

**BEAUFORT–PORT ROYAL
METROPOLITAN PLANNING COMMISSION
AGENDA**

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

Monday, February 14, 2022, 5:00 P.M.

City Hall, Council Chambers, 2nd Floor – 1911 Boundary Street, Beaufort, SC

Please click the link below to join the webinar:

<https://us02web.zoom.us/j/88034506976?pwd=VmwzNkVsL1pqSG5Sa3YvdHpsN1MrZz09>

Password: 040005 Meeting ID: 880 3450 6976 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. **December 20, 2021 Meeting Minutes**
- IV. **Questions Relating to Military Operations**
- V. **Review of Projects for the City of Beaufort:**
 - A. **Watercrest – Multi-Family Development Sketch Plan and Street Names.** The applicant, Andrews Engineering, Inc. (Ryan Lyle), is requesting sketch plan and street name approval of a parcel located on the south side of Broad River Boulevard, approximately 250’ northeast of the intersection of WK Alston Drive and Broad River Boulevard Drive. The proposed development, currently referred to as Watercrest, will be a multi-family development that totals 37.7 acres.
 - B. **City of Beaufort 2021 Comprehensive Plan – MPC Final**
- VI. **Review of Projects for the Town of Port Royal:**
 - A. **None.**
- VII. **Review of Projects for Beaufort County:**
 - A. **None.**
- VIII. **Discussion**
- 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 – December 20, 2021

1. CALL TO ORDER

0:20

A meeting of the Metropolitan Planning Commission was held in person on December 20, 2021, at 5:00 pm.

2. ATTENDEES

Members in attendance: Michael Tomy (Chairman), Judy Alling (Vice-Chair), Sue Cosner, Caroline Fermin, Jason Hinchler and Wendy Zara.

Staff in attendance: Dan Frazier (City of Beaufort Senior Planner), David Prichard (City of Beaufort Director of Community and Economic Development), Emmilyn Potts (City of Beaufort Planner) and Rob Merchant (Beaufort County Director of Planning and Development)

3. REVIEW OF MINUTES

1:05

Motion: Ms. Zara made a motion to approve the November 15, 2021 meeting minutes; seconded by Ms. Cosner. The motion passed unanimously.

Disclaimer: All Metropolitan Planning Commission Meeting minutes are recorded and can be found on the City's website at <http://www.cityofbeaufort.org/AgendaCenter>. Audio recordings are available upon request by contacting the City Clerk, Traci Guldner at 843-525-7024 or by email at tguldner@cityofbeaufort.org

4. QUESTIONS RELATING TO MILITARY OPERATIONS

1:21

None.

5. REVIEW OF PROJECTS FOR THE CITY OF BEAUFORT

2:35

A. City of Beaufort 2021 Comprehensive Plan Draft-Final

Motion: Ms. Fermin made a motion to move Agenda Item V.C. City of Beaufort 2021 Comprehensive Plan Draft-Final to the top of the agenda; seconded by Ms. Zara. The motion passed unanimously.

Mr. Frazier provided a brief overview of the status of the City of Beaufort 2021 Comprehensive Plan Draft-Final. He noted that there have been four MPC Work Sessions, and that at the last work session commissioners suggested holding a fifth work session to continue review of the plan.

Motion: Mr. Hinchler made a motion to table this agenda item until the MPC Work Session and draft Comprehensive Plan review is complete; seconded by Ms. Alling. The motion passed unanimously.

B. 1026 Ribaut Road Sketch Plan.

5:00

The applicant, Whitehall Point Holdings (Sam Levin), is requesting sketch plan approval for the major subdivision of three parcels totaling +/- 11.95 acres and located at the southwest corner of Ribaut Road and Allison Road. The subject parcels are R120 005 000 0236 0000 (T5-UC and T3-S districts), R120 005 000 0266 0000 (T4-N district), and R120 005 000 0278 0000 (T3-S district).

The chairman, Mike Tomy, invited the public to comment. A total of ten speakers provided public comment.

Motion: Mr. Hinchler made a motion to approve the Sketch Plan with staff conditions and the added condition that Oak Haven Street does not pass through the property; receiving no second, the motion fails.

Motion: Ms. Zara made a motion to approve the Sketch Plan with staff conditions, and the added recommendations that the MPC comes back into the process concurrent with Design Review, if possible, and it be considered that Oak Haven not run through the property; seconded by Ms. Alling. The motion passed unanimously.

C. 442 Robert Smalls Parkway Sketch Plan and Street Names.

1:28:15

The applicant, Homes Urban Development (Robert Morgan), is requesting sketch plan and street name approval for the major subdivision of a parcel located on the north side of Robert Smalls Parkway (SC Route 170) approximately 1000' west of the intersection of Robert Smalls Parkway and W K Alston Drive. The subject parcel is a portion of R120 028 000 0138 0000 (IC district).

The chairman, Mike Tomy, invited the public to comment. A total of two speakers provided public comment.

Motion: Ms. Cosner made a motion to approve the Sketch Plan and street names as submitted, and the added condition that the design cross sections for the alleys and streets are the same except with respect to parking orientation, and the added recommendation that the applicant take into consideration providing buffers for adjacent properties; seconded by Ms. Zara. The motion passed with 5 in favor, 1 opposed.

6. REVIEW OF PROJECTS OF BEAUFORT COUNTY

2:45:00

A. Map Amendment Request for 6.26 Zoning Acres (R100 027 000 0387 0000) 186 Cherokee Farms Road from T2 Rural to T4 Hamlet Center Open”.

Motion: Ms. Fermin made a motion to approve the map amendment request for 6.26 acres on 186 Cherokee Farms Road from T2 Rural to T4 Hamlet Center Open; seconded by Mr. Hinchey. The motion passed unanimously.

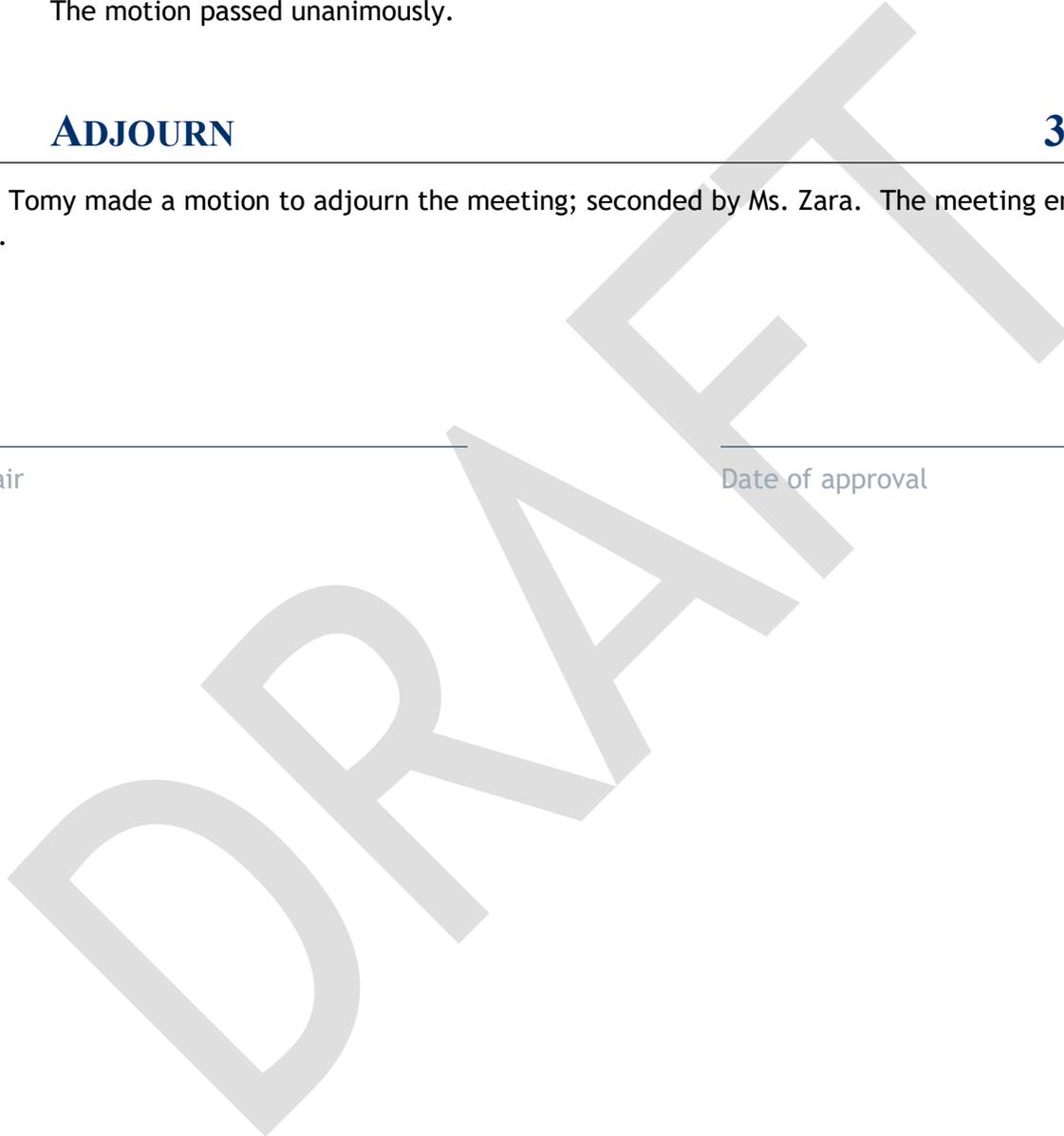
7. ADJOURN

3:00:57

Mr. Tomy made a motion to adjourn the meeting; seconded by Ms. Zara. The meeting ended at 8:00 pm.

Chair

Date of approval





MAJOR SUBDIVISION PROCESS
SKETCH PLAN APPLICATION

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

Application Fee: \$0

OFFICE USE ONLY: Date Filed: 1/18 Application #: Zoning District: T5-UC/R MX
Site Area: Meeting Date:

Schedule: The Metropolitan Planning Commission (MPC) typically meets the 3rd Monday of each month at 5:00 pm. The complete schedule can be found here - http://www.cityofbeaufort.org/metropolitan-planning-commission.aspx

Submittal Requirements: 7 hard copies and 1 digital copy of all forms and information are 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.

Applicant Name: Bryant Ligon

Applicant Address: 591 Browns Cove Rd S Unit G Ridgeland, SC 29936

Applicant E-mail: bligon@logandevolvers.com Applicant Phone Number: 9198010618

Applicant Title: [] Homeowner [] Tenant [] Architect [] Engineer [x] Developer [] Contractor

Owner (if other than the Applicant): John W Gray III & Cecile F Gray

Owner Address: PO Box 4037 Burton SC 29903

Project Name: Watercrest - Multifamily Development

Property Address: 211 Broad River Blvd

Property Identification Number (s): (Tax Map & Parcel Number): R120 028 000 0137 0000

Meeting Date Requested: 02/14/2022

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

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

Applicant's Signature: [Signature] Date: 01/14/2022



MAJOR SUBDIVISION PROCESS SKETCH PLAN APPLICATION

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

Application Fee: \$0

Project Information

Project Name: Watercrest- Multifamily Development

Site Area in Acres: 37.7 Zoning District: T5-UC/RMX

Proposed Allocations (in acres and gross %):

Developed Area: 16.7 acres / 44% Civic/Open Space: 21 acres / 56%

Provide a brief Project Narrative:

- The proposed multifamily project will be served by constructing a new access at the intersection of Broad River Blvd and Ramsey Road as well as extending Ambrose Run through the site to connect Parris Island Gateway to WK Alston Drive. In addition to the new streets, the project will include an internal network of drive aisles. The community will include 21 residential buildings housing 528 multi-family units, private garages, clubhouse and pool, maintenance building, a mail kiosk, trash compactor. The project will have a significant amount of open space which will include parks and walking paths around ponds. This application is requesting sketch plan approval for street name approval. The pertinent information related to this request is included on the attached plat and site plan.
- Street names include:
 - • Ambrose Run (existing)
 - • Watercrest Road
 - • Berkins Street
 - • Fanning Avenue
 - • Medina Lane

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

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

NOTE: See page 3 for Major Subdivision Process and Sketch Plan Checklist



MAJOR SUBDIVISION PROCESS SKETCH PLAN APPLICATION

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

Application Fee: \$0

MAJOR SUBDIVISION PROCESS

STEP 1 (Consultation):

- ✓ Schedule a Pre-Application conference with a City of Beaufort Planner

STEP 2 (Sketch Plan Approval):

- ☑ Submit 'Sketch plan' application along with items required on checklist (may need to be submitted to Metropolitan Planning Commission (MPC) by staff for approval)

STEP 3 (Preliminary Plat Approval):

- Submit 'Preliminary Plat' application along with items required on checklist (fee based on the number of lots)
- Letter from Beaufort-Jasper Water & Sewer Authority (BJWSA) certifying availability of service
- Preliminary and TIA (as required) approvals from SC Dept. of Transportation (843) 524-7255
- Topographical Survey
- Preliminary plat approval prior to site work/infrastructure construction plans being submitted (or bonded)

STEP 4 (Project Permit Issuance):

- Submit 'Project Permit' for site work/infrastructure along with items required on checklist - complete work (can be bonded)

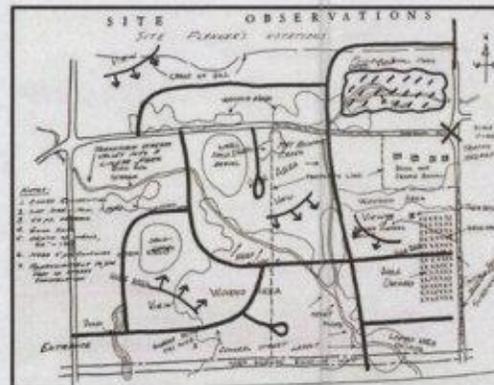
STEP 5 (Final Plat Approval):

- Complete 'Final Plat' application along with items on checklist once site work/infrastructure has been completed/approved.
- Submit five (5) copies of final plat labeled "Subdivision Plat."
- Final plat will be reviewed, approved, and stamped for recording.

SKETCH PLAN CHECKLIST

Plan can be a simple line drawing form showing the following:

- ☑ Proposed layout of streets
- ☑ Proposed layout of lots
- ☑ Proposed layout of buildings (general)
- ☑ Proposed layout of civic spaces
- ☑ Proposed tree coverage and other features in relation to existing conditions



Principles and Practice of Urban Planning 4th Ed. ICMA



DOG PARK
TRASH COMPACTOR
PROPOSED ACCESS
TO WK ALSTON

ROBERT SMALLS
INTERNATIONAL ACADEMY
CAMPUS

WK ALSTON DR

WAL-MART
SUPERCENTER

BUS DEPOT

CROSS CREEK
APARTMENTS

AMBROSE RUN

VEHICULAR AND PEDESTRIAN
ACCESS TO CROSS CREEK
SHOPPING CENTER
TRASH COMPACTOR
MAINTENANCE STORAGE
AND CAR CARE CENTER

CROSS CREEK
SHOPPING CENTER

GARAGE-TYP.
(7 UNITS)
COMMUNITY MAIL
KIOSK
POCKET PARK (TYP.)
COMMUNITY DOCK
NATURE TRAIL
PEDESTRIAN ACCESS
TO CROSS CREEK
SHOPPING CENTER

Appendix C: Street Infrastructure Plans | C.5: Street Sections

C.5.7	Neighborhood St. 1 - General (NS1: 50 ft - 62 ft)
Description	Type 1 Neighborhood Streets are the most common urban street type in Beaufort. These versatile streets are typically unmarked in residential neighborhoods to allow for informal parking, but can be signed with blue lines and/or white line-street parking as necessary in more urban situations. As Beaufort's neighborhoods begin to fill in and intensify over time, this street type with its formal curbs and sidewalks may be applied as the logical next step in urbanization from Low Impact Development roads with their open swale drainages.
Curb Type	Curb
Right-of-Way Width	50 to 62 feet
Traffic Lanes (Pavement Width)	2 lanes (30 to 36 feet total) - Marked or Unmarked
Movement (Design Speed)	Slow (25 MPH)
Parking Lanes (Width)	Informal - 1 side only if bike lane is included; angled parking may be permitted if sufficient R.O.W. exists
Bike Facilities	Signed route or bike lane (5 feet) as needed
Sidewalk (Width)	2 sides (5 to 6 feet each)
Planter Type (Width)	Planting strip (6 to 7 feet)
Street Trees	40 feet on-center max. overstory, 24 feet on-center max. understorey or palms
Specific Applicability	See Street Registering Plan

PREPARED FOR:
Logan Homes/The Avery Company, Inc.
PREPARED BY:

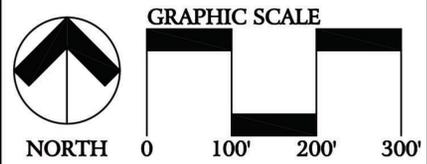
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING | LANDSCAPE ARCHITECTURE
181 BLUFFTON ROAD, SUITE F203 | BLUFFTON, SC 29910
Voice 843.815.4800 | tiller@jtiller.com | Fax 843.815.4802

Andrews Engineering & Surveying

WATERCREST

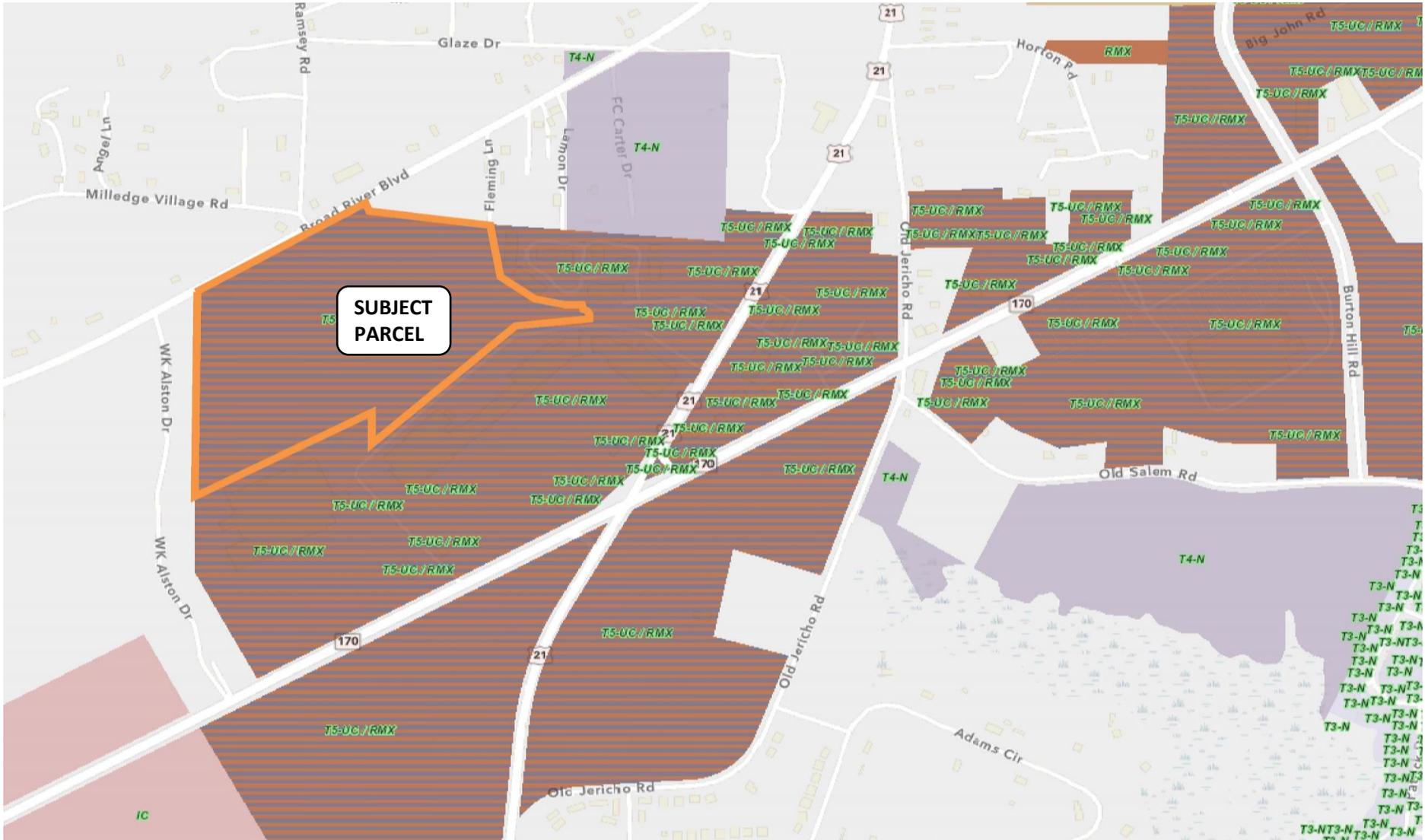
MULTI-FAMILY CONCEPT PLAN 10

CITY OF BEAUFORT, SOUTH CAROLINA
DECEMBER 2, 2021



THIS IS A CONCEPTUAL PLAN AND IS SUBJECT TO CHANGE. ALL SURVEY INFORMATION AND SITE BOUNDARIES WERE COMPILED FROM A VARIETY OF UNVERIFIED SOURCES AT VARIOUS TIMES AND AS SUCH ARE INTENDED TO BE USED ONLY AS A GUIDE. ALL PROPERTY LINES, TRACT DIMENSIONS AND NARRATIVE DESCRIPTIONS ARE FOR GRAPHIC REPRESENTATION ONLY, AS AN AID TO SITE LOCATION AND POTENTIAL LAND USE, AND ARE NOT LEGAL REPRESENTATIONS AS TO FUTURE USES OR LOCATIONS. J. K. TILLER ASSOCIATES, INC. ASSUMES NO LIABILITY FOR ITS ACCURACY OR STATE OF COMPLETION, OR FOR ANY DECISIONS (REQUIRING ACCURACY) WHICH THE USER MAY MAKE BASED ON THIS INFORMATION. JKT Job Number: 202107-01

