000 105B 0000
R120 029 000 105C 0000

THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	KS
FIELD CHECK:	JWR
DRAWN BY:	TGU
DATE:	02–13–2020
SCALE:	1"=120'
PROJECT No.:	BFT–20061
FILE:	BFT–20061 B1.DWG

ATLAS SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
RIDGELAND, SC 29936
PHONE: (843) 645–9277
WEBSITE: WWW.ATLASSURVEYING.COM

SOUTH CAROLINA ATLAS SURVEYING BFT LLC No. C05928 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 28139 JEREMY W. REEDER

"THE AREA SHOWN ON THIS PLAT IS A REPRESENTATION OF DEPARTMENT (SCDHEC OCRM) PERMIT AUTHORITY ON THE SUBJECT PROPERTY. CRITICAL AREAS BY THEIR NATURE ARE DYNAMIC AND SUBJECT TO CHANGE OVER TIME. BY DELINEATING THE PERMIT AUTHORITY OF SCDHEC OCRM, SCDHEC OCRM IN NO WAY WAIVES ITS RIGHT TO ASSERT PERMIT JURISDICTION AT ANY TIME IN ANY CRITICAL AREA ON THE SUBJECT PROPERTY, WHETHER SHOWN HEREON OR NOT."

SIGNATURE *DATE*

The critical line shown on this plat is valid for five years from the date of this signature, subject to the cautionary language above.

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

JEREMY W. REEDER
S.C.P.L.S. No. 28139
NOT VALID UNLESS STAMPED WITH SEAL

SALEM FARMS

OPEN SPACE PLAN

DATE: 19 MAY 2020

LOCATION: BEAUFORT, SC

NOTE: PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

Ward Edwards ENGINEERING

Witmer·Jones·Keefer Ltd.
landscape architecture land planning

RIDGEWAY
TRAFFIC CONSULTING
803-361-9044

MEMORANDUM

TO: Willy Powell, P.E., **Ward Edwards**

FROM: Mike Ridgeway, P.E., **Ridgeway Traffic Consulting, LLC**

DATE: May 20, 2020

RE: **Salem Farms: Beaufort, SC**
Preliminary Traffic Summary

I have provided this brief memorandum to provide general traffic information related to the proposed Salem Farms residential subdivision in Beaufort, South Carolina. The following presents my findings.

Project Description

The Salem Farms subdivision is planned along the east side of Salem Road approximately halfway between Old Salem Road to the south and Salem Farm Road to the north. While the total density/lot count has not been finalized, a rough estimate of 325 single family residences is projected that will be serviced by two connections to Salem Road. Salem Road is a two-lane collector roadway maintained by SCDOT with a posted speed limit of 35 miles-per-hour (mph).

Traffic Volumes

Based on coordination with with Beaufort County staff, there were plans to collect traffic volumes for the following intersections:

1. SC 170 at Salem Road;
2. SC 170 at Burton Hill Road; and
3. Salem Road at Old Salem Road.

Due to the current pandemic, traffic volumes have not been able to be collected. It is understood that traffic volumes will be collected for these intersections when school returns to session and these intersections will be reviewed for any potential mitigation measures.

Trip Generation/Anticipated Distribution

Traffic volumes expected to be generated by the proposed project were forecasted using the Tenth Edition of the ITE *Trip Generation* manual, as published by the Institute of Transportation Engineers. Land-Use Code #210 (Single-Family Residential) was used to estimate the specific site-generated traffic for the facility. **Table 1** presents a summary of anticipated project trips.

Table 1
PROJECT TRIP GENERATION SUMMARY[1]
Salem Farms: Beaufort, SC

Time Period	325 Single-Family Residences[2]
AM Peak-Hour	
Enter	59
Exit	177
Total	236
PM Peak-Hour	
Enter	198
Exit	117
Total	315

[1]ITE Trip Generation Manual, Tenth Edition.
[2]ITE Trip Generation Manual - LUC 210 - Single-Family Residential.

As shown, a total of 236 trips (59 entering, 177 exiting) can be expected during the typical weekday AM peak-hour. During the typical PM peak-hour, 315 trips (198 entering, 117 exiting) can be expected.

Traffic is anticipated to be relatively equally split along Salem Road with traffic destined north/east towards Beaufort anticipated to utilize Salem Road to SC 170; and traffic destined south/west on SC 170 anticipated to utilize the traffic signal for Burton Hill Road at SC 170.

It is anticipated that the site volumes at the direct access drives will not warrant turn lanes based on the characteristics of Salem Road, however this will be confirmed in the formal traffic study along with any recommended off-site mitigation for the three off-site intersections. The formal traffic study is anticipated to be completed by mid-September of 2020

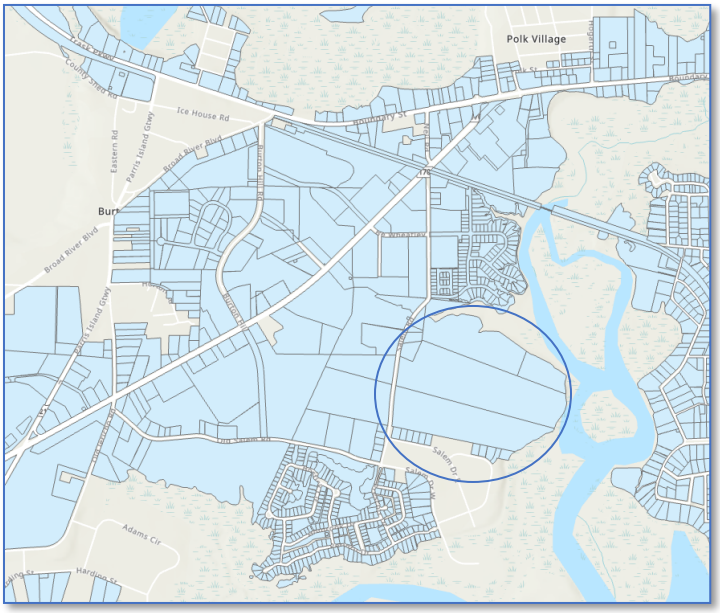
Please call me at 803-361-9044 with any questions or comments.

Staff Report for MPC

From the Director of Community and Economic Development

July 20, 2020

SUBJECT: Salem Farms - Major Subdivision



Request: The applicant, Pulte Group, has requested a major subdivision of approximately 94.94 acres located on Salem Farm Road. The subdivision covers 4 existing parcels which will be combined into a single parcel prior to creation of individual lots and new streets.

The zoning district is T3-N.

The size of the parcel designates this as a Major subdivision and requires a sketch plan approval from the Metropolitan Planning Commission (MPC).

Sketch plans are to provide the general layout of lots and streets, reviewed by the MPC, for the sole purpose of subdividing the land. The intent is to provide the applicant confirmation that the "simple line drawing" is consistent with the development code in terms of lot dimensions, street connectivity, street dimensions, and the allocation of required open space, in order for the applicant to confidently proceed with investing in technical drawings. It is not a building development plan.

A sketch plan review is a determination by the MPC that the provisions of the code regarding the subdivision of land have been met.

In accordance with the Beaufort Development Code § 9.9.3.E, the MPC "shall approve, approve with conditions, or disapprove the sketch plan within 60 days after submission. Unless this time limit is extended by mutual agreement, failing to act within the time limit constitutes approval of the sketch plan. If the proposed sketch plan is approved by the MPC, the MPC shall advise the applicant in writing of:

a. the conditions of such approval, if any;
b. certification of the plan by the city; and
c. the date on which the MPC granted approval.

If the MPC disapproves the sketch plan, written notice will be given to the applicant.

If the MPC approves the sketch plan, the applicant will submit a preliminary plat incorporating any conditions required by the MPC. The preliminary plat will inform the site plan for the development and will be reviewed by the TRC.

STAFF ASSESSMENT

The Sketch Plan is consistent with the City of Beaufort Code:

> Section 2.4 District Development Standards - The parcel is zoned T4-N. The lot-width-at-front-setback standard is 40ft minimum, the minimum lot size requirement is 4,000sq. ft.
>
> Section 7.2. Street Network and Design Standards – The proposed street layout is coordinated with the street system of the surrounding area. Adequate street connectivity shall be assessed by the TRC, based on the ability of the proposed alignments to; permit multiple routes between origin and destination points, diffuse traffic, and shorten walking distances.
>
> Section 7.2.B Street Network and Design Standards - Block Sizes: Blocks shall be compact so that they are comfortably walkable and appropriate for their context. The design of the proposed subdivision meets the intent of the code.
>
> Section 7.4 – Community Space/Open Space exceeds the 20% required, 27.67% of the development will consist of open space.

Suitability and adequacy of required infrastructure, given the future plans for the property, will be assessed during preliminary plat review by the Technical Review Committee in accordance with the Beaufort Development Code Chapter 7 (Land Development), Chapter 8 (Environmental & Resource Protection) and Chapter 9 (Development Review Procedures).

Building form, orientation, and access will be evaluated as part of development design review (§ 9.8) prior to the submittal for a project permit.

STAFF RECOMMENDATION

Approve.

CITY OF BEAUFORT

Annexation and Rezoning
14 FC Carter Court

District 100, Map 29, Parcel 45

Chkd 5/22

REZONING APPLICATION (EXCEPT FOR PUDS)

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

PAID

Application Fee: $250 + $10 for each additional lot. 6/4/20 CK
Receipt # 13119

RZ20-04

OFFICE USE ONLY: **Date Filed:** 5/22 **Application #:** 20594 **Zoning District:** T4-N

Submittal Requirements: You must attach a boundary map prepared by a registered land surveyor of the tract, plot, or properties, in question, and all other adjoining lots of properties under the same ownership. 12 copies of all application materials are required.

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? ☐ Yes ☒ No

Applicant, Owner and Property Information

Property Address: 14 FC Carter, Beaufort, SC 29906

Property Identification Number *(Tax Map & Parcel Number)*: R100 029 000 045 0000 R100 029 000 0482

Applicant Name: Robert Sample for Broad River Place LLC

Applicant Address: PO Box 2238

Applicant E-mail: robesample@gmail.com Applicant Phone Number: 843 476 9439

Property Owner (if other than the Applicant): Eloise Miressi

Property Owner Address: 136 Winslow Ave, Somerset NJ 08873

Have any previous applications been made for a map amendment affecting these same premises? ◯ YES ◯ NO

If yes, give action(s) taken:

Present zone classification: Regional Center Mixed-Use (CSRCMU) (Beaufort Cty)

Requested zone classification: T4-N

Total area of property: 19± acres

Existing land use: Residential

Desired land use: Residential

Reasons for requesting rezoning: Improve density and buildability.

Applicant's Signature: Date: 22 May 2020

NOTE: If the applicant is not the property owner, the property owner must sign below. 16 July 2020

Property Owner's Signature: Eloise Miressi Date: May 22 2020

See Section 9.13 of The Beaufort Code for complete information about Rezoning (except for PUDS) | updated February 8, 2019 | p. 1 of 1
This form is also available online at www.cityofbeaufort.org

TO THE MEMBERS OF
CITY COUNCIL
CITY OF BEAUFORT, SOUTH CAROLINA

PETITION OF ANNEXATION

We, the undersigned freeholders, pursuant to Section 5-3-150(3), South Carolina Code of Laws, 1976, as amended, do pray that your Honorable Body accept the petition and annex the enclosed described area, and enact an Ordinance declaring the area annexed to the City of Beaufort with full City privileges accorded to, and responsibilities required of, the said residents thereof and the lands and properties and businesses erected therein, subject only to the conditions, provisions, and limitations hereinafter set forth. The said annexation shall be upon terms, limitations, provisions, and conditions as follows:

The City of Beaufort shall furnish and render as promptly as practical to said area, its residents and properties, all of privileges, benefits, rights and services now and hereinafter to be accorded the citizens within the corporate limits of the City of Beaufort in every particular under its charter and general special laws of South Carolina applicable to the City of Beaufort, and subject to the existing ordinances of the City.

The petitioning area to be annexed is described as follows:

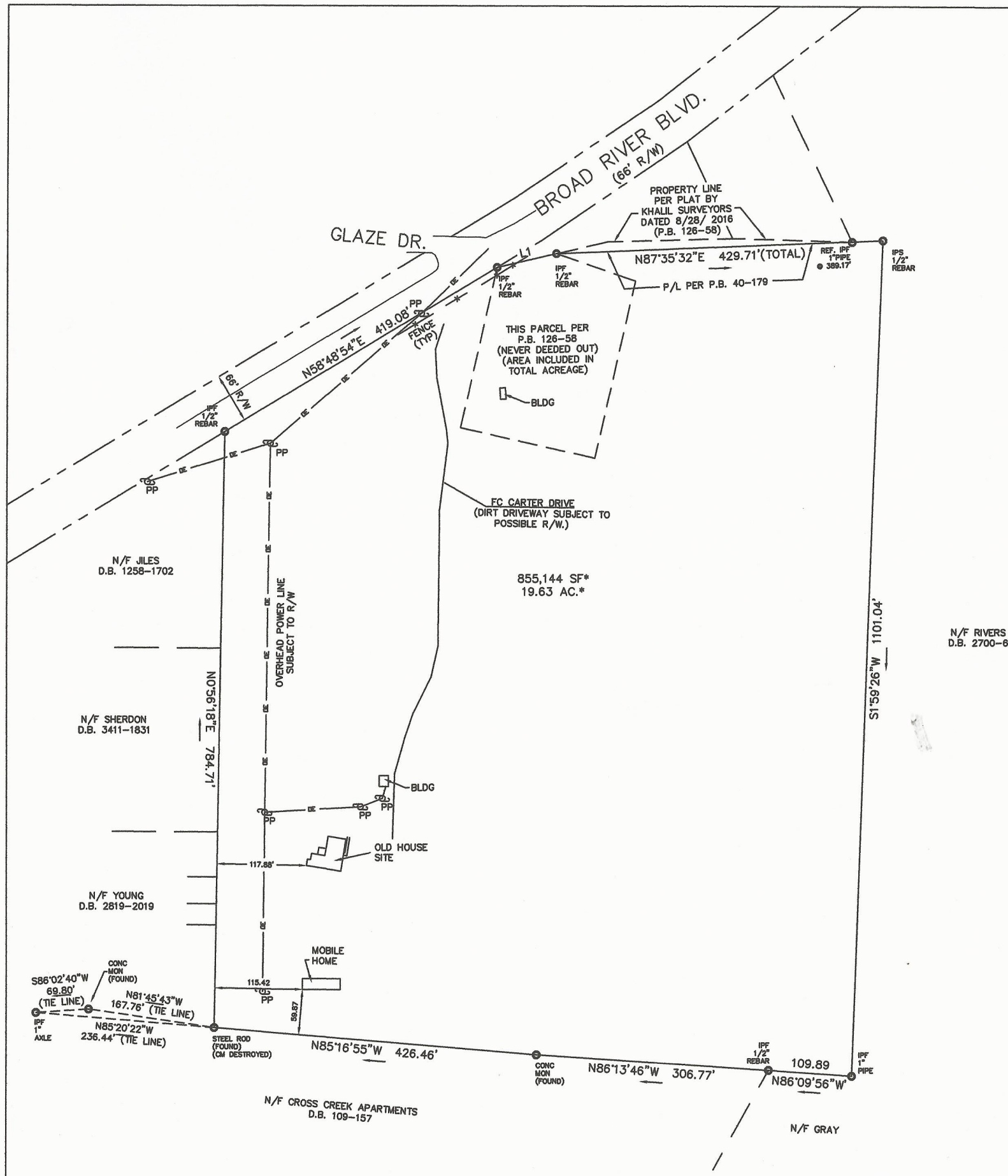
19 ± acres known as 14 FC Carter Drive, Beaufort SC 29906

DMP# R100 029 000 045 0050

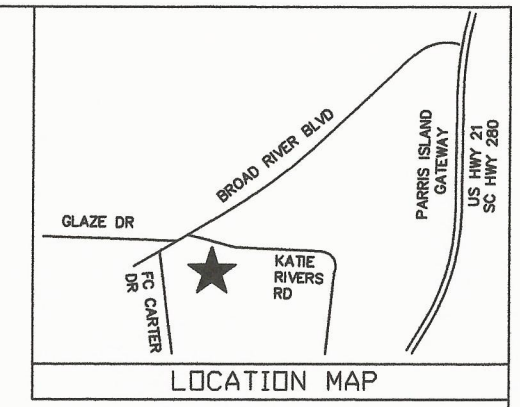
R100 029 000 0482 000

Plat of area to be annexed and list of freeholders are attached hereto.

Name (print)	Address	Signature	Date of Signature
Elaine Miressi	136 Winslow Ave Somerset, N.J. 08873	Elaine Miressi	5-22-2020



LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	80.37	N76° 58' 40"E



LOCATION MAP

NOTES:
1.)REFERENCE:
- TAX MAP # R100 029 000 0045
- D.B. 3645-2439
- P.B. 40-179 & 52-105
- BURTON HILL TRACT, LOTS 51 & 52

2.) * -ACREAGE INCLUDES ANY AND ALL RIGHTS-OF-WAY AND/OR EASEMENTS OF RECORD OR NOT OF RECORD.

3.) PURSUANT TO THE PROVISIONS OF SOUTH CAROLINA CODE OF LAWS, SECTION 40-22-270(3), THIS PLAN, SPECIFICATION, OR PLAT SHALL NOT BE FILED WITH PUBLIC AUTHORITIES WITHOUT THE SEAL, SIGNATURE, AND DATE AFFIXED. FURTHERMORE, IF THIS PLAN, SPECIFICATION, OR PLAT DOES NOT HAVE A SEAL THAT IS SIGNED AND DATED, IT SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN A PRELIMINARY STUDY DRAWING AND WILL BE CONSIDERED A WORK IN PROGRESS.

4.) THIS PLAT HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT NECESSARILY INDICATE ALL ENCUMBRANCES ON THE PROPERTY.

SURVEY FOR
ROBERT SAMPLE
BURTON
BEAUFORT COUNTY
SOUTH CAROLINA
MAY 18, 2020

0 100 200 300
SCALE: 1"=100'

C. O. RIDDLE
SURVEYING CO., INC.
P.O. BOX 5632
GREENVILLE, S.C. 29606
PHONE (864)235-3892
TEXT 864-982-9929
E-MAIL: joe@coriddle.com

SOUTH CAROLINA
C.O. RIDDLE
No. C00409
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED LAND SURVEYOR
No. 15179
J. A. McCULLOUGH, IV

J. A. McCULLOUGH, IV
RLS 15179
DRAWING NO. 2020-056

I HEREBY STATE TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

Staff Report for Metropolitan Planning Commission

From the Department of Community and Economic Development

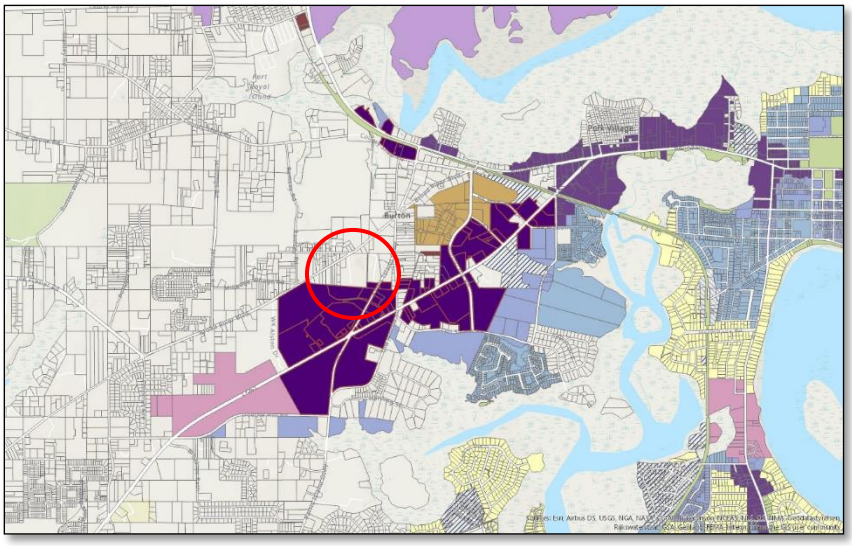
July 20, 2020

1 SUBJECT

The applicant, Robert Sample, on behalf of the property owner, Elouise Miressi, submitted a petition for annexation and also request for zoning upon annexation for two parcels located on Broad River Boulevard. The properties can be further identified as R100 029 000 0045 0000 and R100 029 000 0482 0000.

Annexation: The applicant has requested that the parcels R100 029 000 0045 0000 (19+/- acres) and R100 029 000 0482 0000 (1+/- acre) be annexed into the City of Beaufort, SC. The larger parcel is currently addressed 14 FC Carter Drive.

Zoning: Contingent of annexation, the applicant has requested that the parcels be zoned T4-N



Size: 19 acres and 1 acre

Current Zoning [County]: The portion of the parcel identified as R100 029 000 0045 0000, located north of Broad River Blvd. is zoned Neighborhood Mixed-Use (C3NMU). The southern portion of R100 029 000 0045 0000 and the parcel identified as R100 029 000 0482 0000 is zoned Regional Center Mixed-Use (C5RCMU).

Current Land Use: Residential

Future Land Use: G3– Neighborhood Mixed Use (G-3A) and Corridor Mixed Use (G-3B). G-3 Land generally falls within areas for higher-intensity regional-serving development.

The Beaufort Code: In accordance with 10.2.1.C.3 of the *Beaufort Code* the Metropolitan Planning Commission shall have the power and duty to recommend the annexation of parcels into the City limits for adoption by City Council.

Public Hearing: Scheduled for September 8, 2020 at 7 pm in City of Beaufort Council Chambers

2 Staff Assessment

The parcel is adjacent to an C5RCMU Regional Center Mixed-Use (County) on both the east and west and C3NMU Neighborhood Mixed-Use (County) directly north of Broad River boulevard. The neighboring City zoning designation is T5-UC/RMX located directly to the south of the property.

The T4 zoning designation is foreseen in the G-3 framework areas. The general character of T-4 is a mix of houses, townhouses, and small apartment buildings with scattered commercial activity.

3 Staff Recommendation

Annexation: Approve **Zoning:** T4-N

CITY OF BEAUFORT

Text Amendment - Section 2.6.2.C.1
Building Height Above Grade

$ P 6/23/20CA

BEAUFORT CODE TEXT AMENDMENT APPLICATION

Department of Planning & Development Services
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: $400
Receipt # 135119

OFFICE USE ONLY: **Date Filed:** 6/23 **Application #:** 20594

Submittal Requirements: All forms shall be complete and may be submitted digitally to Julie Bachety - jbachety@cityofbeaufort.org.

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? ☐ **Yes** ☒ **No**

Applicant Information

Applicant Name: Robert Sample for Broad River Place, LLC

Applicant Address: PO Box 2238, Beaufort SC 29901

Applicant E-mail: robsampleengr@gmail.com Applicant Phone Number: 843 476-9639

Amendment Request Information

List section(s) of the Beaufort Code proposed to be changed: 2.6.2, C.1

List proposed modification(s) – attached separate page if necessary: Reduce minimum elevation required from 2 feet to 12 inches (1ft).

Reasons for requesting amendment: To make housing product more affordable for the market.

Certification of Correctness: I/we certify that the information in this application is correct.

Applicant's Signature: [signature] Date: 16 Jun 20

Staff Report for MPC

From the Department of
Community and Economic Development

July 20, 2020

1 SUBJECT

Robert Sample, on behalf of Broad River Place LLC, has proposed amending the Beaufort Code section 2.6.2.C.1 Building Heights Above Grade (residential structures in T4 zones) reducing the required minimum finished floor height above grade for residential structures from 2 feet to one foot in order "to make the housing product more affordable".

2 FACTS

The Beaufort Code currently reads:

Specific to T4 Zones: 1. The finished ground floor height for residential structures shall be elevated a minimum of 2 feet above the average adjacent sidewalk grade or adjacent street grade where no sidewalk is present. Apartment Houses are permitted to be a minimum of 18" above grade, per Section 4.5.7.

3 ATTACHMENTS

Beaufort Development Code, section 2.6.2.C.1

4 ASSESSMENT

- The Beaufort Code addresses height above grade requirements for properties in a flood hazard zone:

  2.6.2.A General to All Zones:

  1. Freeboard: In addition to the standards listed below, where a parcel is located in a flood-hazard zone, the minimum elevation above grade is 1 foot above base flood elevation.

  2. Exception: Commercial buildings that have been floodproofed, per ASCE Section 24 or most recent version, do not have to be elevated above grade.

- It is unclear what public purpose is served by requiring certain finished floor heights above grade outside of flood hazard areas.

- It is also unclear why the residential structures' minimum finished floor heights above grade differ between zoning districts.
  - In a T-3 zone, a single-family home has no minimum finished floor height above grade (save where it is below average grade at property line), but a 2-3-unit building must be 2 feet above grade.
  - In a T-4 zone, residential structures' minimum finished floor height above grade is 2 feet.
  - In a T-5 zone, residential structures' minimum finished floor height above grade is 3 feet.

- Requiring minimum finished floor heights adds additional construction expense.

E. Unoccupied attics less than 7 feet in height to the ridge beam or collar tie (whichever is lower) and raised basements less than 6 feet above the adjacent grade shall not be calculated as stories.

F. Certain buildings (such as gymnasiums, religious institutions, theatres, etc.) may require finished floor-to-ceiling heights greater than 15 feet. In such instances, the number of stories shall be calculated as the finished floor-to-ceiling height (in feet) divided by 15. Any fractions of a story shall be rounded up to the next whole number, with the following exception:

1. **Specific to T5-UC:** The maximum first floor height for such buildings shall be 24'.

G. **Specific to T5-DC:** The maximum height at the property line shall be 3 stories, and the maximum height 15 feet behind the property line, or front line of the building, shall be 4 stories.

2.6.2 BUILDING HEIGHT ABOVE GRADE

A. **General to All Zones:**

1. **Freeboard:** In addition to the standards listed below, where a parcel is located in a flood-hazard zone, the minimum elevation above grade is 1 foot above base flood elevation.
2. **Exception:** Commercial buildings that have been floodproofed, per ASCE Section 24 or most recent version, do not have to be elevated above grade.

B. **Specific to T3 Zones:**

1. If the finished floor of new single-family residential construction will be lower than the average grade along any property line, the finished floor must be elevated a minimum of 18" above finished grade adjacent to the building exterior.
2. The finished ground floor elevation for 2- and 3- unit buildings shall be elevated a minimum of 2 feet above the average adjacent sidewalk, or adjacent street grade where no sidewalk is present.
3. If a single-family residence in a T3 zone is developed as part of an Alternative Development Pattern (Section 2.8), it shall be elevated a minimum of 18" above the average adjacent sidewalk grade or adjacent street grade where no sidewalk is present.

C. **Specific to T4 Zones:**

1. The finished ground floor height for residential structures shall be elevated a minimum of 2 feet above the average adjacent sidewalk grade or adjacent street grade where no sidewalk is present. Apartment Houses are permitted to be a minimum of 18" above grade, per Section 4.5.7.
2. The ground floor height of single-family residential structures shall be a minimum of 9 feet from finished floor to ceiling.
3. The ground floor height of multi-family residential structures shall be a minimum of 10 feet from finished floor to ceiling.
4. The ground floor height of commercial buildings shall be a minimum of 11 feet from finished floor to ceiling.
5. Each full story above the ground floor shall be a minimum of 8 feet from floor to ceiling.

D. **Specific to T5 Zones:**

1. The finished ground floor height for residential structures shall be elevated a minimum of 3 feet above the average adjacent sidewalk grade. Apartment Houses are permitted to be a minimum of 18" above grade, per Section 4.5.7.
2. The ground floor height of residential structures shall be a minimum of 10 feet from finished floor to ceiling.
3. The ground floor height of single-story commercial buildings shall be a minimum of 14 feet from finished floor to ceiling.

CITY OF BEAUFORT

Major Subdivision - 4 Harborview Circle

District 123, Map 14, Parcel 149

MAJOR SUBDIVISION PROCESS

CONCEPTUAL / PRELIMINARY PLAT APPLICATION

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: $0

OFFICE USE ONLY: **Date Filed:** 6/30 **Application #:** 20729 **Zoning District:** T4-N
Site Area: 1.304 **Meeting Date:** 7-20-20-MPC

Schedule: The Metropolitan Planning Commission (MPC) typically meets the 3rd Monday of each month at 5:30pm. The complete schedule, along with the list of deadlines, may be found here - http://www.cityofbeaufort.org/metropolitan-planning-commission.aspx

Review Request: ☑ Conceptual ☐ Preliminary

Submittal Requirements: 7 hard copies and 1 digital copy of all forms and information are required. In addition to a complete application form, applicants are required to submit the following information. Additional information, such as traffic studies, stormwater concepts/calculations, arborist report, may be required.

Conceptual Request: Sketch Plan as described in Section 9.3.1.B, Conceptual Plat showing lots, roads and street sections, sidewalks, existing/proposed trees, open space.

Preliminary Request: Site Plan for Preliminary Plat as described in Section 9.3.1.C

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? ☐ **Yes** ☑ **No**

Applicant, Property, and Project Information

Applicant Name: Whitehall Point Holdings LLC

Applicant Address: 11124 Park West Blvd., Suite 101, Mount Pleasant, SC 29466

Applicant E-mail: sam.levin234@gmail.com Applicant Phone Number: 843-345-0824

Applicant Title: ☐ Homeowner ☐ Tenant ☐ Architect ☐ Engineer ☑ Developer ☐ Contractor

Owner (if other than the Applicant):

Owner Address:

Project Name: Whitehall

Property Address:

Property Identification Number (s):*(Tax Map & Parcel Number)*: R 123 014 000 0149 0000

Meeting Date Requested:

Certification of Correctness: I/we certify that the information in this application is correct.

Applicant's Signature: Date: June 22, 2020

MAJOR SUBDIVISION PROCESS

CONCEPTUAL / PRELIMINARY PLAT APPLICATION

Department of Planning & Development Services
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: $0

Required Project Information

Project Name: Whitehall

Site Area in Acres: ±10 acres Zoning District: ***T4N***

Proposed Allocations (in acres and gross %):

Developed Area: ***+/-10 acres*** Civic/Open Space: ***10% proposed- see plan***

Provide a brief Project Narrative:

Subdivision of +/-10 acre parcel located the intersection of Sea Island Parkway and Meridian Road. The subdivision will result in 2 lots. See attached narrative and supporting plans

CONTACT INFORMATION – Application form & supplementary information may be submitted via email:

Attention: Julie A. Bachety, Administrative Assistant II

City of Beaufort Department of Planning & Development Services

1911 Boundary Street, Beaufort, South Carolina 29902

E-Mail: jbachety@cityofbeaufort.org: | Phone: (843) 525-7011 | Fax: (843) 986-5606

Witmer·Jones·Keefer Ltd.
landscape architecture
land planning

June 22, 2020

Mr. David Prichard
City of Beaufort – Community and Economic Development Director

RE: Whitehall – Sketch Master Plan Submittal Narrative

Dear Mr. Prichard,

On behalf of the Applicant, Whitehall Point Holdings, we are submitting for the July 2020 Planning Commission Sketch Master Plan review for the +/- 10.0 acre property bordering Sea Island Parkway (north); Beaufort River (west) and Harbor View Circle / Meridian Road (east). The property name for this application is ***Whitehall***.

The Plan for Whitehall is using the by-right zoning, which is T4-Neighborhood (T4-N). The applicants' plan is to subdivide the property into a mix of potential mixed-use commercial and residential uses. T4-N allows a wide range of building types, including, but not limited to, *commercial retail, apartment buildings, multi-family buildings, mixed use buildings, row homes, and single family housing*. The 1st floor of the buildings fronting Sea Island Parkway will be designed to accommodate a mix of uses (commercial and residential) based on market conditions. The buildings fronting the Beaufort River will be residential in scale and maintain a private access off Harbor View Circle.

The buildings and streetscape will be designed in the Coastal Vernacular that ties to the History of Beaufort while remaining inspired, innovative and authentic.

Along with review of the Sketch Master Plan; following are items for endorsement by the Planning Commission at the July 2020 meeting:

1. **Vehicular Circulation and Street sections:**
   Following the guidance of the Beaufort Code, *Street Network Diagram,* the applicant has proposed 3 vehicular connection points including one off Sea Island Parkway, one access point off Meridian Road and a secondary access point off Harbor View Circle.

   The internal street network is designed using a modified grid to preserve existing landmark trees and tie in to the designated access points. The internal east / west street (Street 'B') terminates on the proposed Whitehall Park.

23 Promenade Street, Suite 201
Bluffton, SC 29910
Tel: 843-757-7411

A traffic Impact study has been completed based the conceptual master plan. The report supports the access points and development proposed within Whitehall. See attached Traffic Impact study.

2. Pedestrian and Bicycle Circulation:

The applicant has proposed sidewalks on all the streets within Whitehall. As outlined on the conceptual master plan, sidewalks will tie into the existing walkway along Sea Island Parkway and provide for future connectivity to sidewalks / bike paths along Meridian road.