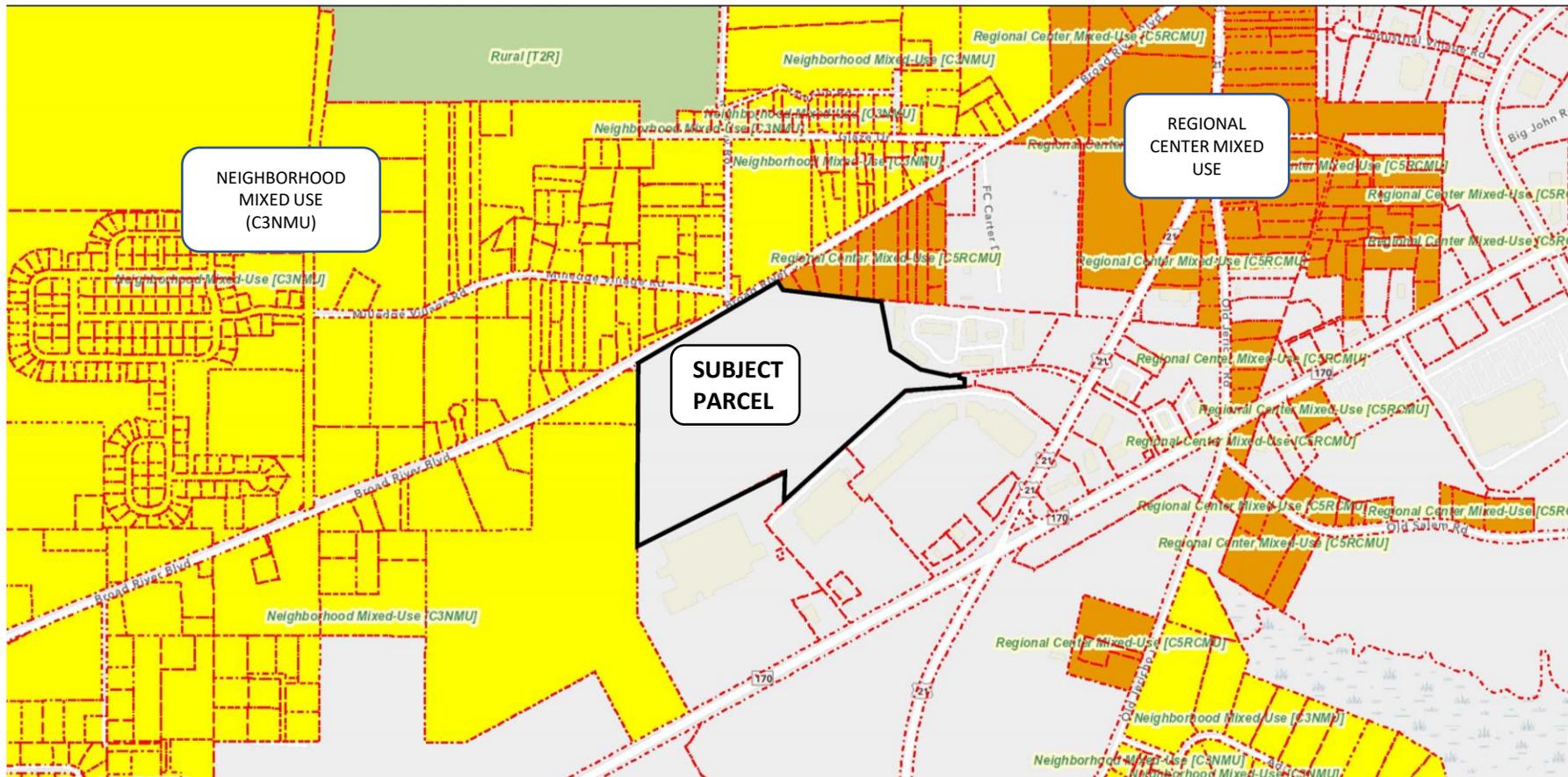
REGIONAL ZONING MAP (CITY OF BEAUFORT)



REGIONAL MIXED-USE (RMX)

The RMX district's intensity accommodates region- and community-serving commercial and business uses, as well as highway-oriented businesses. Development form supports a high-quality commercial character coordinated with a uniform streetscape that enables pedestrian and transit access.

REGIONAL ZONING MAP (BEAUFORT COUNTY)



Neighborhood Mixed Use (C3). The Neighborhood Mixed Use (C3) Zone provides for high-quality, moderate-density (averaging under three dwelling units per acre) residential development, with denser areas of multi-family and mixed-use development to provide walkability and affordable housing options. The design requirements are intended to provide a suburban character and encourage pedestrian, as well as automobile, access.

Regional Center Mixed Use (C5). The Regional Center Mixed Use (C5) Zone permits a full range of retail, service, and office uses. The Zone's intensity accommodates regional and community commercial and business activities. Uses include large, commercial activities that serve the entire County and highway-oriented businesses that need to be located on major highways. While this use intends high-quality, commercial character, the setback or build-to-line, landscaping and other design requirements provide a uniform streetscape that makes provision for pedestrian and transit access.

TRAFFIC IMPACT AND ACCESS STUDY

**BURTONWOODS APARTMENTS
BROAD RIVER BOULEVARD AT WK ALSTON DRIVE
CITY of BEAUFORT/BEAUFORT COUNTY, SOUTH CAROLINA**

Prepared for:

**The Avery Company, Inc
Port Royal, SC**

**Submitted
May, 2020**

Prepared by:



EPC, LLC

*2404 Taylor Road
Cayce, SC 29033*

*(803) 794 7018
(803) 794 9216 Fax*



EPC, LLC

2404 Taylor Road
Cayce, SC 29033

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May 27, 2021

Mr. Dennis Avery
The Avery Company, Inc
PO Box 606
Port Royal, SC 29935

Email: dennis@theaveryco.com
Cell: 843 224 550

**RE: Traffic Impact and Access Study
Burtonwood Apartments
City of Beaufort/Beaufort County, SC**

As requested, Encroachment Permit Clearinghouse (EPC) has completed an assessment of the traffic impacts associated with the development of a new residential sub-division to be located between SC 170 (Robert Smalls Parkway) and Broad River Boulevard behind the Wal*Mart shopping center in Beaufort County, SC. The following provides a summary of this study's findings.

PROJECT DESCRIPTION

The project site is an approximately 38-acre tract generally located in the southeast corner of the WK Alston Drive at Broad River Boulevard intersection behind the CrossCreek Center/Wal*Mart in Beaufort County, SC. **Figure 1** depicts the site location in relation to the regional roadway system (Figures located at end of report.).

The project proposal is to construct an apartment complex comprised of 21 buildings, 726 on-site parking spaces and an amenity area (club house, pool, etc.). In total, 528 apartment units are expected to be constructed and fully operational by 2023. As planned, direct access to/from the site will be provided via three access points: one access to/from WK Alston Drive located opposite Robert Smalls International Academy (northern access which serves buses), one to Broad River Boulevard located opposite Ramsey Road and one access that will connect to Ambrose Run providing access to US 21. **Figure 2** illustrates the planned development concept.

EXISTING CONDITIONS

A comprehensive field inventory of the project study area was conducted in May 2021 while schools were in session. The field inventory included a collection of geometric data, traffic volumes and traffic control within the study area. The following sections detail the current traffic conditions and include a description of roadways/intersections serving the site and traffic flow in close proximity to the project.

Study Area Intersections

As identified by SCDOT District #6 staff, the following intersections have been required to be analyzed in order to determine project impact on the surrounding roadway network:

- SC 170 at WK Alston Drive;
- Broad River Boulevard at WK Alston Drive;
- Broad River Boulevard at Ramsey Road; and
- Parris Island Gateway at Ambrose Run.

Figure 3 illustrates the existing geometrics and traffic control for the study area intersections and surrounding roadways.

Traffic Volumes

In order to determine the existing traffic volume flow patterns within the study area, manual turning movement counts were performed. Weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) peak period turning movement specific counts were conducted. Since counts were conducted in May 2021, the issue of Covid-19 impact to traffic volumes/flow must be accounted for.

In accordance with SCDOT District #6, it was defined that traffic studies could be performed as long as a 15-percent increase was applied to the AM peak-hour traffic volume data and a 2-percent increase applied to the PM peak-hour data. This methodology has been used for this report and is reflected in all peak-hour volume figures and analyses presented within this report.

Summarized count sheets for the study area intersection are included in the Appendix of this report. **Figures 4** and **5** graphically depict the respective Existing AM and PM peak-hour traffic volumes at the study area intersections to be used for analytical purposes.

FUTURE CONDITIONS

Traffic analyses for future conditions have been conducted for two separate scenarios: first, 2023 No-Build conditions, which include an annual normal growth in traffic, all pertinent background development traffic, and any pertinent planned roadway/intersection improvements; and secondly, 2023 Build conditions, which account for all No-Build conditions PLUS traffic generated by the proposed development.

Future No-Build Traffic Conditions

Background Development

Based on the requirement of SCDOT staff, the adjacent commercial retail development planned on the south side of SC 170 opposite the Wal*Mart Center has been included in all future year analyses (No-Build and Build). This adjacent development plans a mix of commercial uses including general retail, gas/c-store, drive-up coffee shop, and both fast-food and high turnover restaurants. Information on this project has been obtained via the completed study prepared in April, 2020. Site-specific traffic for this development is presented in the Appendix.

It should also be noted that a small 138-unit apartment complex (Cannon Gate) was recently approved east of the project along Broad River Boulevard opposite Glaze Drive (close to US 21). Review of the

traffic study prepared for this project in March 2021 indicates the vast majority of traffic to be oriented towards the east/US 21 with very minimal traffic being added to Broad River Boulevard to the west. Based on this and the minimal trip generation, this project is assumed to be part of the annual growth rate which is discussed below.

Planned Roadway Improvements

Two projects are planned in the study area by the SCDOT. The first is a safety improvement project which will add a raised concrete median within both US 21 and SC 170 along the frontage of the CrossCreek Center. This improvement is combined with the signaling of SC170 at WK Alston Drive along with some minor geometric improvements which will aid in U-turn movements. Concept drawings of this improvement are located in the appendix.

In addition to these SCDOT improvements, the planned commercial development will also provide improvements to the SC 170 at WK Alston Drive intersection by constructing a new northbound approach leg which will access the site, construct an eastbound right-turn deceleration lane and make other striping improvements to accommodate the new geometrics/signing phasing/timing.

Annual Growth Rate

Based on SCDOT count data gathered from a count station located along SC 170 (#175), a 5½-percent per year growth was defined based on the comparison of historical volumes between 2019 and 2017. This annual growth rate has been applied to all existing volumes. This annual growth rate which will account for all unspecified traffic growth, was applied to the Existing peak-hour traffic volumes.

The anticipated 2023 No-Build AM and PM peak-hour traffic volumes, which reflect the specified annual growth rate and traffic generated by the approved commercial retail development on the south side of SC 170 are shown in **Figures 6** and **7**.

Site-Generated Traffic

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 (LUC) #220 (Multi-Family: Low Rise) was utilized. **Table 1** depicts the anticipated site-generated traffic.

Table 1
PROJECT TRIP-GENERATION SUMMARY¹
Burtonwoods Residential
Beaufort County, SC

Time Period	528 Multi-Family Units
Weekday Daily	3,950
AM Peak-Hour	
Enter	56
Exit	<u>187</u>
Total	243
PM Peak-Hour	
Enter	186
Exit	<u>110</u>
Total	296

1. ITE *TRIP GENERATION* 10th Ed. LUC 220.

As shown, the proposed development at build-out can be expected to generate 3,950 two-way daily trips of which a total of 243 trips (56 entering and 187 exiting) are expected during the AM peak-hour. During the PM peak-hour, a total of 296 trips (186 entering, 110 exiting) are expected.

Distribution Pattern

The directional distribution of site-generated traffic on the study area roadways has been based on an evaluation of existing travel patterns along SC 170 and US 21. These anticipated patterns are shown in **Table 2**. This distribution pattern has been applied to the site-generated traffic volumes from Table 1 to develop the site-generated specific volumes for the study area intersections illustrated in **Figures 8 & 9**.

Table 2
TRIP DISTRIBUTION PATTERN
Burtonwoods Residential
Beaufort County, SC

Roadways	Directional Flow	Percent Enter/Exit
SC 170	East	25
	West	25
US 21	North	20
	South	25
Broad River Boulevard	West	5
	Total	<u>100</u>

Note: Based on the existing traffic patterns within the study area.

Future Build Traffic Conditions

The site-generated traffic, as depicted in Figures 8 and 9, have been added to the respective 2023 No-Build traffic volumes shown in Figures 6 and 7. This results in the peak-hour Build traffic volumes, which are graphically depicted in **Figures 10** and **11**. These volumes were used as the basis to determine potential improvement measures necessary to mitigate traffic impacts caused by the project.

TRAFFIC OPERATIONS

Analysis Methodology

A primary result of capacity analysis is the assignment of Level-of-Service (LOS) to traffic facilities under various traffic flow conditions. The concept of Level-of-Service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A Level-of-Service designation provides an index to the quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six Levels-of-Service are defined for each type of facility (signalized and unsignalized intersections). They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst.

Since the Level-of-Service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of Levels-of-Service depending on the time of day, day of week, or period of a year.

Analysis Results

As part of this TIAS, capacity analyses have been performed at the study area intersections under both Existing and Future (No-Build & Build) conditions. The results of these analyses are summarized in **Table 3**.

Table 3
LEVEL-OF-SERVICE SUMMARY¹
Burtonwoods Residential
Beaufort County, SC

Signalized Intersection	Time Period	Existing		2023 No-Build		2023 Build	
		Delay^a	LOS^b	Delay	LOS	Delay	LOS
SC 170 at WK Alston Drive ³	AM	See Unsignalized		23.4	C	25.0	C
	PM	Below		21.9	C	22.5	C
Unsignalized Intersections							
SC 170 at WK Alston Drive ³	AM	146.6	F	See Signalized Above			
	PM	256.8	F				
Broad River Boulevard at WK Alston Drive	AM	16.9	C	21.1	C	21.9	C
	PM	17.0	C	22.9	C	23.6	C
Broad River Boulevard at Ramsey Road ⁴	AM	10.4	B	10.7	B	11.3	B
	PM	11.7	B	12.3	B	13.7	B
US 21 (Parris Island Gateway) at Ambrose Run⁵	AM	41.9	E	44.8	F	129.7	F
	PM	80.4	F	>300.0	F	>300.0	F
WK Alston at Site Access	AM	To be Constructed by Project				12.9	B
	PM					12.5	B

- a. Delay in seconds-per-vehicle.
- b. LOS = Level-of-Service.
- c. Intersection to be signalized by SCDOT, Build conditions reflect the addition of a northbound approach leg (site access).

GENERAL NOTES:

1. Signalized intersections, Delay is a weighted average of each lane group/approach.
2. For unsignalized intersections, Delay is representative of critical movement/lane group/approach.
3. Intersection to be signalized by SCDOT and new NB approach leg to be constructed by adjacent retail project.
4. New NB approach leg to be constructed by Burtonwoods.
5. Connectivity by project to Ambrose Run planned resulting in intersection serving as a project access.

As shown in Table 3, under Existing conditions, two of the unsignalized intersections operate poorly, SC 170 at WK Alston Drive and US 21 at Ambrose Run. The poor operations at WK Alston Drive are expected as this intersection is currently being prepared/constructed to be placed under traffic signal control as defined earlier in this report. ~~The unsignalized intersection of US 21 at Ambrose Run operates poorly due to the minor street(s) left-turn and through movements.~~ While these left-turn volumes are relatively minor (20 or less during either peak-hour), they must contend with the high volume of through traffic on US 21. ~~The remaining two unsignalized intersections of Broad River Boulevard at WK Alston Drive and Ramsey Road both operate at good service levels during both peak hours.~~

Future 2023 No-Build conditions include growth expected in the area (annual percentage rate & commercial development) as well as the signalization and improvements to the SC 170 and WK Alston Drive intersection. Due to the SCDOT safety project and signalization, the SC 170 at WK Alston Drive intersection improves to very good service levels during both peak hours (Note this intersection now has a new NB approach leg serving the commercial retail development.). The unsignalized intersection of US 21 at Ambrose Run will continue to operate poorly now during both peak hours and both Broad River Boulevard at WK Alston Drive and at Ramsey Road will operate acceptably.

Under Build 2023 conditions, the SC 170 at WK Alston Drive intersection will operate acceptably during both the AM and PM peak hours. The unsignalized intersection of US 21 at Ambrose Run will operate at a LOS F during both the AM and PM peak hours with significant delays during the PM peak due to minor street left-turn movements. As identified under Existing conditions, the number of left-turn movements is relatively minor at less than 30 vehicles. The remaining two unsignalized intersections of Broad River Boulevard at WK Alston Drive and Ramsey Road (now has a new NB approach leg serving the site) both are expected to operate acceptably.

The site access drive along WK Alston Drive which aligns opposite the Robert Smalls International Academy bus access is expected to operate at acceptable conditions during both peak hours. As indicated earlier, the Broad River Boulevard at Ramsey Road/site access intersection can be expected to operate at good service levels while the third access via Ambrose Run to US 21 will operate poorly.