3. Tree Preservation, Tree Removal, and Proposed Street Trees

The preliminary plat takes into account the sensitive elements of the site and surrounding neighborhoods. All trees and vegetation on the waterfront perimeter of the site will be preserved. This will ensure the view-sheds from the Woods Memorial Bridge, Downtown Beaufort and the surrounding neighborhoods are preserved.

The applicant has obtained a tree survey for all trees greater than 8" Diameter at Breast Height (DBH) on the property. Road layout, lot lines, and potential building locations have been adjusted to accommodate Landmark and specimen trees as outlined on the arborist report.

4. Parks and Open Space

+/- 10% of Whitehall is designated as Open space, Park and Greens. Open spaces and Parks will be utilized for tree preservation; Storm-water management; and Passive / Active recreation.

(Site plan attached showing open space)

5. Stormwater

Storm water runoff will be routed to above ground or underground detention/retention or a combination of these methods before leaving the site. Innovative methods including vegetated bio-retention corridors; and pervious surfaces; are planned for the open spaces within Whitehall. The drainage design will be submitted to the City of Beaufort for review and approval as well as to the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management.

6. Building Setbacks

Building setbacks will follow the District Development Standards outlined in 2.4.1 of the Beaufort Code. The Final plat will indicate special setbacks to preserve trees and provide protection of natural resources.

7. Utilities

-Water and sewer will be provided by BJWSA

-Electric and gas will be provided by SCE&G
-Cable and telephone will be provided by Hargray

8. Phasing

Whitehall roadways and infrastructure will be phased based on market conditions. Any proposed phasing will be included in the final development plans.

Attached are the following:

a. Application
b. Sketch Master Plan / Open Space Plan
c. Traffic Impact Study Previously submitted

Please contact myself to discuss any questions or comments.

Sincerely,

Witmer◆Jones◆Keefer, Ltd.

Daniel P. Keefer

Daniel Keefer, ASLA
Principal

Cc: Sam Levin
Tim Brutcher (Carolina Engineering)

June 22, 2020

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Attached are the following:

a. Application
b. Sketch Master Plan / Open Space Plan
c. Traffic Impact Study Previously submitted

Please contact myself to discuss any questions or comments.

Sincerely,

Witmer◆Jones◆Keefer, Ltd.

Daniel P. Keefer

Daniel Keefer, ASLA
Principal

Cc: Sam Levin
Tim Brutcher (Carolina Engineering)

WHITEHALL

SKETCH PLAN

FOR ILLUSTRATIVE PURPOSES

DATE: 22 JUNE 2020

LOCATION: BEAUFORT, SC

N

0 25 50 75 100 125 150 175 200

Scale 1" = 50'

DRAFT

Note: Plan is conceptual in nature and subject to change.

Witmer·Jones·Keefer Ltd.

landscape architecture land planning

www.wjkltd.com

WHITEHALL

SKETCH PLAN

FOR ILLUSTRATIVE PURPOSES

DEVELOPMENT SUMMARY

PARCEL A : ± 8.4 ACRES
- OPEN SPACE REQUIRED: 10% (±0.84 ACRES)
- OPEN SPACE PROVIDED: 12% (±1.03 ACRES)

PARCEL B: ±1.65 AC
- OPEN SPACE REQUIRED: 10% (±0.165 ACRES)
- OPEN SPACE PROVIDED: 12% (±0.20 ACRES)

DATE: 22 JUNE 2020

LOCATION: BEAUFORT, SC

N

0 25 50 75 100 125 150 175 200

Scale 1 " = 50'

DRAFT

Note: Plan is conceptual in nature and subject to change.

Witmer·Jones·Keefer Ltd.

landscape architecture land planning

www.wjkltd.com

RAMEY KEMP ASSOCIATES
Moving forward.

T 843 614 3800

7301 Rivers Avenue, Suite 242
North Charleston, SC 29406

TECHNICAL MEMORANDUM

DATE: May 1, 2020

TO: Josh Johnson, SCDOT
Juleigh Fleming, SCDOT

FROM: Jeff Ingham, Ramey Kemp & Associates, Inc.

REFERENCE: Whitehall Plantation – Traffic Study update

This memorandum serves to address previous comments on the Traffic Impact Study submitted for this site and provide an update on the proposed land plan.

A traffic impact study was submitted for this site to SCDOT in 2018 (attached). The previous Whitehall land use plan consisted of 25 single-family houses, 75 multifamily units, 100 senior adult housing units and 20,000 square feet of retail uses. The current land plan includes 202 multi-family residential units. In addition, 10 acres of the site will be transferred to the County for creation of a new park. A trip generation comparison of the new plan and the previous plan is shown Table 1.

Table 1 – Trip Generation Estimates

Land Use	ITE LUC	Scale	Weekday Daily Trips	Weekday AM Peak Hour Trips		Weekday PM Peak Hour Trips	
				In	Out	In	Out
Multifamily Housing (Low Rise)	220	202 dwelling units	1,486	21	72	69	41
Public Park	411	10 Acres	95	0	0	13	10
New External Trips (Current Plan):			**1,581**	**21**	**72**	**82**	**51**
New External Trips (Previous Plan)			**1,535**	**47**	**77**	**78**	**60**
Difference			**46**	**-26**	**-5**	**4**	**-9**

The current plan is estimated to generate roughly the same amount of peak hour trips. The findings of the previous traffic impact study should not change.

RAMEY KEMP ASSOCIATES
Moving forward.

T 843 614 3800

7301 Rivers Avenue, Suite 242
North Charleston, SC 29406

The following comments were provided by SCDOT (e-mail attached). Response are shown in green.

1. If your traffic study was not phased, you will be required to install all access points that are approved as part of the overall traffic study approval. You will not be able to just install the driveway on US-21. If it is not your plan to install all access points listed in the study, you will need an update to your study with defined phasing of the site development.

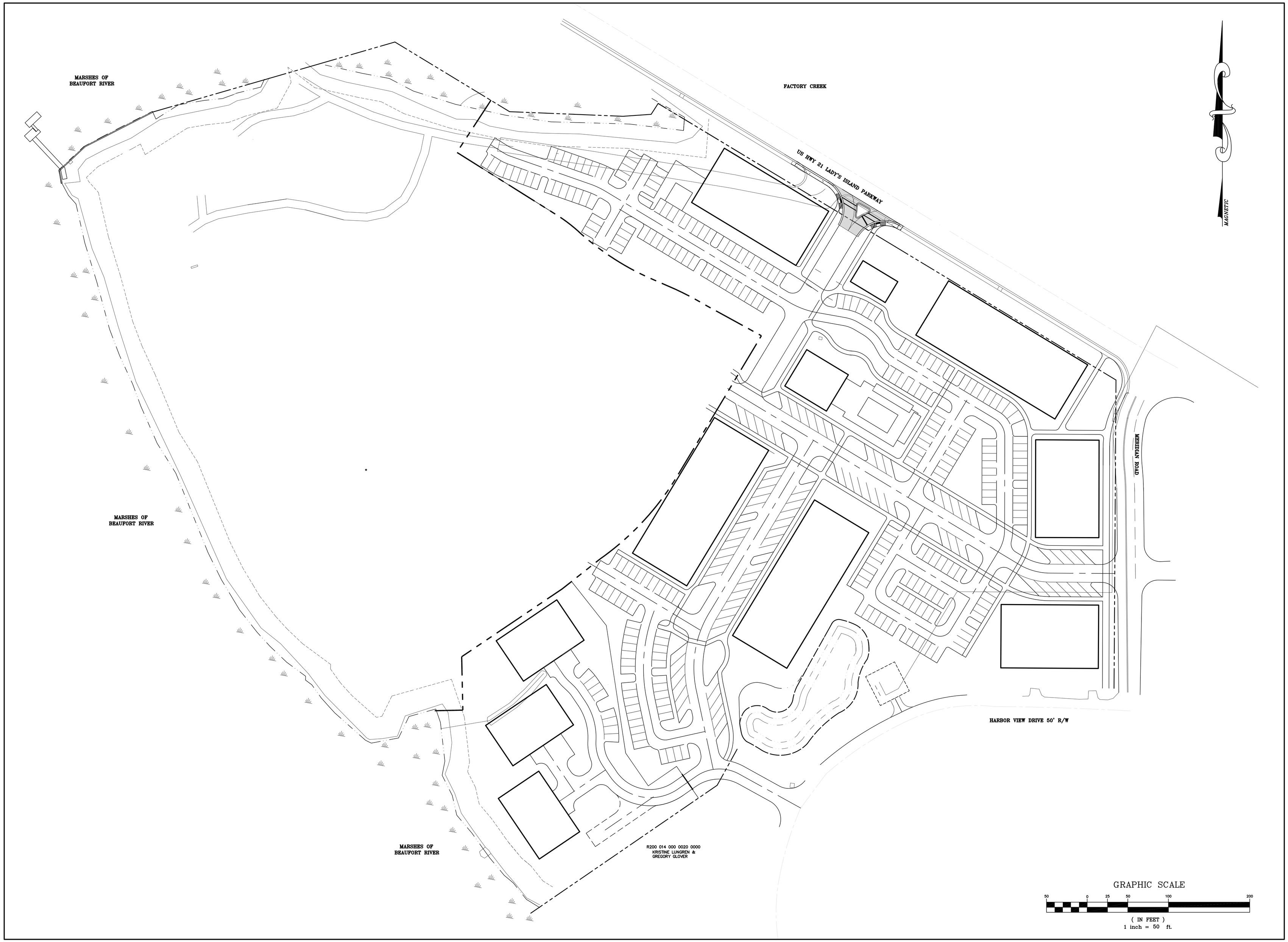
   So, when you resubmit a new application, you'll want to make sure your plans match the recommendations in the approved traffic study.
   The owner is currently seeking to construct the right-in, right-out access only as a relocation of the existing skewed access to the Park parcel. The existing access will be closed with the relocation. Traffic volumes will be shifted, but new trips will not be generated. The current plan will develop the residential section and all of the other access points in one phase. No residential development will be occupied prior to the construction of the other accesses.

2. A prior comment requested evaluation of other improvements other than signalization since a signal will not be initially approved and is not guaranteed. Specifically, would a turn lane from Meridian onto US 21 Bus be beneficial as an interim improvement?
   A second approach lane from Meridian Road approaching US 21 Business will be included as part of future encroachment permit applications – see attached site plan.

3. Driveway spacing is discussed and it was mentioned that the proposed driveway on Meridian is 20 feet north of the bank driveway. Driveways need to be aligned when site plan is provided. Not only would this location not meet spacing requirements, but it would create interlocked left turns. If driveway spacing cannot be met, then eliminate driveway.
   The revised plan aligns the driveway with the bank driveway – see attached site plan.

4. A traffic signal will be considered at the location of US 21 Bus & Meridian when volume warrants are met but will not be approved at this time. An updated study by the developer will be required to justify the signal, and if approved, signal design and construction will be at the cost of the developer. If at any time SCDOT, City of Beaufort, or Beaufort County conducts a signal warrant study and determines a signal is justified and approved, the developer will be notified and required to design and construct the signal."
   The developer acknowledges that if at any time ***up to the completion of the development***, the SCDOT, City of Beaufort or Beaufort County conducts a signal warrant study and determines a signal is justified and approved, the developer will be notified and required to design and construct the signal.

If you have any questions regarding this memorandum, please contact me at (843) 819-0270.



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PLAN REVISIONS

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2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-

WHITEHALL
CITY OF BEAUFORT
BEAUFORT COUNTY, SC

CAROLINA ENGINEERING CONSULTANTS, INC.
PO BOX 294
BEAUFORT, SC 29901
843/322-0553
843/322-0556 (FAX)
WWW.CAROLINAENGINEERING.COM

PROJECT:	2085
DATE:	05/30/19
REVISED:	04/29/20
DRAWN BY:	TAB
ENGINEER:	JPA
SCALE:	1"=50'

SITE PLAN

1
OF 1

From: Fleming, Juleigh B. <FlemingJB@scdot.org>
Sent: Monday, February 03, 2020 1:44 PM
To: Tim Brutcher <timb@carolinaengineering.com>
Cc: Grooms, Robert W. <GroomsRW@scdot.org>; Payne, Adam C. <PayneAC@scdot.org>; Johnson, Joshua A. <JohnsonJA@scdot.org>; Rick Reiff <rreiff@rameykemp.com>
Subject: RE: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

Tim,
I need to clarify my last response that is attached. If your traffic study was not phased, you will be required to install all access points that are approved as part of the overall traffic study approval. You will not be able to just install the driveway on US-21. If it is not your plan to install all access points listed in the study, you will need an update to your study with defined phasing of the site development.

So, when you resubmit a new application you'll want to make sure your plans match the recommendations in the approved traffic study.

Thanks!
JuLeigh
From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Monday, February 3, 2020 11:56 AM
To: Rick Reiff <rreiff@rameykemp.com>
Cc: Grooms, Robert W. <GroomsRW@scdot.org>; Fleming, Juleigh B. <FlemingJB@scdot.org>; Payne, Adam C. <PayneAC@scdot.org>; Tim Brutcher <timb@carolinaengineering.com>
Subject: RE: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

Thanks, Rick. These do address the comments themselves, but what is the request of my office? Is the applicant requesting approval of the TIA which does not currently recommend the turn lane improvement and does not recommend changes to the driveway locations which do not meet spacing? The responses below state these will be addressed with the design, but the typical application would include an approval of the TIA. Perhaps the quickest way to address these could be a cover memo packaged together with the TIA which addresses the comments similar to the responses below?

Josh Johnson, PE, PTOE
District Traffic Engineer
SCDOT District 6

From: Rick Reiff <RReiff@rameykemp.com>
Sent: Wednesday, January 29, 2020 4:49 PM
To: Johnson, Joshua A. <JohnsonJA@scdot.org>; Tim Brutcher <timb@carolinaengineering.com>
Cc: Grooms, Robert W. <GroomsRW@scdot.org>; Fleming, Juleigh B. <FlemingJB@scdot.org>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Josh, as a follow-up to your comments, please see our responses below in **green**. I believe these responses should address your comments on the traffic study, please let me know if you have any questions or would like to discuss further.

Richard M. Reiff, P.E., PTOE, RSP2I
South Carolina State Director

<image001.jpg>

7301 Rivers Avenue, Suite 242
North Charleston, South Carolina 29406
Direct: 843-614-3801 | Mobile: 843-718-5232

Proudly serving the Southeast since 1992.

<image002.gif><image003.gif><image004.gif>

From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Thursday, November 7, 2019 10:32 AM
To: Tim Brutcher <timb@carolinaengineering.com>
Cc: Grooms, Robert W. <GroomsRW@scdot.org>; Fleming, Juleigh B. <FlemingJB@scdot.org>; Rick Reiff <RReiff@rameykemp.com>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

Tim,

The TIA you provided is dated 3/29/18, which is the same TIA that we reviewed on 4/6/18. That TIA was sent to us for review by the City of Beaufort, and so we provided comments to them at that time. There was a prior review of an earlier version of the TIA sent to us on 10/11/17 by Rick Reiff with comments provided on 10/16/17. Two of the three 10/16/17 comments were addressed in the 3/29/18 update but further comments were generated based on the revisions. Below is the complete set of prior comments and their status, in italics.

"We reviewed the original study and provided comments 10/16/2017. Of the three comments provided, two were addressed in the updated study. The comments were:

1. *A signal is recommended, but no signal warrant analysis is provided. Provide signal warrant analysis. – Addressed. A signal warrant analysis was provided and a signal is recommended when warrants are met.*
2. *Because a signal is not likely to be warranted, are there other improvements to evaluate, such as a turn lane from Meridian onto US 21 Bus? – Not addressed.*
3. *Driveway spacing is not discussed for US 21 Bus. Does the proposed driveway meet spacing requirements? – Addressed for the purposes of the study. Driveways meet spacing except the proposed full access on Meridian, which is 20 feet north of the bank driveway. This would be*

commented on in the site plan review and this offset would not be allowed. I'll bet there is a tree in the way.

Updated comments for the new TIA are as follows:

1. *A prior comment requested evaluation of other improvements other than signalization since a signal will not be initially approved and is not guaranteed. Specifically, would a turn lane from Meridian onto US 21 Bus be beneficial as an interim improvement?* **The second approach lane from Meridian Road approaching US 21 Business will been included in the development plans.**
2. *Driveway spacing is discussed and it was mentioned that the proposed driveway on Meridian is 20 feet north of the bank driveway. Driveways need to be aligned when site plan is provided. Not only would this location not meet spacing requirements, but it would create interlocked left turns. If driveway spacing cannot be met, then eliminate driveway.* **SCDOT requirements are acknowledged and the final Meridian Road Access location and alignment will be addressed upon encroachment permit application.**
3. *A traffic signal will be considered at the location of US 21 Bus & Meridian when volume warrants are met, but will not be approved at this time. An updated study by the developer will be required to justify the signal, and if approved, signal design and construction will be at the cost of the developer. If at any time SCDOT, City of Beaufort, or Beaufort County conducts a signal warrant study and determines a signal is justified and approved, the developer will be notified and required to design and construct the signal."* **This comment is acknowledged.**

Thanks,

Josh Johnson, PE, PTOE
District Traffic Engineer
SCDOT District 6

From: Tim Brutcher [mailto:timb@carolinaengineering.com]
Sent: Tuesday, November 05, 2019 2:13 PM
To: Johnson, Joshua A.
Cc: Grooms, Robert W.; Fleming, Juleigh B.; Rick Reiff
Subject: RE: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Josh,

Attached is a traffic impact analysis for the Whitehall development project for your approval. Rick Reiff was the traffic engineer for this and has been copied in on the email. Let us know if you have any questions of need any additional information.

Thanks

Tim Brutcher, PLS
Carolina Engineering Consultants
800 Congress St.

Beaufort, SC 29902
(843)322-0553
timb@carolinaengineering.com

From: Fleming, Juleigh B. <FlemingJB@scdot.org>
Sent: Wednesday, October 30, 2019 1:09 PM
To: Jeff Ackerman <jeffa@carolinaengineering.com>
Cc: Grooms, Robert W. <GroomsRW@scdot.org>; Johnson, Joshua A. <JohnsonJA@scdot.org>
Subject: FW: SCDOT Encroachment Permit Application #200074808 Beaufort - DRIVEWAY - COMMERCIAL

Hey Jeff,
We received your permit submittal for the Whitehall development. There are two issues:

1. The traffic study was never finalized an approved by our District Traffic Engineer – You'll need to get traffic study approval from Josh Johnson before we review your application. Rick Reiff can coordinate this with Josh.
2. The site plan was not uploaded to EPPS. The document that was uploaded as the site plan is actually the project narrative.

I just wanted to let you know for future applications, if you are required to do a traffic study, it has to be reviewed/approved by Josh before you submit your permit application. That approval email has to be uploaded in the application with the traffic study.

Let me know if you have any questions.

Thanks!
JuLeigh

From: Encroachment Permits <SMPSHPT1302@scdot.org>
Sent: Wednesday, October 30, 2019 11:41 AM
To: Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Dean, Robert G. <DeanRG@scdot.org>
Subject: SCDOT Encroachment Permit Application #200074808 has been created and assigned to you. RE: Beaufort - DRIVEWAY - COMMERCIAL - Intersection of Sea Island Parkway (HWY 21) and Whitehall Drive

TRAFFIC IMPACT STUDY

FOR THE

WHITEHALL MIXED-USE DEVELOPMENT

LOCATED
IN
BEAUFORT, SOUTH CAROLINA

Prepared For:
Witmer-Jones-Keefer, Ltd.

Prepared By:
Ramey Kemp & Associates, Inc.

March 2018
RKA Project #18056

TRAFFIC IMPACT STUDY

FOR THE

WHITEHALL MIXED-USE DEVELOPMENT

LOCATED
IN
BEAUFORT, SOUTH CAROLINA

Prepared For:
Witmer-Jones-Keefer, Ltd.
23 Promenade Street, Suite 201
Bluffton, South Carolina 29910

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

March 2018
RKA Project #18056

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

DocuSigned by:
Richard M. Reiff
C1F1A9F80D54411...
3/29/2018

This document has been digitally signed and sealed by Richard M. Reiff, South Carolina Professional Engineer Number 27504, on March 29, 2018. This electronic document is 127 pages in length.

The digital signature certificate must be verified on any electronic copies of this document.

Printed copies of this document are not considered signed and sealed.

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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 25 single-family houses, 75 multi-family units, 100 senior adult housing units, and 20,000 square feet of retail uses.

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

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, a traffic signal warrant analyses was completed using the 2020 Build conditions traffic projections to determine if traffic signalization of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway would be warranted with buildout of the development. The results show that Warrant 1, Condition B and Warrant 2 are projected to be satisfied with buildout of the development; therefore, it is recommended that this intersection be signalized 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, exclusive left-turn lanes at the project driveways along Meridian Road and Harborview Circle are not recommended.

Based on the Highway Design Manual considerations, exclusive right-turn lanes at the project driveways along US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle are not recommended.

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.

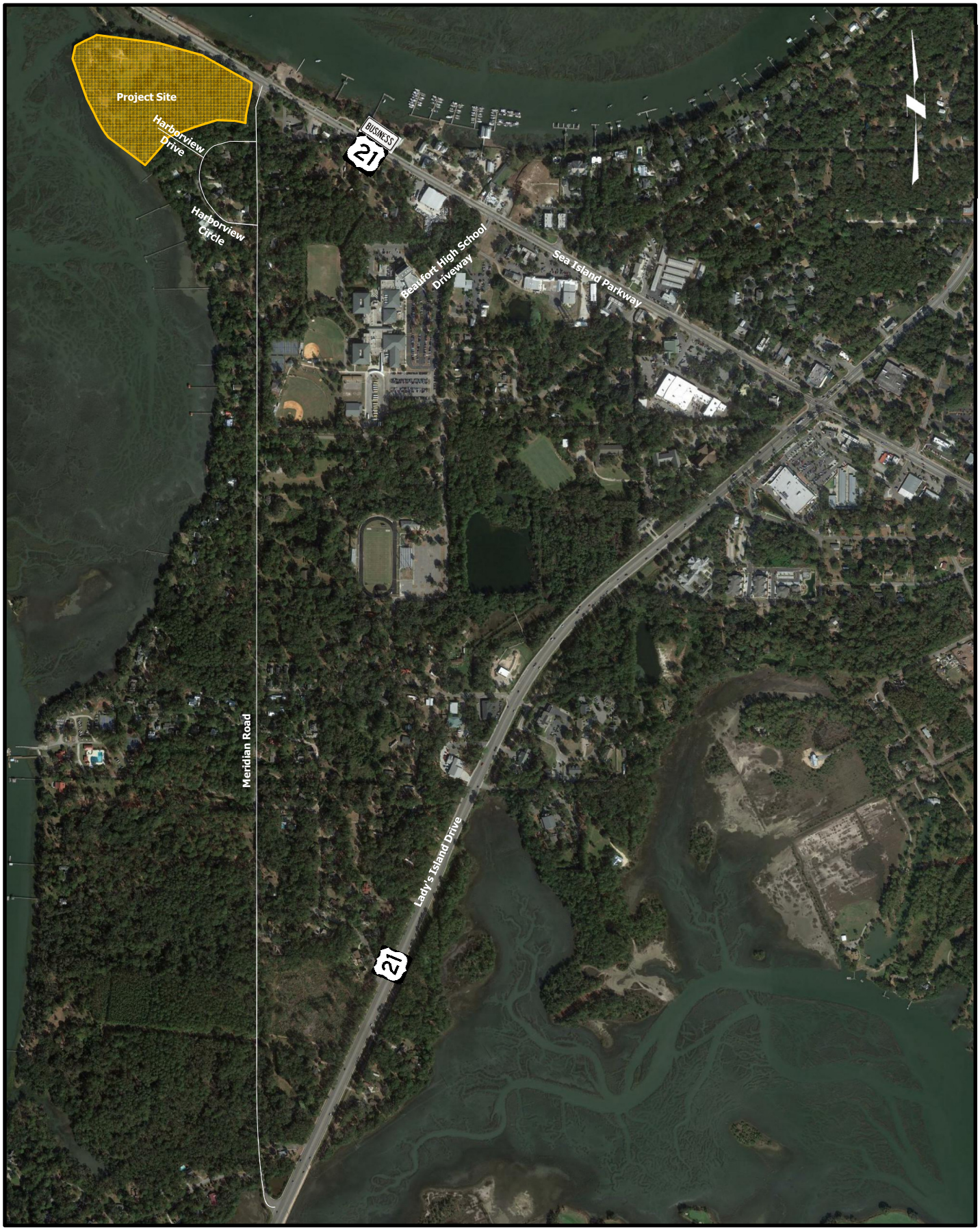
1.1. Project Background

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 25 single-family houses, 75 multi-family units, 100 senior adult housing units, and 20,000 square feet of retail uses. Access to the development is proposed to be provided through one right-in/right-out driveway along US 21 Business/Sea Island Parkway (North Project Driveway), one full-access driveway along Meridian Road (East Project Driveway), and one connection to the existing Harborview Drive (South Project Driveway).

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.



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Whitehall Mixed-Use Development - Traffic Impact Study
Figure 1 - Project Location

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Whitehall Mixed-Use Development - Traffic Impact Study
Figure 2 - Conceptual Site Plan

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

Based upon the 40 mph posted speed limit, the 2016 AADT, and the driveway spacing criteria of *ARMS*, a minimum driveway spacing of 150 feet is required for a right-in/right-out driveways along US 21 Business/Sea Island Parkway. The proposed North Project Driveway is located approximately 380 feet west of the intersection with Meridian Road, which meets the SCDOT spacing criteria; therefore no access modifications are recommended at this driveway.

Based upon the 35 mph posted speed limit, the 2016 AADT, and the driveway spacing criteria of *ARMS*, a minimum driveway spacing of 125 feet is required for driveways along Meridian Road. The proposed East 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. No modifications to the project access plan are recommended at this time.

Harborview Drive is an existing roadway along Harborview Circle therefore no modifications 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 25 single-family houses, 75 multi-family units, 100 senior adult housing units, and 20,000 square feet of retail uses. 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) 210 – Single Family Detached Housing, (LUC) 220 – Apartment, (LUC) 252 – Senior Adult Housing-Attached, and (LUC) 826 – Specialty Retail Center. 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	Scale	Weekday Daily Trips	Weekday AM Peak Hour Trips		Weekday PM Peak Hour Trips	
				In	Out	In	Out
Single Family Detached Housing	210	25 dwelling units	293	7	20	19	11
Apartment	220	75 dwelling units	578	8	32	38	21
Senior Adult Housing – Attached	252	100 dwelling units	320	7	13	14	12
Specialty Retail Center	826	20 ksf	894	36	22	30	39
		Gross Trips:	2,085	58	87	101	83
		- Internal Capture Trips:	-303	-1	-1	-13	-13
		- Pass-By Capture Trips:	-247	-10	-9	-10	-10
		New External Trips:	**1,535**	**47**	**77**	**78**	**60**

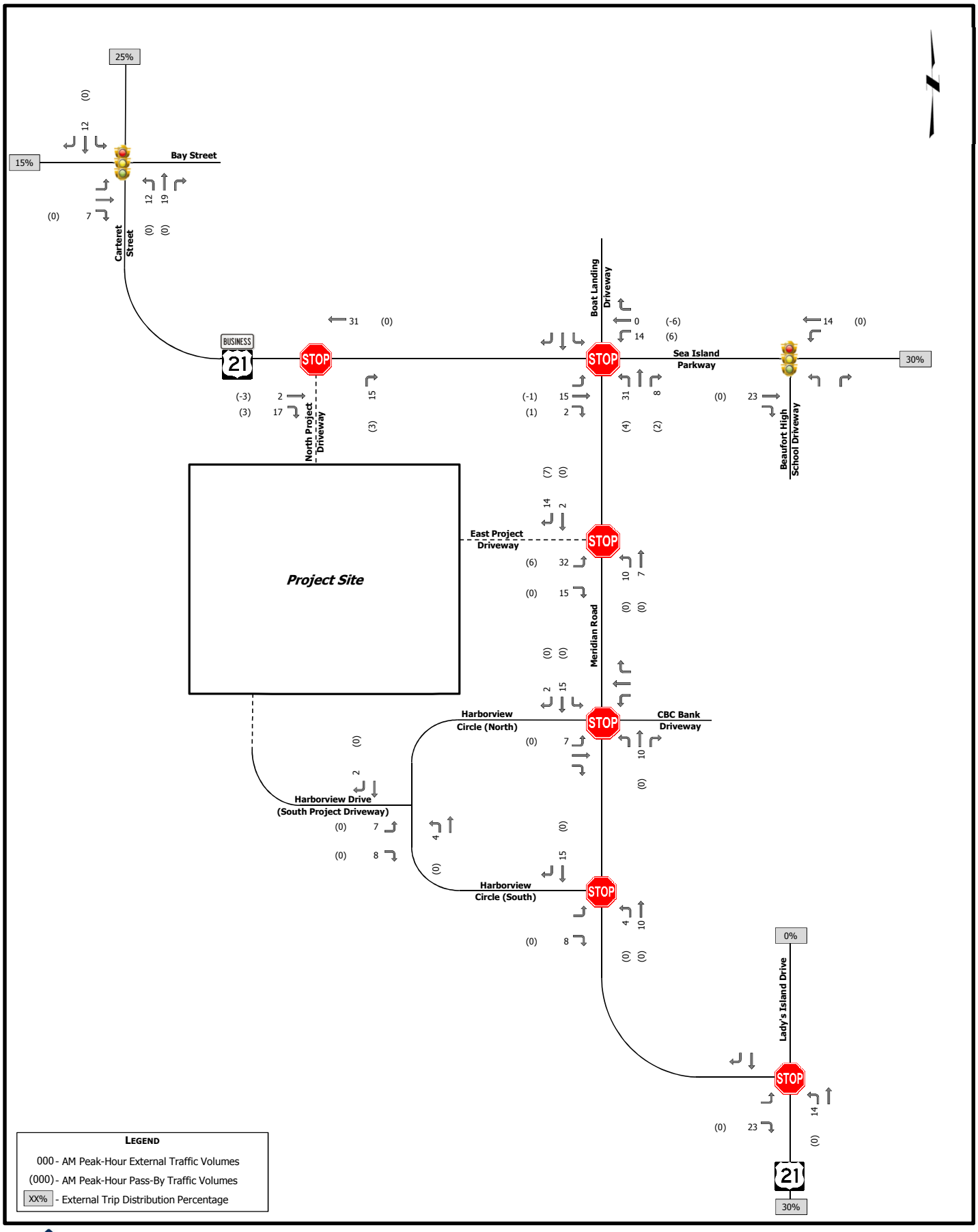
3.3 Trip Distribution & Assignment

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:

- 25% to/from the north via US 21 Business/Carteret Street,
- 15% from the west via Bay Street.
- 30% to the east via US 21 Business/Sea Island Parkway; and
- 30% to/from the south via US 21/Lady's Island Drive.

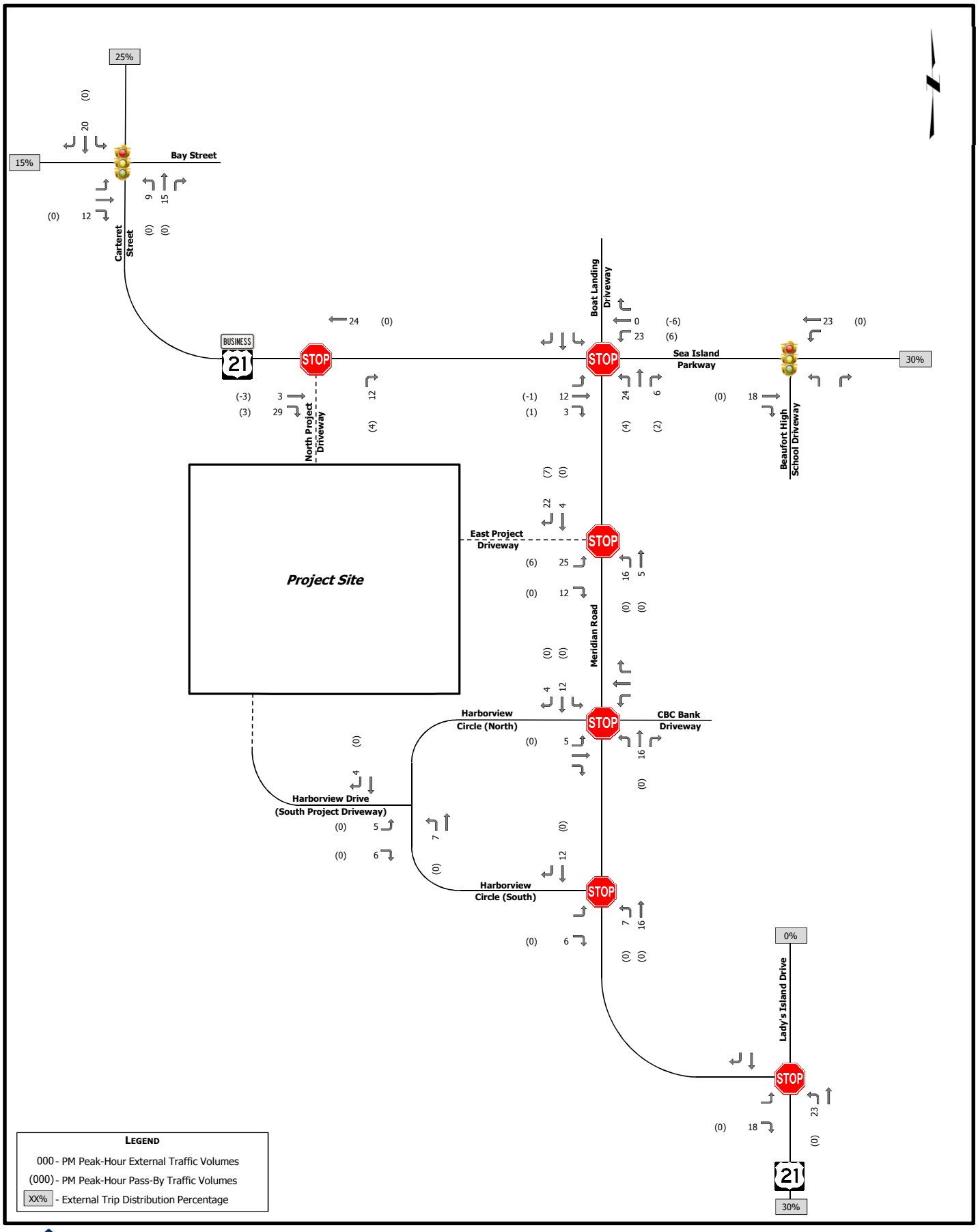
Pass-by traffic expected to be generated by the Whitehall mixed-use development was distributed and assigned to the roadway network based upon existing travel patterns. The general distribution of pass-by trips was assumed to be 55% to/from eastbound US 21 Business/Sea Island Parkway and 45% to/from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



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Whitehall Mixed-Use Development - Traffic Impact Study
Figure 3 - AM Peak-Hour Project Traffic Volumes


25%
15%
Bay Street
Carteret Street
BUSINESS
21
STOP
North Project Driveway
Boat Landing Driveway
Sea Island Parkway
30%
Beaufort High School Driveway
East Project Driveway
Project Site
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (South Project Driveway)
Harborview Circle (South)
0%
Lady's Island Drive
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:

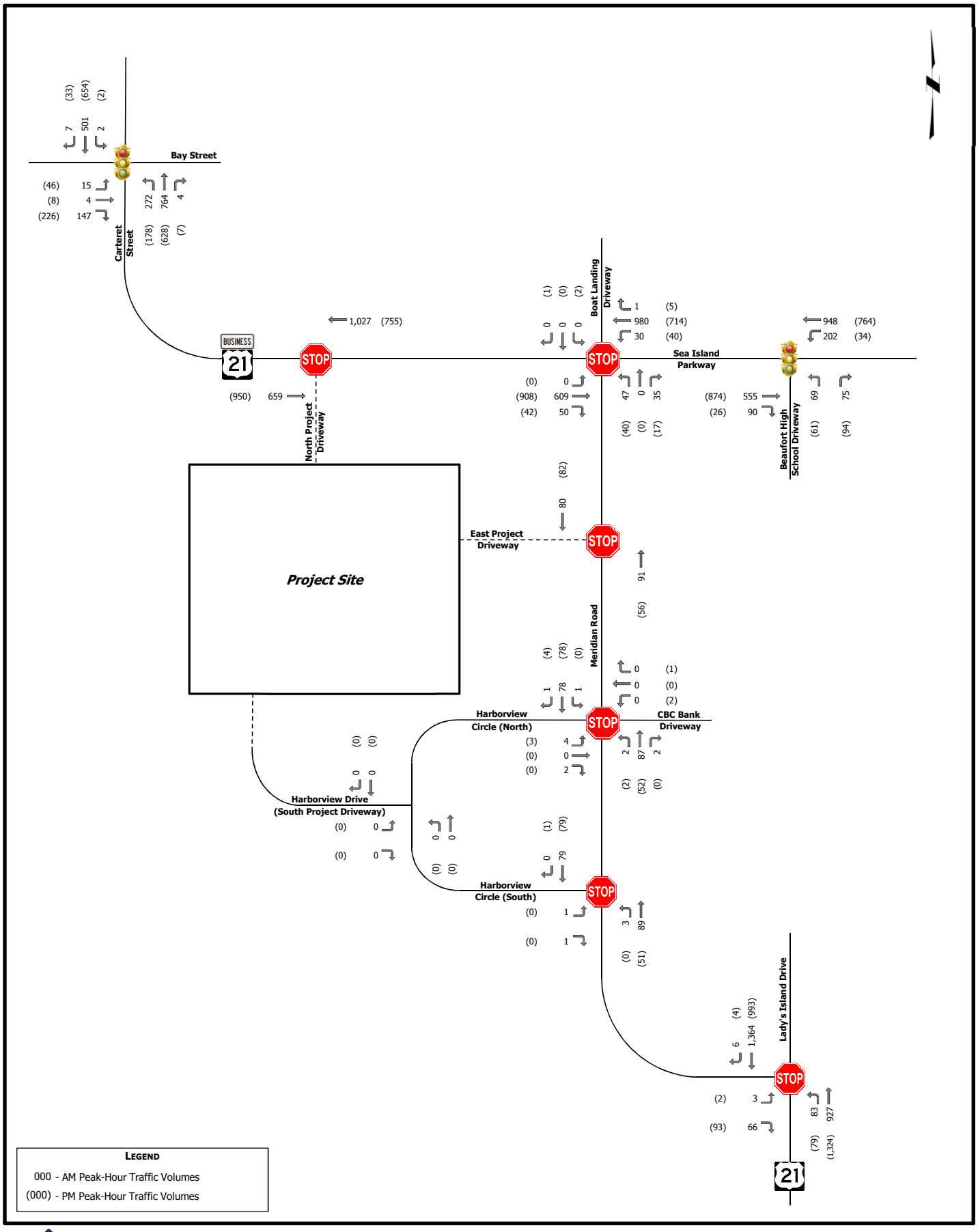
1) US 21 Business/Carteret Street & Bay Street;
2) US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway;
3) US 21 Business/Sea Island Parkway & Beaufort High School Driveway;
4) Meridian Road & Harborview Circle (north)/CNC Bank Driveway;
5) Meridian Road & Harborview Circle (south);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

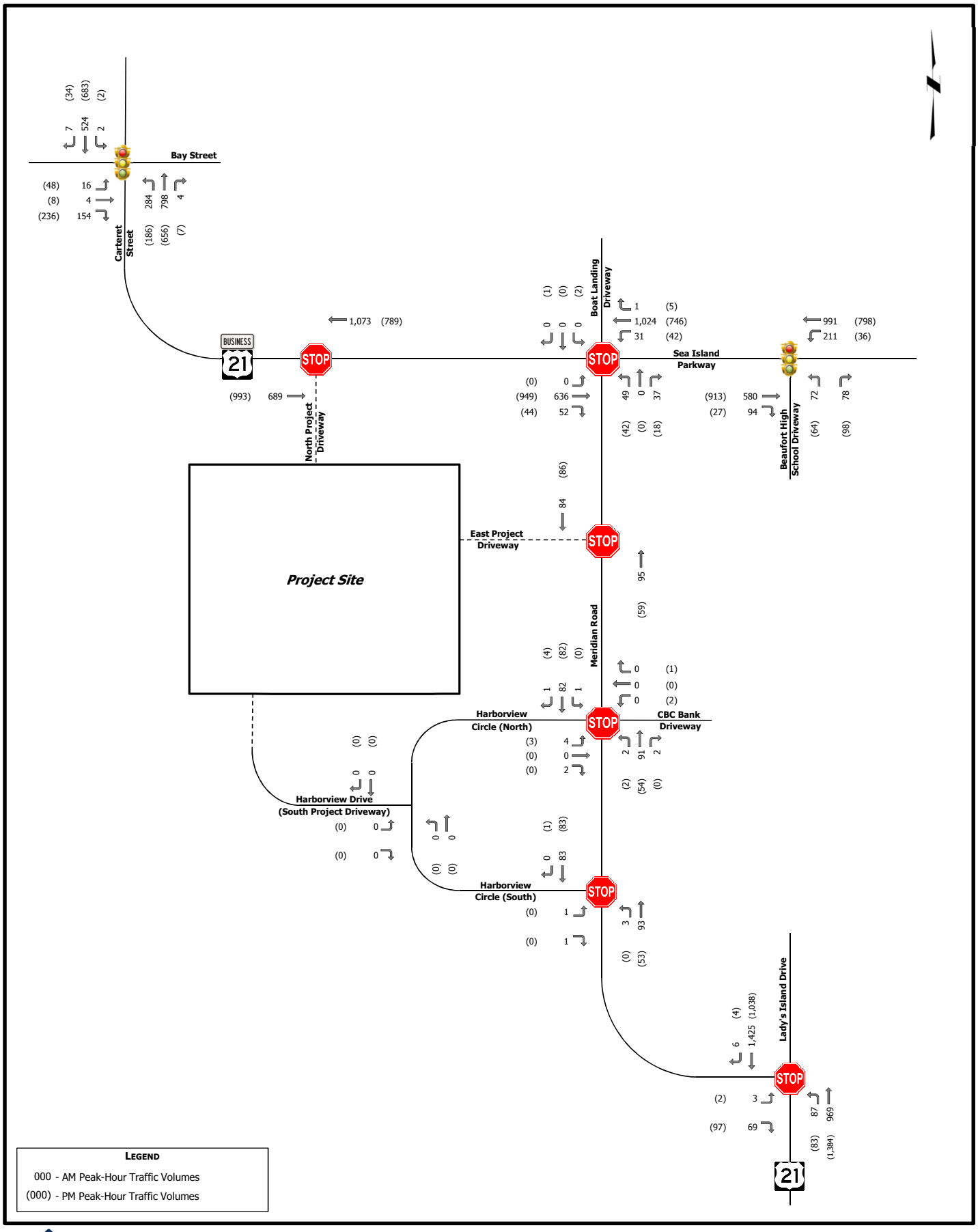
The counts were conducted in August 2017 while the local school district was in session. The raw traffic counts are provided in Appendix B and the 2017 existing traffic volumes are illustrated in Figure 5.

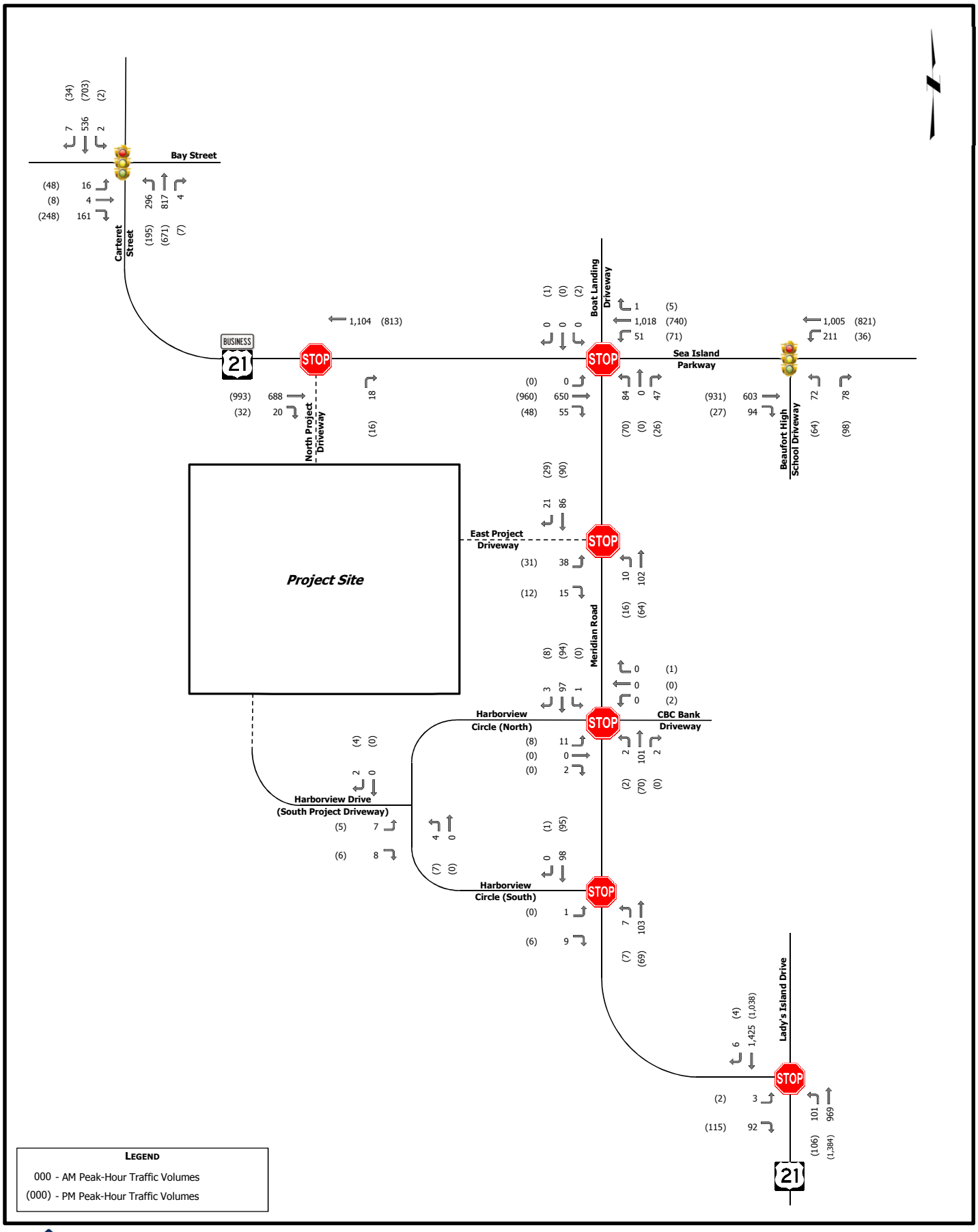
4.2 Future Traffic Volume Projections

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


Bay Street
Carteret Street
BUSINESS 21
North Project Driveway
Boat Landing Driveway
Sea Island Parkway
Beaufort High School Driveway
East Project Driveway
Project Site
Meridian Road
Harborview Circle (North)
CBC Bank Driveway
Harborview Drive (South Project Driveway)
Harborview Circle (South)
Lady's Island Drive
21
STOP
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 7 - Build (2020) 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. Turn Lane Analysis

An analysis was conducted to determine the potential need for exclusive turn lanes along US 21 Business/Sea Island Parkway at the North Project Driveway, along Meridian Road at the East Project Driveway and along Harborview Circle at the South Project Driveway intersections. This analysis was conducted utilizing the criteria documented in SCDOT's *ARMS* manual and *Highway Design Manual* (2017).

The need for exclusive left-turn lanes is based upon the criteria documented in Section 9.5.1.2 of the *Highway Design Manual*, which consists of nine considerations. These considerations and applications at the intersections of Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are summarized below. The intersection of US 21 Business/Sea Island Parkway & North Project Driveway is proposed to be a right-in/right-out driveway therefore a left-turn lane is not recommended at this driveway.

1) *at any unsignalized intersection on principal, high-speed rural highways with other arterials or collectors;*

   The project driveways are not located on high-speed rural highways; therefore, this consideration is not met.

2) *at any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figures 9.5-C, 9.5-D, 9.5-E, 9.5-F, or 9.5-G;*

   The posted speed limit along Meridian Road near the East Project Driveway is 35 mph; therefore, this criteria is not met.

   The posted speed limit along Harborview Circle at the South Project Driveway is 25 mph; therefore, this criteria is not met.

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

   The intersections of Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are projected to operate at an acceptable LOS without exclusive northbound left-turn lanes into the project site; therefore, this consideration is not met.

4) *at any signalized intersection where the left-turn volume is 300 vehicles per hour or more, conduct a traffic review to determine if dual left-turn lanes are required;*

   The intersections of Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are projected to have mainline left-turn volumes of less than 300 vehicles in the peak hours and are not proposed to be signalized; therefore, this consideration is not met.

5) *as a general rule, at any intersection where the left-turning volume is 100 vehicles per hour (for a single turn lane) or 300 vehicles per hour (for a dual turn lane);*

   The intersections of Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are projected to have northbound left-turn volumes less than 100 vehicles in the peak hours; therefore, this consideration is not met.

6) *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 met.

7) *at all median crossovers;*

   There is not a median crossover along Meridian Road or Harborview Circle at the project driveway intersections therefore, this consideration is not met.

8) *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 exclusive left-turn lanes at other unsignalized intersections along Meridian Road or Harborview Circle, therefore, this consideration is not met.

9) *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 or Harborview Circle in this area; therefore, this consideration is not applicable.

Based on the *Highway Design Manual* considerations, exclusive northbound left-turn lanes along Meridian Road at the East Project Driveway intersection and along Harborview Circle the South Project Driveway intersection are not recommended. A worksheet documenting the left-turn lane warrant analysis is provided in Appendix G.

The need for exclusive right-turn lanes is based upon the criteria documented in Section 9.5.1.1 of the *Highway Design Manual*, which consists of nine considerations. These considerations and applications at the intersections of US 21 Business/Sea Island Parkway & North Project Driveway, Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are summarized on the following page.

1) *at a free-flowing leg of any intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 9.5-A;*

   The projected 2020 Build conditions traffic volumes at the US 21 Business/Sea Island Parkway & North Project Driveway intersection do not satisfy the criteria for *FIGURE 9.5-A – GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS.*

   The projected 2020 Build conditions traffic volumes at the Meridian Road & East Project Driveway intersection do not satisfy the criteria for *FIGURE 9.5-A – GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS.*

   The projected 2020 Build conditions traffic volumes at the Harborview Circle & South Project Driveway intersection do not satisfy the criteria for *FIGURE 9.5-A – 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 (50 miles per hour or greater), four-lane urban or rural highway that satisfies the criteria in Figure 9.5-B;*

   The speed limits along US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle are 40 mph, 35 mph, and 25 mph; respectively, in the study area; therefore, this consideration is not met.

3) *at the free-flowing leg of any unsignalized intersection on a six-lane urban or rural highway;*

   US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle are not six-lane roadways; therefore, this consideration is not met.

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

   The US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle approaches to the project driveway intersections are projected to operate at an acceptable LOS without exclusive right-turn lanes along into the project site; therefore, this consideration is not met.

5) *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 intersections of US 21 Business/Sea Island Parkway & North Project Driveway, Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway are projected to have mainline right-turn volumes of less than 300 vehicles in the peak hours; therefore, this consideration is not met.

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

   There are no exclusive mainline right-turn lanes at other unsignalized intersections along US 21 Business/Sea Island Parkway, Meridian Road, or Harborview Circle; therefore, this consideration is not met.

7) *at any intersection where the mainline is curved to the left and where the mainline curve requires superelevation;*

   The project driveway intersections are not located in curves to the left which require superelevation; therefore, the consideration is not met.

8) *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.

9) *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g. intersection beyond a crest vertical curve), 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 of US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle; therefore, this consideration is not applicable.

Based on the *Highway Design Manual* considerations, exclusive right-turn lanes are not recommended for the US 21 Business/Sea Island Parkway & North Project Driveway, Meridian Road & East Project Driveway and Harborview Circle & South Project Driveway intersections. A worksheet documenting the right-turn lane analyses is provided in Appendix G.

5.2. 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 on the following page 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/0.0	A/0.0
	NB	- -	- -	- -	- -	B/14.5	C/20.4
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/1.0
	NB	F/110.5	F/134.2	F/180.9	F/203.4	F/540.6	F/541.8
	SB	A/0.0	F/53.7	A/0.0	F/63.2	A/0.0	F/75.8
Meridian Road & East Project Driveway	EB	- -	- -	- -	- -	A/9.9	A/9.8
	NB	- -	- -	- -	- -	A/0.7	A/1.5
	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	A/9.9	A/9.8
	WB	A/0.0	A/9.2	A/0.0	A/9.2	A/0.0	A/9.4
	NB	A/0.2	A/0.3	A/0.2	A/0.3	A/0.1	A/0.2
	SB	A/0.1	A/0.0	A/0.1	A/0.0	A/0.1	A/0.0
Harborview Circle & Harborview Drive (South Project Driveway)	EB	- -	- -	- -	- -	A/8.5	A/8.5
	NB	- -	- -	- -	- -	A/7.3	A/7.3
	SB	- -	- -	- -	- -	A/0.0	A/0.0
Meridian Road & Harborview Circle (South)	EB	A/9.3	A/0.0	A/9.2	A/0.0	A/9.0	A/8.9
	NB	A/0.2	A/0.0	A/0.2	A/0.0	A/0.5	A/0.7
	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/29.8	C/17.9
	NB	A/1.2	A/0.6	A/1.3	A/0.7	A/1.5	A/0.8
	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/21.5	- -	- -
US 21 Business/Sea Island Parkway & Beaufort High	B/10.5	B/13.0	B/10.9	B/13.4	B/11.0	B/13.6	- -	- -
US 21 Business/Sea Island Parkway Meridian Road/Boat Landing Driveway	- -	- -	- -	- -	- -	- -	B/8.7*	A/9.6*

*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.

6. SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis was conducted for the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection. The methods used for the signal warrant analysis were based upon the criteria set forth in the 2009 Edition of the Federal Highway Administration's *Manual on Uniform Traffic Control Devices (MUTCD).*

The analysis considered the projected 2020 No-Build hourly traffic volumes plus the projected hourly traffic volumes from the Whitehall mixed-use development , which are documented in Appendix H. Traffic volumes for the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection approaches were developed for each hour between 6:00 AM to 7:00 PM using the daily trip generation estimates from the ITE's *Trip Generation Manual*, 9th Edition (2012) as previously discussed. Hourly distribution percentages considered the ITE's *Trip Generation Manual*, 9th Edition (2012) percentages for LUC 820 – Shopping Center and the ITE's *Trip Generation Manual*, 10th Edition (2017) percentages for the residential land uses. A worksheet documenting the hourly traffic volumes is provided in Appendix H.

The *MUTCD* contains eight warrants used to evaluate intersections for potential traffic signalization. In performing this analysis, only the traffic volume warrants, Warrant 1 and Warrant 2, were considered applicable in evaluating the projected intersection characteristics. Worksheets documenting the traffic signal analysis are provided in Appendix H.

For the purposes of the analysis, it is expected that the minor-street Meridian Road right-turn movements will impact the need for a traffic signal; therefore, 50% of the minor-street right-turn traffic volumes were included in the signal warrant analysis.

6.1. Warrant 1A – Eight-Hour Vehicular Volume

The Eight-Hour Vehicular Volume Warrant is separated into two conditions based upon intersection volumes. Condition A is intended for applications where a large volume of intersecting traffic is the principal reason to consider the installation of a traffic signal. The minimum hourly volumes need to satisfy the criteria of Warrant 1, Condition A are 500 vehicles on the major-street approaches and 150 vehicles on the highest minor-street approach for a one-lane approach for each of any eight hours of an average day.

For build 2020 traffic volumes, considering the major street as US 21 Business/Sea Island Parkway and the minor street as Meridian Road, the criteria are met for zero hours; therefore, Warrant 1, Condition A is **not satisfied** for build 2020 conditions.

6.2. Warrant 1B – Eight-Hour Vehicular Volume

The Eight-Hour Vehicular Volume Warrant is separated into two conditions based upon intersection volumes. Condition B is intended where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. The minimum hourly volumes need to satisfy the criteria of Warrant 1, Condition B are 750 vehicles on the major-street approaches and 75 vehicles on the highest minor-street approach for a one-lane approach for each of any eight hours of an average day.

For build 2020 traffic volumes, considering the major street as US 21 Business/Sea Island Parkway and the minor street as Meridian Road, the criteria are met for 11 hours; therefore, Warrant 1, Condition B is **satisfied** for build 2020 conditions.

6.3. Warrant 1 Combination – Eight-Hour Vehicular Volume

In addition to the two Conditions of Warrant 1, a combination of Conditions A and B is provided if the intersection volumes do not meet the criteria of either Condition A or Condition B. The minimum hourly volumes need to satisfy the criteria are 80% of both the respective Condition A and Condition B criteria for the major-street and minor-street approaches for each of any eight hours of an average day.

For build 2020 traffic volumes, considering the major street as US 21 Business/Sea Island Parkway and the minor street as Meridian Road, Warrant 1, Combination is **not applicable** due to the fact that the traffic volumes meet Warrant 1, Condition B for build 2020 conditions.

6.4. Warrant 2 – Four-Hour Vehicular Volume

The Four-Hour Vehicular Volume Warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider the installation of a traffic signal. The criteria of Warrant 2 are satisfied if the major-street and minor-street plotted hourly volumes fall above the applicable curve in Figure 4C-1 of the *MUTCD* for each of any four hours of an average day.

For build 2020 traffic volumes, considering the major street as US 21 Business/Sea Island Parkway and the minor street as Meridian Road, the criteria are met for nine hours; therefore, Warrant 2 is **satisfied** for build 2020 conditions.

6.5. Traffic Signal Warrant Analysis Summary

Table 5 summarizes the results of the signal warrant analysis for the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection. Worksheets documenting the signal warrant analysis are provided in Appendix H.

Table 5 – Signal Warrant Analysis Summary

***MUTCD* Warrant**		**Signal Warrant Results Build 2020 Conditions**
Warrant 1 (Eight-Hour Vehicular Volume)	Condition A	Not Satisfied
	Condition B	Satisfied
	Combination	Not Applicable
Warrant 2 (Four-Hour Vehicular Volume)		Satisfied

Based upon build 2020 traffic volumes, considering the major street as US 21 Business/Sea Island Parkway and the minor street as Meridian Road, the traffic signal warrant criteria are met for 11 (of eight) hours of Warrant 1, Condition B and for nine (of four) hours of Warrant 2. Based upon the results of the traffic signal warrant analysis, traffic signalization is recommended for consideration at the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway intersection once the future traffic volumes meet the warrant criteria with the development of the Whitehall mixed-use development.

The analyses considered 50% of the right-turning vehicles, however it should be noted that the Warrant 1, Condition B and Warrant 2 will still be satisfied considering only 30% of the right-turning vehicles during the 2020 Build conditions.

7. 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 25 single-family houses, 75 multi-family units, 100 senior adult housing units, and 20,000 square feet of retail uses.

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

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, a traffic signal warrant analyses was completed using the 2020 Build conditions traffic projections to determine if traffic signalization of the US 21 Business/Sea Island Parkway & Meridian Road/Boat Landing Driveway would be warranted with buildout of the development. The results show that Warrant 1, Condition B and Warrant 2 are projected to be satisfied with buildout of the development; therefore, it is recommended that this intersection be signalized 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, exclusive left-turn lanes at the project driveways along Meridian Road and Harborview Circle are not recommended.

Based on the Highway Design Manual considerations, exclusive right-turn lanes at the project driveways along US 21 Business/Sea Island Parkway, Meridian Road, and Harborview Circle are not recommended.

APPENDIX A

Trip Generation Worksheet

WHITEHALL MIXED-USE DEVELOPMENT
TRIP GENERATION ESTIMATES (9th Edition Trip Generation Manual)
2/16/2018

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
Single Family Homes	210	25	DU	Ln(T)=	0.92	Ln(X)	+	2.72	50%	50%	147	146	293	13.3%	20	19	39	127	127	254	0%	0	0	0	127	127	254
Apartment	220	75	DU	T=	6.06	(X)	+	123.6	50%	50%	289	289	578	10.2%	30	29	59	259	260	519	0%	0	0	0	259	260	519
Senior Adult Housing- Attached	252	100	DU	T=	2.98	(X)	+	21.05	50%	50%	160	160	320	11.5%	19	18	37	141	142	283	0%	0	0	0	141	142	283
Specialty Retail Center	826	20	ksf	T=	42.78	(X)	+	37.66	50%	50%	447	447	894	18.8%	84	84	168	363	363	726	34%	124	123	247	239	240	479
										Total:	1,043	1,042	2,085	14.5%	153	150	303	890	892	1,782	12%	124	123	247	**766**	**769**	**1,535**

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
Single Family Homes	210	25	DU	T=	0.7	(X)	+	9.74	25%	75%	7	20	27	0.0%	0	0	0	7	20	27	0%	0	0	0	7	20	27
Apartment	220	75	DU	T=	0.49	(X)	+	3.73	20%	80%	8	32	40	2.5%	0	1	1	8	31	39	0%	0	0	0	8	31	39
Senior Adult Housing- Attached	252	100	DU	T=	0.2	(X)	-	0.13	34%	66%	7	13	20	0.0%	0	0	0	7	13	20	0%	0	0	0	7	13	20
Shopping Center	820	20	ksf	Ln(T)=	0.61	Ln(X)	+	2.24	62%	38%	36	22	58	1.7%	1	0	1	35	22	57	34%	10	9	19	25	13	38
										Total:	58	87	145	1.4%	1	1	2	57	86	143	13%	10	9	19	**47**	**77**	**124**

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
Single Family Homes	210	25	DU	Ln(T)=	0.9	Ln(X)	+	0.51	63%	37%	19	11	30	13.3%	3	1	4	16	10	26	0%	0	0	0	16	10	26
Apartment	220	75	DU	T=	0.55	(X)	+	17.65	65%	35%	38	21	59	10.2%	5	1	6	33	20	53	0%	0	0	0	33	20	53
Senior Adult Housing- Attached	252	100	DU	T=	0.24	(X)	+	1.64	54%	46%	14	12	26	11.5%	2	1	3	12	11	23	0%	0	0	0	12	11	23
Specialty Retail Center	826	20	ksf	T=	2.4	(X)	+	21.48	44%	56%	30	39	69	18.8%	3	10	13	27	29	56	34%	10	10	20	17	19	36
										Total:	101	83	184	14.1%	13	13	26	88	70	158	11%	10	10	20	**78**	**60**	**138**

APPENDIX B

Traffic Count Data

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Meridian Rd @ Sea Island Pkwy
Site Code : 00110717
Start Date : 11/7/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Meridian Rd Eastbound				Sea Island Pkwy Westbound				Meridian Rd Northbound				Boat Ramp Southbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:00	0	19	0	1	0	78	0	1	2	0	1	0	0	0	0	0	102
06:15	0	23	1	2	2	87	0	0	2	0	1	0	1	0	0	0	119
06:30	0	53	6	1	1	150	0	0	5	0	2	0	0	0	0	0	218
06:45	0	66	6	3	0	183	0	0	6	0	4	0	0	0	0	0	268
Total	0	161	13	7	3	498	0	1	15	0	8	0	1	0	0	0	707
07:00	0	89	1	1	1	198	4	0	4	0	5	0	1	0	0	0	304
07:15	0	141	7	0	6	203	0	0	6	0	7	0	0	0	0	0	370
07:30	0	144	9	1	9	247	2	0	12	0	9	0	1	0	0	0	434
07:45	0	136	10	0	3	272	0	0	9	0	15	0	0	0	0	0	445
Total	0	510	27	2	19	920	6	0	31	0	36	0	2	0	0	0	1553
08:00	0	133	14	0	10	234	2	1	8	0	11	0	0	0	0	0	413
08:15	0	150	15	0	14	211	1	0	19	0	13	0	1	0	0	0	424
08:30	0	159	12	1	4	159	2	0	8	0	16	0	2	0	0	0	363
08:45	0	123	6	0	9	172	1	0	7	0	12	0	1	0	0	0	331
Total	0	565	47	1	37	776	6	1	42	0	52	0	4	0	0	0	1531
09:00	0	93	10	3	17	128	0	1	12	0	7	0	0	0	0	0	271
09:15	0	121	7	2	11	157	0	0	7	0	7	0	2	0	0	0	314
09:30	0	102	8	0	13	138	2	1	5	0	11	0	0	0	1	0	281
09:45	1	135	14	0	7	159	0	0	7	0	10	0	0	0	0	0	333
Total	1	451	39	5	48	582	2	2	31	0	35	0	2	0	1	0	1199
10:00	0	126	12	0	4	144	0	1	6	0	9	0	1	0	1	0	304
10:15	0	133	8	0	14	154	0	1	13	0	11	0	2	0	1	0	337
10:30	0	106	7	0	9	156	2	1	8	0	4	0	2	0	0	0	295
10:45	0	128	14	0	8	162	0	0	10	0	6	0	3	0	0	0	331
Total	0	493	41	0	35	616	2	3	37	0	30	0	8	0	2	0	1267
11:00	0	127	5	0	1	138	0	0	4	1	7	0	0	0	0	0	283
11:15	0	146	4	3	3	113	0	0	11	0	6	0	1	1	0	0	288
11:30	0	107	10	0	14	145	1	0	6	0	5	0	1	0	0	0	289
11:45	0	180	6	5	6	157	3	0	11	0	12	0	1	0	0	0	381
Total	0	560	25	8	24	553	4	0	32	1	30	0	3	1	0	0	1241
12:00	0	111	5	0	16	130	1	0	4	0	10	0	0	0	1	0	278
12:15	2	192	9	1	6	140	1	0	9	0	10	0	0	0	1	0	371
12:30	1	103	13	1	19	149	1	1	5	0	7	0	0	0	3	0	303
12:45	0	189	18	1	11	175	2	1	9	0	14	0	1	0	2	0	423
Total	3	595	45	3	52	594	5	2	27	0	41	0	1	0	7	0	1375
13:00	0	193	13	0	10	148	1	0	4	0	4	0	0	0	1	0	374
13:15	0	167	9	0	8	182	2	0	6	0	9	0	1	0	1	0	385
13:30	0	151	9	0	6	156	1	0	2	1	7	0	2	0	0	0	335
13:45	0	139	13	0	8	149	2	0	4	1	6	0	3	1	0	0	326
Total	0	650	44	0	32	635	6	0	16	2	26	0	6	1	2	0	1420
14:00	0	136	14	0	9	160	0	0	5	0	5	0	0	0	0	0	329
14:15	0	146	13	3	12	152	1	0	10	0	8	0	1	0	0	0	346
14:30	0	127	7	0	19	139	0	0	4	0	12	0	1	0	0	0	309
14:45	1	201	7	0	10	153	3	0	9	0	17	0	2	0	1	0	404
Total	1	610	41	3	50	604	4	0	28	0	42	0	4	0	1	0	1388
15:00	0	172	12	0	9	170	0	0	11	0	10	0	0	0	0	0	384
15:15	0	196	14	0	16	184	0	0	10	0	11	0	0	0	0	0	431
15:30	1	188	15	0	9	182	0	0	11	0	10	0	0	0	0	0	416
15:45	0	214	9	0	18	165	1	2	20	0	16	0	5	0	0	0	450
Total	1	770	50	0	52	701	1	2	52	0	47	0	5	0	0	0	1681