MITIGATION

The final phase of the analysis process is to identify mitigating measures which may either minimize the impact of the project on the transportation system or tend to alleviate poor service levels not caused by the project. The following describes measures necessary to mitigate the project's impact.

Site Access Drives

As planned, access to the site will be provided via three drives: one each to/from WK Alston Drive, Broad River Boulevard and US 21 via a connection to Ambrose Run. The following present recommended geometries and traffic control for each of these drives:

~~WK Alston Drive~~ Access to be located opposite the northern Robert Smalls Middle school access resulting in four-legged unsignalized intersection. This access should be constructed to provide the following:

- ***Northbound (WK Alston Drive) Approach:*** Based on projected peak-hour volumes, a separate right-turn lane entering the site is recommended (ref. Design Manual, Fig. 9.5-A). This lane should provide a full width length of 100-feet (ref. ARMS Table 5-8) and a taper of 120-feet (ref. Fig. 5-21:30 mph);
- ***Southbound (WK Alston Drive) Approach:*** Given the low volume of site-generated traffic entering the site from the north, the existing lane geometry of a single-operating lane will accommodate the anticipated traffic volumes;
- ***Eastbound (Bus Access Robert Small Academy) Approach:*** Low volumes of buses (9 buses per drop-off and pick-up), no modifications to the current geometry is suggested;
- ***Westbound (Site Access) Approach:*** Construct site access as a two-lane cross-section with a single inbound lane and a single lane exiting the site designated as shared left/through/right-turn; and
- ***Traffic Control:*** Place intersection under STOP sign control where traffic exiting both the site and the schools bus driveway will be required to stop.

Broad River Boulevard- Access to be located opposite Ramsey Road resulting in four-legged unsignalized intersection. This access should be constructed to provide the following:

- ***Northbound (Site Access) Approach:*** Construct site access as a two-lane cross-section with a single inbound lane and a single lane exiting the site designated as shared left/through/right-turn;
- ***Southbound (Ramsey Road) Approach:*** The existing adjacent intersection of Milledge Village Road is only 40-feet to the north of Broad River Boulevard. The project traffic does not impact this adjacent intersection but it may be advisable to add a STOP BAR (pavement marking) to the Milledge Village Road. No further geometric modifications are suggested at this time;
- ***Eastbound & Westbound (Broad River Boulevard) Approaches*** Based on the projected peak-hour volumes, neither a separate left-turn lane (ref. Design Manual Fig. 9.5-G) nor a separate right-turn lane (ref. Fig. 9.5-A) are suggested for this intersection; and
- ***Traffic Control:*** Place intersection under STOP sign control where traffic exiting both the site and Ramsey Road will be required to stop.

Ambrose Run Access- The eastbound approach of Ambrose Run with US 21 exists as a three-lane cross-section providing a single inbound lane and two approach lanes. No modifications are suggested for this existing unsignalized intersection.

Connectivity from the proposed development to Ambrose Run will be provided via a two-lane cross-section roadway located along the southside of Cross-Creek apartment complex which will allow site traffic (and Cross-Creek apartment traffic) connectivity between the two developments and between US 21, Broad River Boulevard and WK Alston Drive.

Sight Distance Considerations

The access drive intersections should be designed/constructed to meet current applicable SCDOT standards and/or guidelines in terms of sight distance. It is assumed that this will be the responsibility of the project's civil engineer and will be depicted by the site plan/submittal information.

Off-Site Study Area Intersections

As shown in Table 3, the off-site study area intersections of SC 170 at WK Alston Drive and Broad River Boulevard at WK Alston Road will both operate at good service levels under all future year conditions studied. Based on this, no improvements are recommended at this time. The Broad River Boulevard at Ramsey Road intersection will be modified to provide a fourth approach leg and as discussed in the earlier section will operate at good service levels under the future Build condition.

US 21 at Ambrose Run - this intersection currently operates poorly (delays on the minor street approaches during both of the peak hours studied under all conditions. Reviewing the intersection approaches and the respective impacted minor street volumes, there is insufficient demand to even be close to meeting the any of the MUTCD peak-hour signal warrants. Therefore, signalization is not an option based on traffic volume demand as well as insufficient separation from the SC 170 at US 21 signalized intersection.

The project will provide connectivity to this intersection which will allow the potential of existing apartment traffic to access Broad River Boulevard via this new connection and go to US 21 at the Broad River Boulevard signalized intersection or to WK Alston Drive if for example headed to the school. While this possible diversion will in no way result in an improvement to acceptable service levels, it does provide alternative routes as opposed to existing conditions.

SUMMARY

EPC has completed a Traffic Impact and Access Study relative to the development of a new apartment complex to be located on the south side of Broad River Boulevard, east of WK Alston Drive behind the Wal*Mart shopping center in the City of Beaufort/Beaufort County, SC. As planned, this complex will provide 528 for rent units and will be provided access to/from WK Alston Drive, Broad River Boulevard and US 21. This project is expected to be constructed and operational in 2023.

Detailed analyses have been conducted for the adjacent study area intersections along SC 170, Broad River Boulevard and US 21 which include the site access drives. Analyses for the SC 170 at WK Alston Drive have included the SCDOT planned Safety Improvement project which includes signalization of this intersection as well as geometric improvements but also additional improvements planned by the adjacent retail center to be located on the south side of SC 170. These analyses indicated that in general, operations at each of the study area intersections are expected to be acceptable with the exception of the unsignalized intersection of US 21 at Ambrose Run.

Recommendations have been made for the site access drives which include the alignment of the access opposite the existing northern school access (buses) along WK Alston Drive as well as alignment opposite Ramsey Road. The third access through Ambrose Run provides opportunity for connectivity between the apartment complexes as well as access to US 21.

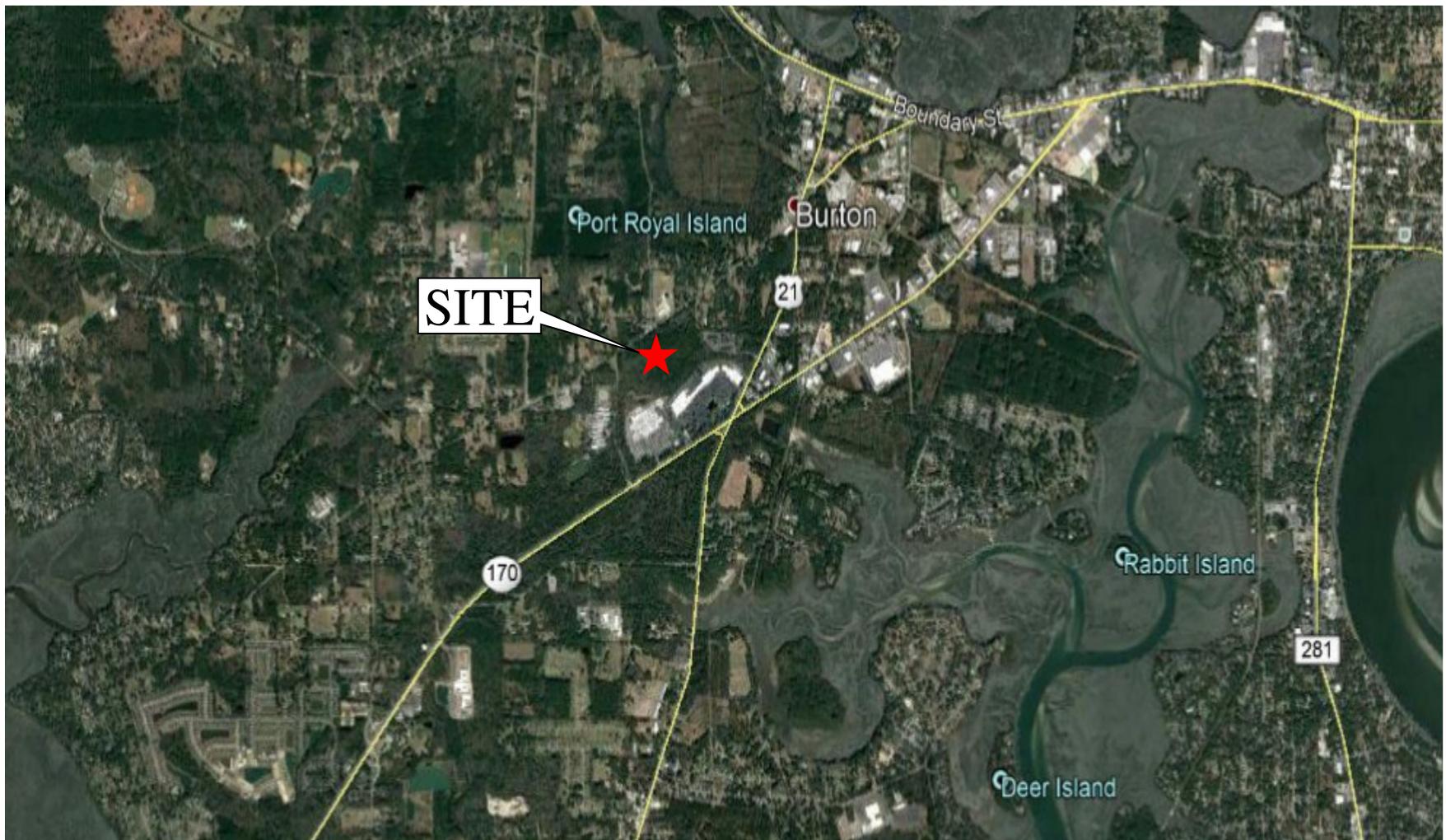
If you have any questions, please contact me at 803 361 3265.



Todd E. Salvagin
EPC, LLC

Attachments





NOT TO SCALE

Figure 1
SITE LOCATION MAP
Burtonwoods Residential
Beaufort County, SC



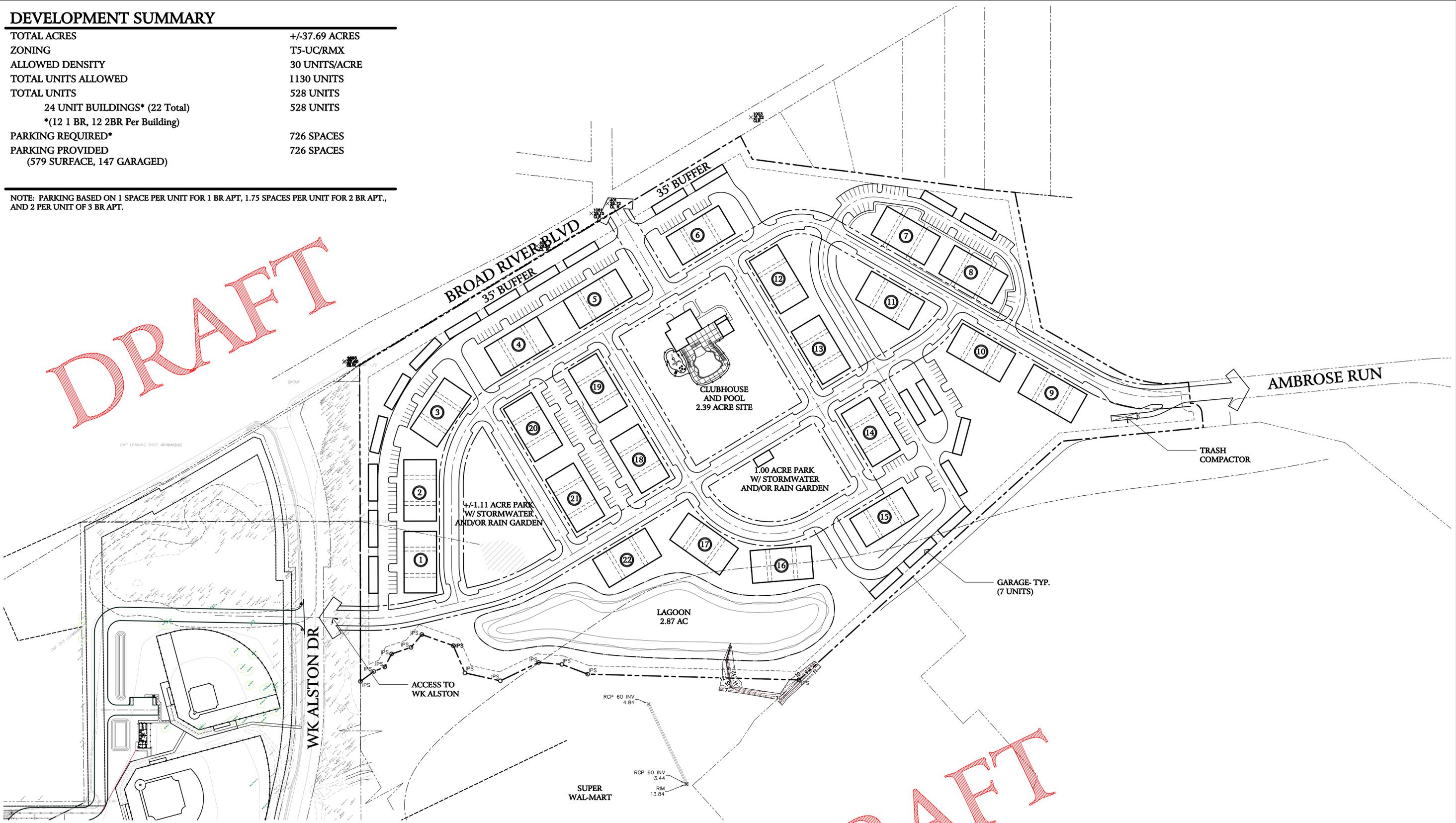
EPC, LLC

DEVELOPMENT SUMMARY

TOTAL ACRES	+/-37.69 ACRES
ZONING	T5-UC/RMX
ALLOWED DENSITY	30 UNITS/ACRE
TOTAL UNITS ALLOWED	1130 UNITS
TOTAL UNITS	528 UNITS
24 UNIT BUILDINGS* (22 Total)	528 UNITS
*(12 1 BR, 12 2BR Per Building)	
PARKING REQUIRED*	726 SPACES
PARKING PROVIDED	726 SPACES
(579 SURFACE, 147 GARAGED)	

NOTE: PARKING BASED ON 1 SPACE PER UNIT FOR 1 BR APT, 1.75 SPACES PER UNIT FOR 2 BR APT., AND 2 PER UNIT OF 3 BR APT.

DRAFT

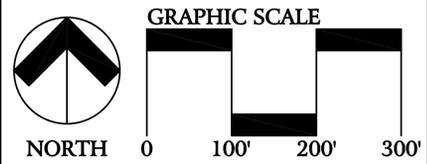


DRAFT

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 PREPARED BY:

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 LAND PLANNING LANDSCAPE ARCHITECTURE
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GRAY 37.69 AC TRACT
 MULTI-FAMILY CONCEPT PLAN 2
 CITY OF BEAUFORT, SOUTH CAROLINA
 MARCH 21, 2021



THIS IS A CONCEPTUAL PLAN AND IS SUBJECT TO CHANGE. ALL SURVEY INFORMATION AND SITE BOUNDARIES WERE COMPILED FROM A VARIETY OF UNVERIFIED SOURCES AT VARIOUS TIMES AND AS SUCH ARE INTENDED TO BE USED ONLY AS A GUIDE. ALL PROPERTY LINES, TRACT DIMENSIONS AND NARRATIVE DESCRIPTIONS ARE FOR GRAPHIC REPRESENTATION ONLY, AS AN AID TO SITE LOCATION AND POTENTIAL LAND USE, AND ARE NOT LEGAL REPRESENTATIONS AS TO FUTURE USES OR LOCATIONS. J. K. TILLER ASSOCIATES, INC. ASSUMES NO LIABILITY FOR ITS ACCURACY OR STATE OF COMPLETION, OR FOR ANY DECISIONS (REQUIRING ACCURACY) WHICH THE USER MAY MAKE BASED ON THIS INFORMATION.