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Meridian Rd @ Sea Island Pkwy
Site Code : 00110717
Start Date : 11/7/2017
Page No : 2

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Meridian Rd Eastbound				Sea Island Pkwy Westbound				Meridian Rd Northbound				Boat Ramp Southbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	187	14	1	18	234	0	0	24	0	16	0	0	0	0	0	494
16:15	0	222	9	1	11	171	0	0	10	0	3	0	0	0	0	0	427
16:30	0	202	19	0	10	187	0	0	6	0	8	0	0	0	0	0	432
16:45	1	213	11	1	5	157	1	0	12	0	5	0	1	0	0	0	407
Total	1	824	53	3	44	749	1	0	52	0	32	0	1	0	0	0	1760
17:00	0	238	17	4	10	182	2	2	15	0	13	0	0	0	0	0	483
17:15	0	264	13	4	9	173	0	0	17	0	11	0	0	0	0	0	491
17:30	0	229	14	0	11	155	0	0	13	0	8	0	0	0	0	0	430
17:45	0	232	6	0	9	161	0	0	13	0	14	0	2	0	0	0	437
Total	0	963	50	8	39	671	2	2	58	0	46	0	2	0	0	0	1841
18:00	0	159	9	1	6	126	0	0	1	0	6	0	0	0	1	0	309
18:15	0	173	4	0	6	142	0	0	9	0	3	0	0	0	0	0	337
18:30	0	183	7	1	9	120	1	0	6	0	5	0	0	0	0	0	332
18:45	0	146	5	0	8	108	0	0	11	0	5	0	0	0	0	0	283
Total	0	661	25	2	29	496	1	0	27	0	19	0	0	0	1	0	1261
Grand Total	7	7813	500	42	464	8395	40	13	448	3	444	0	39	2	14	0	18224
Apprch %	0.1	93.4	6	0.5	5.2	94.2	0.4	0.1	50.1	0.3	49.6	0	70.9	3.6	25.5	0	
Total %	0	42.9	2.7	0.2	2.5	46.1	0.2	0.1	2.5	0	2.4	0	0.2	0	0.1	0	
Passenger Vehicles	7	7749	497	25	453	8317	38	6	447	3	440	0	37	2	14	0	18035
% Passenger Vehicles	100	99.2	99.4	59.5	97.6	99.1	95	46.2	99.8	100	99.1	0	94.9	100	100	0	99
Heavy Vehicles	0	44	0	0	10	50	2	0	0	0	2	0	2	0	0	0	110
% Heavy Vehicles	0	0.6	0	0	2.2	0.6	5	0	0	0	0.5	0	5.1	0	0	0	0.6
Buses	0	20	3	17	1	28	0	7	1	0	2	0	0	0	0	0	79
% Buses	0	0.3	0.6	40.5	0.2	0.3	0	53.8	0.2	0	0.5	0	0	0	0	0	0.4

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Meridian Rd @ Sea Island Pkwy
Site Code : 00110717
Start Date : 11/7/2017
Page No : 3

	Meridian Rd Eastbound					Sea Island Pkwy Westbound					Meridian Rd Northbound					Boat Ramp Southbound					
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	144	9	**1**	154	9	247	**2**	0	258	12	0	9	0	21	**1**	0	0	0	**1**	434
07:45	0	136	10	0	146	3	**272**	0	0	**275**	9	0	**15**	0	24	0	0	0	0	0	**445**
08:00	0	133	14	0	147	10	234	2	**1**	247	8	0	11	0	19	0	0	0	0	0	413
08:15	0	**150**	**15**	0	**165**	**14**	211	1	0	226	**19**	0	13	0	**32**	1	0	0	0	1	424
Total Volume	0	563	48	1	612	36	964	5	1	1006	48	0	48	0	96	2	0	0	0	2	1716
% App. Total	0	92	7.8	0.2		3.6	95.8	0.5	0.1		50	0	50	0		100	0	0	0		
PHF	.000	.938	.800	.250	.927	.643	.886	.625	.250	.915	.632	.000	.800	.000	.750	.500	.000	.000	.000	.500	.964
Passenger Vehicles	0	555	48	1	604	36	956	4	0	996	48	0	48	0	96	2	0	0	0	2	1698
% Passenger Vehicles																					
Heavy Vehicles	0	5	0	0	5	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	12
% Heavy Vehicles	0	0.9	0	0	0.8	0	0.6	20.0	0	0.7	0	0	0	0	0	0	0	0	0	0	0.7
Buses	0	3	0	0	3	0	2	0	1	3	0	0	0	0	0	0	0	0	0	0	6
% Buses	0	0.5	0	0	0.5	0	0.2	0	100	0.3	0	0	0	0	0	0	0	0	0	0	0.3
Peak Hour Analysis From 11:00 to 12:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00																					
12:00	0	111	5	0	116	16	130	1	0	147	4	0	10	0	14	0	0	1	0	1	278
12:15	**2**	**192**	9	**1**	204	6	140	1	0	147	**9**	0	10	0	19	0	0	1	0	1	371
12:30	1	103	13	1	118	**19**	149	1	**1**	170	5	0	7	0	12	0	0	**3**	0	**3**	303
12:45	0	189	**18**	1	**208**	11	**175**	**2**	1	**189**	9	0	**14**	0	**23**	**1**	0	2	0	3	**423**
Total Volume	3	595	45	3	646	52	594	5	2	653	27	0	41	0	68	1	0	7	0	8	1375
% App. Total	0.5	92.1	7	0.5		8	91	0.8	0.3		39.7	0	60.3	0		12.5	0	87.5	0		
PHF	.375	.775	.625	.750	.776	.684	.849	.625	.500	.864	.750	.000	.732	.000	.739	.250	.000	.583	.000	.667	.813
Passenger Vehicles	3	590	45	1	639	49	590	5	0	644	27	0	41	0	68	1	0	7	0	8	1359
% Passenger Vehicles																					
Heavy Vehicles	0	3	0	0	3	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	8
% Heavy Vehicles	0	0.5	0	0	0.5	3.8	0.5	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0.6
Buses	0	2	0	2	4	1	1	0	2	4	0	0	0	0	0	0	0	0	0	0	8
% Buses	0	0.3	0	66.7	0.6	1.9	0.2	0	100	0.6	0	0	0	0	0	0	0	0	0	0	0.6
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	238	**17**	**4**	259	10	**182**	**2**	**2**	**196**	15	0	13	0	**28**	0	0	0	0	0	483
17:15	0	**264**	13	4	**281**	9	173	0	0	182	**17**	0	11	0	28	0	0	0	0	0	**491**
17:30	0	229	14	0	243	**11**	155	0	0	166	13	0	8	0	21	0	0	0	0	0	430
17:45	0	232	6	0	238	9	161	0	0	170	13	0	**14**	0	27	**2**	0	0	0	**2**	437
Total Volume	0	963	50	8	1021	39	671	2	2	714	58	0	46	0	104	2	0	0	0	2	1841
% App. Total	0	94.3	4.9	0.8		5.5	94	0.3	0.3		55.8	0	44.2	0		100	0	0	0		
PHF	.000	.912	.735	.500	.908	.886	.922	.250	.250	.911	.853	.000	.821	.000	.929	.250	.000	.000	.000	.250	.937
Passenger Vehicles	0	961	50	8	1019	39	668	2	2	711	58	0	46	0	104	2	0	0	0	2	1836
% Passenger Vehicles																					
Heavy Vehicles	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
% Heavy Vehicles	0	0.2	0	0	0.2	0	0.4	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

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

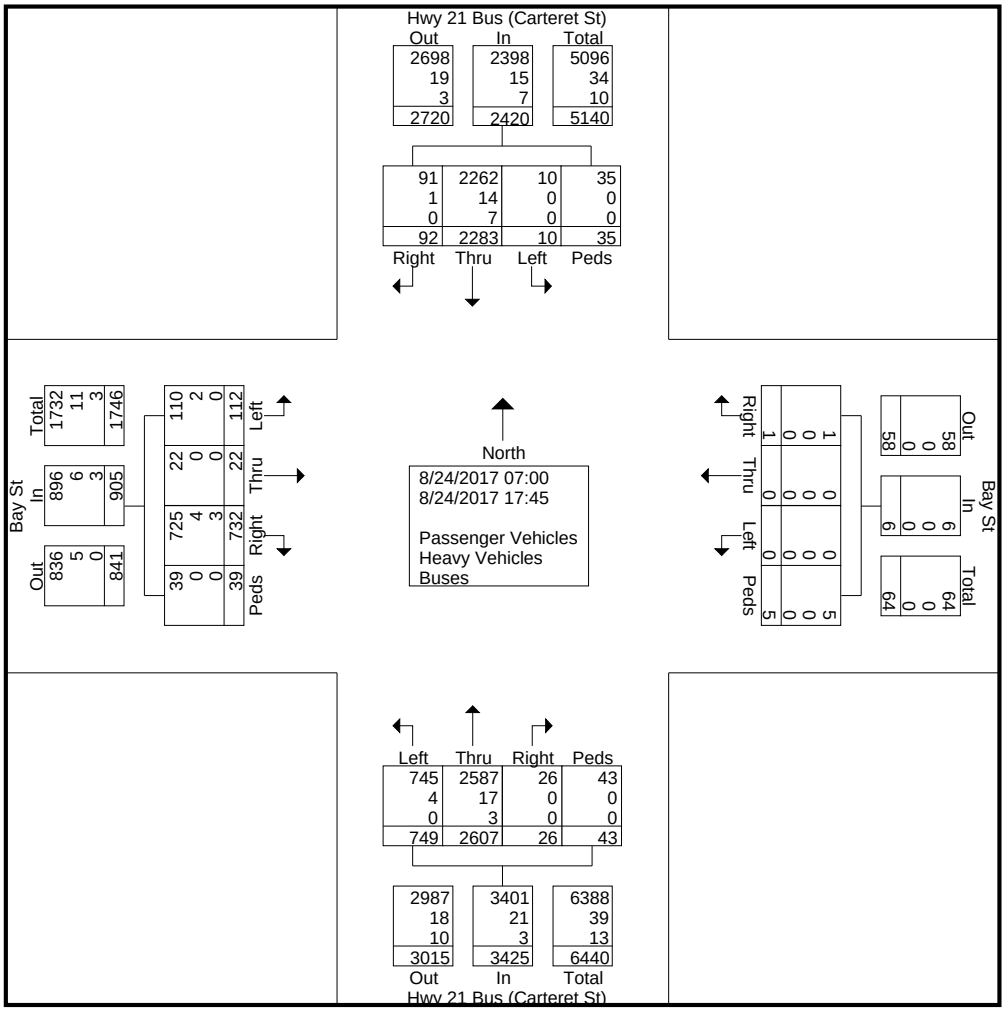
	Hwy 21 Bus (Carteret St) Southbound				Bay St Westbound				Hwy 21 Bus (Carteret St) Northbound				Bay St Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	78	3	1	0	0	0	0	28	150	0	2	1	0	10	0	273
07:15	0	111	1	0	0	0	0	0	51	163	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

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

File Name : Hwy 21 Bus @ Bay St
Site Code :
Start Date : 8/24/2017
Page No : 2



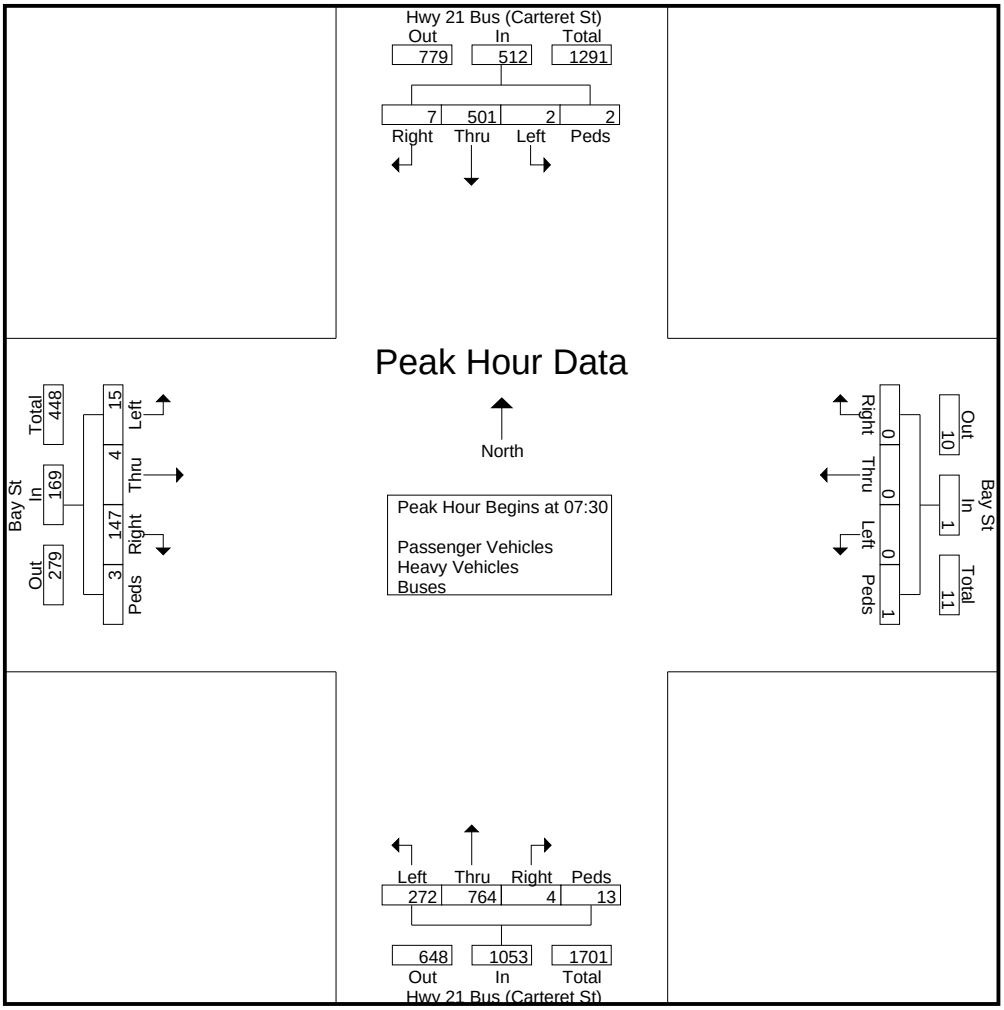
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

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



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Hwy 21 Bus @ Bay St
Site Code :
Start Date : 8/24/2017
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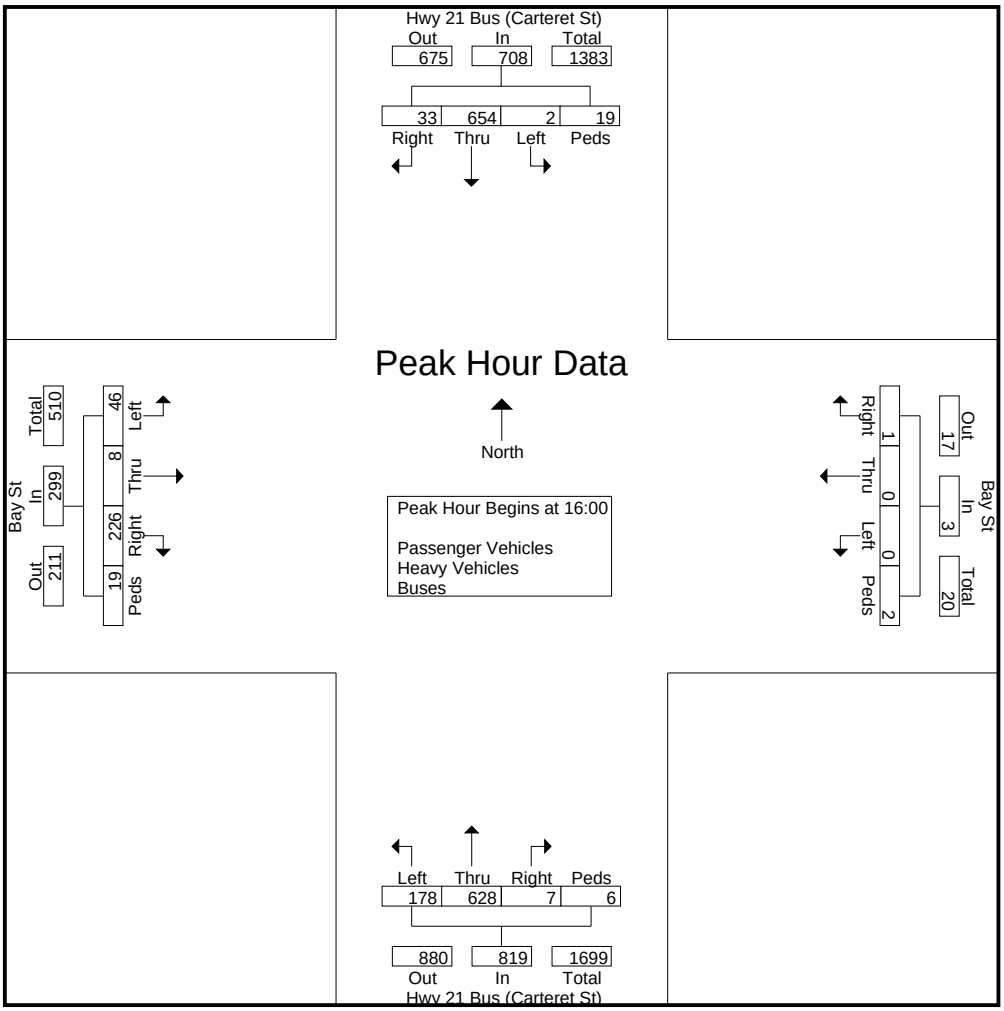
	Hwy 21 Bus (Carteret St) Southbound					Bay St Westbound					Hwy 21 Bus (Carteret St) Northbound					Bay St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 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



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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Default Comments
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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

735 Maryland St
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File Name : Meridian Rd @ Harborview Cir North
Site Code :
Start Date : 8/24/2017
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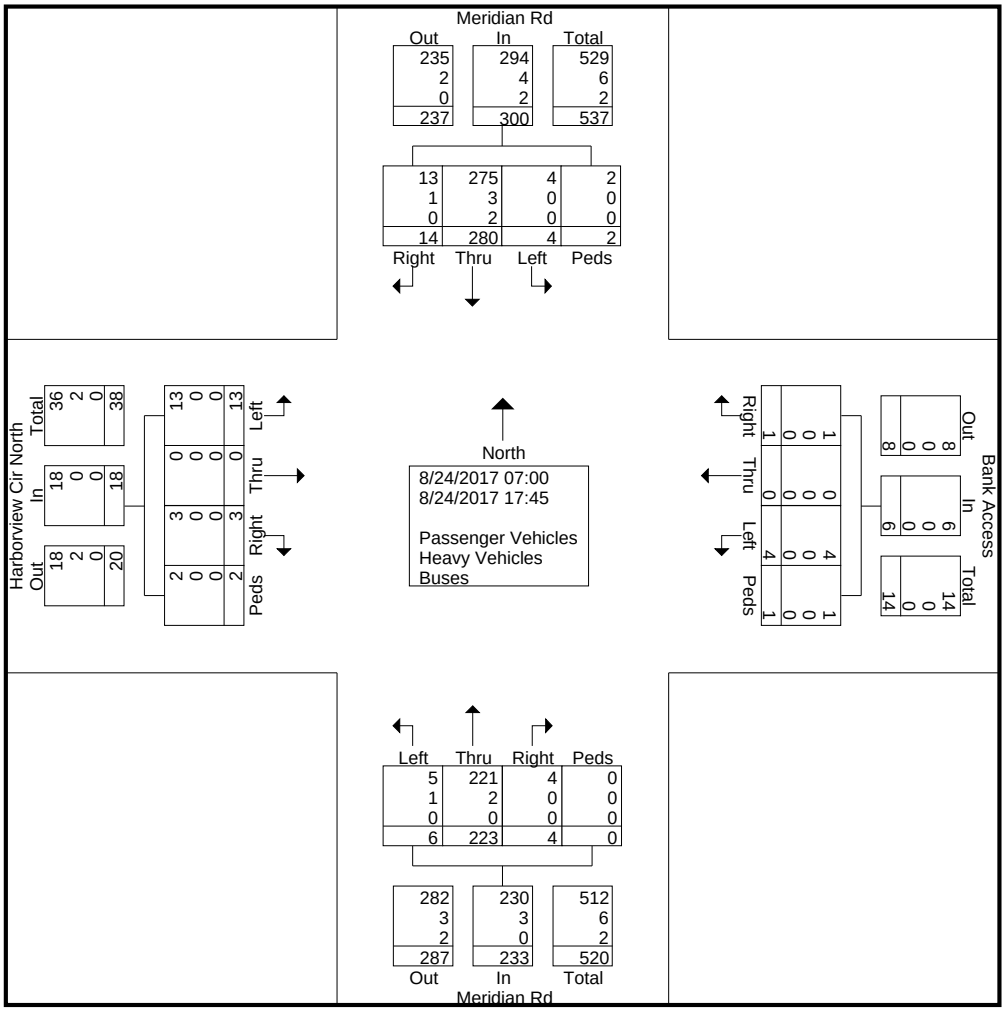


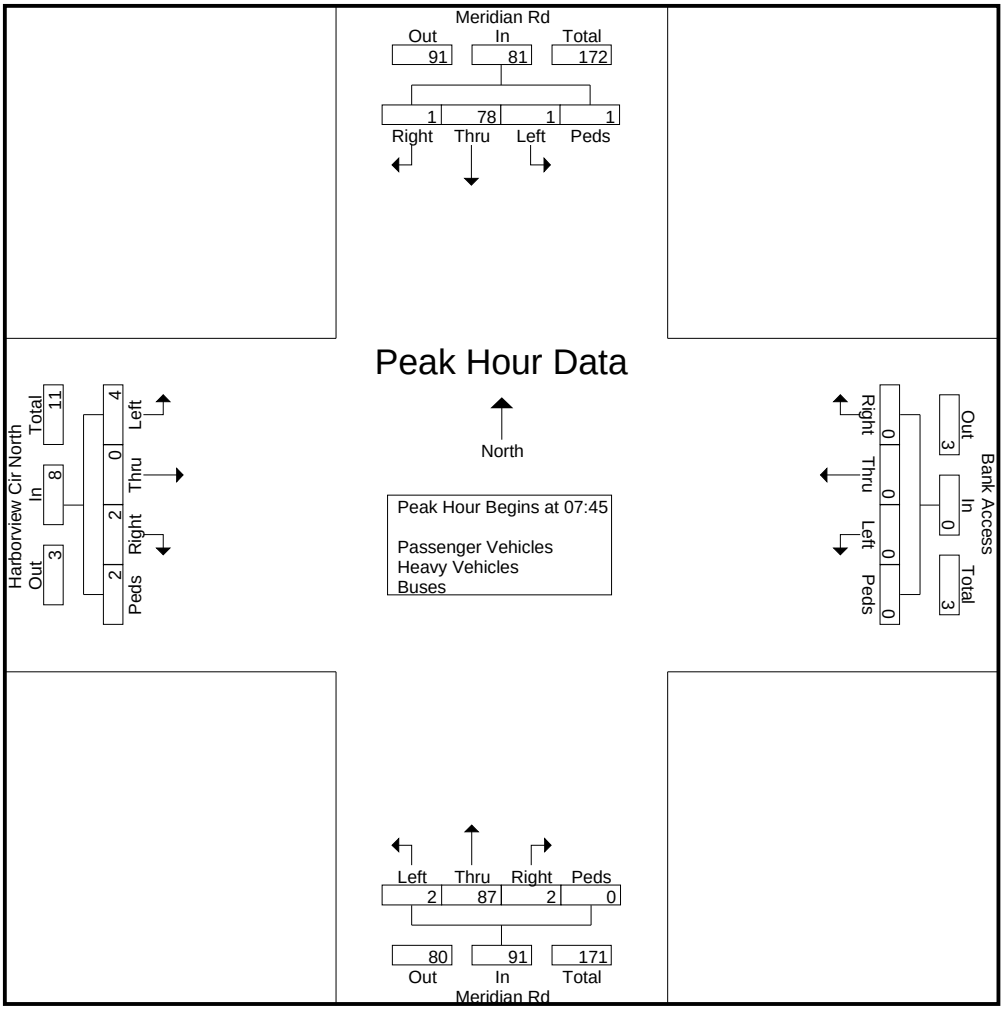
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Meridian Rd @ Harborview Cir North
Site Code :
Start Date : 8/24/2017
Page No : 3

	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



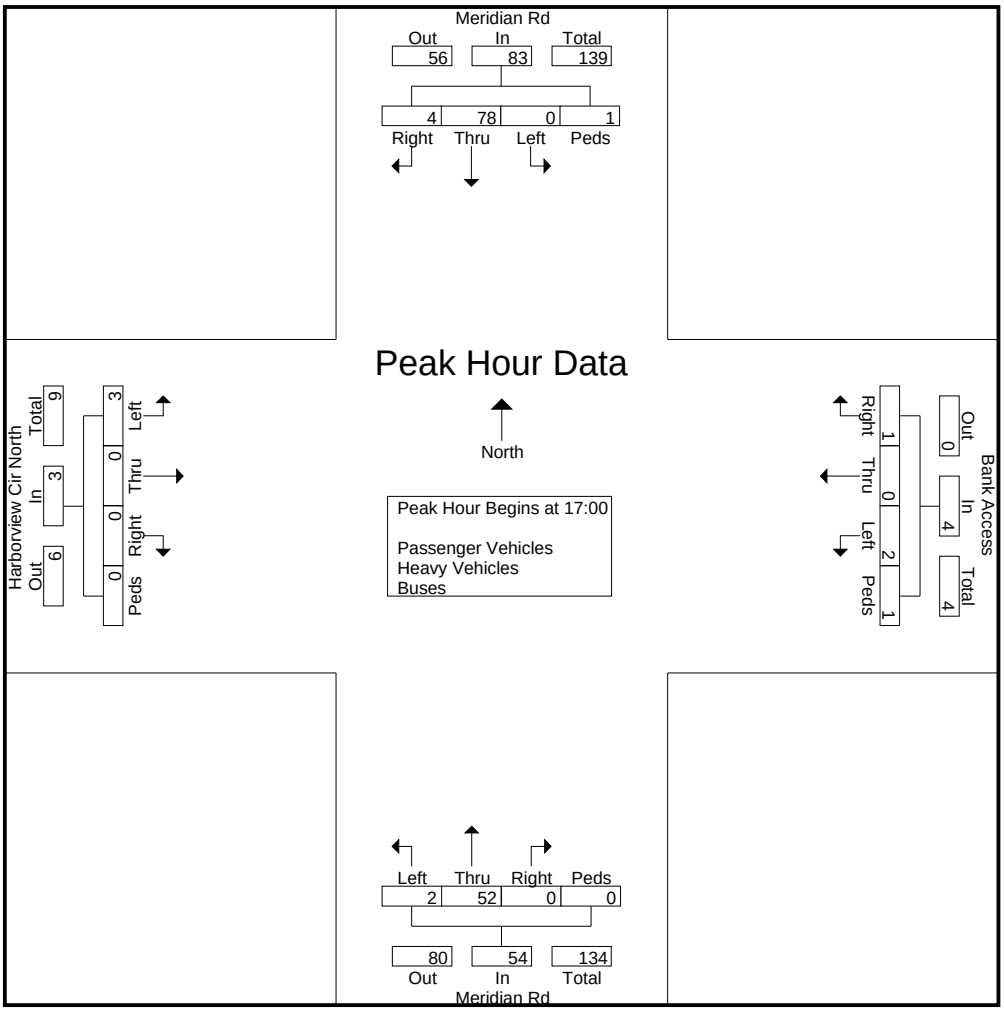
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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

File Name : Meridian Rd @ Harborview Cir 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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735 Maryland St
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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

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
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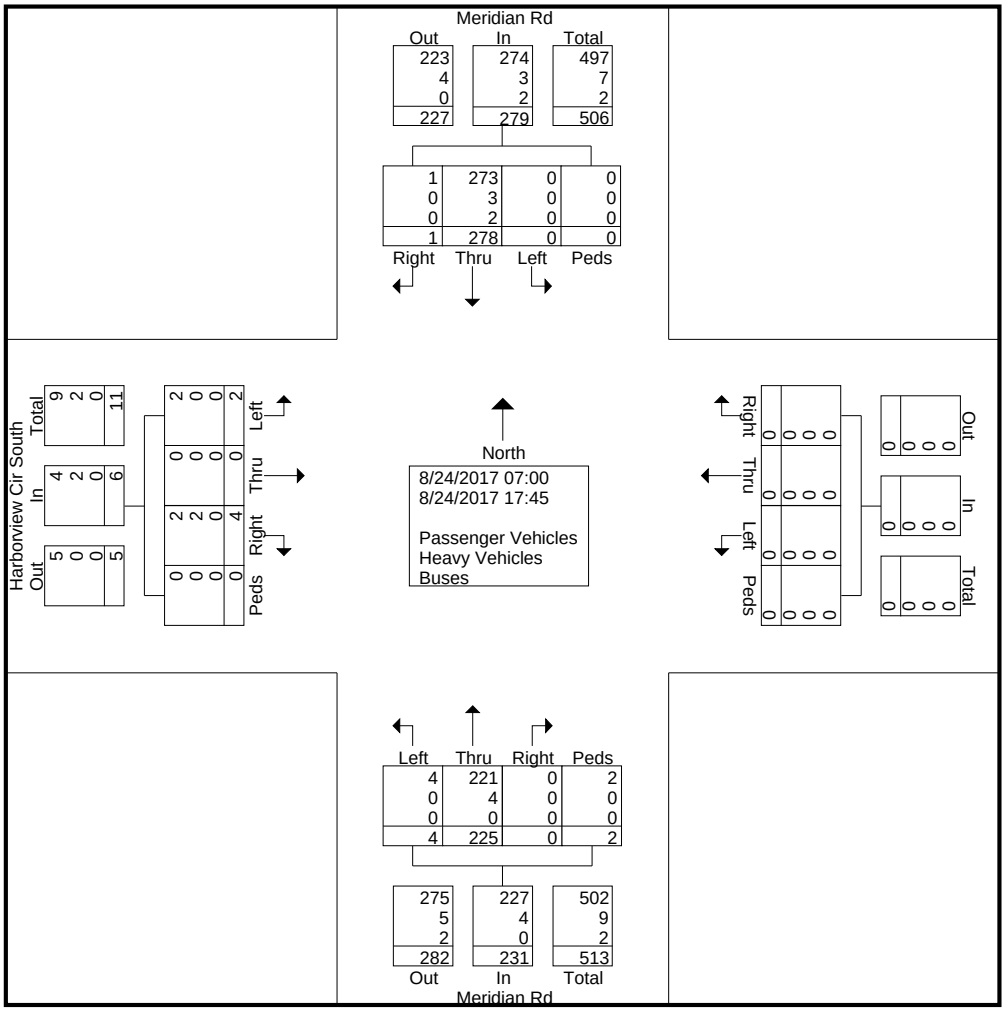