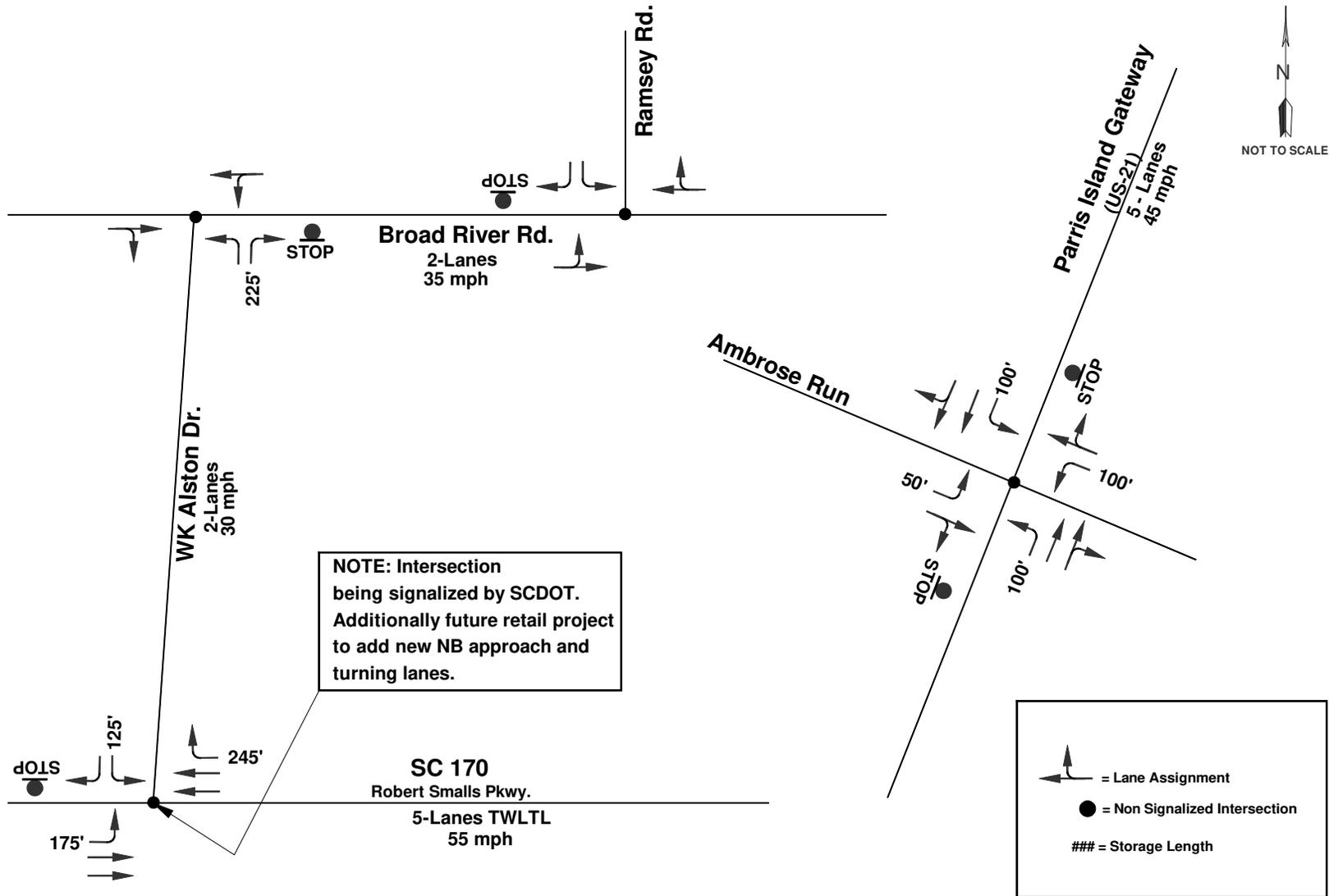


Figure 3

EXISTING GEOMETRICS & TRAFFIC CONTROL

Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

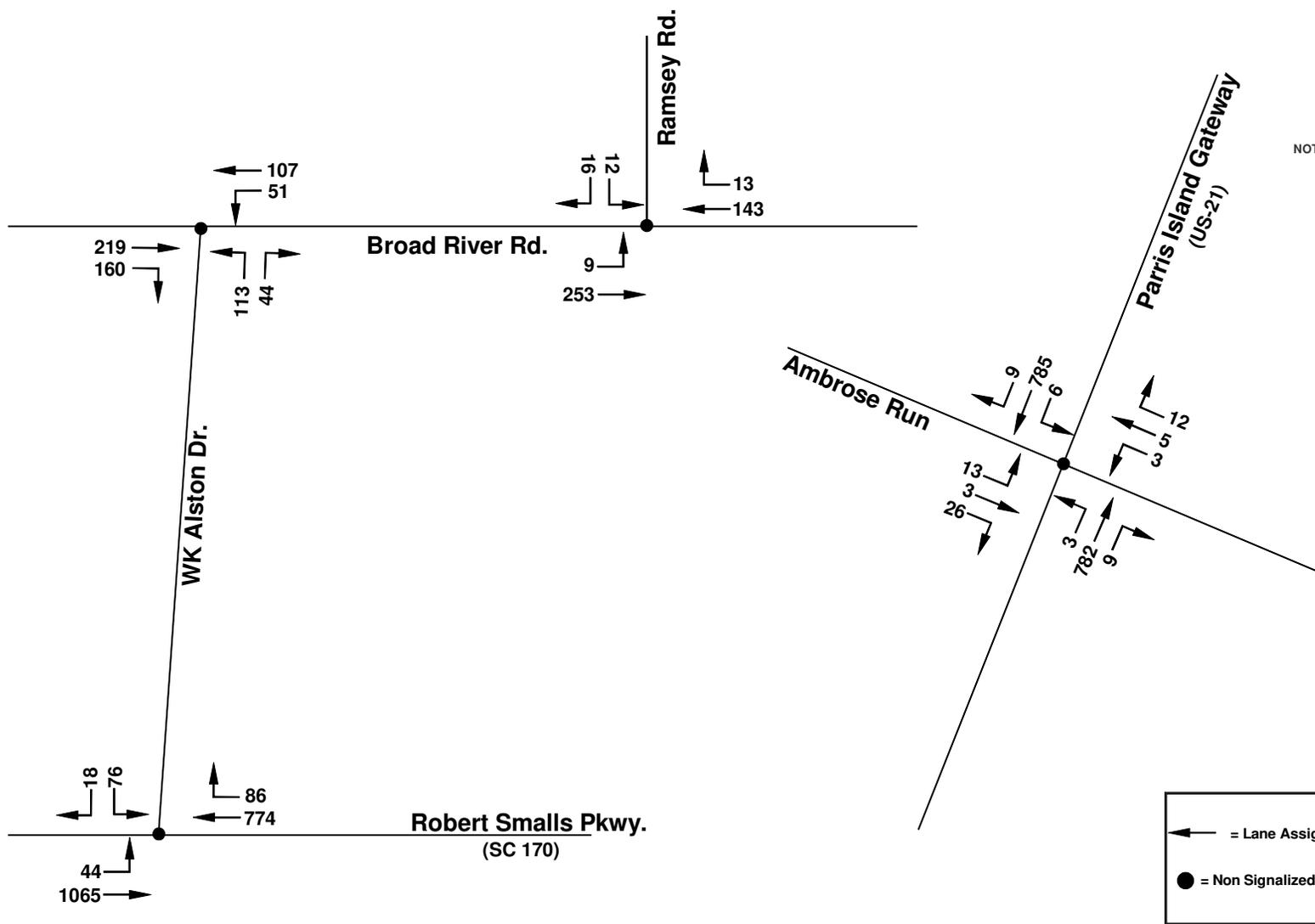


Figure 4
2021 EXISTING TRAFFIC VOLUMES
AM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

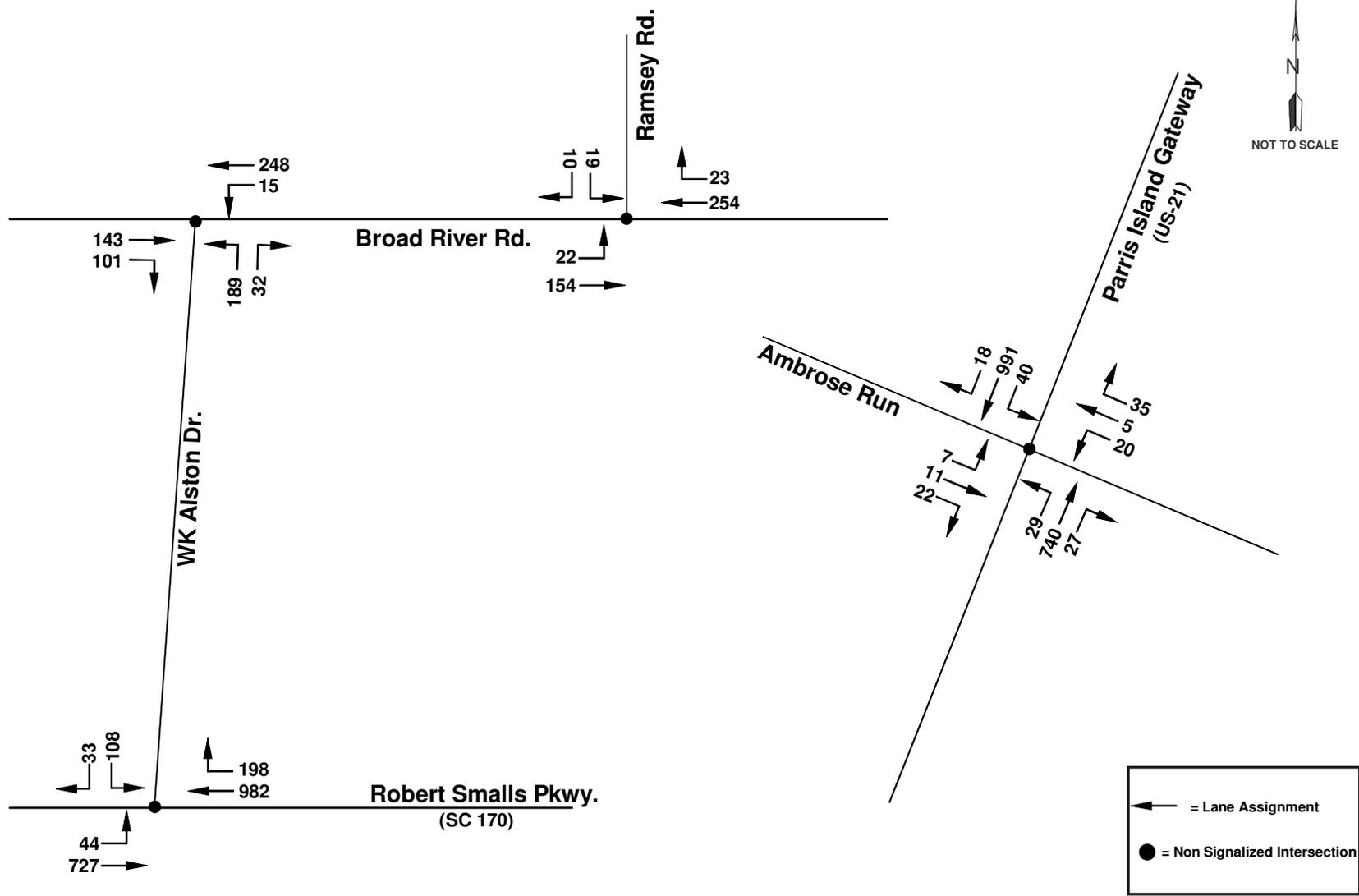


Figure 5
2021 EXISTING TRAFFIC VOLUMES
PM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

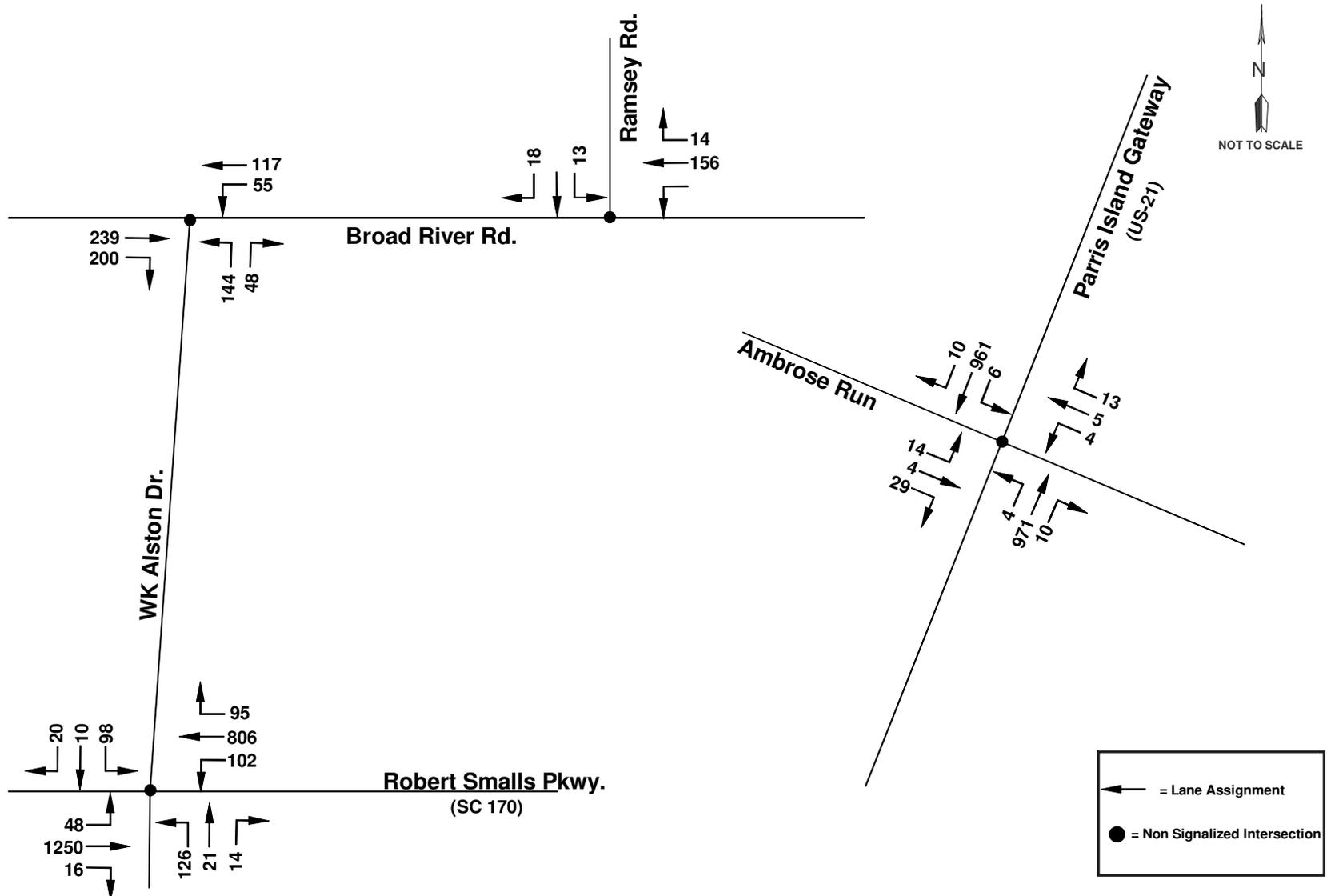


Figure 6
2023 NO BUILD TRAFFIC VOLUMES
AM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

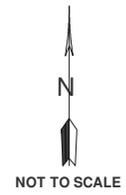
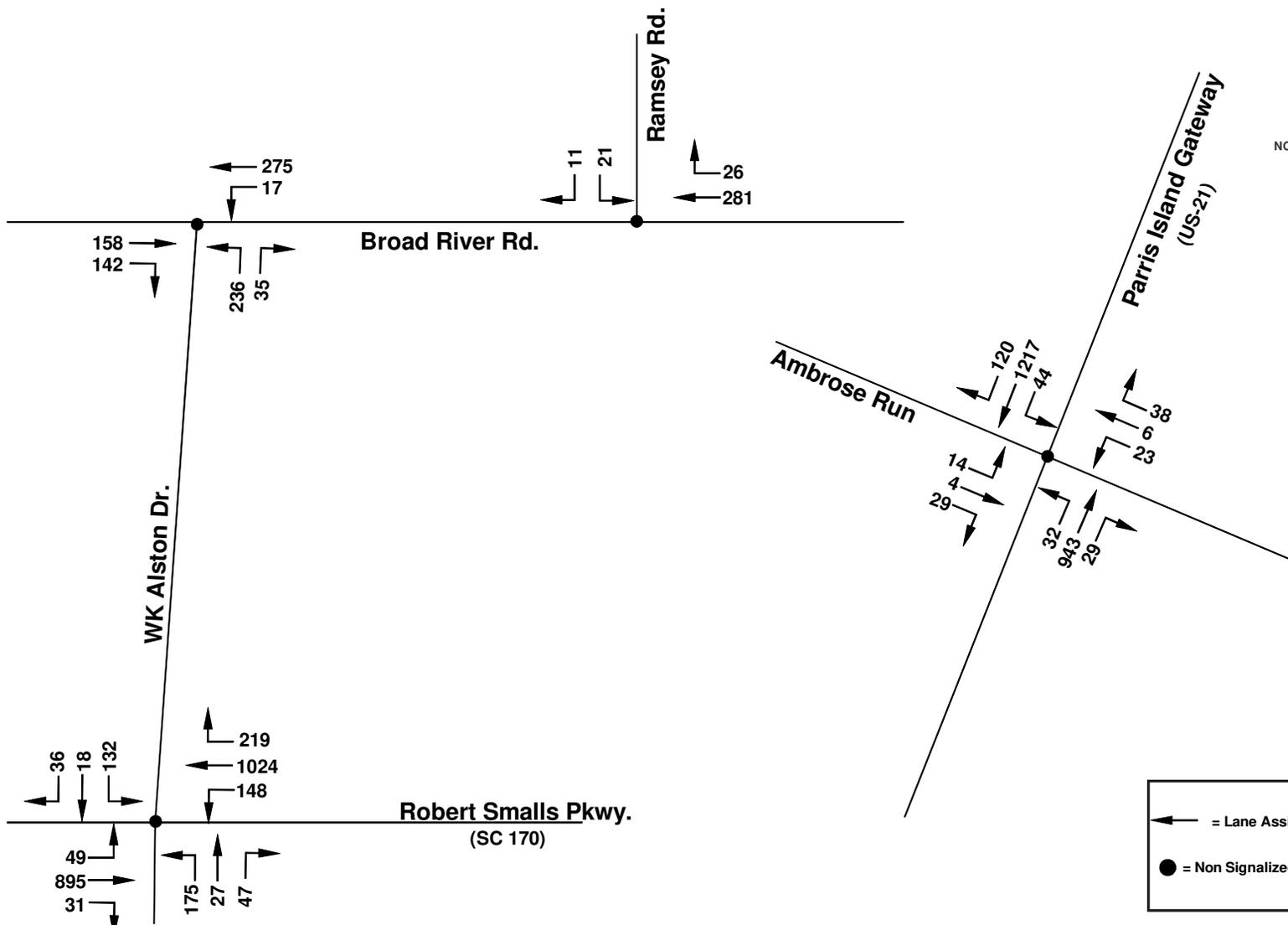


Figure 7
2023 NO BUILD TRAFFIC VOLUMES
PM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

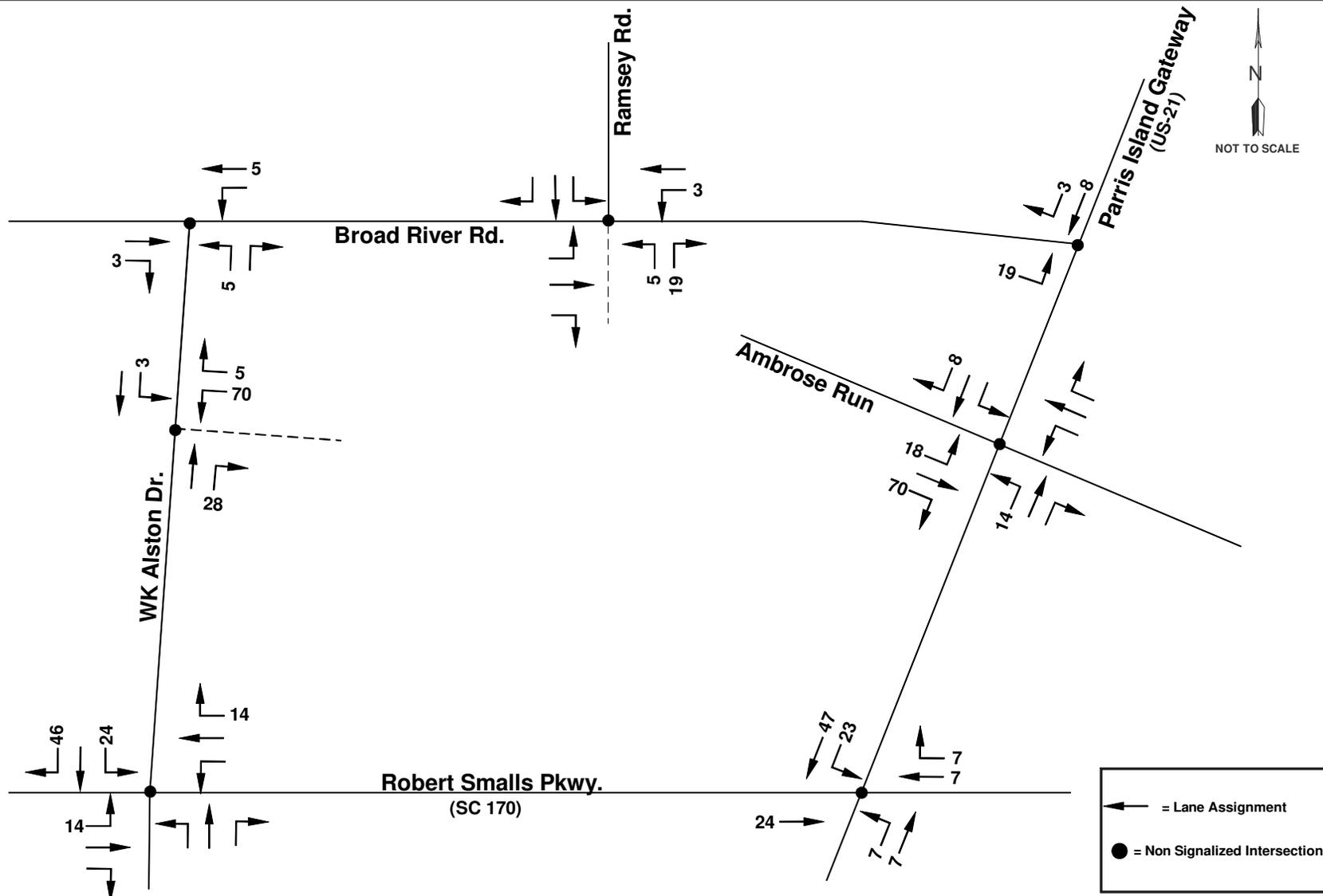


Figure 8
SITE GENERATED TRAFFIC VOLUMES
AM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

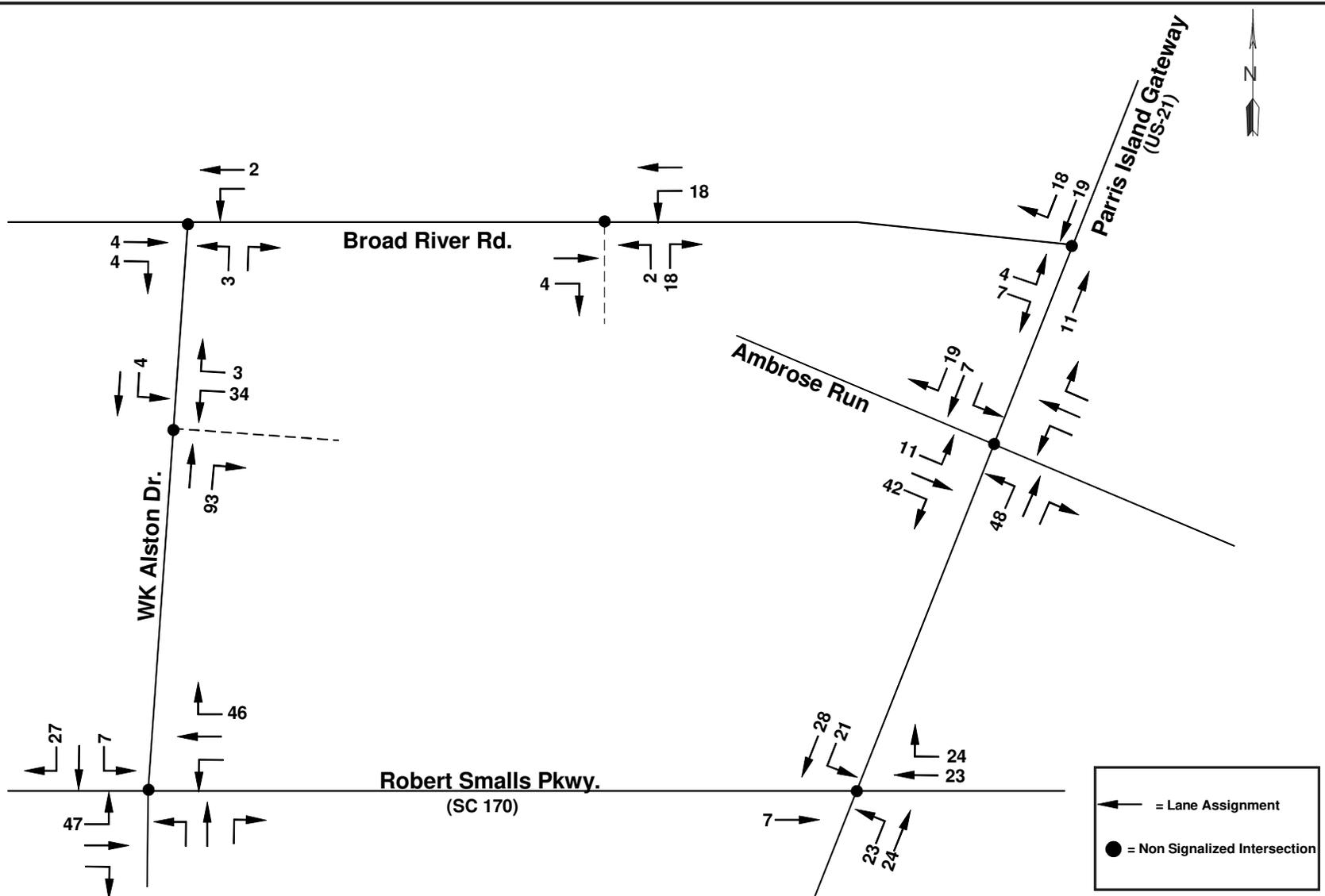


Figure 9
SITE GENERATED TRAFFIC VOLUMES
PM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

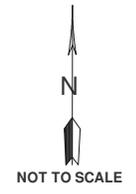
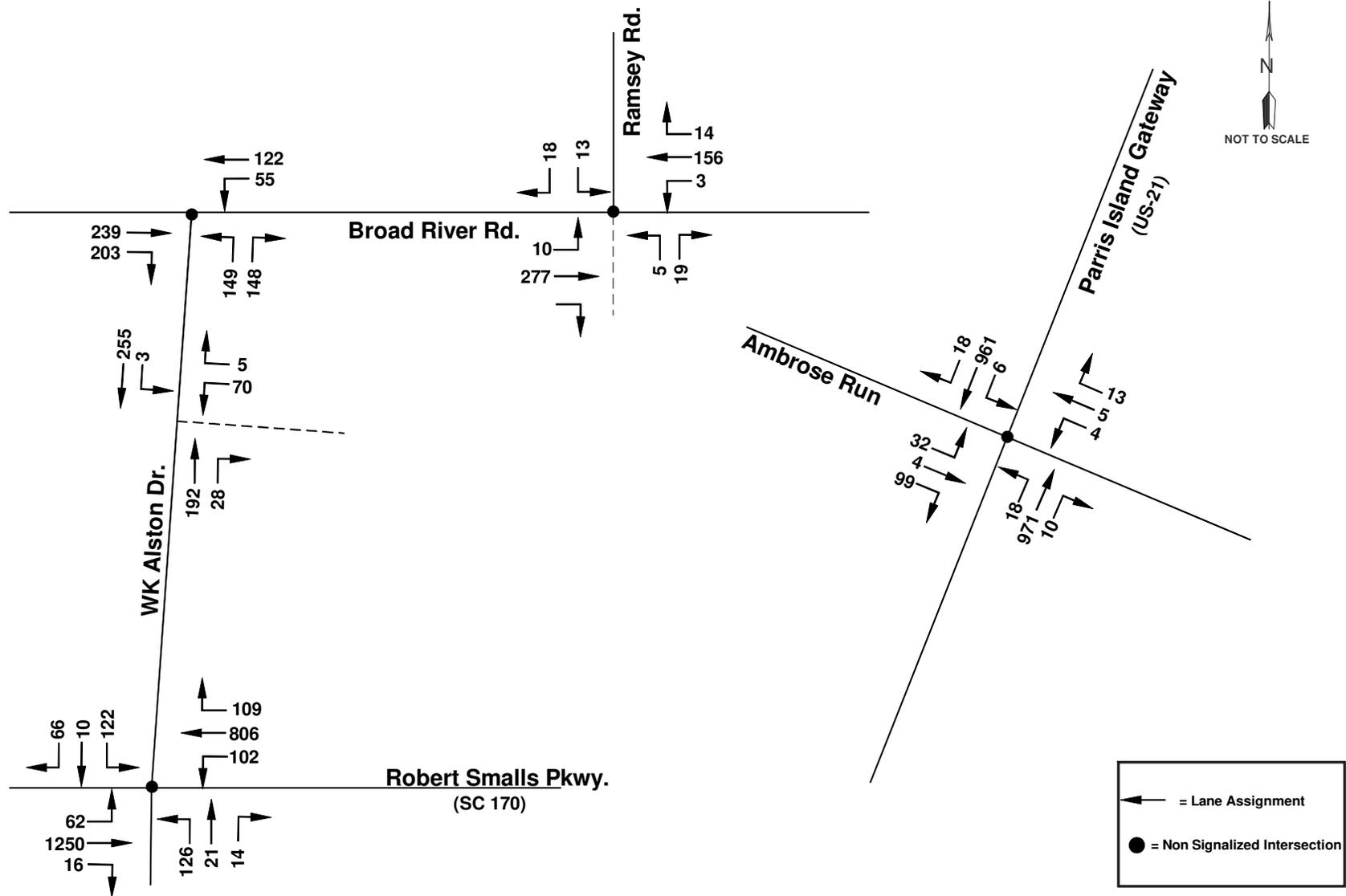


Figure 10
2023 BUILD TRAFFIC VOLUMES
AM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

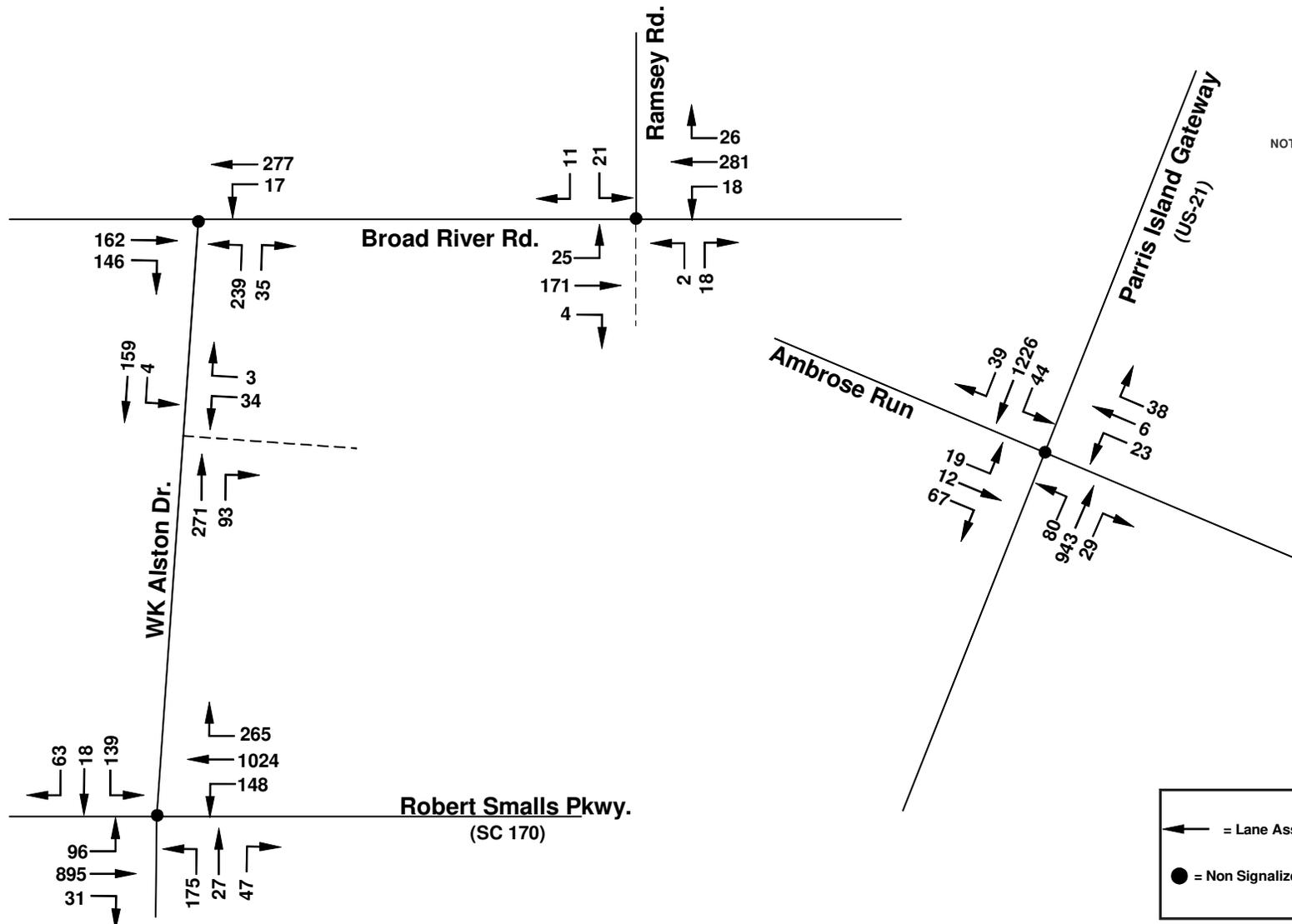


Figure 11
2023 BUILD TRAFFIC VOLUMES
PM PEAK HOUR
 Burtonwoods Apartments, City of Beaufort/Beaufort County, S.C.

COUNT DATA

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	SC 170 at WK Alston Dr AM PK			1794	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			94.3%	5.7%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Tuesday May 18, 2021	0				

Peak Hour Data

Time Period	EB SC 170							WB SC 170							WK Alston Dr SB							Total Vehicles	Total Pedestrians	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			
7:15 AM	0	5	209	0	0	0	214	0	0	193	14	0	0	207	0	0	0	0	0	0	0	17	438	0
7:30 AM	0	8	259	0	0	0	267	0	0	168	15	0	0	183	0	0	0	0	0	0	0	19	469	0
7:45 AM	0	11	275	0	0	0	286	0	0	166	24	0	0	190	0	0	0	0	0	0	0	24	500	0
8:00 AM	0	14	183	0	0	0	197	0	0	146	22	0	0	168	0	0	0	0	0	0	0	22	387	0

Vehicle Movement Summary

Movement / Details	EB SC 170							WB SC 170							WK Alston Dr SB							Entire Intersection		
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians	
Movement Volume	0	38	926	0	0	0	964	0	0	673	75	0	0	748	0	0	0	0	0	0	0	82	1794	0
PHF	-	0.68	0.84	-	-	-	0.84	-	-	0.87	0.78	-	-	0.90	-	-	-	-	-	-	-	0.85	0.90	-
% Bank 1	0.0%	94.7%	95.7%	0.0%				0.0%	0.0%	92.9%	92.0%				0.0%	0.0%	0.0%	0.0%					Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	5.3%	4.3%	0.0%				0.0%	0.0%	7.1%	8.0%				0.0%	0.0%	0.0%	0.0%						
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%						
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%						

Turning Movement Count Report

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Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	SC 170 at WK Alston Drive PM Peak			2051	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			97.3%	2.7%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Tuesday May 18, 2021	0				

Peak Hour Data

Time Period	EB SC 170							WB SC 170							SB WK Alston Dr							Total Vehicles	Total Pedestrians	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			
4:15 PM	0	2	172	0	0	0	174	0	0	223	33	0	0	256	0	0	0	0	0	0	0	41	471	0
4:30 PM	0	12	185	0	0	0	197	0	0	250	51	0	0	301	0	0	0	0	0	0	0	36	534	0
4:45 PM	0	10	185	0	0	0	195	0	0	210	46	0	0	256	0	0	0	0	0	0	0	36	487	0
5:00 PM	0	19	171	0	0	0	190	0	0	280	64	0	0	344	0	0	0	0	0	0	0	25	559	0

Vehicle Movement Summary

Movement / Details	EB SC 170							WB SC 170							SB WK Alston Dr							Entire Intersection		
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians	
Movement Volume	0	43	713	0	0	0	756	0	0	963	194	0	0	1157	0	0	0	0	0	0	0	138	2051	0
PHF	-	0.57	0.96	-	-	-	0.96	-	-	0.86	0.76	-	-	0.84	-	-	-	-	-	-	-	0.84	0.92	-
% Bank 1	0.0%	100.0%	96.2%	0.0%				0.0%	0.0%	97.7%	99.0%				0.0%	0.0%	0.0%	0.0%				100.0%	Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	3.8%	0.0%				0.0%	0.0%	2.3%	1.0%				0.0%	0.0%	0.0%	0.0%				0.0%		
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%		
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%		

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	WK Alston Dr at Broad River Blvd Morning Count			578	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			93.9%	6.1%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Tuesday, May 18, 2021	0				

Peak Hour Data

Time Period	EB Broad River Rd							WB Broad River Rd							NB WK Alston Dr							Total Vehicles	Total Pedestrians							
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			U	L	T	R	P1	P2	Veh
8:00 AM	0	0	45	23	0	0	68	0	9	23	0	0	0	32	0	18	0	2	0	0	20	0	0	0	0	0	0	0	120	0
8:15 AM	0	0	33	44	0	0	77	0	13	27	0	0	0	40	0	30	0	8	0	0	38	0	0	0	0	0	0	0	155	0
8:30 AM	0	0	43	43	0	0	86	0	17	22	0	0	0	39	0	31	0	16	0	0	47	0	0	0	0	0	0	0	172	0
8:45 AM	0	0	50	29	0	0	79	0	5	21	0	0	0	26	0	19	0	7	0	0	26	0	0	0	0	0	0	0	131	0

Vehicle Movement Summary

Movement / Details	EB Broad River Rd							WB Broad River Rd							NB WK Alston Dr							Entire Intersection								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	0	171	139	0	0	310	0	44	93	0	0	0	137	0	98	0	33	0	0	131	0	0	0	0	0	0	0	578	0
PHF	-	-	0.86	0.79	-	-	0.90	-	0.65	0.86	-	-	-	0.86	-	0.79	-	0.52	-	-	0.70	-	-	-	-	-	-	-	0.84	-
% Bank 1	0.0%	0.0%	95.3%	90.6%				0.0%	97.7%	88.2%	0.0%				0.0%	98.0%	0.0%	100.0%				0.0%	0.0%	0.0%	0.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	4.7%	9.4%				0.0%	2.3%	11.8%	0.0%				0.0%	2.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Broad River Rd at WKA1ston Dr PM Pk			684	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			96.3%	3.7%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Tuesday, May 18, 2021	0				

Peak Hour Data

Time Period	EB Broad River Rd							WB Broad River Rd							NB WK Alson Dr							Total Vehicles	Total Pedestrians								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			U	L	T	R	P1	P2	Veh	
4:45 PM	0	0	34	24	0	0	58	0	7	58	0	0	0	65	0	47	0	8	0	0	0	55	0	0	0	0	0	0	0	178	0
5:00 PM	0	0	47	19	0	0	66	0	3	57	0	0	0	60	0	54	0	7	0	0	0	61	0	0	0	0	0	0	0	187	0
5:15 PM	0	0	21	33	0	0	54	0	3	62	0	0	0	65	0	54	0	10	0	0	0	64	0	0	0	0	0	0	0	183	0
5:30 PM	0	0	34	23	0	0	57	0	2	41	0	0	0	43	0	30	0	6	0	0	0	36	0	0	0	0	0	0	0	136	0

Vehicle Movement Summary

Movement / Details	EB Broad River Rd							WB Broad River Rd							NB WK Alson Dr							Entire Intersection									
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians	
Movement Volume	0	0	136	99	0	0	235	0	15	218	0	0	0	233	0	185	0	31	0	0	0	216	0	0	0	0	0	0	0	684	0
PHF	-	-	0.72	0.75	-	-	0.89	-	0.54	0.88	-	-	-	0.90	-	0.86	-	0.78	-	-	-	0.84	-	-	-	-	-	-	-	0.91	-
% Bank 1	0.0%	0.0%	97.8%	96.0%				0.0%	86.7%	97.7%	0.0%				0.0%	95.7%	0.0%	90.3%					0.0%	0.0%	0.0%	0.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	2.2%	4.0%				0.0%	13.3%	2.3%	0.0%				0.0%	4.3%	0.0%	9.7%					0.0%	0.0%	0.0%	0.0%					
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					0.0%	0.0%	0.0%	0.0%					
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					0.0%	0.0%	0.0%	0.0%					

Turning Movement Count Report

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Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Broad River Road at Ramsey Rd AM PK			379	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			94.2%	5.8%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Wednesday, May 19, 2021	0				

Peak Hour Data

Time Period	EB Broad River Rd							WB Broad River Rd							0							SB Ramsey Rd							Total Vehicles	Total Pedestrians
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh		
7:45 AM	0	1	63	0	0	0	64	0	0	31	3	0	0	34	0	0	0	0	0	0	0	0	4	0	1	0	0	5	103	0
8:00 AM	0	1	50	0	0	0	51	0	0	30	1	0	0	31	0	0	0	0	0	0	0	0	2	0	2	0	0	4	86	0
8:15 AM	0	2	45	0	0	0	47	0	0	26	4	0	0	30	0	0	0	0	0	0	0	0	2	0	5	0	0	7	84	0
8:30 AM	0	4	62	0	0	0	66	0	0	29	3	0	0	32	0	0	0	0	0	0	0	0	2	0	6	0	0	8	106	0