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735 Maryland St
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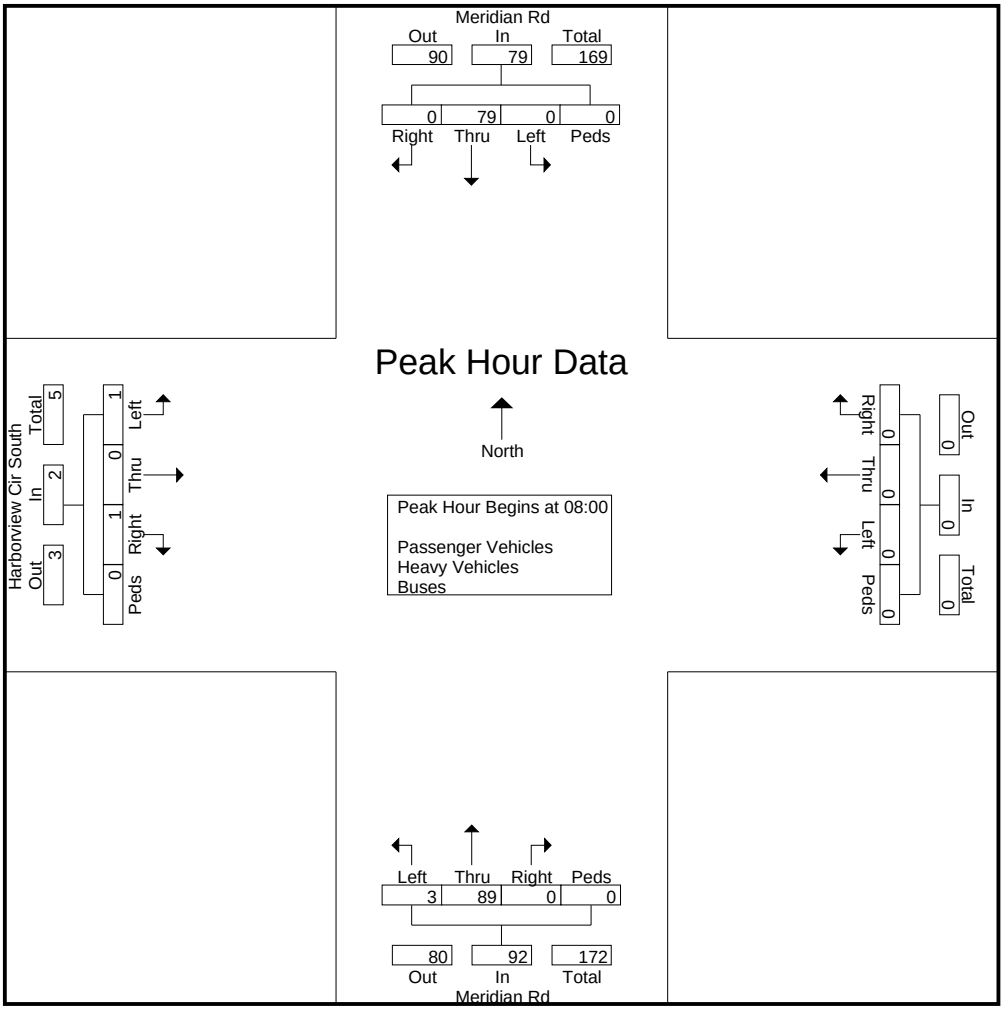
We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Harborview Cir South
Site Code :
Start Date : 8/24/2017
Page No : 3

	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



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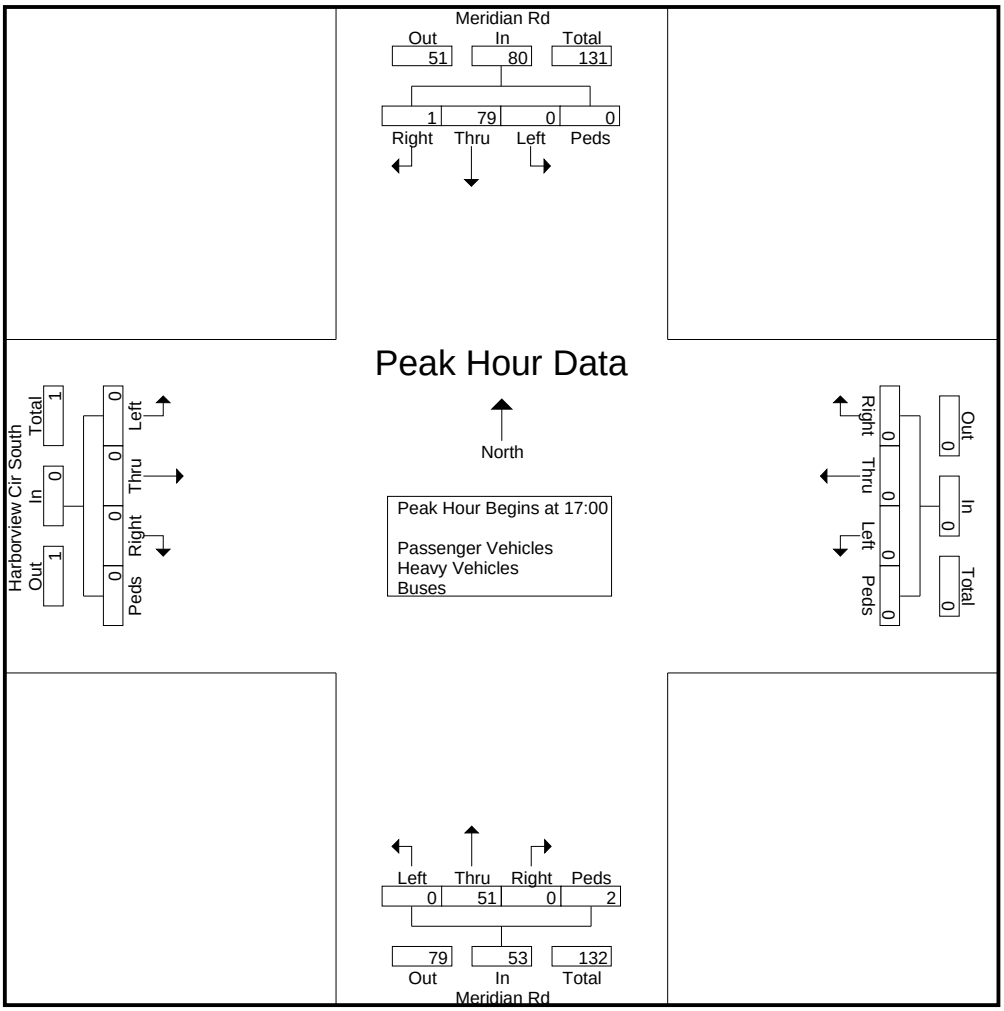
We can't say we're the Best, but you Can!

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



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

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Ladys Island Dr Southbound				Westbound				Ladys Island Dr Northbound				Meridian Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	229	0	0	0	0	0	0	8	112	1	0	2	0	9	0	361
07:15	0	293	0	0	0	0	0	0	8	133	0	1	1	0	11	0	447
07:30	0	339	0	0	0	0	0	0	15	216	1	0	1	0	13	0	585
07:45	0	371	1	0	0	0	0	0	14	252	1	0	2	0	17	0	658
Total	0	1232	1	0	0	0	0	0	45	713	3	1	6	0	50	0	2051
08:00	0	366	3	0	0	0	0	0	26	219	3	0	0	0	17	0	634
08:15	0	288	2	0	0	0	0	0	28	240	2	0	0	0	19	0	579
08:30	0	224	0	0	0	0	0	0	22	251	2	0	0	0	15	0	514
08:45	0	245	0	0	0	0	0	0	13	190	0	0	0	0	12	0	460
Total	0	1123	5	0	0	0	0	0	89	900	7	0	0	0	63	0	2187
16:00	0	262	0	0	0	0	0	0	0	371	0	0	3	0	18	0	654
16:15	0	222	0	0	0	0	0	0	0	357	0	0	0	0	17	0	596
16:30	0	214	0	0	0	0	0	0	0	343	0	0	0	0	11	0	568
16:45	0	238	0	0	0	0	0	0	0	365	0	0	0	0	6	0	609
Total	0	936	0	0	0	0	0	0	0	1436	0	0	3	0	52	0	2427
17:00	0	270	0	0	0	0	0	0	0	354	0	0	1	0	9	0	634
17:15	0	263	0	0	0	0	0	0	0	336	0	0	0	0	11	0	610
17:30	0	208	0	0	0	0	0	0	0	346	0	0	1	0	6	0	561
17:45	0	205	1	0	0	0	0	0	0	323	0	0	0	0	8	0	537
Total	0	946	1	0	0	0	0	0	0	1359	0	0	2	0	34	0	2342
Grand Total	0	4237	7	0	0	0	0	0	134	4408	10	1	11	0	199	0	9007
Apprch %	0	99.8	0.2	0	0	0	0	0	2.9	96.8	0.2	0	5.2	0	94.8	0	
Total %	0	47	0.1	0	0	0	0	0	1.5	48.9	0.1	0	0.1	0	2.2	0	
Passenger Vehicles	0	4146	7	0	0	0	0	0	133	4316	0	1	9	0	194	0	8806
% Passenger Vehicles	0	97.9	100	0	0	0	0	0	99.3	97.9	0	100	81.8	0	97.5	0	97.8
Heavy Vehicles	0	78	0	0	0	0	0	0	0	80	0	0	1	0	5	0	164
% Heavy Vehicles	0	1.8	0	0	0	0	0	0	0	1.8	0	0	9.1	0	2.5	0	1.8
Buses	0	13	0	0	0	0	0	0	1	12	10	0	1	0	0	0	37
% Buses	0	0.3	0	0	0	0	0	0	0.7	0.3	100	0	9.1	0	0	0	0.4

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

File Name : Meridian Rd @ Ladys Island Dr
Site Code :
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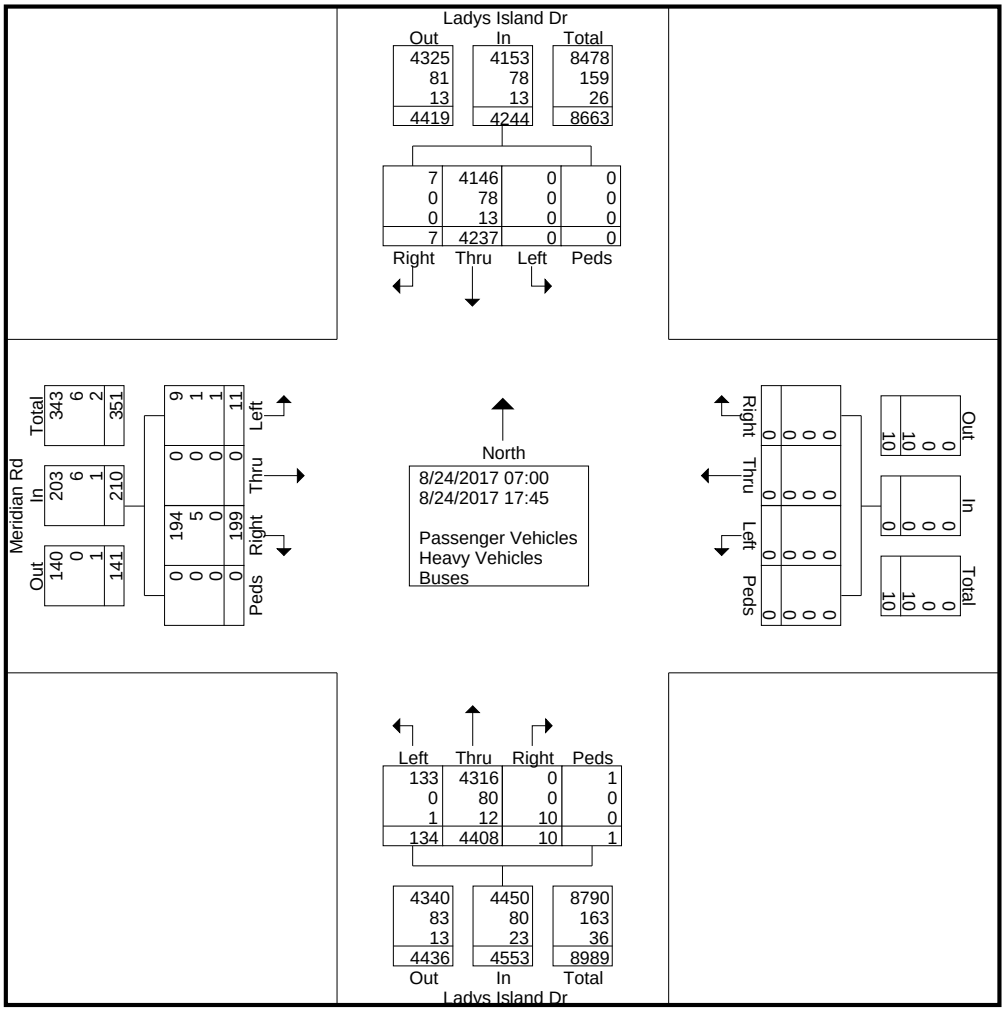

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735 Maryland St
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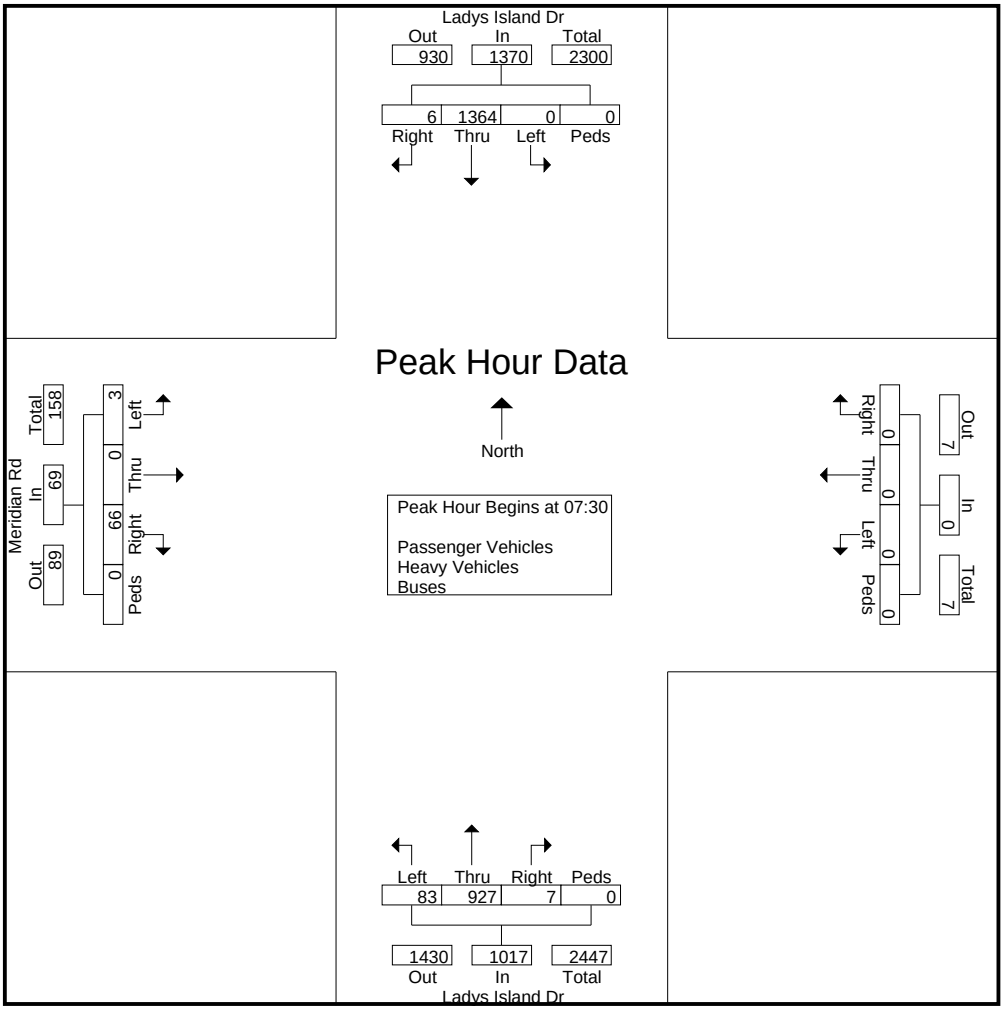
We can't say we're the Best, but you Can!

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



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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
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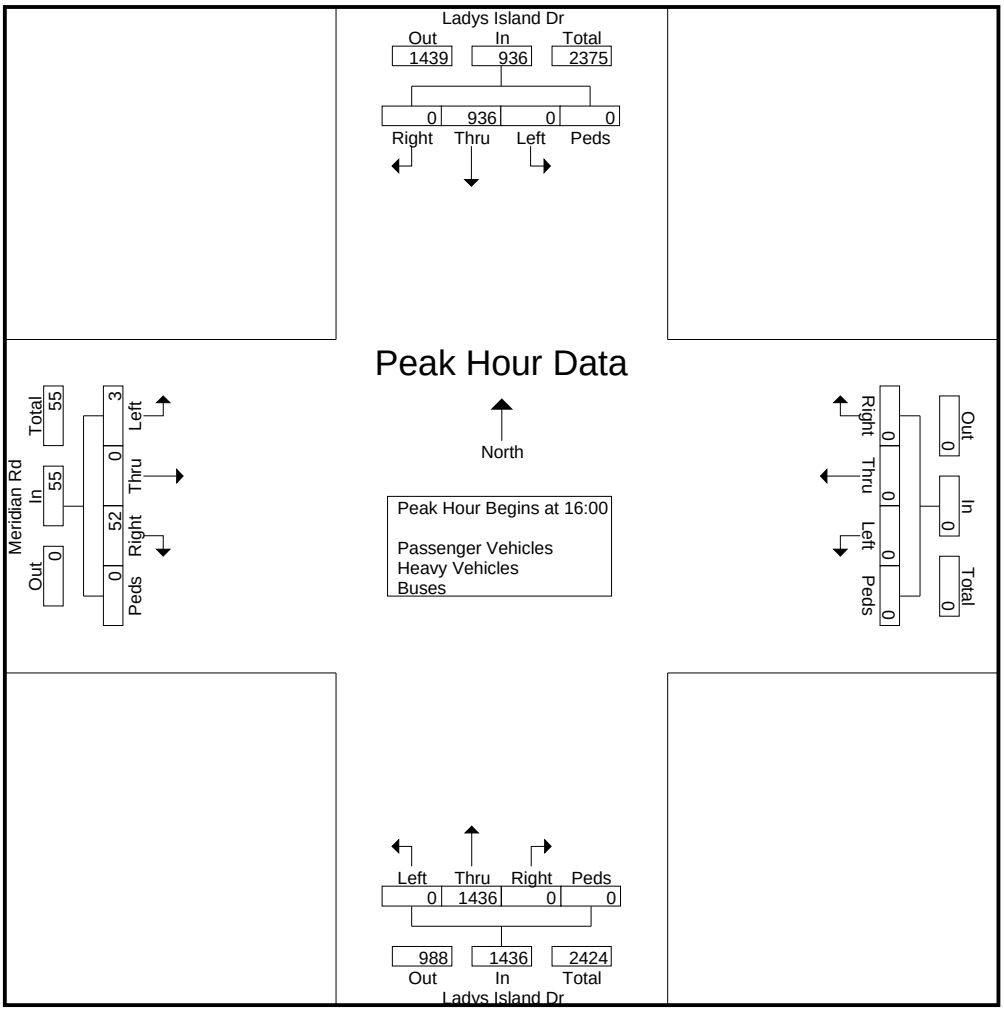
	Ladys Island Dr Southbound					Westbound					Ladys Island Dr Northbound					Meridian Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	**262**	0	0	**262**	0	0	0	0	0	0	**371**	0	0	**371**	**3**	0	**18**	0	**21**	**654**
16:15	0	222	0	0	222	0	0	0	0	0	0	357	0	0	357	0	0	17	0	17	596
16:30	0	214	0	0	214	0	0	0	0	0	0	343	0	0	343	0	0	11	0	11	568
16:45	0	238	0	0	238	0	0	0	0	0	0	365	0	0	365	0	0	6	0	6	609
Total Volume	0	936	0	0	936	0	0	0	0	0	0	1436	0	0	1436	3	0	52	0	55	2427
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		5.5	0	94.5	0		
PHF	.000	.893	.000	.000	.893	.000	.000	.000	.000	.000	.000	.968	.000	.000	.968	.250	.000	.722	.000	.655	.928



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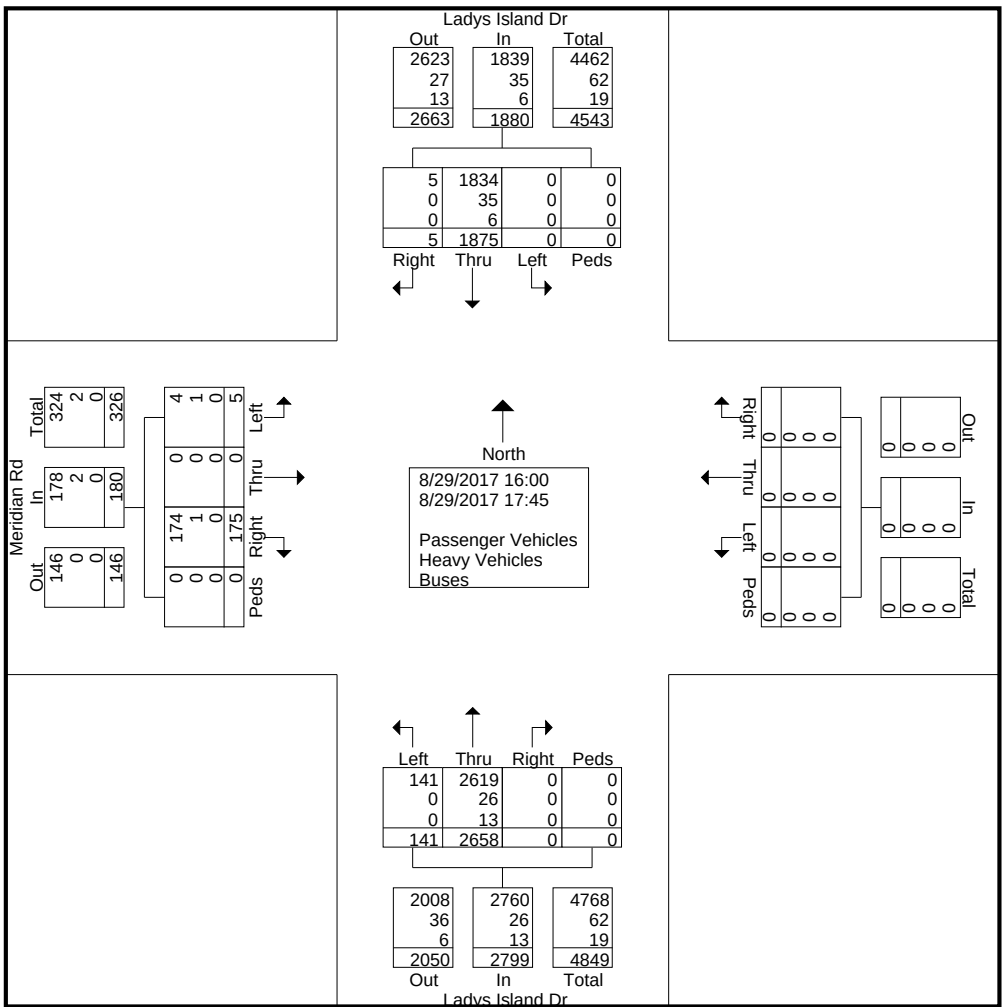
File Name : Meridian Rd @ Ladys Island Dr PM
Site Code :
Start Date : 8/29/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Ladys Island Dr Southbound				Westbound				Ladys Island Dr Northbound				Meridian Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	244	0	0	0	0	0	0	18	350	0	0	2	0	14	0	628
16:15	0	227	0	0	0	0	0	0	20	337	0	0	0	0	17	0	601
16:30	0	222	1	0	0	0	0	0	21	321	0	0	0	0	30	0	595
16:45	0	235	2	0	0	0	0	0	16	353	0	0	0	0	24	0	630
Total	0	928	3	0	0	0	0	0	75	1361	0	0	2	0	85	0	2454
17:00	0	265	1	0	0	0	0	0	19	327	0	0	1	0	20	0	633
17:15	0	271	0	0	0	0	0	0	23	323	0	0	1	0	19	0	637
17:30	0	201	1	0	0	0	0	0	15	329	0	0	1	0	26	0	573
17:45	0	210	0	0	0	0	0	0	9	318	0	0	0	0	25	0	562
Total	0	947	2	0	0	0	0	0	66	1297	0	0	3	0	90	0	2405
Grand Total	0	1875	5	0	0	0	0	0	141	2658	0	0	5	0	175	0	4859
Apprch %	0	99.7	0.3	0	0	0	0	0	5	95	0	0	2.8	0	97.2	0	
Total %	0	38.6	0.1	0	0	0	0	0	2.9	54.7	0	0	0.1	0	3.6	0	
Passenger Vehicles	0	1834	5	0	0	0	0	0	141	2619	0	0	4	0	174	0	4777
% Passenger Vehicles	0	97.8	100	0	0	0	0	0	100	98.5	0	0	80	0	99.4	0	98.3
Heavy Vehicles	0	35	0	0	0	0	0	0	0	26	0	0	1	0	1	0	63
% Heavy Vehicles	0	1.9	0	0	0	0	0	0	0	1	0	0	20	0	0.6	0	1.3
Buses	0	6	0	0	0	0	0	0	0	13	0	0	0	0	0	0	19
% Buses	0	0.3	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0.4



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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
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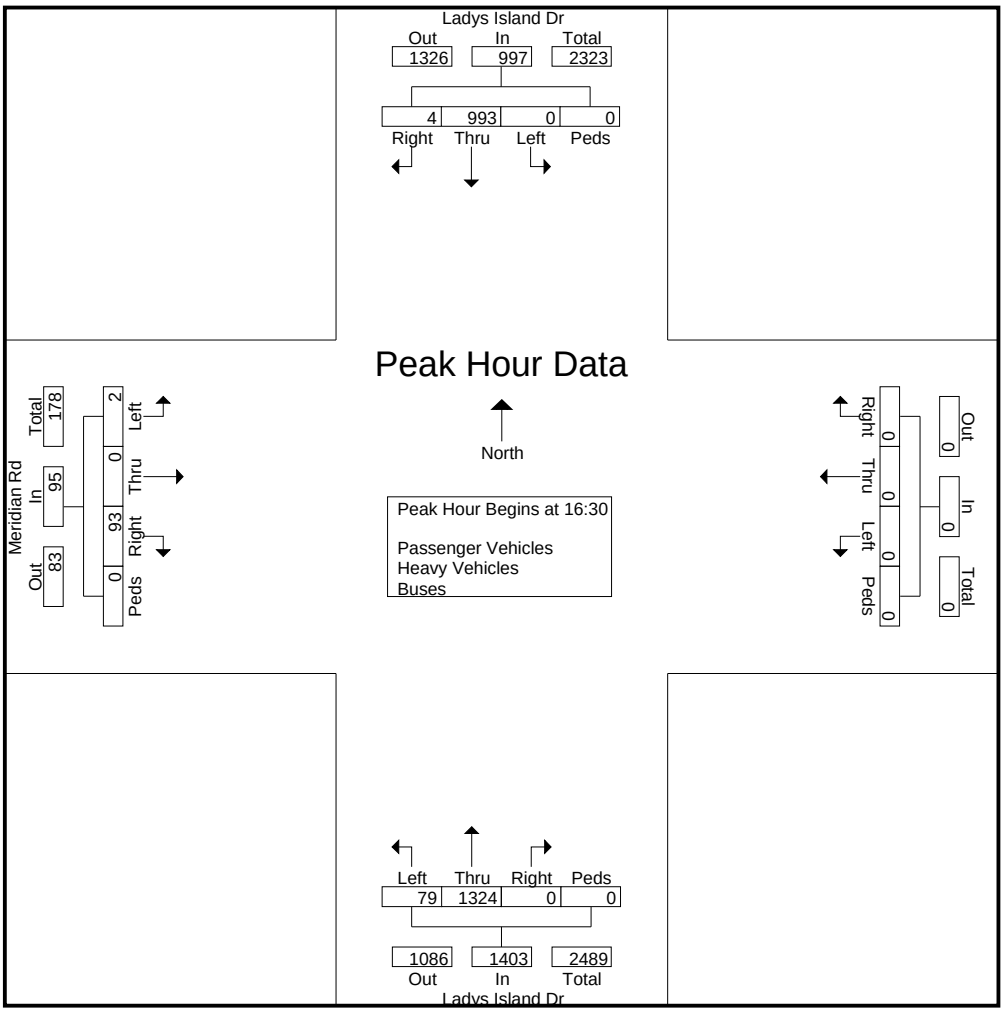
	Ladys Island Dr Southbound					Westbound					Ladys Island Dr Northbound					Meridian Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 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



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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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File Name : Meridian Rd @ Sea Island Pkwy
Site Code :
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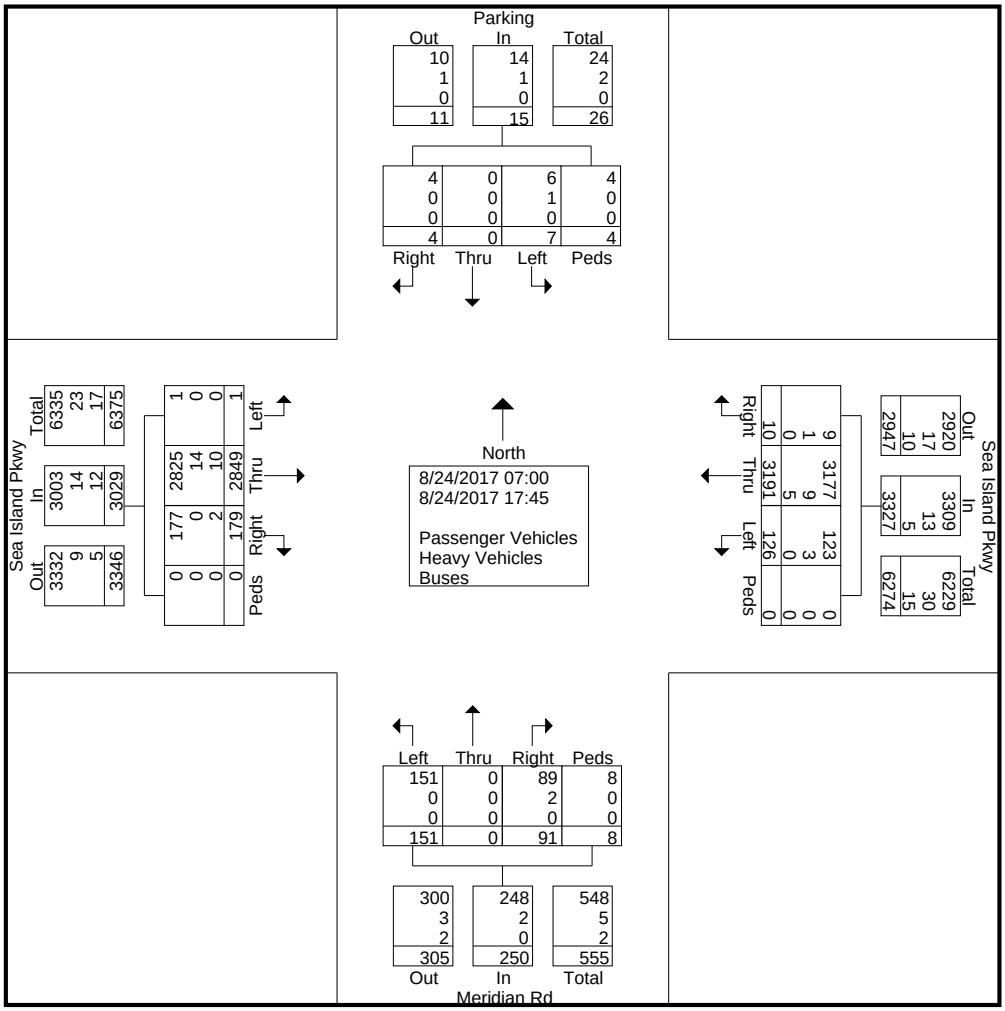

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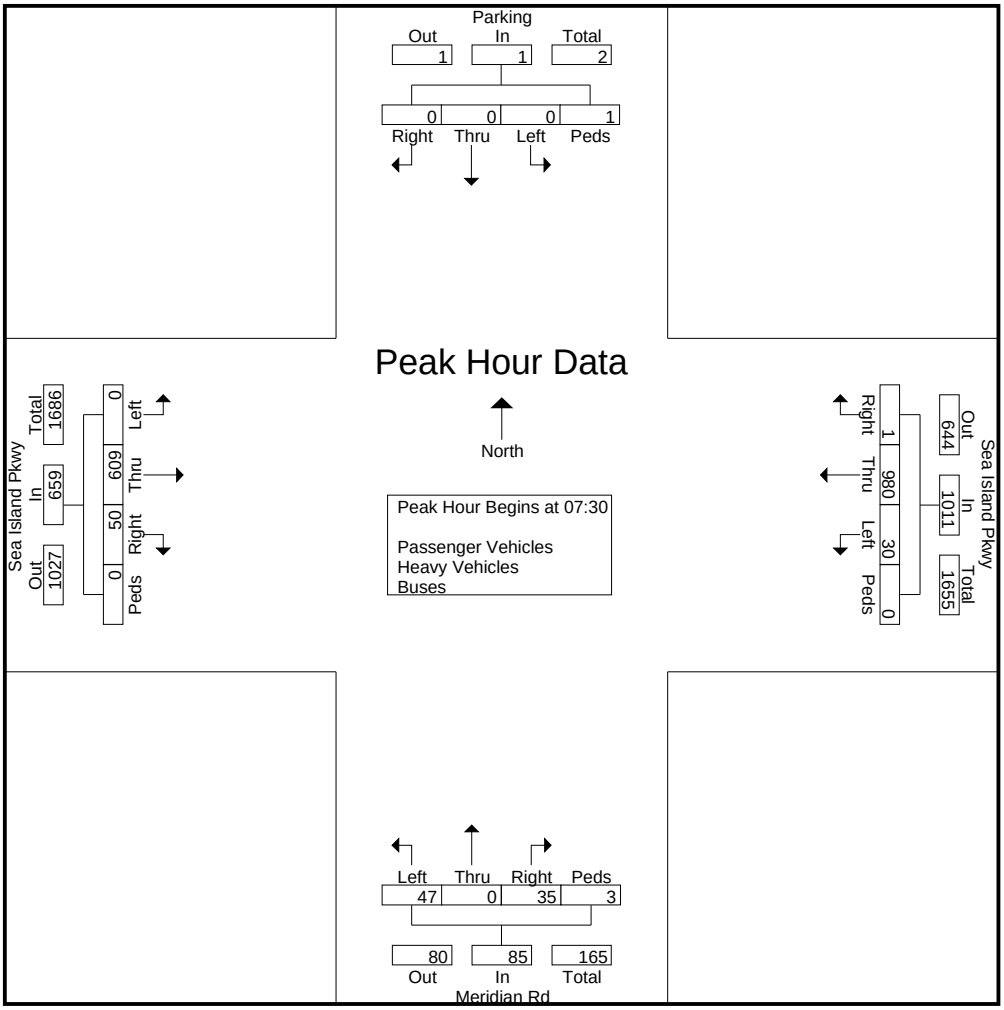
We can't say we're the Best, but you Can!