Vehicle Movement Summary

Movement / Details	EB Broad River Rd							WB Broad River Rd							0							SB Ramsey Rd							Entire Intersection	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	8	220	0	0	0	228	0	0	116	11	0	0	127	0	0	0	0	0	0	0	0	10	0	14	0	0	24	379	0
PHF	-	0.50	0.87	-	-	-	0.86	-	-	0.94	0.69	-	-	0.93	-	-	-	-	-	-	-	-	0.63	-	0.58	-	-	0.75	0.89	-
% Bank 1	0.0%	100.0%	93.6%	0.0%				0.0%	0.0%	94.8%	90.9%				0.0%	0.0%	0.0%	0.0%				0.0%	100.0%	0.0%	92.9%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	6.4%	0.0%				0.0%	0.0%	5.2%	9.1%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	7.1%					
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					

Turning Movement Count Report

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Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Broad River Road at Ramsey Rd PM Pk			474	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			97.5%	2.5%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Thursday, May 20, 2021	0				

Peak Hour Data

Time Period	EB Broad River Rd							WB Broad River Rd							SB Ramsey Rd							Total Vehicles	Total Pedestrians	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			
4:45 PM	0	8	35	0	0	0	43	0	0	67	2	0	0	69	0	0	0	0	0	0	0	7	119	0
5:00 PM	0	3	34	0	0	0	37	0	0	67	10	0	0	77	0	0	0	0	0	0	0	2	116	0
5:15 PM	0	8	41	0	0	0	49	0	0	68	3	0	0	71	0	0	0	0	0	0	0	11	131	0
5:30 PM	0	3	41	0	0	0	44	0	0	47	8	0	0	55	0	0	0	0	0	0	0	9	108	0

Vehicle Movement Summary

Movement / Details	EB Broad River Rd							WB Broad River Rd							SB Ramsey Rd							Entire Intersection		
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians	
Movement Volume	0	22	151	0	0	0	173	0	0	249	23	0	0	272	0	0	0	0	0	0	0	29	474	0
PHF	-	0.69	0.92	-	-	-	0.88	-	-	0.92	0.58	-	-	0.88	-	-	-	-	-	-	-	0.66	0.90	-
% Bank 1	0.0%	95.5%	98.0%	0.0%				0.0%	0.0%	97.6%	91.3%				0.0%	0.0%	0.0%	0.0%					Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	4.5%	2.0%	0.0%				0.0%	0.0%	2.4%	8.7%				0.0%	0.0%	0.0%	0.0%						
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%						
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%						

Turning Movement Count Report

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Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Parris Island Pkwy at Ambrose Run AM PK			1441	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			94.4%	5.6%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Thursday, May 20, 2021	0				

Peak Hour Data

Time Period	EB Ambrose Run							WB Ambrose Run							NB Parris Island Pkwy							SB Parris Island Pkwy							Total Vehicles	Total Pedestrians
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh		
7:15 AM	0	5	0	4	0	0	9	0	0	0	1	0	0	1	0	0	201	0	0	0	201	0	2	150	1	0	0	153	364	0
7:30 AM	0	1	1	6	0	0	8	0	0	1	0	0	0	1	0	0	158	2	0	0	160	0	0	183	1	0	0	184	353	0
7:45 AM	0	4	1	7	0	0	12	0	2	0	6	0	0	8	0	3	182	0	0	0	185	0	1	178	4	0	0	183	388	0
8:00 AM	0	1	1	6	0	0	8	0	1	3	3	0	0	7	0	0	139	6	0	0	145	0	2	172	2	0	0	176	336	0

Vehicle Movement Summary

Movement / Details	EB Ambrose Run							WB Ambrose Run							NB Parris Island Pkwy							SB Parris Island Pkwy							Entire Intersection	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	11	3	23	0	0	37	0	3	4	10	0	0	17	0	3	680	8	0	0	691	0	5	683	8	0	0	696	1441	0
PHF	-	0.55	0.75	0.82	-	-	0.77	-	0.38	0.33	0.42	-	-	0.53	-	0.25	0.85	0.33	-	-	0.86	-	0.63	0.93	0.50	-	-	0.95	0.93	-
% Bank 1	0.0%	100.0%	100.0%	95.7%				0.0%	100.0%	100.0%	100.0%				0.0%	100.0%	95.3%	87.5%				0.0%	100.0%	93.3%	87.5%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	0.0%	4.3%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	4.7%	12.5%				0.0%	0.0%	6.7%	12.5%					
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					

Turning Movement Count Report

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Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Parris Island Pkwy at Ambrose Run PM PK			1907	
	Location			% Bank 1	% Bank 2
	Beaufort SC, Not Available			96.8%	3.2%
	Performed By			% Bank 3	% Bank 4
	Scott Brewer			0.0%	0.0%
	Date			Pedestrians Volume	
Wednesday, May 19, 2021	0				

Peak Hour Data

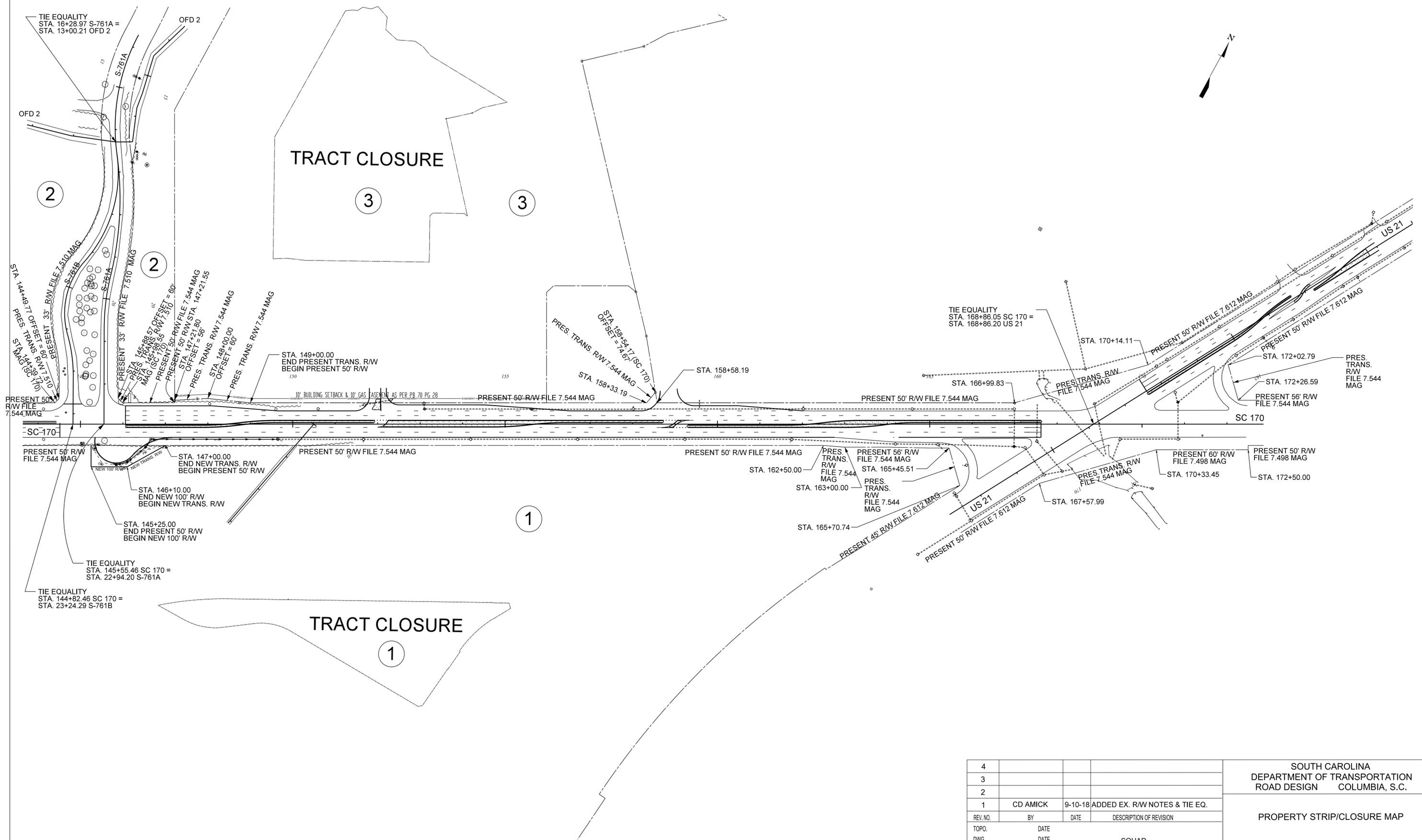
Time Period	EB Ambrose Run							WB Ambrose Run							NB Parris Island Pkwy							SB Parris Island Pkwy							Total Vehicles	Total Pedestrians
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh		
4:30 PM	0	0	5	4	0	0	9	0	3	1	7	0	0	11	0	6	172	5	0	0	183	0	11	270	6	0	0	287	490	0
4:45 PM	0	2	1	5	0	0	8	0	4	1	6	0	0	11	0	5	160	4	0	0	169	0	10	259	7	0	0	276	464	0
5:00 PM	0	3	2	5	0	0	10	0	2	1	6	0	0	9	0	7	186	6	0	0	199	0	7	229	4	0	0	240	458	0
5:15 PM	0	2	3	8	0	0	13	0	11	2	15	0	0	28	0	10	207	11	0	0	228	0	11	214	1	0	0	226	495	0

Vehicle Movement Summary

Movement / Details	EB Ambrose Run							WB Ambrose Run							NB Parris Island Pkwy							SB Parris Island Pkwy							Entire Intersection	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	7	11	22	0	0	40	0	20	5	34	0	0	59	0	28	725	26	0	0	779	0	39	972	18	0	0	1029	1907	0
PHF	-	0.58	0.55	0.69	-	-	0.77	-	0.45	0.63	0.57	-	-	0.53	-	0.70	0.88	0.59	-	-	0.85	-	0.89	0.90	0.64	-	-	0.90	0.96	-
% Bank 1	0.0%	100.0%	100.0%	100.0%				0.0%	100.0%	100.0%	94.1%				0.0%	96.4%	95.9%	100.0%				0.0%	100.0%	97.1%	100.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	5.9%				0.0%	3.6%	4.1%	0.0%				0.0%	0.0%	2.9%	0.0%					
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					

SCDOT PROJECTS

FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	BEAUFORT	P028659		SC 170	4A	



GemenskyTD
 028659_Beaufort_SC_170_US_21_Sheet4A_Stripmap.dgn
 05-MAR-2020

4				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.
3				
2				
1	CD AMICK	9-10-18	ADDED EX. R/W NOTES & TIE EQ.	
REV. NO.	BY	DATE	DESCRIPTION OF REVISION	PROPERTY STRIP/CLOSURE MAP
TOPO.		DATE		
DWG.		DATE	SQUAD	
R/W		DATE		SCALE 1"= 100' RTE. DWG. NO.

CAPACITY ANALYSIS

- **Existing**
- **2023 No-Build**
- **2023 Build**

Intersection

Int Delay, s/veh 5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗	↘	↗
Traffic Vol, veh/h	38	926	673	75	66	16
Future Vol, veh/h	38	926	673	75	66	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	175	-	-	245	125	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	5	8	8	5	19
Mvmt Flow	49	1183	860	96	84	20

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	956	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.22	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.26	-	-
Pot Cap-1 Maneuver	691	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	691	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	120.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	691	-	-	-	94	529
HCM Lane V/C Ratio	0.07	-	-	-	0.897	0.039
HCM Control Delay (s)	10.6	-	-	-	146.6	12.1
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	5.1	0.1

Intersection

Int Delay, s/veh 13.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗	↗↗	↘	↘	↘
Traffic Vol, veh/h	43	713	963	194	106	32
Future Vol, veh/h	43	713	963	194	106	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	245	125	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	12	5	10	2	2
Mvmt Flow	48	791	1068	215	118	35

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	1283	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.16	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.23	-	-
Pot Cap-1 Maneuver	531	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	531	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	SB
HCM Control Delay, s	0.7	0	200.2
HCM LOS			F

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	531	-	-	-	94	491
HCM Lane V/C Ratio	0.09	-	-	-	1.25	0.072
HCM Control Delay (s)	12.4	-	-	-	256.8	12.9
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	8.3	0.2

Notes

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

Intersection

Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	190	139	44	93	98	38
Future Vol, veh/h	190	139	44	93	98	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	10	3	12	2	2
Mvmt Flow	260	190	60	127	134	52

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	450	0	602
Stage 1	-	-	-	-	355
Stage 2	-	-	-	-	247
Critical Hdwy	-	-	4.13	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.227	-	3.518
Pot Cap-1 Maneuver	-	-	1105	-	463
Stage 1	-	-	-	-	710
Stage 2	-	-	-	-	794
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1105	-	436
Mov Cap-2 Maneuver	-	-	-	-	436
Stage 1	-	-	-	-	710
Stage 2	-	-	-	-	748

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	436	689	-	-	1105	-
HCM Lane V/C Ratio	0.308	0.076	-	-	0.055	-
HCM Control Delay (s)	16.9	10.7	-	-	8.4	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.2	-

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	140	99	15	243	185	31
Future Vol, veh/h	140	99	15	243	185	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	4	14	3	5	10
Mvmt Flow	157	111	17	272	207	35

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	268	0	519
Stage 1	-	-	-	-	213
Stage 2	-	-	-	-	306
Critical Hdwy	-	-	4.24	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	-	-	2.326	-	3.545
Pot Cap-1 Maneuver	-	-	1229	-	512
Stage 1	-	-	-	-	815
Stage 2	-	-	-	-	740
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1229	-	504
Mov Cap-2 Maneuver	-	-	-	-	504
Stage 1	-	-	-	-	815
Stage 2	-	-	-	-	728

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	807	-	-	1229	-
HCM Lane V/C Ratio	0.411	0.043	-	-	0.014	-
HCM Control Delay (s)	17	9.7	-	-	8	0
HCM Lane LOS	C	A	-	-	A	A
HCM 95th %tile Q(veh)	2	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	220	124	11	10	14
Future Vol, veh/h	8	220	124	11	10	14
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	89	89	89	89	89	89
Heavy Vehicles, %	2	7	6	10	2	8
Mvmt Flow	10	284	160	14	13	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	174	0	-	0	471 167
Stage 1	-	-	-	-	167 -
Stage 2	-	-	-	-	304 -
Critical Hdwy	4.12	-	-	-	6.42 6.28
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.372
Pot Cap-1 Maneuver	1403	-	-	-	551 862
Stage 1	-	-	-	-	863 -
Stage 2	-	-	-	-	748 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1403	-	-	-	547 862
Mov Cap-2 Maneuver	-	-	-	-	547 -
Stage 1	-	-	-	-	856 -
Stage 2	-	-	-	-	748 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1403	-	-	-	695
HCM Lane V/C Ratio	0.007	-	-	-	0.045
HCM Control Delay (s)	7.6	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	22	151	249	23	19	10
Future Vol, veh/h	22	151	249	23	19	10
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, %	5	2	3	9	2	2
Mvmt Flow	25	171	282	26	22	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	308	0	-	0	516 295
Stage 1	-	-	-	-	295 -
Stage 2	-	-	-	-	221 -
Critical Hdwy	4.15	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.245	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1236	-	-	-	519 744
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	816 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1236	-	-	-	508 744
Mov Cap-2 Maneuver	-	-	-	-	508 -
Stage 1	-	-	-	-	738 -
Stage 2	-	-	-	-	816 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1236	-	-	-	570
HCM Lane V/C Ratio	0.02	-	-	-	0.058
HCM Control Delay (s)	8	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↕↔		↔	↕↔	
Traffic Vol, veh/h	11	3	23	3	4	10	3	680	8	5	683	8
Future Vol, veh/h	11	3	23	3	4	10	3	680	8	5	683	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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	5	2	2	2	2	5	13	2	7	13
Mvmt Flow	14	4	28	4	5	12	4	841	10	6	845	10

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1293	1721	428	1291	1721	426	855	0	0	851	0	0
Stage 1	862	862	-	854	854	-	-	-	-	-	-	-
Stage 2	431	859	-	437	867	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	120	88	567	121	88	577	781	-	-	783	-	-
Stage 1	316	370	-	320	373	-	-	-	-	-	-	-
Stage 2	573	371	-	568	368	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	111	87	567	110	87	577	781	-	-	783	-	-
Mov Cap-2 Maneuver	111	87	-	110	87	-	-	-	-	-	-	-
Stage 1	314	367	-	318	371	-	-	-	-	-	-	-
Stage 2	550	369	-	530	365	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.1	25.6	0	0.1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	111	346	110	221	783	-	-
HCM Lane V/C Ratio	0.005	-	-	0.123	0.093	0.034	0.078	0.008	-	-
HCM Control Delay (s)	9.6	-	-	41.9	16.5	38.9	22.7	9.6	-	-
HCM Lane LOS	A	-	-	E	C	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.1	0.3	0	-	-

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Vol, veh/h	7	11	22	20	5	34	28	725	26	39	972	18
Future Vol, veh/h	7	11	22	20	5	34	28	725	26	39	972	18
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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
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	6	4	5	2	2	3	2
Mvmt Flow	7	12	23	21	5	36	30	770	28	41	1033	19

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1573	1983	526	1449	1978	399	1052	0	0	798	0	0
Stage 1	1125	1125	-	844	844	-	-	-	-	-	-	-
Stage 2	448	858	-	605	1134	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	7.02	4.18	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.36	2.24	-	-	2.22	-	-
Pot Cap-1 Maneuver	74	61	496	92	61	589	646	-	-	820	-	-
Stage 1	218	278	-	324	377	-	-	-	-	-	-	-
Stage 2	560	372	-	451	276	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	60	55	496	68	55	589	646	-	-	820	-	-
Mov Cap-2 Maneuver	60	55	-	68	55	-	-	-	-	-	-	-
Stage 1	208	264	-	309	360	-	-	-	-	-	-	-
Stage 2	494	355	-	390	262	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	46.5		41.3		0.4		0.4	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	646	-	-	60	135	68	262	820	-	-
HCM Lane V/C Ratio	0.046	-	-	0.124	0.26	0.313	0.158	0.051	-	-
HCM Control Delay (s)	10.8	-	-	73.3	40.8	80.4	21.3	9.6	-	-
HCM Lane LOS	B	-	-	F	E	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1	1.1	0.6	0.2	-	-

BURTONWOOD
3: Retail Access/WK Alston Dr & SC 170

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗		↖	↗	
Traffic Volume (veh/h)	48	1250	16	102	806	95	126	21	14	98	10	20
Future Volume (veh/h)	48	1250	16	102	806	95	126	21	14	98	10	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1826	1870	1870	1781	1781	1870	1870	1870	1826	1870	1618
Adj Flow Rate, veh/h	53	1389	17	111	896	106	137	23	15	109	11	22
Peak Hour Factor	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Percent Heavy Veh, %	6	5	2	2	8	8	2	2	2	5	2	19
Cap, veh/h	311	1631	745	217	1630	727	395	258	169	384	136	272
Arrive On Green	0.04	0.47	0.47	0.05	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1725	3469	1585	1781	3385	1510	1376	1057	689	1337	557	1113
Grp Volume(v), veh/h	53	1389	17	111	896	106	137	0	38	109	0	33
Grp Sat Flow(s),veh/h/ln	1725	1735	1585	1781	1692	1510	1376	0	1746	1337	0	1670
Q Serve(g_s), s	1.4	31.8	0.5	2.9	16.8	3.5	7.7	0.0	1.5	6.2	0.0	1.4
Cycle Q Clear(g_c), s	1.4	31.8	0.5	2.9	16.8	3.5	9.0	0.0	1.5	7.7	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.67
Lane Grp Cap(c), veh/h	311	1631	745	217	1630	727	395	0	427	384	0	408
V/C Ratio(X)	0.17	0.85	0.02	0.51	0.55	0.15	0.35	0.00	0.09	0.28	0.00	0.08
Avail Cap(c_a), veh/h	336	1631	745	224	1630	727	395	0	427	384	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	21.1	12.8	18.8	16.5	13.0	29.7	0.0	26.3	29.2	0.0	26.2
Incr Delay (d2), s/veh	0.3	5.8	0.1	1.9	1.3	0.4	2.4	0.0	0.4	1.8	0.0	0.4
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	0.5	12.0	0.2	1.0	5.8	1.1	2.8	0.0	0.7	2.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	26.9	12.8	20.7	17.8	13.4	32.1	0.0	26.7	31.1	0.0	26.6
LnGrp LOS	B	C	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		1459			1113			175				142
Approach Delay, s/veh		26.2			17.7			30.9				30.0
Approach LOS		C			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	49.3		29.0	10.7	50.3		29.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	42.0		22.0	5.0	42.0		22.0				
Max Q Clear Time (g_c+I1), s	4.9	33.8		9.7	3.4	18.8		11.0				
Green Ext Time (p_c), s	0.0	5.1		0.3	0.0	6.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				23.4								
HCM 6th LOS				C								

BUTONWOODS APTS
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘	↗↗	↘	↘	↗		↘	↗	
Traffic Volume (veh/h)	49	895	31	148	1024	219	175	27	47	132	18	36
Future Volume (veh/h)	49	895	31	148	1024	219	175	27	47	132	18	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1722	1870	1870	1826	1752	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	973	34	161	1113	238	190	29	51	143	20	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	12	2	2	5	10	2	2	2	2	2	2
Cap, veh/h	247	1480	717	328	1670	715	371	149	261	352	139	270
Arrive On Green	0.04	0.45	0.45	0.07	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	3272	1585	1781	3469	1485	1344	608	1070	1319	567	1105
Grp Volume(v), veh/h	53	973	34	161	1113	238	190	0	80	143	0	59
Grp Sat Flow(s),veh/h/ln	1767	1636	1585	1781	1735	1485	1344	0	1678	1319	0	1671
Q Serve(g_s), s	1.4	20.9	1.1	4.3	22.0	8.9	11.6	0.0	3.4	8.7	0.0	2.5
Cycle Q Clear(g_c), s	1.4	20.9	1.1	4.3	22.0	8.9	14.1	0.0	3.4	12.1	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		0.66
Lane Grp Cap(c), veh/h	247	1480	717	328	1670	715	371	0	410	352	0	409
V/C Ratio(X)	0.21	0.66	0.05	0.49	0.67	0.33	0.51	0.00	0.20	0.41	0.00	0.14
Avail Cap(c_a), veh/h	273	1480	717	401	1670	715	371	0	410	352	0	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	19.2	13.8	14.7	17.8	14.4	32.1	0.0	27.0	31.8	0.0	26.6
Incr Delay (d2), s/veh	0.4	2.3	0.1	1.1	2.1	1.3	5.0	0.0	1.1	3.4	0.0	0.7
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	0.5	7.2	0.4	1.5	7.8	2.8	4.2	0.0	1.5	3.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	21.5	13.9	15.8	19.9	15.7	37.1	0.0	28.0	35.2	0.0	27.4
LnGrp LOS	B	C	B	B	B	B	D	A	C	D	A	C
Approach Vol, veh/h		1060			1512			270				202
Approach Delay, s/veh		20.9			18.8			34.4				32.9
Approach LOS		C			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	47.7		29.0	10.7	50.3		29.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	10.0	37.0		22.0	5.0	42.0		22.0				
Max Q Clear Time (g_c+I1), s	6.3	22.9		14.1	3.4	24.0		16.1				
Green Ext Time (p_c), s	0.1	5.2		0.4	0.0	7.5		0.5				
Intersection Summary												
HCM 6th Ctrl Delay				21.9								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	239	200	55	117	144	48
Future Vol, veh/h	239	200	55	117	144	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	10	3	12	2	2
Mvmt Flow	285	238	65	139	171	57

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	523	0	673
Stage 1	-	-	-	-	404
Stage 2	-	-	-	-	269
Critical Hdwy	-	-	4.13	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.227	-	3.518
Pot Cap-1 Maneuver	-	-	1038	-	421
Stage 1	-	-	-	-	674
Stage 2	-	-	-	-	776
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1038	-	392
Mov Cap-2 Maneuver	-	-	-	-	392
Stage 1	-	-	-	-	674
Stage 2	-	-	-	-	723

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	647	-	-	1038	-
HCM Lane V/C Ratio	0.437	0.088	-	-	0.063	-
HCM Control Delay (s)	21.1	11.1	-	-	8.7	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	0.3	-	-	0.2	-

Intersection

Int Delay, s/veh 6.8

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations						
Traffic Vol, veh/h	158	142	17	275	236	35
Future Vol, veh/h	158	142	17	275	236	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	4	14	3	5	10
Mvmt Flow	174	156	19	302	259	38

Major/Minor Major1 Major2 Minor1

Conflicting Flow All	0	0	330	0	592	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	340	-
Critical Hdwy	-	-	4.24	-	6.45	6.3
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.326	-	3.545	3.39
Pot Cap-1 Maneuver	-	-	1165	-	464	768
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1165	-	455	768
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	700	-

Approach EB WB NB

HCM Control Delay, s	0	0.5	21.2
HCM LOS			C

Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL WBT

Capacity (veh/h)	455	768	-	-	1165	-
HCM Lane V/C Ratio	0.57	0.05	-	-	0.016	-
HCM Control Delay (s)	22.9	9.9	-	-	8.1	0
HCM Lane LOS	C	A	-	-	A	A
HCM 95th %tile Q(veh)	3.5	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	277	156	14	13	18
Future Vol, veh/h	10	277	156	14	13	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	89	89	89	89	89	89
Heavy Vehicles, %	2	7	6	10	2	8
Mvmt Flow	11	311	175	16	15	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	191	0	-	0	516 183
Stage 1	-	-	-	-	183 -
Stage 2	-	-	-	-	333 -
Critical Hdwy	4.12	-	-	-	6.42 6.28
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.372
Pot Cap-1 Maneuver	1383	-	-	-	519 844
Stage 1	-	-	-	-	848 -
Stage 2	-	-	-	-	726 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1383	-	-	-	514 844
Mov Cap-2 Maneuver	-	-	-	-	514 -
Stage 1	-	-	-	-	840 -
Stage 2	-	-	-	-	726 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1383	-	-	-	665
HCM Lane V/C Ratio	0.008	-	-	-	0.052
HCM Control Delay (s)	7.6	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	25	171	281	26	21	11
Future Vol, veh/h	25	171	281	26	21	11
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, %	5	2	3	9	2	2
Mvmt Flow	28	190	312	29	23	12

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	341	0	-	0	573 327
Stage 1	-	-	-	-	327 -
Stage 2	-	-	-	-	246 -
Critical Hdwy	4.15	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.245	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1202	-	-	-	481 714
Stage 1	-	-	-	-	731 -
Stage 2	-	-	-	-	795 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1202	-	-	-	468 714
Mov Cap-2 Maneuver	-	-	-	-	468 -
Stage 1	-	-	-	-	712 -
Stage 2	-	-	-	-	795 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1202	-	-	-	531
HCM Lane V/C Ratio	0.023	-	-	-	0.067
HCM Control Delay (s)	8.1	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Traffic Vol, veh/h	14	4	29	4	5	13	4	971	10	6	961	10
Future Vol, veh/h	14	4	29	4	5	13	4	971	10	6	961	10
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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	5	2	2	2	2	5	13	2	7	13
Mvmt Flow	15	4	31	4	5	14	4	1044	11	6	1033	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1584	2114	522	1589	2114	528	1044	0	0	1055	0	0
Stage 1	1051	1051	-	1058	1058	-	-	-	-	-	-	-
Stage 2	533	1063	-	531	1056	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	73	50	492	72	50	495	662	-	-	656	-	-
Stage 1	243	302	-	240	300	-	-	-	-	-	-	-
Stage 2	498	298	-	500	300	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	64	49	492	62	49	495	662	-	-	656	-	-
Mov Cap-2 Maneuver	64	49	-	62	49	-	-	-	-	-	-	-
Stage 1	242	299	-	239	298	-	-	-	-	-	-	-
Stage 2	472	296	-	457	297	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.3		40.7		0		0.1	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	662	-	-	64	235	62	140	656	-	-
HCM Lane V/C Ratio	0.006	-	-	0.235	0.151	0.069	0.138	0.01	-	-
HCM Control Delay (s)	10.5	-	-	77.8	23	67.3	34.8	10.5	-	-
HCM Lane LOS	B	-	-	F	C	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.5	0.2	0.5	0	-	-

BUTONWOODS APTS
12: Parris Island Gateway & Ambrose Run

PM NB 2023
05/23/2021

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↕		↵	↕	
Traffic Vol, veh/h	8	12	25	23	6	38	32	943	29	44	1217	20
Future Vol, veh/h	8	12	25	23	6	38	32	943	29	44	1217	20
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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
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	6	4	5	2	2	3	2
Mvmt Flow	8	13	26	24	6	40	33	982	30	46	1268	21

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1931	2449	645	1796	2444	506	1289	0	0	1012	0	0
Stage 1	1371	1371	-	1063	1063	-	-	-	-	-	-	-
Stage 2	560	1078	-	733	1381	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	7.02	4.18	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.36	2.24	-	-	2.22	-	-
Pot Cap-1 Maneuver	40	31	415	50	31	501	523	-	-	681	-	-
Stage 1	154	212	-	238	298	-	-	-	-	-	-	-
Stage 2	480	293	-	378	210	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	27	27	415	27	27	501	523	-	-	681	-	-
Mov Cap-2 Maneuver	27	27	-	27	27	-	-	-	-	-	-	-
Stage 1	144	198	-	223	279	-	-	-	-	-	-	-
Stage 2	405	275	-	309	196	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	115.7		144.7		0.4		0.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	523	-	-	27	73	27	148	681	-	-
HCM Lane V/C Ratio	0.064	-	-	0.309	0.528	0.887	0.31	0.067	-	-
HCM Control Delay (s)	12.4	-	-	189.5	99.8	345.1	39.9	10.7	-	-
HCM Lane LOS	B	-	-	F	F	F	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1	2.2	2.8	1.2	0.2	-	-

BURTONWOOD
3: Retail Access/WK Alston Dr & SC 170

AM BUILD 2023
05/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	62	1250	16	102	806	109	126	21	14	122	10	66
Future Volume (veh/h)	62	1250	16	102	806	109	126	21	14	122	10	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1826	1870	1870	1781	1781	1870	1870	1870	1826	1870	1618
Adj Flow Rate, veh/h	69	1389	17	111	896	121	137	23	15	136	11	73
Peak Hour Factor	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Percent Heavy Veh, %	6	5	2	2	8	8	2	2	2	5	2	19
Cap, veh/h	318	1808	826	218	1791	799	346	273	178	383	55	363
Arrive On Green	0.04	0.52	0.52	0.05	0.53	0.53	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1725	3469	1585	1781	3385	1510	1314	1057	689	1337	212	1406
Grp Volume(v), veh/h	69	1389	17	111	896	121	137	0	38	136	0	84
Grp Sat Flow(s),veh/h/ln	1725	1735	1585	1781	1692	1510	1314	0	1746	1337	0	1617
Q Serve(g_s), s	2.2	38.4	0.6	3.5	20.3	4.9	10.9	0.0	2.0	10.3	0.0	4.9
Cycle Q Clear(g_c), s	2.2	38.4	0.6	3.5	20.3	4.9	15.8	0.0	2.0	12.3	0.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.87
Lane Grp Cap(c), veh/h	318	1808	826	218	1791	799	346	0	451	383	0	418
V/C Ratio(X)	0.22	0.77	0.02	0.51	0.50	0.15	0.40	0.00	0.08	0.35	0.00	0.20
Avail Cap(c_a), veh/h	411	1808	826	375	1791	799	346	0	451	383	0	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	23.0	13.9	20.7	18.1	14.5	41.0	0.0	33.7	38.4	0.0	34.8
Incr Delay (d2), s/veh	0.3	3.2	0.0	1.8	1.0	0.4	3.4	0.0	0.4	2.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	14.6	0.2	1.3	7.4	1.6	3.9	0.0	0.9	3.7	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	26.2	14.0	22.5	19.1	14.9	44.4	0.0	34.1	41.0	0.0	35.9
LnGrp LOS	B	C	B	C	B	B	D	A	C	D	A	D
Approach Vol, veh/h		1475			1128			175				220
Approach Delay, s/veh		25.5			19.0			42.1				39.0
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	69.5		38.0	11.5	70.5		38.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	16.0	52.0		31.0	11.0	57.0		31.0				
Max Q Clear Time (g_c+I1), s	5.5	40.4		14.3	4.2	22.3		17.8				
Green Ext Time (p_c), s	0.2	6.6		0.8	0.1	6.7		0.5				

Intersection Summary

HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

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

BURTONWOODS APTS
3: Retail Access/WK Alston Dr & SC 170

PM BUILD 2023
05/23/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	96	895	31	148	1024	265	175	27	47	139	18	63
Future Volume (veh/h)	96	895	31	148	1024	265	175	27	47	139	18	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1722	1870	1870	1826	1752	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	973	34	161	1113	288	190	29	51	151	20	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	12	2	2	5	10	2	2	2	2	2	2
Cap, veh/h	255	1481	718	328	1633	699	344	149	261	352	91	310
Arrive On Green	0.05	0.45	0.45	0.07	0.47	0.47	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	3272	1585	1781	3469	1485	1309	608	1070	1319	373	1269
Grp Volume(v), veh/h	104	973	34	161	1113	288	190	0	80	151	0	88
Grp Sat Flow(s),veh/h/ln	1767	1636	1585	1781	1735	1485	1309	0	1678	1319	0	1642
Q Serve(g_s), s	2.8	20.8	1.1	4.3	22.5	11.5	12.2	0.0	3.4	9.2	0.0	3.9
Cycle Q Clear(g_c), s	2.8	20.8	1.1	4.3	22.5	11.5	16.0	0.0	3.4	12.6	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		0.77
Lane Grp Cap(c), veh/h	255	1481	718	328	1633	699	344	0	410	352	0	401
V/C Ratio(X)	0.41	0.66	0.05	0.49	0.68	0.41	0.55	0.00	0.20	0.43	0.00	0.22
Avail Cap(c_a), veh/h	302	1481	718	382	1633	699	344	0	410	352	0	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	19.2	13.8	14.7	18.6	15.6	33.6	0.0	27.0	32.0	0.0	27.1
Incr Delay (d2), s/veh	1.0	2.3	0.1	1.1	2.3	1.8	6.3	0.0	1.1	3.8	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.2	0.4	1.5	8.1	3.6	4.4	0.0	1.5	3.3	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	21.5	13.9	15.8	20.9	17.4	39.8	0.0	28.0	35.8	0.0	28.4
LnGrp LOS	B	C	B	B	C	B	D	A	C	D	A	C
Approach Vol, veh/h		1111			1562			270				239
Approach Delay, s/veh		20.7			19.7			36.3				33.1
Approach LOS		C			B			D				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	47.7		29.0	11.6	49.4		29.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	9.0	38.0		22.0	7.0	40.0		22.0				
Max Q Clear Time (g_c+I1), s	6.3	22.8		14.6	4.8	24.5		18.0				
Green Ext Time (p_c), s	0.1	5.4		0.5	0.0	7.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				22.5								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	239	203	55	122	149	48
Future Vol, veh/h	239	203	55	122	149	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	10	3	12	2	2
Mvmt Flow	285	242	65	145	177	57

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	527	0	681
Stage 1	-	-	-	-	406
Stage 2	-	-	-	-	275
Critical Hdwy	-	-	4.13	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.227	-	3.518
Pot Cap-1 Maneuver	-	-	1035	-	416
Stage 1	-	-	-	-	673
Stage 2	-	-	-	-	771
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1035	-	388
Mov Cap-2 Maneuver	-	-	-	-	388
Stage 1	-	-	-	-	673
Stage 2	-	-	-	-	719

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	388	645	-	-	1035	-
HCM Lane V/C Ratio	0.457	0.089	-	-	0.063	-
HCM Control Delay (s)	21.9	11.1	-	-	8.7	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2.3	0.3	-	-	0.2	-

Intersection

Int Delay, s/veh 7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	162	146	17	277	239	35
Future Vol, veh/h	162	146	17	277	239	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	225	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	4	14	3	5	10
Mvmt Flow	178	160	19	304	263	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	338
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.24
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.326
Pot Cap-1 Maneuver	-	-	1157
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1157
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	21.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	450	762	-	-	1157	-
HCM Lane V/C Ratio	0.584	0.05	-	-	0.016	-
HCM Control Delay (s)	23.6	10	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	3.6	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	277	5	3	156	14	5	0	19	13	0	18
Future Vol, veh/h	10	277	5	3	156	14	5	0	19	13	0	18
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	92	92	89	89	92	92	92	89	92	89
Heavy Vehicles, %	2	7	2	2	6	10	2	2	2	2	2	8
Mvmt Flow	11	311	5	3	175	16	5	0	21	15	0	20

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	191	0	0	316	0	0	535	533	314	535	527	183
Stage 1	-	-	-	-	-	-	336	336	-	189	189	-
Stage 2	-	-	-	-	-	-	199	197	-	346	338	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.28
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	3.372
Pot Cap-1 Maneuver	1383	-	-	1244	-	-	456	453	726	456	456	844
Stage 1	-	-	-	-	-	-	678	642	-	813	744	-
Stage 2	-	-	-	-	-	-	803	738	-	670	641	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1383	-	-	1244	-	-	440	447	726	439	450	844
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	447	-	439	450	-
Stage 1	-	-	-	-	-	-	671	636	-	805	742	-
Stage 2	-	-	-	-	-	-	781	736	-	644	635	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	10.9	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	639	1383	-	-	1244	-	-	609
HCM Lane V/C Ratio	0.041	0.008	-	-	0.003	-	-	0.057
HCM Control Delay (s)	10.9	7.6	0	-	7.9	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	171	4	18	281	26	2	0	19	21	0	11
Future Vol, veh/h	25	171	4	18	281	26	2	0	19	21	0	11
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	92	92	90	90	92	92	92	90	92	90
Heavy Vehicles, %	5	2	2	2	3	9	2	2	2	2	2	2
Mvmt Flow	28	190	4	20	312	29	2	0	21	23	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	341	0	0	194	0	0	621	629	192	626	617	327
Stage 1	-	-	-	-	-	-	248	248	-	367	367	-
Stage 2	-	-	-	-	-	-	373	381	-	259	250	-
Critical Hdwy	4.15	-	-	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	2.245	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1202	-	-	1379	-	-	400	399	850	397	405	714
Stage 1	-	-	-	-	-	-	756	701	-	653	622	-
Stage 2	-	-	-	-	-	-	648	613	-	746	700	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1202	-	-	1379	-	-	380	381	850	374	387	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	381	-	374	387	-
Stage 1	-	-	-	-	-	-	736	683	-	636	611	-
Stage 2	-	-	-	-	-	-	625	602	-	709	682	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.4			9.9			13.7		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1202	-	-	1379	-	-	447
HCM Lane V/C Ratio	0.03	0.023	-	-	0.014	-	-	0.08
HCM Control Delay (s)	9.9	8.1	0	-	7.6	0	-	13.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↕		↵	↕	
Traffic Vol, veh/h	32	4	99	4	5	13	18	971	10	6	961	18
Future Vol, veh/h	32	4	99	4	5	13	18	971	10	6	961	18
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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	5	2	2	2	2	5	13	2	7	13
Mvmt Flow	34	4	106	4	5	14	19	1044	11	6	1033	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1618	2148	526	1619	2152	528	1052	0	0	1055	0	0
Stage 1	1055	1055	-	1088	1088	-	-	-	-	-	-	-
Stage 2	563	1093	-	531	1064	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	69	48	489	69	47	495	657	-	-	656	-	-
Stage 1	241	301	-	230	290	-	-	-	-	-	-	-
Stage 2	478	288	-	500	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	59	46	489	49	45	495	657	-	-	656	-	-
Mov Cap-2 Maneuver	59	46	-	49	45	-	-	-	-	-	-	-
Stage 1	234	298	-	223	282	-	-	-	-	-	-	-
Stage 2	442	280	-	382	295	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	45.7		46		0.2		0.1	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	657	-	-	59	356	49	131	656	-	-
HCM Lane V/C Ratio	0.029	-	-	0.583	0.311	0.088	0.148	0.01	-	-
HCM Control Delay (s)	10.6	-	-	129.7	19.6	85.4	37.2	10.5	-	-
HCM Lane LOS	B	-	-	F	C	F	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	1.3	0.3	0.5	0	-	-