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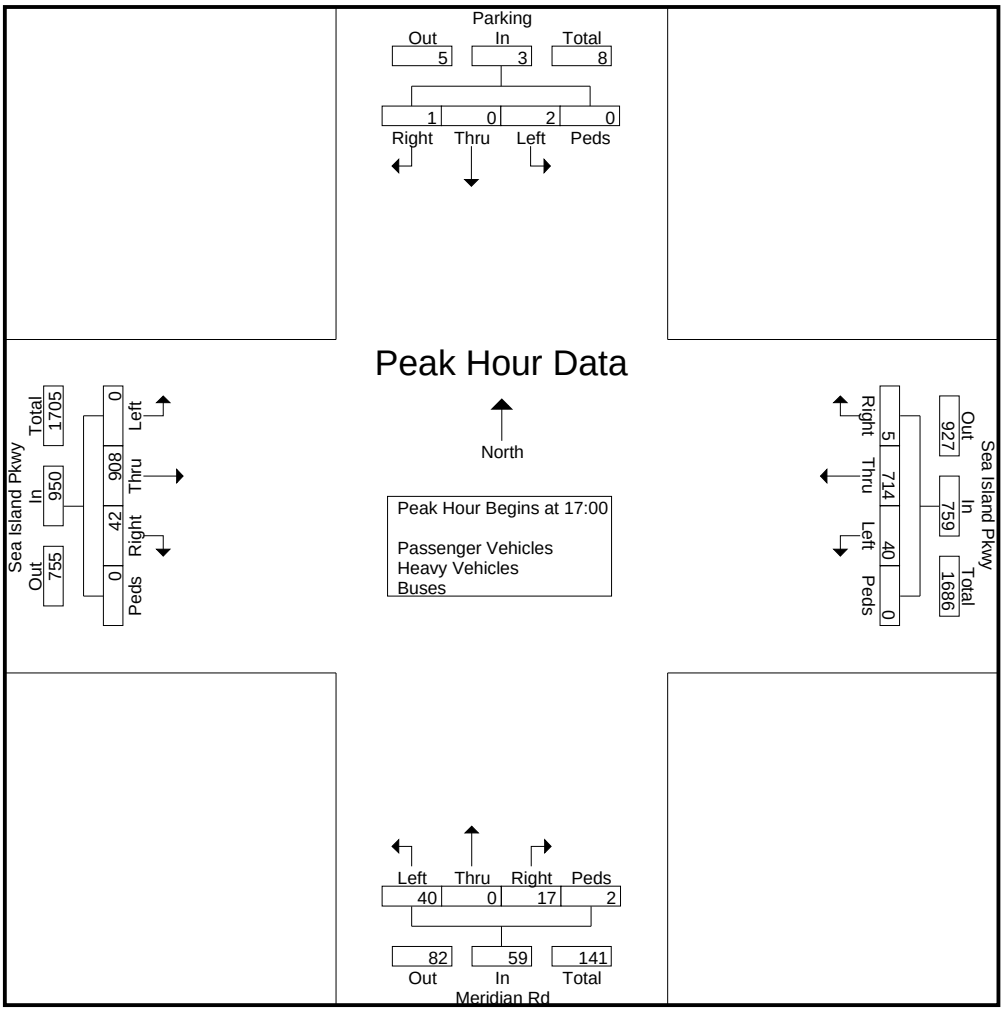
We can't say we're the Best, but you Can!

File Name : Meridian Rd @ Sea Island Pkwy
Site Code :
Start Date : 8/24/2017
Page No : 4

	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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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

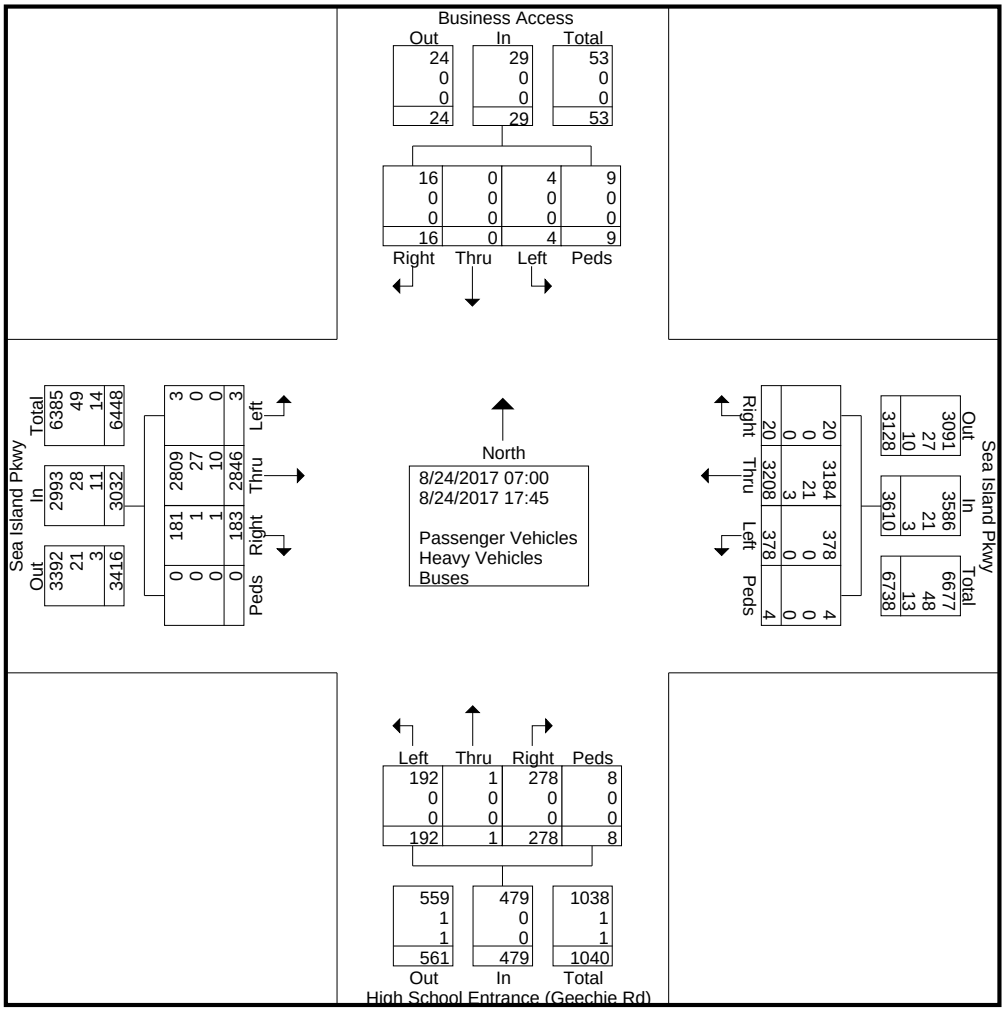
	Business Access Southbound				Sea Island Pkwy Westbound				High School Entrance (Geechie Rd) Northbound				Sea Island Pkwy Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	1	0	9	203	2	0	1	0	3	3	0	85	2	0	309
07:15	2	0	2	0	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

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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
Page No : 2



SHORT COUNTS, LLC

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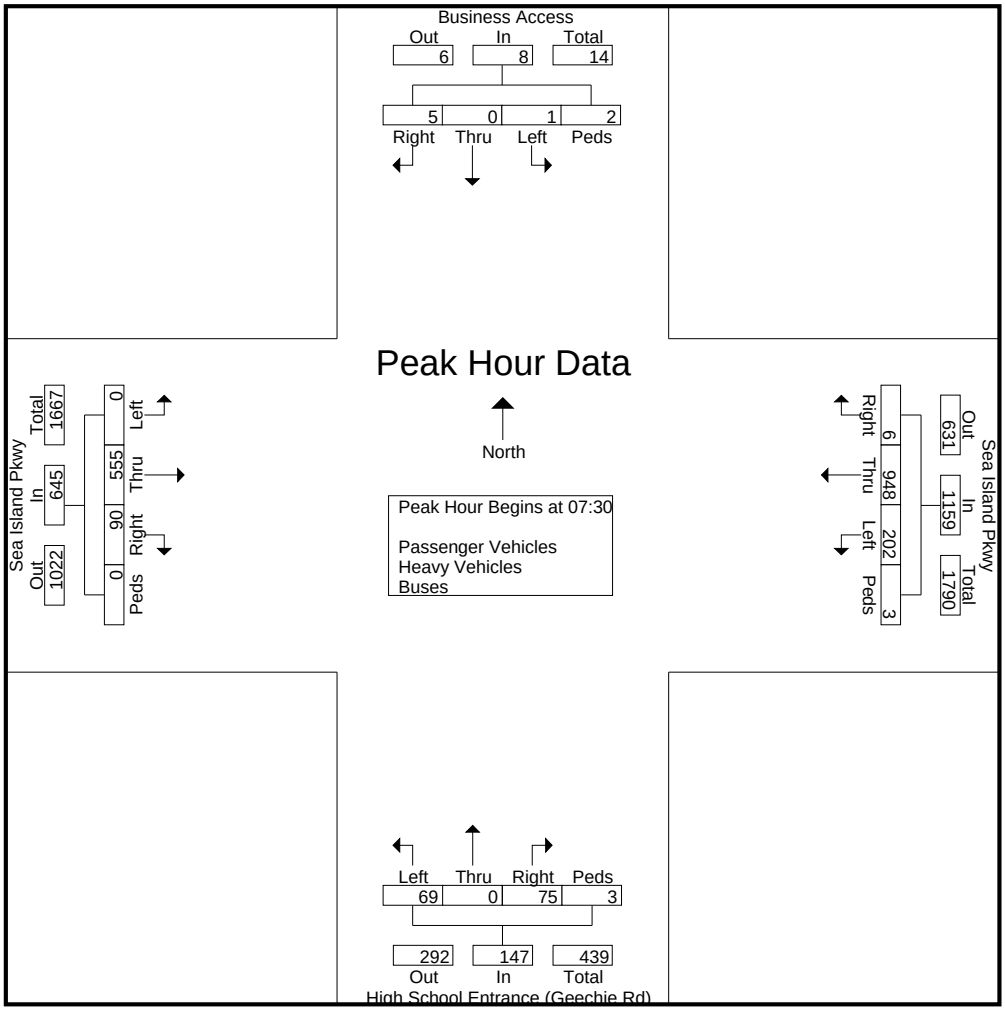
Columbia, SC 29201

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
Page No : 3

	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



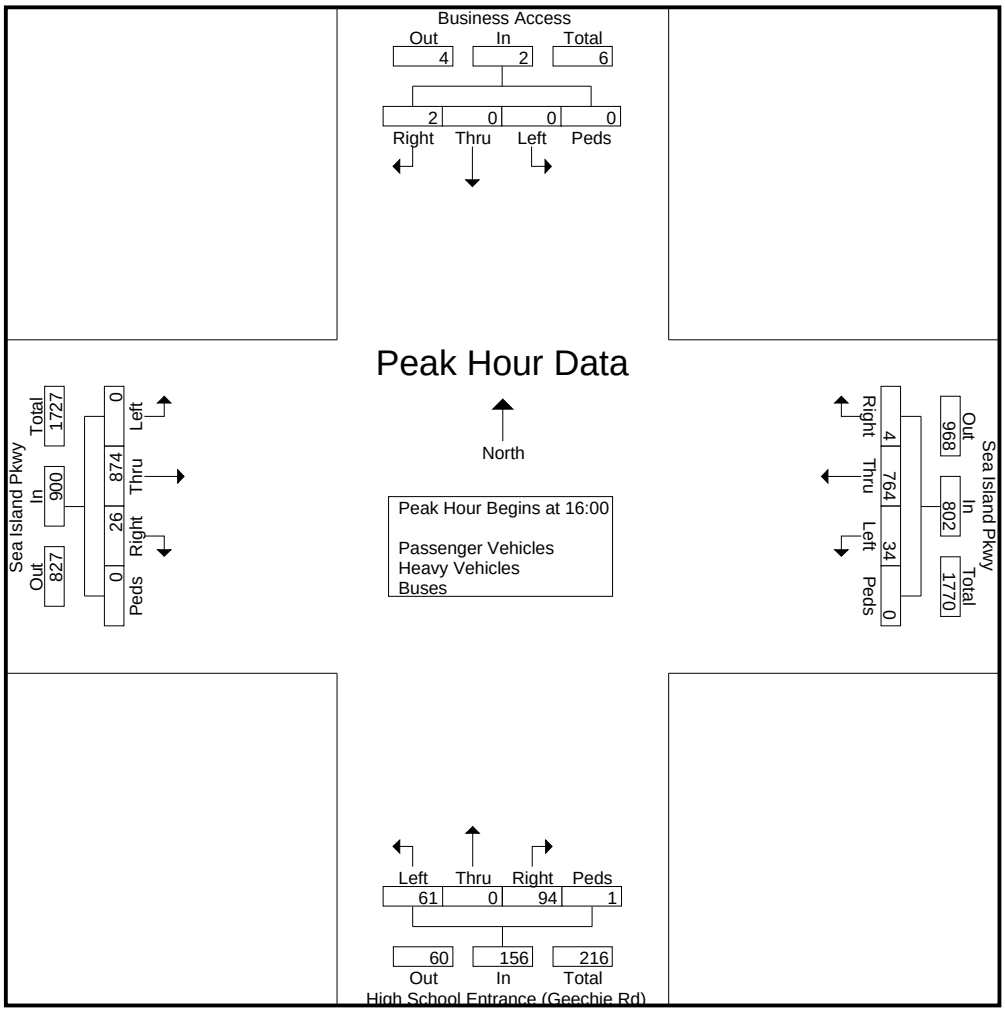
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

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
Page No : 4

	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



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				12	19			12	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**16**	**4**	**161**				**296**	**817**	**4**	**2**	**536**	**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			12				9	15			20	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**48**	**8**	**248**				**195**	**671**	**7**	**2**	**703**	**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		2	17		31				15			
Pass-By Project Traffic		-3	3						3			
2020 BUILD TRAFFIC VOLUMES		**688**	**20**	**0**	**1,104**		**0**		**18**			

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		3	29		24				12			
Pass-By Project Traffic		-3	3						4			
2020 BUILD TRAFFIC VOLUMES		**993**	**32**	**0**	**813**		**0**		**16**			

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		15	2	14			31		8			
Pass-By Project Traffic		-1	1	6	-6		4		2			
2020 BUILD TRAFFIC VOLUMES	**0**	**650**	**55**	**51**	**1,018**	**1**	**84**	**0**	**47**	**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		12	3	23			24		6			
Pass-By Project Traffic		-1	1	6	-6		4		2			
2020 BUILD TRAFFIC VOLUMES	**0**	**960**	**48**	**71**	**740**	**5**	**70**	**0**	**26**	**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		23			14							
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**	**603**	**94**	**211**	**1,005**	**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		18			23							
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**	**931**	**27**	**36**	**821**	**4**	**64**	**0**	**98**	**0**	**0**	**2**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

Meridian Road & East 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	32		15				10	7			2	14
Pass-By Project Traffic	6											7
2020 BUILD TRAFFIC VOLUMES	**38**		**15**				**10**	**102**			**86**	**21**

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	25		12				16	5			4	22
Pass-By Project Traffic	6											7
2020 BUILD TRAFFIC VOLUMES	**31**		**12**				**16**	**64**			**90**	**29**

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	7							10			15	2
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**11**	**0**	**2**	**0**	**0**	**0**	**2**	**101**	**2**	**1**	**97**	**3**

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	5							16			12	4
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**8**	**0**	**0**	**2**	**0**	**1**	**2**	**70**	**0**	**0**	**94**	**8**

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			8				4	10			15	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**1**		**9**				**7**	**103**			**98**	**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			6				7	16			12	
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**0**		**6**				**7**	**69**			**95**	**1**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

Harborview Circle & Harborview Drive/South Project Driveway

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: N/A

AM PEAK HOUR (8:00-9:00 AM)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2017 TRAFFIC VOLUMES	**0**		**0**				**0**	**0**			**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	0		0				0	0			0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**0**			**0**	**0**
New Project Traffic	7		8				4					2
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**7**		**8**				**4**	**0**			**0**	**2**

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**	**0**			**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	0		0				0	0			0	0
2020 NO-BUILD TRAFFIC VOLUMES	**0**		**0**				**0**	**0**			**0**	**0**
New Project Traffic	5		6				7					4
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**5**		**6**				**7**	**0**			**0**	**4**

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			23				14					
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**3**		**92**				**101**	**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			18				23					
Pass-By Project Traffic												
2020 BUILD TRAFFIC VOLUMES	**2**		**115**				**106**	**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	31.0	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	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	688	20	0	1104	0	18
Future Vol, veh/h	688	20	0	1104	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	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	764	22	0	1227	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	776
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	397
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	397
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	397	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-
HCM Control Delay (s)	14.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	37.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	650	55	51	1018	1	84	0	47	0	0	0
Future Vol, veh/h	0	650	55	51	1018	1	84	0	47	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	684	58	54	1072	1	88	0	49	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1073	0	0	742	0	0	1892	1893	713	1917	1921	1072
Stage 1	-	-	-	-	-	-	713	713	-	1179	1179	-
Stage 2	-	-	-	-	-	-	1179	1180	-	738	742	-
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	650	-	-	865	-	-	~ 53	70	432	51	67	268
Stage 1	-	-	-	-	-	-	423	435	-	232	264	-
Stage 2	-	-	-	-	-	-	232	264	-	410	422	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	650	-	-	865	-	-	~ 50	66	432	43	63	268
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 50	66	-	43	63	-
Stage 1	-	-	-	-	-	-	423	435	-	232	248	-
Stage 2	-	-	-	-	-	-	218	248	-	363	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	$ 540.6	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	73	650	-	-	865	-	-	-
HCM Lane V/C Ratio	1.889	-	-	-	0.062	-	-	-
HCM Control Delay (s)	$ 540.6	0	-	-	9.4	-	-	0
HCM Lane LOS	F	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	12.3	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	650	55	51	1018	1	84	0	47	0	0	0
Future Volume (veh/h)	0	650	55	51	1018	1	84	0	47	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	684	58	54	1072	1	88	0	49	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	90	1244	106	486	1367	1	177	7	61	0	216	0
Arrive On Green	0.00	0.73	0.73	0.73	0.73	0.73	0.12	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	524	1694	144	715	1861	2	893	60	531	0	1863	0
Grp Volume(v), veh/h	0	0	742	54	0	1073	137	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	524	0	1837	715	0	1862	1484	0	0	0	1863	0
Q Serve(g_s), s	0.0	0.0	14.4	2.9	0.0	29.0	6.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	14.4	17.3	0.0	29.0	7.2	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.00	0.64		0.36	0.00		0.00
Lane Grp Cap(c), veh/h	90	0	1350	486	0	1368	246	0	0	0	216	0
V/C Ratio(X)	0.00	0.00	0.55	0.11	0.00	0.78	0.56	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	507	0	2815	1056	0	2854	533	0	0	0	580	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	4.7	8.6	0.0	6.7	34.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.1	0.0	1.0	2.0	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	7.3	0.6	0.0	15.0	3.1	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	5.1	8.7	0.0	7.7	36.5	0.0	0.0	0.0	0.0	0.0
LnGrp LOS			A	A		A	D					
Approach Vol, veh/h		742			1127			137			0	
Approach Delay, s/veh		5.1			7.7			36.5			0.0	
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.0		15.3		65.0		15.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		123.0		25.0		123.0		25.0
Max Q Clear Time (g_c+I1), s		16.4		0.0		31.0		9.2
Green Ext Time (p_c), s		28.7		0.0		28.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	15	10	102	86	21
Future Vol, veh/h	38	15	10	102	86	21
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	42	17	11	113	96	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	243	107	119	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	136	-	-	-	-	-
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	745	947	1469	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	739	947	1469	-	-	-
Mov Cap-2 Maneuver	739	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	788	-	-
HCM Lane V/C Ratio	0.008	-	0.075	-	-
HCM Control Delay (s)	7.5	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	2	0	0	0	2	101	2	1	97	3
Future Vol, veh/h	11	0	2	0	0	0	2	101	2	1	97	3
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	12	0	2	0	0	0	2	112	2	1	108	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	230	231	109	231	231	113	111	0	0	114	0	0
Stage 1	112	112	-	118	118	-	-	-	-	-	-	-
Stage 2	118	119	-	113	113	-	-	-	-	-	-	-
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	717	662	934	724	669	940	1479	-	-	1475	-	-
Stage 1	883	795	-	887	798	-	-	-	-	-	-	-
Stage 2	877	790	-	892	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	716	661	934	721	668	940	1479	-	-	1475	-	-
Mov Cap-2 Maneuver	716	661	-	721	668	-	-	-	-	-	-	-
Stage 1	882	794	-	886	797	-	-	-	-	-	-	-
Stage 2	876	789	-	889	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	0	0.1	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1479	-	-	743	-	1475	-	-
HCM Lane V/C Ratio	0.002	-	-	0.019	-	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.9	0	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	8	4	0	0	2
Future Vol, veh/h	7	8	4	0	0	2
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	6	6	6	6
Mvmt Flow	8	9	4	0	0	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	10	1	2	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	1010	1084	1594	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1007	1084	1594	-	-	-
Mov Cap-2 Maneuver	1007	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1594	-	1047	-	-
HCM Lane V/C Ratio	0.003	-	0.016	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	9	7	103	98	0
Future Vol, veh/h	1	9	7	103	98	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	10	8	114	109	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	239	109	109	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	130	-	-	-	-	-
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	741	934	1481	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	737	934	1481	-	-	-
Mov Cap-2 Maneuver	737	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1481	-	910	-	-
HCM Lane V/C Ratio	0.005	-	0.012	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	92	101	969	1425	6
Future Vol, veh/h	3	92	101	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	99	109	1042	1532	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2273	769	1539	0	-	0
Stage 1	1535	-	-	-	-	-
Stage 2	738	-	-	-	-	-
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	34	344	428	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	25	344	428	-	-	-
Mov Cap-2 Maneuver	25	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	323	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.8	1.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	428	-	245	-	-
HCM Lane V/C Ratio	0.254	-	0.417	-	-
HCM Control Delay (s)	16.2	-	29.8	-	-
HCM Lane LOS	C	-	D	-	-
HCM 95th %tile Q(veh)	1	-	1.9	-	-

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	296	817	4	2	536	7
Future Volume (veh/h)	16	4	161	0	0	0	296	817	4	2	536	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				329	908	4	2	596	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				582	1431	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				329	0	912	598	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	26.9	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.3	0.0	12.5				7.4	0.0	26.9	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				582	0	1438	1220	0	1013
V/C Ratio(X)	0.10	0.00	0.56				0.57	0.00	0.63	0.49	0.00	0.01
Avail Cap(c_a), veh/h	381	0	463				663	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				0.6	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	14.0	11.1	0.0	0.1
LnGrp Delay(d),s/veh	48.3	0.0	45.8				9.5	0.0	7.1	13.2	0.0	8.0
LnGrp LOS	D		D				A		A	B		A
Approach Vol, veh/h		201						1241			606	
Approach Delay, s/veh		46.0						7.7			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	16.3	85.0				101.3		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				28.9		14.5
Green Ext Time (p_c), s	0.4	19.1				20.2		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)	603	94	211	1005	72	78
Future Volume (veh/h)	603	94	211	1005	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	641	100	224	1069	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	1217	190	568	1586	122	109
Arrive On Green	0.77	0.77	0.04	0.85	0.07	0.07
Sat Flow, veh/h	1574	246	1774	1863	1774	1583
Grp Volume(v), veh/h	0	741	224	1069	77	83
Grp Sat Flow(s),veh/h/ln	0	1819	1774	1863	1774	1583
Q Serve(g_s), s	0.0	22.0	3.5	28.2	6.0	7.3
Cycle Q Clear(g_c), s	0.0	22.0	3.5	28.2	6.0	7.3
Prop In Lane		0.13	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1407	568	1586	122	109
V/C Ratio(X)	0.00	0.53	0.39	0.67	0.63	0.76
Avail Cap(c_a), veh/h	0	1407	870	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	6.1	5.3	3.7	63.9	64.5
Incr Delay (d2), s/veh	0.0	0.5	0.3	2.3	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	11.1	2.2	15.0	3.1	3.5
LnGrp Delay(d),s/veh	0.0	6.6	5.6	6.0	69.3	75.1
LnGrp LOS		A	A	A	E	E
Approach Vol, veh/h	741			1293	160	
Approach Delay, s/veh	6.6			5.9	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	31.0	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	24.0				30.2		9.3
Green Ext Time (p_c), s	0.4	36.4				44.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	993	32	0	813	0	16
Future Vol, veh/h	993	32	0	813	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1103	36	0	903	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1121
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	251
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	251
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	251	-	-	-
HCM Lane V/C Ratio	0.071	-	-	-
HCM Control Delay (s)	20.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	27.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	960	48	71	740	5	70	0	26	2	0	1
Future Vol, veh/h	0	960	48	71	740	5	70	0	26	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	1011	51	75	779	5	74	0	27	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	784	0	0	1061	0	0	1968	1970	1036	1980	1992	782
Stage 1	-	-	-	-	-	-	1036	1036	-	931	931	-
Stage 2	-	-	-	-	-	-	932	934	-	1049	1061	-
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	834	-	-	657	-	-	~ 47	63	281	46	61	394
Stage 1	-	-	-	-	-	-	280	309	-	320	346	-
Stage 2	-	-	-	-	-	-	320	345	-	275	300	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	834	-	-	657	-	-	~ 43	56	281	38	54	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 43	56	-	38	54	-
Stage 1	-	-	-	-	-	-	280	309	-	320	307	-
Stage 2	-	-	-	-	-	-	283	306	-	248	300	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	$ 541.8	75.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	56	834	-	-	657	-	-	54
HCM Lane V/C Ratio	1.805	-	-	-	0.114	-	-	0.058
HCM Control Delay (s)	$ 541.8	0	-	-	11.2	-	-	75.8
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	9.6	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	960	48	71	740	5	70	0	26	2	0	1
Future Volume (veh/h)	0	960	48	71	740	5	70	0	26	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	1011	51	75	779	5	74	0	27	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	51	1463	74	371	1538	10	131	2	32	120	8	43
Arrive On Green	0.00	0.83	0.83	0.83	0.83	0.83	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	687	1758	89	529	1849	12	1049	20	390	930	101	515
Grp Volume(v), veh/h	0	0	1062	75	0	784	101	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	687	0	1847	529	0	1861	1459	0	0	1546	0	0
Q Serve(g_s), s	0.0	0.0	32.0	9.2	0.0	17.2	9.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	32.0	41.2	0.0	17.2	9.6	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.73		0.27	0.67		0.33
Lane Grp Cap(c), veh/h	51	0	1536	371	0	1548	165	0	0	171	0	0
V/C Ratio(X)	0.00	0.00	0.69	0.20	0.00	0.51	0.61	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	51	0	1536	371	0	1548	262	0	0	266	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	4.7	12.8	0.0	3.4	63.5	0.0	0.0	59.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.6	1.2	0.0	1.2	3.6	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	17.0	1.5	0.0	9.2	4.0	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	7.3	14.1	0.0	4.6	67.2	0.0	0.0	59.3	0.0	0.0
LnGrp LOS			A	B		A	E			E		
Approach Vol, veh/h		1062			859			101			3	
Approach Delay, s/veh		7.3			5.4			67.2			59.3	
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		123.0		17.7		123.0		17.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		117.0		21.0		117.0		21.0
Max Q Clear Time (g_c+I1), s		34.0		2.2		43.2		11.6
Green Ext Time (p_c), s		29.8		0.4		28.9		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	12	16	64	90	29
Future Vol, veh/h	31	12	16	64	90	29
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	34	13	18	71	100	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	116	132	0	-	0
Stage 1	116	-	-	-	-	-
Stage 2	107	-	-	-	-	-
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	765	936	1453	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	755	936	1453	-	-	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	798	-	-
HCM Lane V/C Ratio	0.012	-	0.06	-	-
HCM Control Delay (s)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	0	2	0	1	2	70	0	0	94	8
Future Vol, veh/h	8	0	0	2	0	1	2	70	0	0	94	8
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	9	0	0	2	0	1	2	78	0	0	104	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	192	191	109	191	195	78	113	0	0	78	0	0
Stage 1	109	109	-	82	82	-	-	-	-	-	-	-
Stage 2	83	82	-	109	113	-	-	-	-	-	-	-
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	759	697	934	769	700	983	1476	-	-	1520	-	-
Stage 1	887	797	-	926	827	-	-	-	-	-	-	-
Stage 2	915	819	-	896	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	758	696	934	768	699	983	1476	-	-	1520	-	-
Mov Cap-2 Maneuver	758	696	-	768	699	-	-	-	-	-	-	-
Stage 1	886	797	-	925	826	-	-	-	-	-	-	-
Stage 2	913	818	-	896	802	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.4	0.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1476	-	-	758	828	1520	-	-
HCM Lane V/C Ratio	0.002	-	-	0.012	0.004	-	-	-
HCM Control Delay (s)	7.4	0	-	9.8	9.4	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	6	7	0	0	4
Future Vol, veh/h	5	6	7	0	0	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	6	6
Mvmt Flow	6	7	8	0	0	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	18	2	4	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	1000	1082	1592	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1082	1592	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1002	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	1041	-	-
HCM Lane V/C Ratio	0.005	-	0.012	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	7	69	95	1
Future Vol, veh/h	0	6	7	69	95	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	7	8	77	106	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	198	106	107	0	-	0
Stage 1	106	-	-	-	-	-
Stage 2	92	-	-	-	-	-
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	782	937	1484	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	777	937	1484	-	-	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1484	-	937	-	-
HCM Lane V/C Ratio	0.005	-	0.007	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
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	2	115	106	1384	1038	4
Future Vol, veh/h	2	115	106	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	121	112	1457	1093	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2047	548	1097	0	-	0
Stage 1	1095	-	-	-	-	-
Stage 2	952	-	-	-	-	-
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	48	480	632	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	39	480	632	-	-	-
Mov Cap-2 Maneuver	39	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	276	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	632	-	402	-	-
HCM Lane V/C Ratio	0.177	-	0.306	-	-
HCM Control Delay (s)	11.9	-	17.9	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	8	248	0	0	0	195	671	7	2	703	34
Future Volume (veh/h)	48	8	248	0	0	0	195	671	7	2	703	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	270				212	729	8	2	764	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	266	46	364				407	1356	15	25	1188	1011
Arrive On Green	0.17	0.17	0.17				0.06	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	270				212	0	737	766	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	23.4				5.9	0.0	25.4	0.0	0.0	1.3
Cycle Q Clear(g_c), s	4.3	0.0	23.4				5.9	0.0	25.4	37.3	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	312	0	364				407	0	1371	1213	0	1011
V/C Ratio(X)	0.20	0.00	0.74				0.52	0.00	0.54	0.63	0.00	0.04
Avail Cap(c_a), veh/h	341	0	390				496	0	1371	1213	0	1011
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	52.1	0.0	52.8				14.8	0.0	8.4	16.4	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	7.0				0.8	0.0	1.5	2.5	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	19.8	0.0	0.6
LnGrp Delay(d),s/veh	52.4	0.0	59.8				15.6	0.0	9.9	18.9	0.0	10.0
LnGrp LOS	D		E				B		A	B		A
Approach Vol, veh/h		331						949			803	
Approach Delay, s/veh		58.4						11.2			18.5	
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		32.5
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	7.9	39.3				27.4		25.4
Green Ext Time (p_c), s	0.3	17.8				19.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

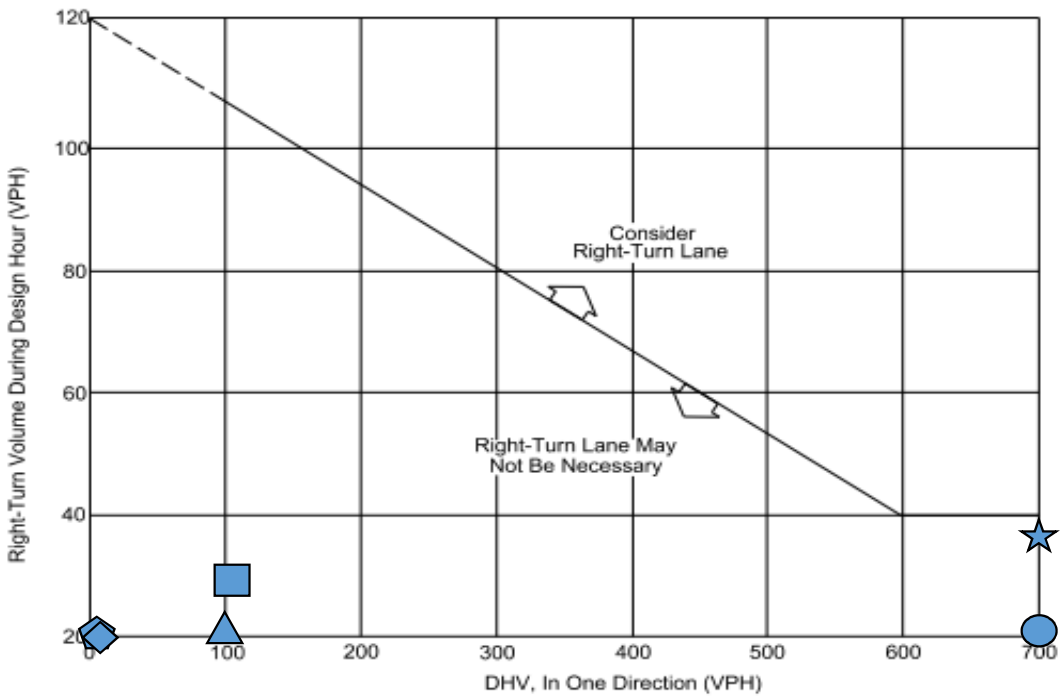
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	931	27	36	821	64	98
Future Volume (veh/h)	931	27	36	821	64	98
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1034	30	40	912	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	341	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	1064	40	912	71	109
Grp Sat Flow(s),veh/h/ln	0	1854	1774	1863	1774	1583
Q Serve(g_s), s	0.0	43.5	0.6	21.7	5.0	8.9
Cycle Q Clear(g_c), s	0.0	43.5	0.6	21.7	5.0	8.9
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1399	341	1542	153	137
V/C Ratio(X)	0.00	0.76	0.12	0.59	0.46	0.80
Avail Cap(c_a), veh/h	0	1399	454	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	11.1	3.8	57.2	59.0
Incr Delay (d2), s/veh	0.0	2.7	0.1	1.7	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	22.9	0.6	11.6	2.6	4.3
LnGrp Delay(d),s/veh	0.0	12.0	11.2	5.5	59.4	69.1
LnGrp LOS		B	B	A	E	E
Approach Vol, veh/h	1064			952	180	
Approach Delay, s/veh	12.0			5.7	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	45.5				23.7		10.9
Green Ext Time (p_c), s	0.0	33.6				50.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

APPENDIX G

Turn-Lane Analysis Worksheet



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 9.5-A

INTERSECTION: US 21 (Sea Island Parkway)/Meridan Road/Harborview Circle & Project Driveways

MOVEMENT: Eastbound/Southbound Right Turn

SCENARIO		Design-Hour Volume	Right-Turn Volume	Symbol
North Project Driveway	AM Peak Hour	708	20	●
	PM Peak Hour	1025	32	★
East Project Driveway	AM Peak Hour	107	21	▲
	PM Peak Hour	119	29	■
South Project Driveway	AM Peak Hour	2	2	⬟
	PM Peak Hour	4	4	◆

APPENDIX H

Signal Warrant Analysis Worksheets

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Whitehall TIS
Project/File #	18056
Scenario	2017 Existing with ITE% Volumes (50% RT reduction)

Intersection Information			
Major Street (E/W Road)	US 21 Business	Minor Street (N/S Road)	Meridian Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	18615.455 vehicles	Total Approach Volume	1503.75 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

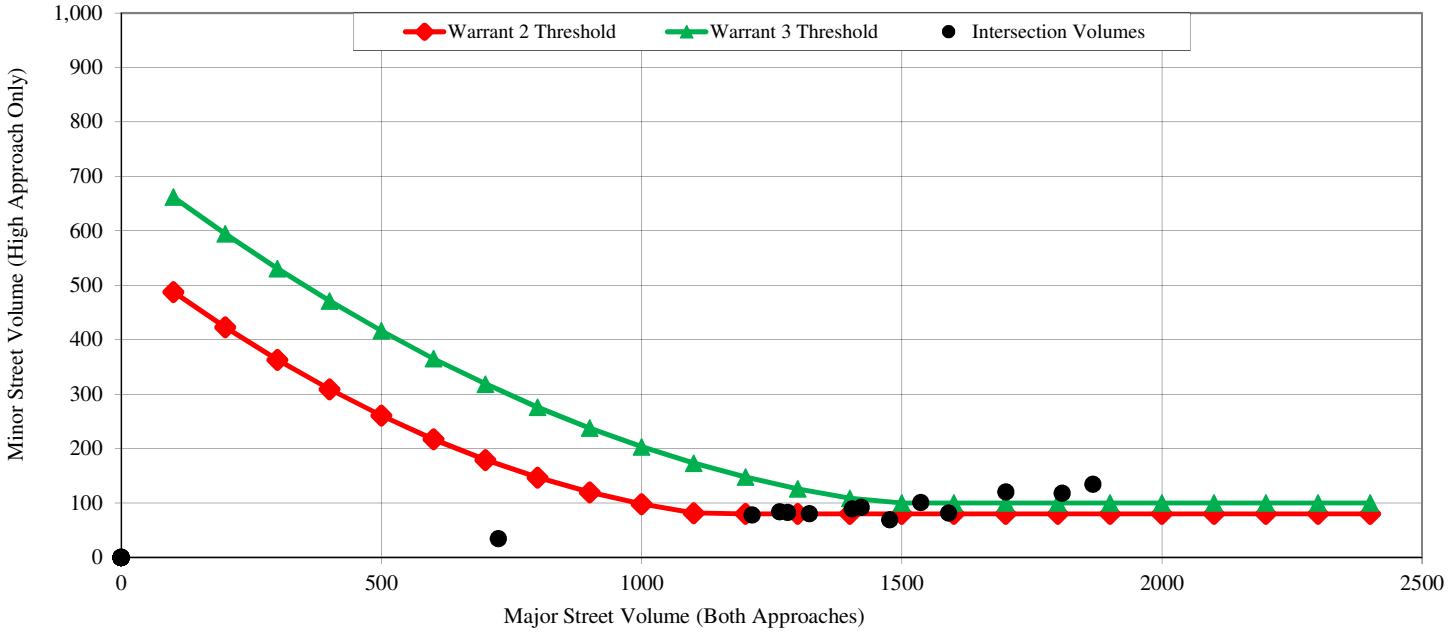
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Satisfied**	**Not Satisfied**
Required values reached for	0 hours	11 hours	2 (Cond. A) & 12 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Satisfied**
Required values reached for	9 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	418.355 total, 94.57 minor, 14.2 dela	4 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Traffic Signal Warrant Analysis

Warrants 4 to 6 (Pedestrian, School, Coordinated Systems)

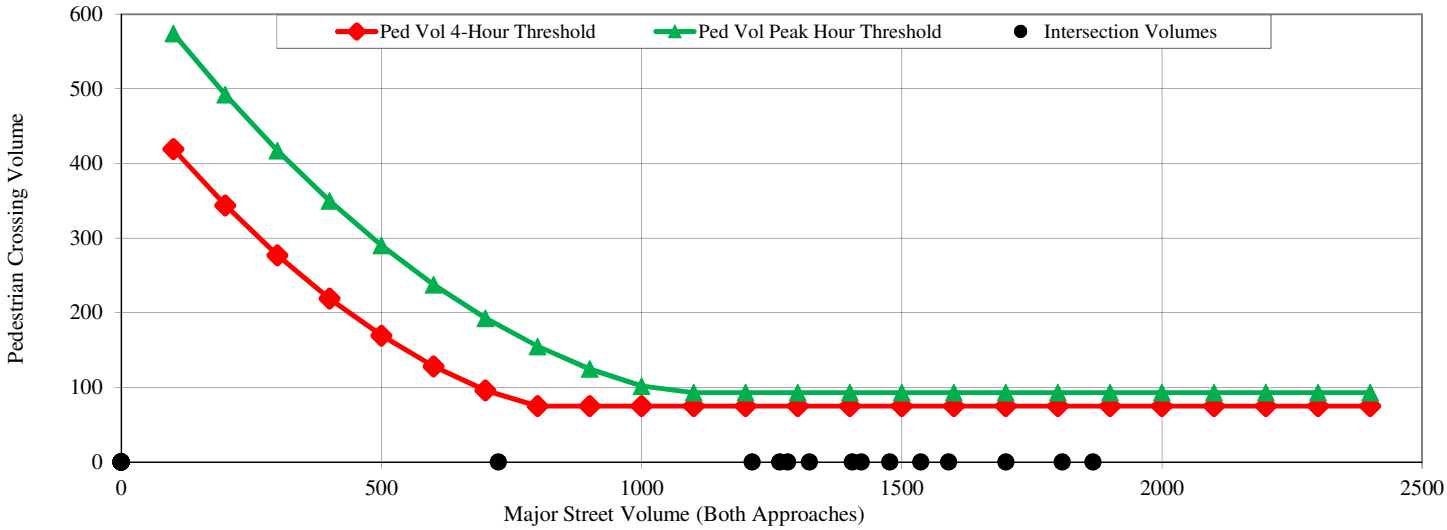
Project Name	Whitehall TIS
Project/File #	18056
Scenario	Build 2020

Intersection Information			
Major Street (E/W Road)	US 21 Business	Minor Street (N/S Road)	Meridian Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	18615.455 vehicles	Total Approach Volume	1503.75 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

Reduction applied to Pedestrian Warrant thresholds due to high speeds on US 21 Business.

Warrant 4, Pedestrian Volume		
	Condition A - Four Hour Vol.	**Condition B - Peak Hour Vol.**
Condition Satisfied?	**Not Examined**	**Not Examined**
Required values reached for		
Criteria - Min. Distance to Nearest Controlled Crossing		
Criteria - Major Street Volume and Crossing Volume		

Figure 4C-5 & Figure 4C-7 (Warrant 4 Four Hour & Peak Hour)



Warrant 5, School Crossing	
Condition Satisfied?	**Not Examined**
Criteria - School Crossing Data	

Warrant 6, Coordinated Signal System	
Condition Satisfied?	**Not Examined**
Criteria - Coordinated Signal System	

Traffic Signal Warrant Analysis

Warrants 7-9 (Crash, Network, Rail Crossing)

Project Name	Whitehall TIS
Project/File #	18056
Scenario	Build 2020

Intersection Information			
Major Street (E/W Road)	US 21 Business	Minor Street (N/S Road)	Meridian Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	18615.455 vehicles	Total Approach Volume	1503.75 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

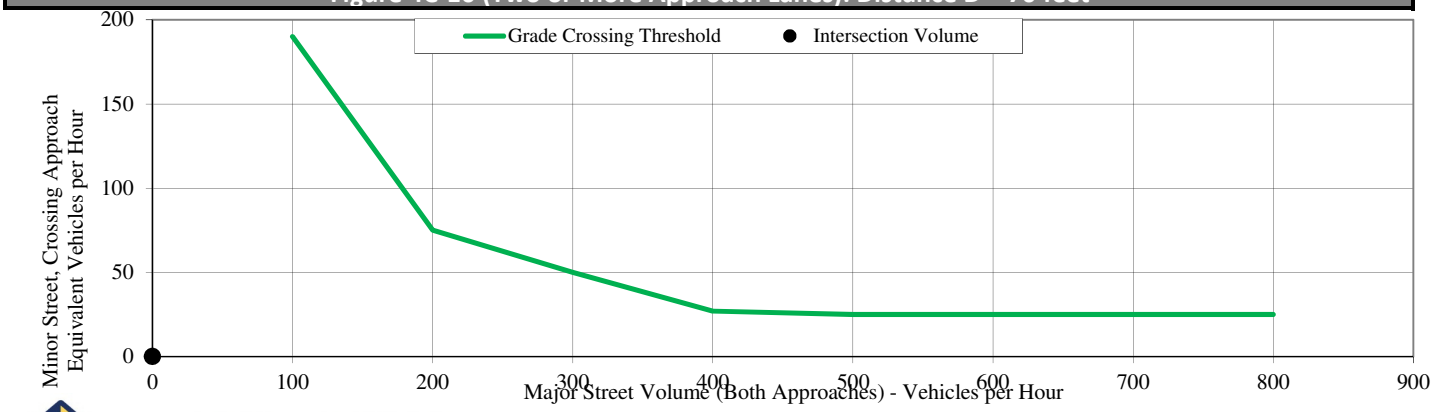
Reduction applied to Crash and Roadway Network Warrant thresholds due to high speed on US 21 Business.

Warrant 7, Crash Experience	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Alternatives	
Criteria - Reported Crashes (within 12-month period)	
Criteria - Major Street (veh/hr) - Minor Street (veh/hr)	
(Alternative Volume Requirement) Criteria - Pedestrian Volume	

Warrant 8, Roadway Network	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Common Intersection of Two Major Routes	
Criteria - Existing or Immediately Projected Entering Volume	
Criteria - Warrants	
(Alternative Requirement) Criteria - Non-normal Business Day	

Warrant 9, Intersection Near a Grade Crossing	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Alternatives	
Criteria - Max. Distance to Nearest Controlled Crossing	
Criteria - Major Street Volume and Crossing Volume	

Figure 4C-10 (Two or More Approach Lanes): Distance D = 70 feet



Traffic Signal Warrant Analysis

Multi-Way Stop Warrants

Project Name	Whitehall TIS
Project/File #	18056
Scenario	Build 2020

Intersection Information			
Major Street (E/W Road)	US 21 Business	Minor Street (N/S Road)	Meridian Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	18615.455 vehicles	Total Approach Volume	1503.75 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

No high speed or isolated community reduction applied to the Multi-Way Stop Warrant thresholds.

Condition A - Traffic Signal Warrant	
Condition Satisfied?	**Not Examined**
Criteria*	

* Multi-way stop control may be used as an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

Condition B - Crash Experience	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Crash Experience	

Condition C - Intersection Volume & Delay	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Major Street (veh/hr)	
Criteria - Minor Street (total vol-veh, ped, & bikes/hr)	
Criteria - Delay (average sec/veh)	

Condition D - Combination Volume, Crash Experience, & Delay	
Condition Satisfied?	**Not Examined**
Required values reached for	
Criteria - Major Street (veh/hr)	
Criteria - Minor Street (total vol-veh, ped, & bikes/hr)	
Criteria - Crash Experience	
Criteria - Delay (average sec/veh)	

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

US 21 Business/Sea Island Parkway & Meridian Road

TRAFFIC CONTROL: Unsignalized

DATE COUNTED: Tuesday, November 07, 2017

	2017 EXISTING TRAFFIC VOLUMES											
START HOUR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
6:00 AM	0	161	13	3	498	0	15	0	8	1	0	0
7:00 AM	0	510	27	19	920	6	31	0	36	2	0	0
8:00 AM	0	565	47	37	776	6	42	0	52	4	0	0
9:00 AM	1	451	39	48	582	2	31	0	35	2	0	1
10:00 AM	0	493	41	35	616	2	37	0	30	8	0	2
11:00 AM	0	560	25	24	553	4	32	1	30	3	1	0
12:00 PM	3	595	45	52	594	5	27	0	41	1	0	7
1:00 PM	0	650	44	32	635	6	16	2	26	6	1	2
2:00 PM	1	610	41	50	604	4	28	0	42	4	0	1
3:00 PM	1	770	50	52	701	1	52	0	47	5	0	0
4:00 PM	1	824	53	44	749	1	52	0	32	1	0	0
5:00 PM	0	963	50	39	671	2	58	0	46	2	0	0
6:00 PM	0	661	25	29	496	1	27	0	19	0	0	1

	PROJECT TRAFFIC VOLUMES											
START HOUR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
6:00 AM	0	6	3	10	0	0	13	0	3	0	0	0
7:00 AM	0	13	7	21	0	0	27	0	7	0	0	0
8:00 AM	0	13	7	21	0	0	26	0	7	0	0	0
9:00 AM	0	12	7	20	0	0	24	0	6	0	0	0
10:00 AM	0	13	7	21	0	0	25	0	6	0	0	0
11:00 AM	0	15	8	24	0	0	30	0	8	0	0	0
12:00 PM	0	17	9	27	0	0	35	0	9	0	0	0
1:00 PM	0	16	8	24	0	0	33	0	8	0	0	0
2:00 PM	0	18	9	26	0	0	36	0	9	0	0	0
3:00 PM	0	18	9	27	0	0	37	0	9	0	0	0
4:00 PM	0	21	10	31	0	0	42	0	10	0	0	0
5:00 PM	0	22	11	32	0	0	44	0	11	0	0	0
6:00 PM	0	19	9	28	0	0	37	0	9	0	0	0

	2020 NO-BUILD TRAFFIC VOLUMES											
START HOUR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
6:00 AM	0	168	14	3	520	0	16	0	8	1	0	0
7:00 AM	0	533	28	20	961	6	32	0	38	2	0	0
8:00 AM	0	590	49	39	811	6	44	0	54	4	0	0
9:00 AM	1	471	41	50	608	2	32	0	37	2	0	1
10:00 AM	0	515	43	37	644	2	39	0	31	8	0	2
11:00 AM	0	585	26	25	578	4	33	1	31	3	1	0
12:00 PM	3	622	47	54	621	5	28	0	43	1	0	7
1:00 PM	0	679	46	33	664	6	17	2	27	6	1	2
2:00 PM	1	637	43	52	631	4	29	0	44	4	0	1
3:00 PM	1	805	52	54	733	1	54	0	49	5	0	0
4:00 PM	1	861	55	46	783	1	54	0	33	1	0	0
5:00 PM	0	1,006	52	41	701	2	61	0	48	2	0	0
6:00 PM	0	691	26	30	518	1	28	0	20	0	0	1

	2020 BUILD TRAFFIC VOLUMES											
START HOUR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
6:00 AM	0	175	17	13	520	0	28	0	12	1	0	0
7:00 AM	0	546	35	41	961	6	59	0	44	2	0	0
8:00 AM	0	604	56	60	811	6	70	0	61	4	0	0
9:00 AM	1	483	48	71	608	2	56	0	43	2	0	1
10:00 AM	0	528	50	58	644	2	64	0	38	8	0	2
11:00 AM	0	600	34	49	578	4	63	1	39	3	1	0
12:00 PM	3	639	56	81	621	5	63	0	52	1	0	7
1:00 PM	0	696	54	58	664	6	50	2	35	6	1	2
2:00 PM	1	656	52	79	631	4	66	0	53	4	0	1
3:00 PM	1	823	61	81	733	1	91	0	58	5	0	0
4:00 PM	1	882	66	77	783	1	96	0	44	1	0	0
5:00 PM	0	1,028	63	73	701	2	105	0	59	2	0	0
6:00 PM	0	709	36	59	518	1	65	0	29	0	0	1

WHITEHALL TIS

Hourly Volume Estimates for the Projected Traffic Signal Warrant Analysis

US 21 Business/Sea Island Parkway & Meridian Road Intersection

ITE Daily Trip Generation Estimates

Land Use	Land Use Category	ITE LUC Code	Size	Unit	Daily Trips		
					In	Out	Total
Apartment	Residential	220	75	DU	259	260	519
Senior Adult Housing- Attached	Residential	252	100	DU	141	142	283
Specialty Retail Center	Retail	826	20	ksf	239	240	479
Single Family Detached Housing	Residential	210	25	DU	127	127	254
				Residential Land Use Category Total:	**527**	**529**	**1,056**
				Retail Land Use Category Total:	**239**	**240**	**479**
				Grand Total:	**766**	**769**	**1,535**

Start Hour	Hourly Retail Trip Distribution								
	LUC 820 Entering %[1]	Whitehall Entering Retail Trips	EBR (IN)	WBL (IN)	LUC 820 Exiting %[1]	Whitehall Exiting Retail Trips	EBT (OUT)	NBL (OUT)	NBR (OUT)
6:00 AM	0.8%	2	0	1	0.3%	1	0	0	0
7:00 AM	2.0%	5	1	2	0.9%	2	0	1	0
8:00 AM	3.1%	7	1	2	1.2%	3	1	1	0
9:00 AM	5.5%	13	1	4	2.0%	5	1	2	1
10:00 AM	7.0%	17	2	5	4.3%	10	2	4	1
11:00 AM	8.4%	20	2	6	6.2%	15	3	6	2
12:00 PM	9.4%	22	2	7	8.3%	20	4	8	2
1:00 PM	8.2%	20	2	6	8.6%	21	4	8	2
2:00 PM	7.7%	18	2	5	8.9%	21	4	8	2
3:00 PM	7.8%	19	2	6	8.8%	21	4	8	2
4:00 PM	8.0%	19	2	6	8.9%	21	4	8	2
5:00 PM	8.4%	20	2	6	9.2%	22	4	9	2
6:00 PM	8.0%	19	2	6	7.5%	18	4	7	2

Start Hour	Hourly Apartment Trip Distribution							Hourly Single Family Trip Distribution							Hourly Senior Housing Trip Distribution						
	ITE % of Daily Traffic	Hourly Total	EBR (IN)	WBL (IN)	EBT (OUT)	NBL (OUT)	NBR (OUT)	ITE % of Daily Traffic	Hourly Total	EBR (IN)	WBL (IN)	EBT (OUT)	NBL (OUT)	NBR (OUT)	ITE % of Daily Traffic	Hourly Total	EBR (IN)	WBL (IN)	EBT (OUT)	NBL (OUT)	NBR (OUT)
6:00 AM	2.9%	15	2	5	3	6	2	3.8%	10	1	3	2	4	1	2.1%	6	1	2	1	2	1
7:00 AM	7.4%	38	4	11	8	15	4	6.7%	17	2	5	3	7	2	3.5%	10	1	3	2	4	1
8:00 AM	6.3%	33	3	10	7	13	3	6.2%	16	2	5	3	6	2	5.0%	14	1	4	3	6	1
9:00 AM	5.3%	28	3	8	6	11	3	4.3%	11	1	3	2	4	1	5.6%	16	2	5	3	6	2
10:00 AM	4.0%	21	2	6	4	8	2	4.8%	12	1	4	2	5	1	6.9%	20	2	6	4	8	2
11:00 AM	5.3%	28	3	8	6	11	3	5.2%	13	1	4	3	5	1	6.7%	19	2	6	4	8	2
12:00 PM	5.4%	28	3	8	6	11	3	5.5%	14	1	4	3	6	1	8.8%	25	3	8	5	10	3
1:00 PM	4.6%	24	2	7	5	10	2	6.0%	15	2	5	3	6	2	7.8%	22	2	7	4	9	2
2:00 PM	5.7%	30	3	9	6	12	3	6.6%	17	2	5	3	7	2	8.0%	23	2	7	5	9	2
3:00 PM	6.2%	32	3	10	6	13	3	7.2%	18	2	5	4	7	2	7.3%	21	2	6	4	8	2
4:00 PM	7.6%	39	4	12	8	16	4	9.0%	23	2	7	5	9	2	7.3%	21	2	6	4	8	2
5:00 PM	9.1%	47	5	14	9	19	5	8.8%	22	2	7	4	9	2	6.6%	19	2	6	4	8	2
6:00 PM	7.9%	41	4	12	8	16	4	7.2%	18	2	5	4	7	2	5.8%	16	2	5	3	6	2

	Whitehall Project Volumes					
Movement:	EBT	EBR	WBL	WBT	NBL	NBR
Movement Type:	Exiting	Entering	Entering	Entering	Exiting	Exiting
Project Traffic Distribution[3]:	20%	10%	30%	0%	40%	10%
Start Hour						
6:00 AM	6	3	10	0	13	3
7:00 AM	13	7	21	0	27	7
8:00 AM	13	7	21	0	26	7
9:00 AM	12	7	20	0	24	6
10:00 AM	13	7	21	0	25	6
11:00 AM	15	8	24	0	30	8
12:00 PM	17	9	27	0	35	9
1:00 PM	16	8	24	0	33	8
2:00 PM	18	9	26	0	36	9
3:00 PM	18	9	27	0	37	9
4:00 PM	21	10	31	0	42	10
5:00 PM	22	11	32	0	44	11
6:00 PM	19	9	28	0	37	9

Jeff Ingham

From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Thursday, May 21, 2020 11:15 AM
To: Jeff Ingham
Cc: Tim Brutcher; sam Levin; Fleming, Juleigh B.
Subject: RE: Whitehall Plantation on Ladys Island

Jeff, Thank you for the information on this project trying to bring some clarity to current issues. See below for what I see as the path forward for this project.

- In February (email chain included in your document), I asked the question about whether the applicant is seeking approval of the TIA. Is the provided memo intended to be the cover memo answering the issues in the TIA? This memo addresses the TIA comments and I should be able to approve, pending the other issues (project phasing) being sorted out. The mitigation is as follows:
    - Right-in/right-out on US 21 Bus with raised median installed within US 21 Bus
    - Full access aligning with bank driveway on Meridian Rd
    - Second approach lane addition on Meridian Rd to US 21 Bus
    - Signal warrant analysis to be conducted by the developer upon occupancy of the project and signal designed and installed if warranted and approved by SCDOT. If signal warrant analysis conducted by SCDOT/County/City after project construction begins and before developer-conducted study, and signal is warranted and approved by SCDOT, signal designed and constructed by developer.
- (Memo comment/response #1) It is understood that all access points and mitigation will be constructed prior to occupancy of any portion of the development other than the park. We will require documentation from the City stating this. The City will also need to document the signal warrant analysis and possible signal construction requirement.

If your team is in concurrence with the above, I will issue the TIA + memo approval and you can proceed with permitting.
Thanks,

Josh Johnson, PE, PTOE
District Traffic Engineer
SCDOT District 6

From: Jeff Ingham <jingham@rameykemp.com>
Sent: Tuesday, May 19, 2020 5:34 PM
To: Johnson, Joshua A. <JohnsonJA@scdot.org>; Fleming, Juleigh B. <FlemingJB@scdot.org>
Cc: Tim Brutcher <timb@carolinaengineering.com>; sam Levin <sam.levin234@gmail.com>
Subject: [WARNING: AMP - ATTACHMENT(S) MAY CONTAIN MALWARE]Whitehall Plantation on Ladys Island

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Josh/Juleigh,
Please see the attached memorandum regarding Whitehall Plantation.

This has a history going back a couple years, I was hoping to resolve any outstanding issues with this memo. Please give me a call if you'd like to discuss.
Thanks.

Jeff Ingham, PE, PTOE, RSP2I
State Traffic Engineering Lead
D 843 614 3802 | C 843 819 0270

Moving forward.

RAMEY KEMP ASSOCIATES

OWNERSHIP > OUR CULTURE > YOUR SUCCESS

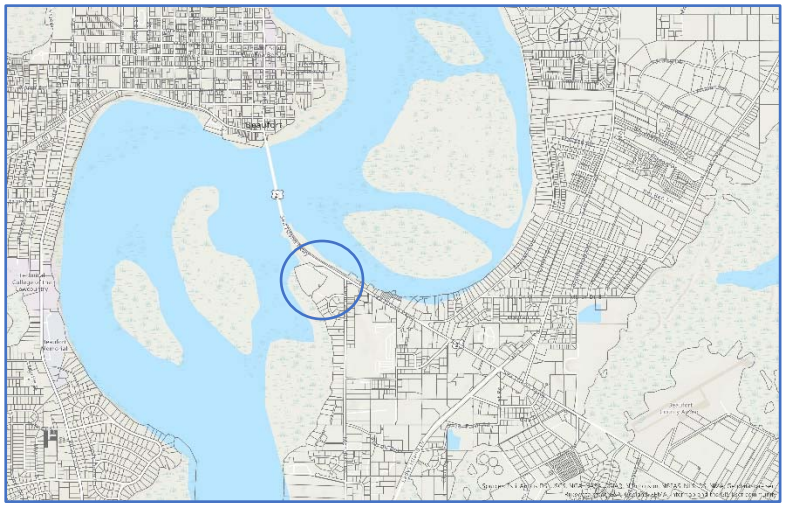
rameykemp.com

Staff Report for MPC

From the Director of Community and Economic Development

July 20, 2020

SUBJECT: Whitehall Major Subdivision



Request: The applicant, Sam Levin, has requested a major subdivision of approximately 10.1 acres located at 4 Harborview Circle (Whitehall) (R123 014 000 0149 0000). The subdivision will result in 2 lots (8.4 ac and 1.6 ac) and new streets.

The zoning district is T4-N.

The size of the parcel and the creation of new streets designates this as a Major subdivision and requires a sketch plan approval from the Metropolitan Planning Commission (MPC).

Sketch plans are to provide the general layout of lots and streets, reviewed by the MPC, for the sole purpose of subdividing the land. The intent is to provide the applicant confirmation that the "simple line drawing" is consistent with the development code in terms of lot dimensions, street connectivity, street dimensions, and the allocation of required open space, in order for the applicant to confidently proceed with investing in technical drawings. It is not a building development plan.

The MPC determines that the provisions of the code regarding the subdivision of land have been met.

In accordance with the Beaufort Development Code § 9.9.3.E, the MPC "shall approve, approve with conditions, or disapprove the sketch plan within 60 days after submission. Unless this time limit is extended by mutual agreement, failing to act within the time limit constitutes approval

of the sketch plan. If the proposed sketch plan is approved by the MPC, the MPC shall advise the applicant in writing of:

a. the conditions of such approval, if any;
b. certification of the plan by the city; and
c. the date on which the MPC granted approval.

If the MPC disapproves the sketch plan, written notice will be given to the applicant.

If the MPC approves the sketch plan, the applicant will submit a preliminary plat incorporating any conditions required by the MPC. The preliminary plat will inform the site plan for the development and will be reviewed by the TRC.

STAFF ASSESSMENT

The Sketch Plan is consistent with the City of Beaufort Code:

Section 2.4 District Development Standards - The parcel is zoned T4-N. There are no lot-width-at-front-setback standards, nor is there a minimum lot size requirement.

Section 7.2 Street Network and Design Standards – staff is satisfied with the street layout.

Section 7.4 – Community Space/Open Space is shown to exceed the 10% minimum.

Suitability and adequacy of required infrastructure, given the future plans for the property, will be assessed during preliminary plat review by the Technical Review Committee in accordance with the Beaufort Development Code Chapter 7 (Land Development), Chapter 8 (Environmental & Resource Protection) and Chapter 9 (Development Review Procedures).

Building form, orientation, and access will be evaluated as part of development design review (§ 9.8) prior to the submittal for a project permit.

STAFF RECOMMENDATION

Approve.

TOWN OF PORT ROYAL

REZONING REQUEST – 4 SUNDOWN BEND

District 112, Map 30, Parcel 4

City of Beaufort - Town of Port Royal – Beaufort County
Joint Metropolitan Planning Commission
Rezoning Analysis
Meeting Date: July 20, 2020

Applicant
Forino Company L.P.
Site
Approximately 2.96 acres located on Sundown Bend near Broad River Boulevard and Robert Smalls Parkway, also identified as District 112, Map 30, Parcel 4. See Location Map, Exhibit A.

Present Zoning and Existing Development
The parcel is currently zoned T4 Neighborhood Center. The property is currently vacant

Proposed Zoning
The proposal is to rezone the parcels to T4 Neighborhood Center - Open. The intent of the T4NC-O Sub-Zone is to provide neighborhoods with a broader amount of retail and service uses in the scale and character of the T4NC zone. See Exhibit B, Zoning Map and Use Chart

Comprehensive Plan / Land Use Compatibility

The property owner states that his requested zoning change is being made so that he may develop a boat storage facility. The property is contiguous to property zoned T4 Neighborhood Center-Open. The Future Land Use map from the Comprehensive Plan classifies the parcel in a Controlled Growth Sector (G-2). T4 Neighborhood Center-Open is compatible, in both density and allowed uses than what is envisioned in an Controlled Growth Sector. The Controlled Growth Sector in this area lines Robert Smalls Parkway and Savannah Highway as does the T4 Neighborhood Center – Open zoning designation. See Exhibit C, The Future Land Use Map.

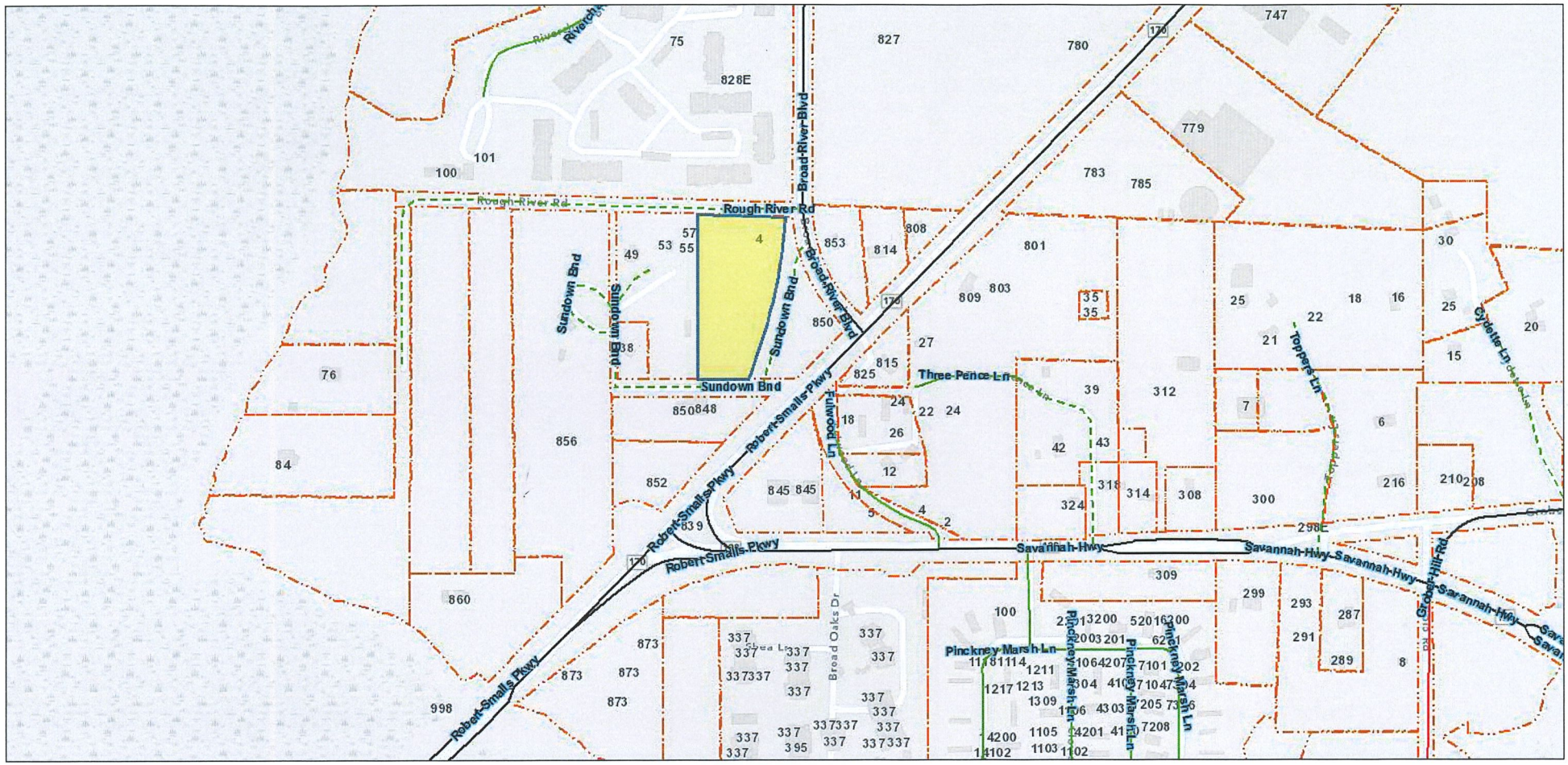
Development of the property will include a review of stormwater. The district also requires Design Guidelines as well as Architectural Standards.

Environmental Issues
There are no environmental issues for this property.

Public Service Issues
None

Letters were sent to property owners within 400 feet of the property being rezoned

4 Sundown Bend Location Map



7/9/2020, 11:42:37 AM

Search Results: LiveParcels

Override 1

LiveParcels

Road Classifications

STATE, PAVED

COUNTY, PAVED

PRIVATE, PAVED

PRIVATE, UNPAVED

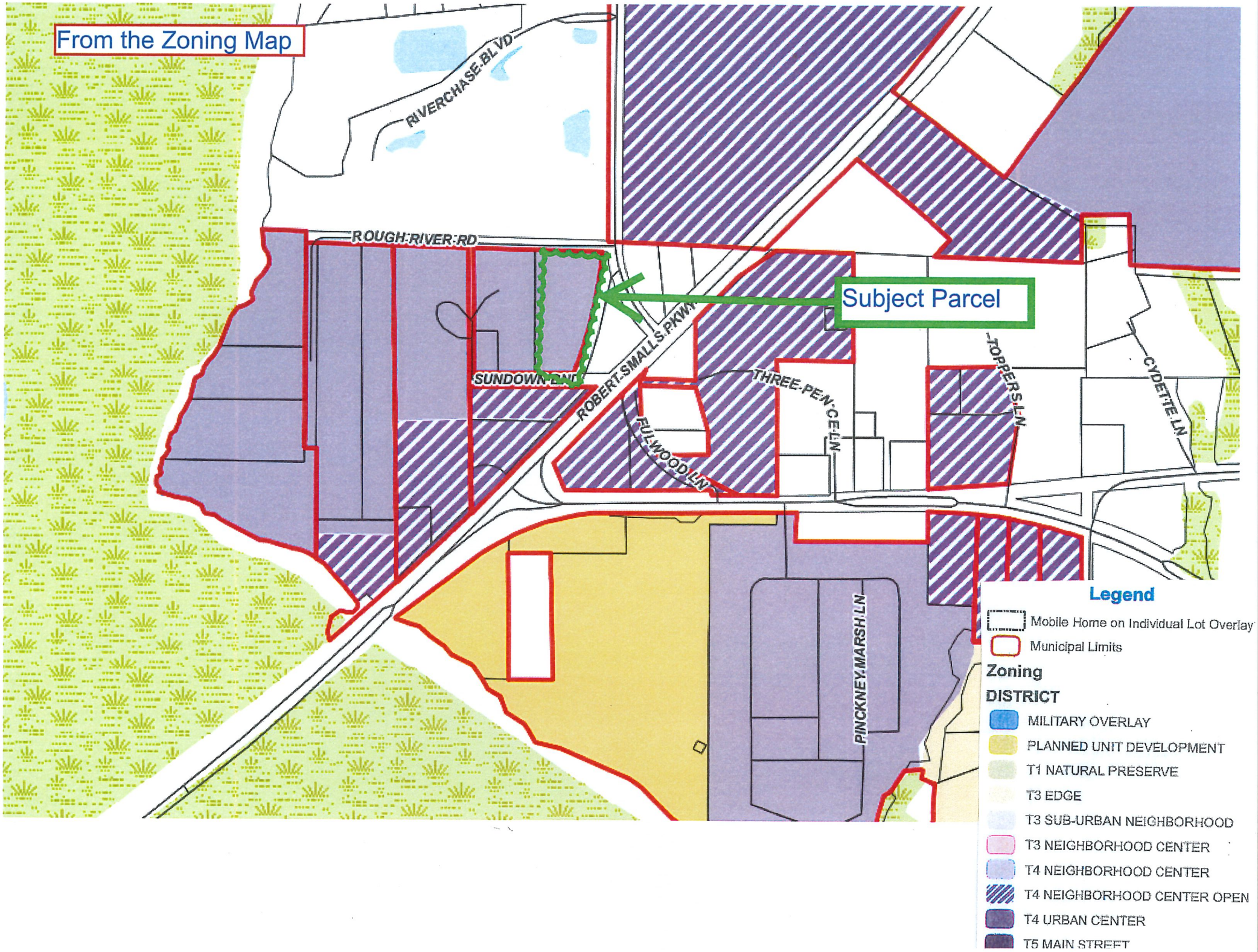
1:4,514

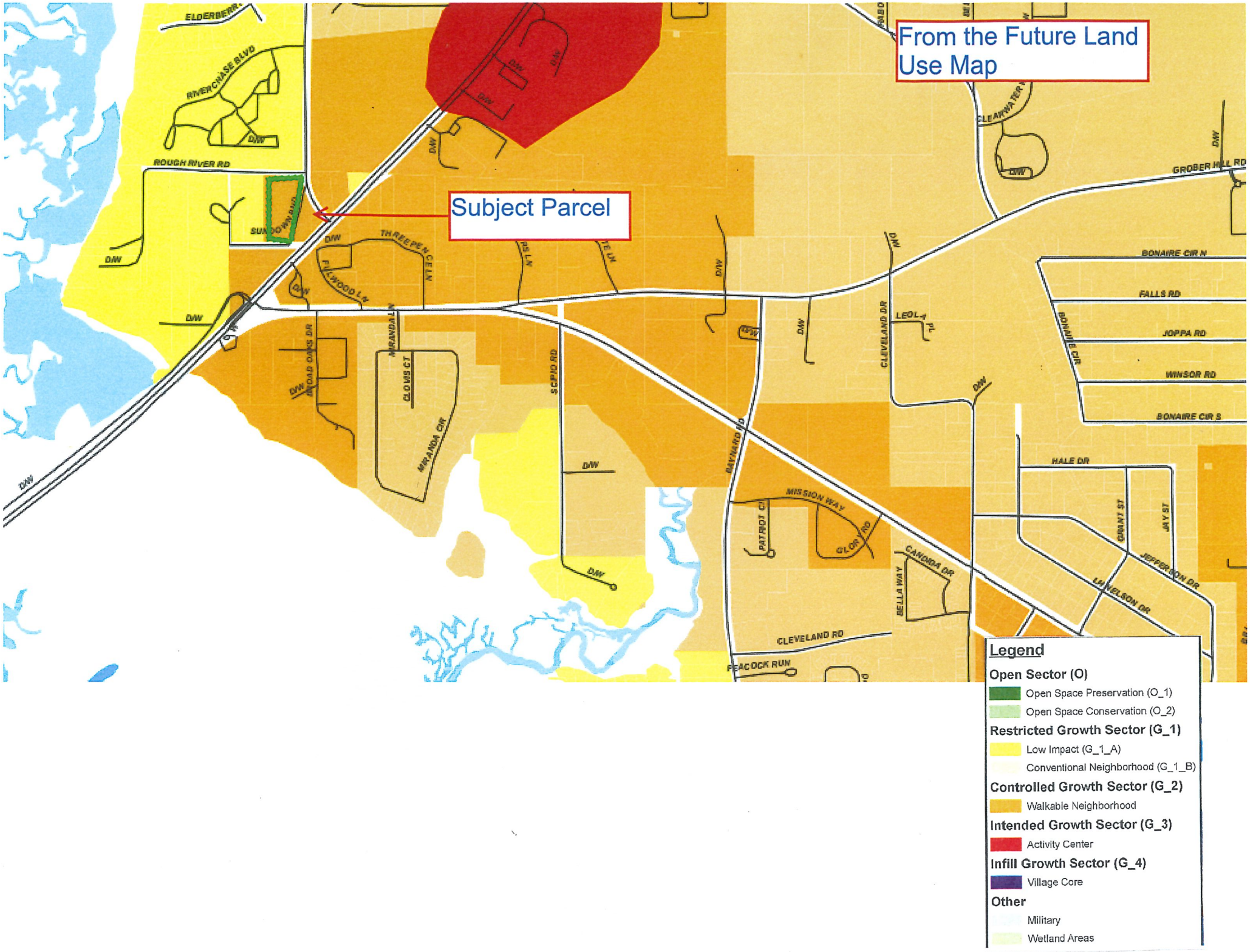
0 0.05 0.1 0.2 mi

0 0.075 0.15 0.3 km

Your Name Here

Data supplied for you by Beaufort County Mapping and Applications, powered by Web AppBuilder for ArcGIS


From the Zoning Map
RIVERCHASE BLVD
ROUGH RIVER RD
SUNDOWN BND
ROBERT SMALLS PKWY
Subject Parcel
THREE PENCE LN
FULWOOD LN
TOPPERS LN
CYDETTE LN
PINCKNEY MARSH LN
Legend
Mobile Home on Individual Lot Overlay
Municipal Limits
Zoning
DISTRICT
MILITARY OVERLAY
PLANNED UNIT DEVELOPMENT
T1 NATURAL PRESERVE
T3 EDGE
T3 SUB-URBAN NEIGHBORHOOD
T3 NEIGHBORHOOD CENTER
T4 NEIGHBORHOOD CENTER
T4 NEIGHBORHOOD CENTER OPEN
T4 URBAN CENTER
T5 MAIN STREET


From the Future Land Use Map
Subject Parcel
ELDERBERRY
RIVERCHASE BLVD
ROUGH RIVER RD
SUNDOWN DR
THREEPEN CT LN
PINEWOOD LN
MIRANDA LN
MIRANDA CIR
CLOVIS CT
BROAD OAKS DR
SCIPIO RD
MAYNARD RD
CLEVELAND DR
LEOLA PL
MISSION WAY
GLORY RD
PATRIOT CT
BELLA WAY
CANDIDA DR
CLEVELAND RD
PEACOCK RUN
CLEARWATER
GROBER HILL RD
BONAIRE CIR N
FALLS RD
JOPPA RD
WINSOR RD
BONAIRE CIR S
BONAIRE CIR
HALE DR
GRANT ST
JAY ST
JEFFERSON DR
LINNELSON DR
DNW
Legend
Open Sector (O)
Open Space Preservation (O_1)
Open Space Conservation (O_2)
Restricted Growth Sector (G_1)
Low Impact (G_1_A)
Conventional Neighborhood (G_1_B)
Controlled Growth Sector (G_2)
Walkable Neighborhood
Intended Growth Sector (G_3)
Activity Center
Infill Growth Sector (G_4)
Village Core
Other
Military
Wetland Areas

The Application Request

PROPOSED ZONING AMENDMENT
Town of Port Royal South Carolina

Fee: $250.00
PUD: $500.00 plus $5.00 per acre

To The Honorable Mayor and Town Council:

The undersigned hereby respectfully request that the Town of Port Royal Ordinance be amended as described below:

(1) This is a request for a change in the: (Check one)
(X) Zoning Map (fill in items #2, 3, 4, 5, 6, and 8 only)
( ) Zoning Text (fill in items #7 and 8 only)

(2) Give exact address and plat map reference for property you propose a zoning change;

District No. 112 Map 030 Parcel (s) 0004

Address 4 Sundown Bend, Beaufort SC

(3) Area of subject property 2.96 AC Sq. Ft. or acres.

(4) Current Zoning (remember to list any overlays) T4 Neighborhood Center

(5) Proposed Zoning (remember to list any overlays) T4 Neighborhood Center Open

* Under item #8 explain why this area should be zoned as you proposed.

(6) Does the applicant own all of the property proposed for this zoning change?
( ) YES (X) NO If NO, give the address of the property involved which he does not own and the owner's name and contact information: _____
Janette E Fields, 814 Robert Smalls PKWY, Beaufort SC

(7) Proposed language for TEXT change _____

(8) Explanation: See Attached

(If more space is needed, continue on back)

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? ____ Yes _X_ No

It is understood by the undersigned that while this application will be carefully reviewed and considered, the burden of proving the need for the proposed amendment rests with the applicant.

Date: 7/2/20

Owners Name: Forino Co. L.P. / John G. Smith President

Signed: [signature]

Phone #: 610-587-6564
Email: JgSmith@forino.com

Address: 3229 Argent Blvd.
Ridgeland, SC 29936

Ward Edwards
ENGINEERING

July 2, 2020

Linda Bridges
Town of Port Royal – Planning Administrator
700 Parris Ave.
Port Royal, SC 29935

Subject: **Zoning Amendment Narrative**
Shearwater Boat Storage
WE Project No: 200219F

This application is for the zoning adjustment for the property located at 4 Sundown Bend, Beaufort SC (Tax ID #R112 030 000 0004 0000). The parcel is currently zoned T4 *Neighborhood Center* (T4NC) and the property owner requests to amend the zoning to *T4 Neighborhood Center Open (T4NC-O)*.

Adjacent properties along Robert Smalls Parkway with similar frontage are currently zoned T4NC-O. The parcel is adjacent to a highway department (SCDOT) residual parcel, which appears to be the remaining right-of-way from a previous realignment of the highway system. Accordingly, it appears the subject parcel was zoned T4NC without the "open" designation, due to this SCDOT parcel. Since the property functions as a highway frontage parcel the owner is requesting the rezoning to T4NC-O in keeping with the existing community zoning application.

A boat storage facility is the proposed use of the property. The current zoning (T4NC) doesn't allow boat storage as a use. Therefore, the property owner requests the zoning amendment to allow for the specific use of boat storage. T4NC-O allows boat storage within the "Personal Storage" use a by-right "conditional use".

Below are excerpts from the Town of Port Royal Development Code for T4NC-O showing the use allowances:

> *Section 4.1.30 Principal Uses Allowed in Each Zone* states for T4NC-O Marine Oriented Facilities are permitted by right.
>
> *Section 4.1.40 Principal Uses Allowed in Each Zone* states "Does Not Include: Surface or Dry stack storage of boats (See "Personal Storage Facility").
>
> *Section 4.1.30 Principle Uses Allow in Each Zone* states for T4NC-O personal storage is a Conditional Use.

The property owner is requesting a zoning amendment to be allowed similar consistency with the application of the T4NC-O district which would allow the use of a boat storage facility on their property. The boat storage facility will consist of gravel parking bays with a perimeter fence to ensure the security of the facility. The facility will also allow community users to store their boats near the Broad River Boat Landing. A site exhibit is attached along with excerpts from the Town of Port Royal Development Code.

Specific Use	T1 NP	T3 Edge	T3 SN	T3 N	T4 NC	T4 NC-O	T4 UC	T5 MS	Section For Additional Conditions	Additional Design Criteria
OFFICES & SERVICES *(continued)*										
7. Lodging: Short Term Rental	-	P	P	P	P	P	P	P		
8. Lodging: Bed & Breakfast	-	P	P	P	P	P	P	P		
9. Lodging: Inn	-	-	-	-	P	P	P	P		
10. Lodging: Hotel	-	-	-	-	-	P	P	P		
11. Medical Services: Clinics & Offices	-	-	-	-	P	P	P	P		
12. Medical Services: Hospital	-	-	-	-	-	P	P	P		(>35,000sf) 5.2.50
13. Personal Storage Facility	-	-	-	-	-	C	-	-	4.2.20.E	
14. Vehicle Services: Minor Maintenance & Repair	-	-	-	-	P	P	P	-		
15. Vehicle Services: Major Maintenance & Repair	-	-	-	-	C	C	C	-	4.2.20.F	
RETAIL & RESTAURANTS										
1. General Retail	-	-	-	-	P	P	P	P		(>35,000sf) 5.2.50
2. Restaurant, Café, Coffee Shop	-	-	-	-	P	P	P	P		
3. General Retail or Restaurant with a Drive Through Facility	-	-	-	-	C	C	C	C	4.2.30.A	4.2.70
4. Bar, Tavern, Nightclub	-	-	-	-	-	P	P	P		
5. Gas Station or Fuel Sales	-	-	-	-	-	P	P	-		5.2.40
6. Open Air Retail	-	-	-	-	-	SE	SE	-	4.2.30.B	
7. Vehicle Sales & Rental: Alternative and Low Impact	-	-	-	-	C	C	C	C	4.2.30.C	
8. Vehicle Sales & Rental: Automobiles, Light Trucks, Boats	-	-	-	-	-	C	C	-	4.2.20.D	(>35,000sf) 5.2.50
RECREATION, EDUCATION, SAFETY, PUBLIC ASSEMBLY										
1. Community Oriented Facility	-	-	-	-	-	-	P	P		5.2.30
2. Community Recreation Facility	-	-	-	-	-	P	P	P		5.2.30
3. Community Safety Facility	-	-	-	-	P	P	P	P		5.2.30
Specific Use	T1 NP	T3 Edge	T3 SN	T3 N	T4 NC	T4 NC-O	T4 UC	T5 MS	Section For Additional Conditions	Additional Design Criteria

(P) = Permitted By Right (C) = Conditional Use (SE) = Special Exception Use (--) = Prohibited Use

Specific Use	T1 NP	T3 Edge	T3 SN	T3 N	T4 NC	T4 NC-O	T4 UC	T5 MS	Section For Additional Conditions	Additional Design Criteria
RECREATION, EDUCATION, SAFETY, PUBLIC ASSEMBLY *(continued)*										
4. Institutional Care Facility	-	-	-	-	-	P	P	-		
5. Marine Oriented Facility	-	P	P	P	P	P	P	P		(Multi-bldg) 2.2.100
6. Meeting Facility or Place of Worship: < 5,000 SF	-	P	P	P	P	P	P	P		5.2.30
7. Meeting Facility or Place of Worship: 5,000 SF - 10,000 SF	-	-	-	-	P	P	P	P		5.2.30
8. Meeting Facility or Place of Worship: > 10,000 SF	-	-	-	-	-	P	P	P		5.2.30
9. Parks & Open Areas	P	P	P	P	P	P	P	P		2.4
10. Recreation & Entertainment Facility: Indoor	-	-	-	-	P	P	P	P		(>35,000sf) 5.2.50
11. Recreation & Entertainment Facility: Outdoor	-	-	-	-	-	C	-	-	4.2.40.A	(Multi-bldg) 2.2.100
12. School: Public or Private	-	-	P	P	P	P	P	P		5.2.30
13. School: Specialized Training or Studio	-	-	-	-	P	P	P	P		
14. School: College or University	-	-	-	-	P	P	P	P		5.2.30 (Multi-bldg) 2.2.100
TRANSPORTATION, COMMUNICATIONS, INFRASTRUCTURE										
1. Infrastructure & Utilities: Minor	C	C	C	C	C	C	C	C	4.2.50.A	
2. Infrastructure & Utilities: Major	SE	-	-	-	-	SE	-	-	4.2.50.A	
3. Parking Facility: Public or Commercial	-	-	-	-	C	C	C	C	4.2.50.B	(Garage) 5.2.50
4. Transportation Terminal	-	-	-	-	-	P	P	P		5.2.30 (>35,000sf) 5.2.50
5. Waste Management Facility: Community Collection & Recycling	-	-	-	-	-	-	-	-		
6. Wireless Communications Facility	-	-	-	-	-	-	-	-		
Specific Use	T1 NP	T3 Edge	T3 SN	T3 N	T4 NC	T4 NC-O	T4 UC	T5 MS	Section For Additional Conditions	Additional Design Criteria

(P) = Permitted By Right (C) = Conditional Use (SE) = Special Exception Use (--) = Prohibited Use

OFFICES AND SERVICES *(continued)*	
This category is intended to encompass uses that are primarily oriented towards business, financial, government, professional, medical, or lodging services.	
Specific Use	**Definition**
13. Personal Storage Facility	Fully enclosed structures that contain individual, compartmentalized stalls or lockers for rent or lease to the general public as individual storage spaces for household goods, vehicles, and boats. Outside storage is not permitted. *Accessory Uses* may include a leasing office, and retail or wholesale sales and rental related to storage (e.g. boxes, locks, tape, protective material, etc.).Truck and trailer rental is not considered accessory to a Personal Storage Facility (see Vehicle Sales and Rental).
14. Vehicle Services: Minor Maintenance & Repair	Incidental minor repairs and service to passenger cars and light trucks in which the customer typically waits for the service on-site. Openings to repair bays and wash bays shall not face a primary or secondary street ROW. Vehicles are generally not stored on the premises overnight and there is no outside storage of materials. Such Facilities shall be limited to lots or new developments that front a Collector or Arterial thoroughfare, exclusive of East and West Paris Avenue. *Examples include, but are not limited to:* quick service oil, tune-ups, tires, brake and muffler shops, etc. *Does Not Include:* car washes / detailing, tire service, or operations defined as ("Vehicle Services - Major Maintenance and Repair").
15. Vehicle Services: Major Maintenance & Repair	A facility providing for the general repair, rebuilding, or reconditioning of boats and / or motor vehicles. Such Facilities shall be limited to lots or new developments that front a Collector or Arterial thoroughfare, exclusive of East and West Paris Avenue. *Examples include, but are not limited to:* car wash / detailing, collision service including body or frame straightening or repair, tire service, vehicle alignment shop, vehicle paint shop, vehicle transmission or muffler shop, vehicle upholstery shop, wrecker service, etc.

RETAIL AND RESTAURANTS	
This category is intended to encompass uses that are primarily oriented towards the sale and lease of goods directly to a consumer, including facilities that engage in the preparation and sale of food and beverages.	
Specific Use	**Definition**
1. General Retail	Stores and shops that sell and/or rent goods and merchandise to the general public, including the sale of materials produced on the premises. *Examples include, but are not limited to:* art galleries; auto parts; books and magazines; clothing, shoes, and accessories; drug stores and pharmacies; dry goods; electronics; fabrics and sewing supplies; furniture and appliance stores; jewelry; markets and grocery stores; movie theaters; plant nurseries with goods and inventory located behind the required parking setback; specialty shops (luggage, sporting goods, stationary, toys, etc.); variety stores; etc. *Does Not Include*: lumber yards and other building material businesses that sell primarily to contractors and do not have a retail orientation (see "Manufacturing, Processing, and Packaging: Light – 15,000 SF or Less"); ("Open Air Retail"); ("Vehicle Sales and Rental"); ("Gas Stations/Fuel Sales"); or businesses primarily engaged in the sale of adult-oriented merchandise and goods.
2. Restaurant, Café, Coffee Shop	A retail business selling ready-to-eat food and/or beverages for on- or off-premise consumption. These include eating establishments where customers are served from a walk-up ordering counter for either on- or off-premise consumption ("counter service"); and establishments where customers are served food at their tables for on-premise consumption ("table service"), that may also provide food for take-out, but does not include drive-through services, which are separately defined and regulated. This use includes all mobile kitchens. Facilities in **T4NC** that front a thoroughfare other than a Collector or Arterial shall limit their hours of operation to 7 am. to 10 pm. *Accessory Uses* may include outdoor seating areas and outdoor entertainment.
3. General Retail or Restaurant with a Drive Through Facility	Shops and restaurants where products may be purchased by motorists without leaving their vehicle. In **T4NC** facilities shall be limited to lots or new developments that front a Collector or Arterial thoroughfare. *Examples include, but are not limited to:* pharmacies, fast-food restaurants, etc.
4. Bar, Tavern, Nightclub	a. **Bar, Tavern.** A business where alcoholic beverages are sold for on-site consumption that is not part of a larger restaurant. Includes bars, taverns, pubs, and similar establishments where any food service is subordinate to the sale of alcoholic beverages. *Accessory Uses* may include beer brewing as part of a micro brewery ("brew-pub"), and other beverage tasting facilities. b. **Night Club.** A facility serving alcoholic beverages for on-site consumption, and providing entertainment, examples of which include live music and/or dancing, comedy, etc. *Does Not Include:* adult-oriented businesses or entertainment.

RECREATION, EDUCATION, SAFETY, PUBLIC ASSEMBLY *(continued)*	
This category is intended to encompass uses of a public, nonprofit, or charitable nature that serve a recreational, educational, safety, or social function, and benefit the people of the community.	
Specific Use	**Definition**
4. Institutional Care Facility	State licensed facilities that provide living, sleeping, and sanitation accommodations in coordination with the provision of social, rehabilitative and/or medical services in a protective living environment for persons residing voluntarily, by court placement, or under protective control of the government. Examples include, but are not limited to: post-correctional facilities, residential substance abuse treatment facilities, and residential treatment facilities for the mentally ill. *Accessory Uses* may include a caretaker's quarters, a club house, dining facilities, maintenance facilities, health facilities, recreational facilities, etc. *Does Not Include:* licensed nursing homes (see "Community Residence").
5. Marine Oriented Facility	A not-for-profit or for-profit marina for on-water storage, servicing, fueling, berthing, securing, loading and unloading of boats; recreational fishing; and other marine related activities that occupy and / or operate from a building. Such facilities may contain accessory Water-Oriented Facilities such as landings, docks, boat houses, etc. (see Sub-section 4.3.30.A.1). All such facilities shall be allowed to infringe upon required setback areas along shorelines for waterways. Examples include, but are not limited to: charter fishing, sightseeing tours, boat and watercraft rentals, as well as marine-related retail (bait and tackle, supplies, etc.) and services (fuel sales, pump-out facilities, and minor boat repairs). *Does Not Include:* Surface or Dry stack storage of boats (see "Personal Storage Facility").
6. Meeting Facility or Place of Worship: < 5000 SF	A facility for public or private meetings or worship. *Examples include, but are not limited to:* meeting halls for clubs and other membership organizations, religious facilities (churches, mosques, synagogues, etc.), single use community centers (primarily meeting space), etc. *Accessory Uses* for Meeting Facility / Place of Worship may include kitchens, multi-purpose rooms, and offices. *Accessory Uses Specific to Places of Worship* may include not-for-profit cemeteries; parsonage, pastorium, or parish house; day care centers; elementary, middle, and high schools; and on-site social programs such as health care clinics, food banks, etc.
7. Meeting Facility or Place of Worship: 5000 SF – 10,000 SF	
8. Meeting Facility or Place of Worship: >10,000 SF	
9. Parks & Open Areas	An outdoor civic space that provides opportunities for both passive and active assembly, recreation, sport, and ecotourism. *Examples include, but are not limited to:* conventional parks, greens, squares, plazas, and playgrounds; as well as less traditional civic spaces such as arboretums, beaches, botanical gardens, historic sites, nature preserves, trails, etc. *Accessory Uses* may include concessions, maintenance facilities, police substations, recreation facilities, etc.
10. Recreation & Entertainment Facility: Indoor	An establishment providing indoor amusement and entertainment services, often for a fee or admission charge. *Examples include, but are not limited to:* bowling alleys, coin-operated amusement arcades (video games, pinball, etc.), indoor ice skating and roller skating rinks, movie theaters, pool and billiard rooms as primary uses, etc. *Accessory Uses* may include bars, restaurants, and minor retail, etc. Facilities in **T4NC** shall be limited to lots or new developments that front a Collector or Arterial thoroughfare. *Does Not Include:* businesses providing adult-oriented entertainment. *Notes:* Any establishment with four or more electronic games or amusement devices (e.g., pool or billiard tables, pinball machines, etc.) or a premise where 50 percent or more of the floor area is occupied by electronic games or amusement devices is considered an indoor recreation facility; 3 or fewer machines or devices are not considered a use separate from the primary use of the site.
11. Recreation & Entertainment Facility: Outdoor	A facility for outdoor recreational activities where a fee is often charged for use. *Examples include, but are not limited to:* amusement and theme parks, go-cart tracks, golf driving ranges, miniature golf courses, watercraft rentals, and water parks. *Accessory Uses* may include bars, concession stands, offices and maintenance facilities, restaurants, small-scale retail, spectator seating, video game arcades, etc. *Does Not Include:* golf courses.
12. School: Public or Private	A public or private academic institution that provides the state-mandated educational curriculum. *Examples include:* elementary schools (kindergarten through 6th grade), middle and junior high schools (7th and 8th grades), secondary and high schools (9th through 12th grades), and facilities that provide any combination of those levels. This use also includes schools that provide room and board. *Accessory Uses* may include auditoriums, before or after school child care, cafeterias, recreational and sports facilities, and temporary classroom buildings.

SITE PLAN

8' HEIGHT PRIVACY FENCE EXAMPLE

PARKING SUMMARY:

BOAT PARKING: 116 STALLS

VEHICULAR PARKING: 2 STALLS

JUL. 9, 2020

PROJECT NO.: XXXXX.XX

Witmer Jones Keefer Ltd. / 23 Promenade St., Suite 201, Bluffton, SC. 29910 / ph: (843) 757.7411 / www.wjldltd.com

SHEARWATER BOAT STORAGE

PORT ROYAL, SOUTH CAROLINA

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PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE.
THIS SHEET TO SCALE AT: 24"X36"

Ward Edwards ENGINEERING

Witmer Jones Keefer Ltd. landscape architecture land planning