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↕↕		↵	↕↕	
Traffic Vol, veh/h	19	2	67	23	6	38	80	943	29	44	1226	39
Future Vol, veh/h	19	2	67	23	6	38	80	943	29	44	1226	39
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									
Storage Length	50	-	-	100	-	-	100	-	-	100	-	-
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	6	4	5	2	2	3	2
Mvmt Flow	20	2	70	24	6	40	83	982	30	46	1277	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2050	2568	659	1895	2573	506	1318	0	0	1012	0	0
Stage 1	1390	1390	-	1163	1163	-	-	-	-	-	-	-
Stage 2	660	1178	-	732	1410	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	7.02	4.18	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.36	2.24	-	-	2.22	-	-
Pot Cap-1 Maneuver	32	26	406	42	25	501	510	-	-	681	-	-
Stage 1	150	208	-	207	267	-	-	-	-	-	-	-
Stage 2	418	263	-	379	203	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 19	20	406	27	20	501	510	-	-	681	-	-
Mov Cap-2 Maneuver	~ 19	20	-	27	20	-	-	-	-	-	-	-
Stage 1	126	194	-	173	223	-	-	-	-	-	-	-
Stage 2	313	220	-	290	189	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	127.3	154.1	1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	510	-	-	19	260	27	117	681	-	-
HCM Lane V/C Ratio	0.163	-	-	1.042	0.276	0.887	0.392	0.067	-	-
HCM Control Delay (s)	13.4	-	-	\$ 502	24.1\$	345.1	54.3	10.7	-	-
HCM Lane LOS	B	-	-	F	C	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	2.8	1.1	2.8	1.6	0.2	-	-

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

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	5	192	28	3	255
Future Vol, veh/h	70	5	192	28	3	255
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	5	209	30	3	277

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	507	224	0	0	239
Stage 1	224	-	-	-	-
Stage 2	283	-	-	-	-
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	525	815	-	-	1328
Stage 1	813	-	-	-	-
Stage 2	765	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	523	815	-	-	1328
Mov Cap-2 Maneuver	523	-	-	-	-
Stage 1	813	-	-	-	-
Stage 2	763	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	536	1328
HCM Lane V/C Ratio	-	-	0.152	0.002
HCM Control Delay (s)	-	-	12.9	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	34	3	271	93	4	159
Future Vol, veh/h	34	3	271	93	4	159
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	3	295	101	4	173

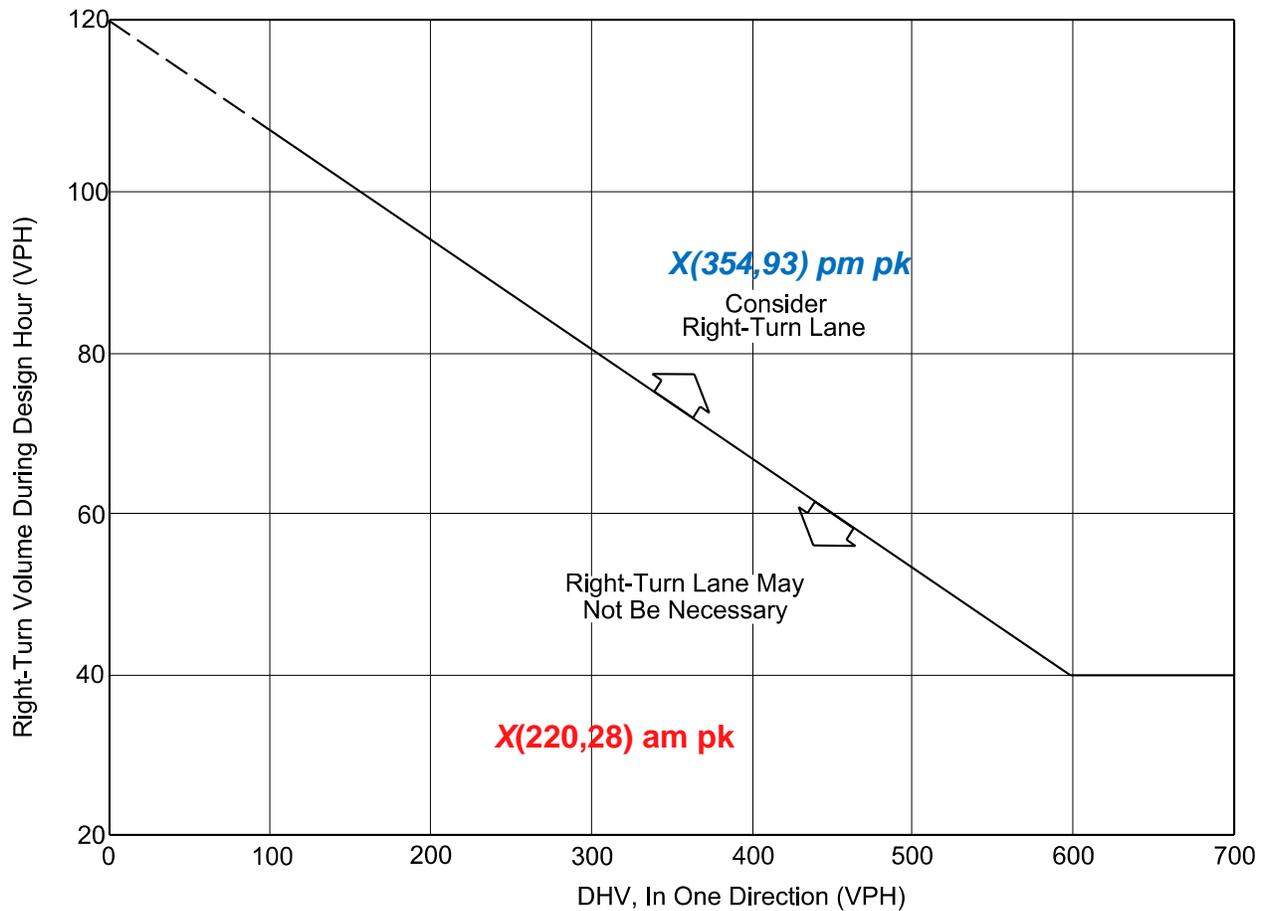
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	527	346	0	0	396
Stage 1	346	-	-	-	-
Stage 2	181	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	512	697	-	-	1163
Stage 1	716	-	-	-	-
Stage 2	850	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	510	697	-	-	1163
Mov Cap-2 Maneuver	510	-	-	-	-
Stage 1	716	-	-	-	-
Stage 2	847	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	521	1163
HCM Lane V/C Ratio	-	-	0.077	0.004
HCM Control Delay (s)	-	-	12.5	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

TURNING LANE WARRANT

WK Alston Dr at Site Access



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

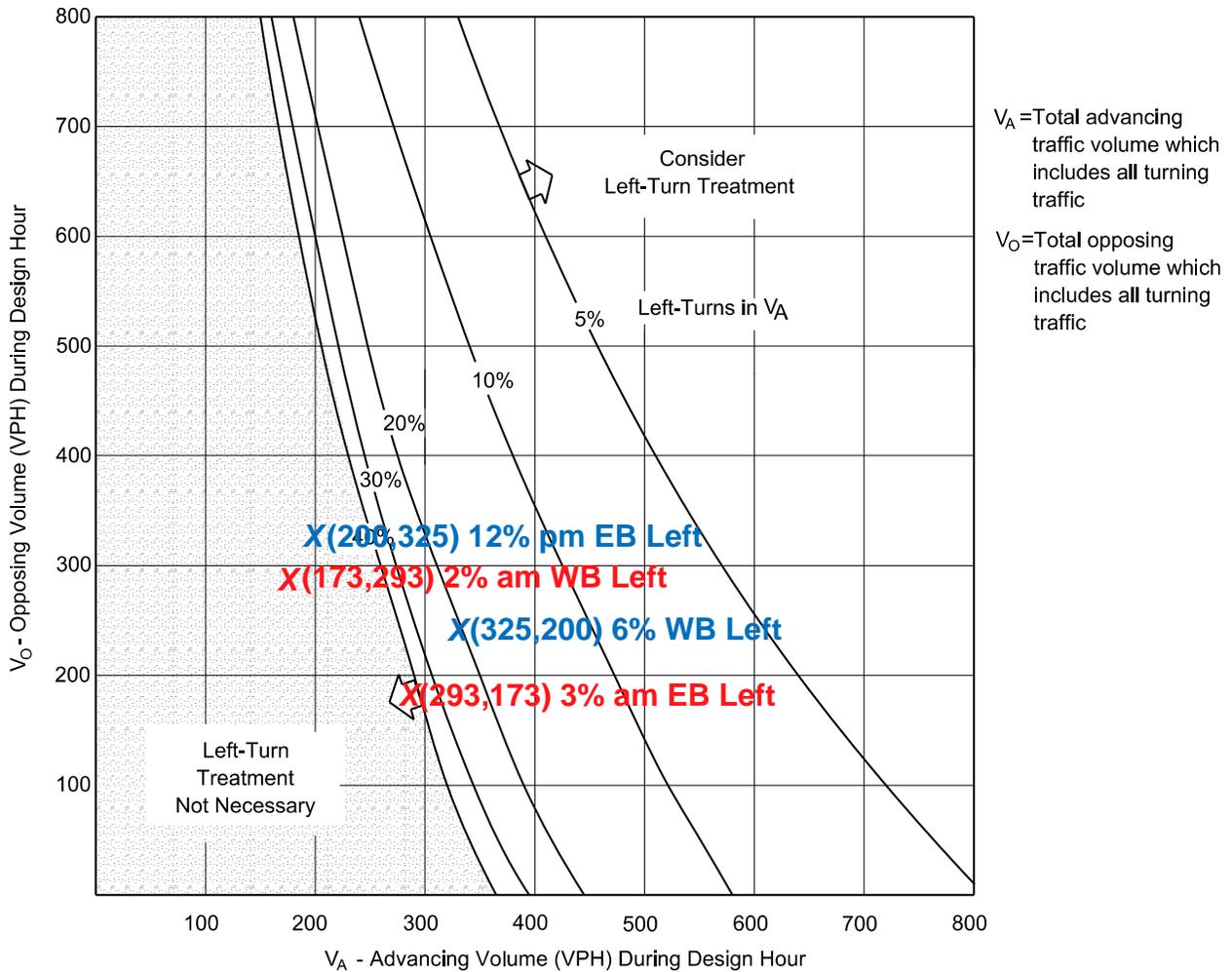
Example

Given:

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

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

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



Broad River Road at Ramsey Rd/Site Access

Instructions:

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

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

Figure 9.5-G



Staff Report for Metropolitan Planning Commission

From the Department of Community and Economic Development

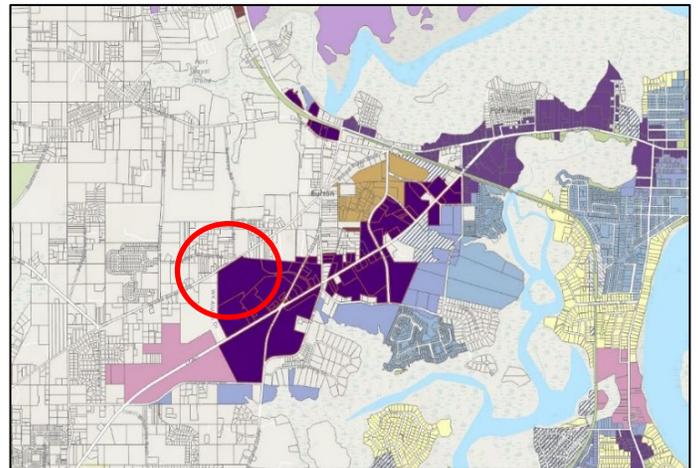
February 14, 2022

1 SUMMARY OF REQUEST

The applicant, Andrews Engineering Inc. (Ryan Lyle), is requesting sketch plan and street name approval of a parcel located on the south side of Broad River Boulevard, approximately 250' northeast of the intersection of WK Alston Drive and Broad River Drive. The proposed development, currently referred to as Watercrest, will be a multifamily development that totals 37.7 acres.

The property is in the T5-Urban Corridor/Regional Mixed Use (T5-UC/RMX) District. Adjacent zoning to the north and west are in unincorporated Beaufort County and zoned Neighborhood Mixed-Use (C3NMU). Property to the south and the east adjacent to the parcel are also in the T5-UC/RMX zoning district. The submittal includes the Sketch Plan application, project narrative, Concept Plan (serving as sketch plan), and a Traffic Impact and Access Study prepared by EPC, LLC and dated May 2020.

The project is a multifamily development consisting of 21 residential apartment buildings, containing a total of 528 units. The project will also include a clubhouse, several accessory buildings, and a significant amount of open space. The project includes proposed street names identified as available by the Emergency Management Division of the Beaufort County Sheriff's Office (Attachment A).



Sketch Plan Review Process

Since the project involves the creation of new streets and the subdivision of a parcel more than 10 acres in size, it is considered a Major subdivision. Per Section 9.9.3 of the Beaufort Code, Major subdivisions require sketch plan review approval by the MPC. A sketch plan review is a ministerial decision; the MPC determines that the provisions of the code regarding the subdivision of land have been met.

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.

In accordance with Section 9.9.3.E, the MPC “shall approve, approve with conditions, or disapprove the sketch plan within 60 days after submission”. 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 Technical Review Committee (TRC).

2 STAFF ASSESSMENT

Staff has reviewed the proposed development subject to the Sketch Plan requirements set forth in Section 9.3.1.B and 9.9.3, with the following findings:

Note: Per Section 9.8.2, any single family attached or multi-family developments containing more than 24 units shall be subject to review and approval by the Design Review Board (DRB). Building form, orientation, landscaping, and access will be evaluated as part of development design review. On November 16, 2021, the City of Beaufort Design Review Board (DRB) granted conceptual approval of the proposed new construction multi-family development subject to staff conditions. The Decision Letter describing the staff conditions is included as Attachment B to this staff report.

- A. Section 2.4.2 Conventional District Standards (RMX, LI, IC and MH Districts)
The sketch plan meets all RMX District General Standards for Development.

- B. Section 2.5.1 Building Placement and Orientation
 - 1. Section 2.5.1.A.1.a
The Sketch Plan layout will allow the development to meet the requirements of Section 2.5.1.A.1.a by breaking the site into smaller blocks by a series of roads.

 - 2. Section 2.5.1.A.1.c
The Sketch Plan layout will allow the development to meet the requirements of 2.5.1.A.c. regarding the placement of perimeter buildings.

- C. Section 4.5.7.B.3 Apartment House Parking
The Sketch Plan layout will allow the development to comply with section 4.5.7.B.3.

- D. Connectivity and Section 7.2 Street Network and Design Standards
All streets and street stubs shall meet the requirements of Section 7.2.2 Street Network Requirements. In accordance with Section 7.2.2, the Sketch Plan shows a development entrance on Broad River Boulevard, a stub to the west property line, and a tie to existing Ambrose Run at the east property line.

- E. Section 7.3 Street Engineering Standards
In accordance with Section 7.3.2: Traffic Impact Analysis, the applicant has included a Traffic Impact and Access Study in this application.

Note: per Section 7.3.2.G “The TRC shall review all TIAs as part of the applicable technical design review phase. Final TIAs shall be approved prior to the applicant submitting a Project Permit application”.

F. Street Sections and Beaufort Code Appendix C: Street Infrastructure Plans

The Sketch Plan identifies the proposed street sections as Neighborhood Street 1-General (NS1). This meets the street section requirements of Beaufort Code Appendix C: Street Infrastructure Plans (Attachment C). However, the primary entrance off Broad River Boulevard is designed as a boulevard street section.

G. Section 7.4 – Community Green Space and Open Space Requirement

Twenty-one acres (56% of the site area) has been allocated to open space. Per Section 7.4.2, Community Green Space and Open Space Requirements properties in the RMX District are exempt from open/civic space requirements.

3 STAFF RECOMMENDATIONS

Recommendation: Sketch Plan approval

Attachment A

Subject: FW: Watercrest Apartments- proposed streets names

From: Breton, Nichole <nbreton@bcgov.net>
Sent: Thursday, December 16, 2021 2:49 PM
To: Ryan Lyle <ryan@andrews-sc.com>
Subject: RE: Watercrest Apartments- proposed streets names

These have been reserved.

Nichole Breton
Emergency Communications
Data Manager
Emergency Management Division



Beaufort County Sheriff's Office
P.O. Box 1758
Beaufort, SC 29901
Phone: 843-255-4017
Fax: 843-255-4008

From: Ryan Lyle <ryan@andrews-sc.com>
Sent: Thursday, December 16, 2021 12:40 PM
To: Breton, Nichole <nbreton@bcgov.net>
Subject: FW: Watercrest Apartments- proposed streets names

[EXTERNAL EMAIL] Please report any suspicious attachments, links, or requests for sensitive information to the Beaufort County IT Division at helpdesk@bcgov.net or to 843-255-7000.

Nicole,
Please reserve these road names.
Thanks
Ryan

From: Bryant Ligon <BLigon@logandevolvers.com>
Sent: Thursday, December 16, 2021 12:35 PM
To: Ryan Lyle <ryan@andrews-sc.com>
Subject: RE: Watercrest Apartments- proposed streets names

Ryan please see list in order of preference.

- Watercrest Rd (needs to be a main connecting road into the development)
- Burkins St w
- Kennely Ave
- Fanning Ave
- Webber Ln
- Medina Ln
- Florence Ln

Thanks,



60 GREGORY ROAD, SUITE 1
BELVILLE, NC 28451

C 919 801 0618

LOGANDEVELOPERS.COM

Attachment B



CITY OF BEAUFORT
DESIGN REVIEW BOARD
1911 BOUNDARY STREET
BEAUFORT, SOUTH CAROLINA 29902
(843) 525-7011 FAX: (843) 986-5606

DECISION LETTER

November 24, 2021

Ryan Lyle, PE
Andrews Engineering, Inc.
2712 Bull Street, Suite A
Beaufort, SC 29902

RE: 21-15 DRB.2 211 Broad River Boulevard, Watercrest – Multi-family Development

Dear Mr. Lyle:

On November 16, 2021, the City of Beaufort Design Review Board (DRB) met to review your application for approval of new construction of a multi-family development to be located at 211 Broad River Boulevard. The DRB voted to grant conceptual approval with staff conditions from the October 2021 Staff Report. The conditions have been noted below:

Staff Conditions (Non-Discretionary):

1. Section 2.5.1.A.1.c states that “Perimeter buildings shall be oriented so that the primary façade(s) faces a public street and has a usable entry on that street. Buildings that are interior to a lot that has buildings ... may have entrances that do not face the Primary Frontage.”

This project has been designed in accordance with Section 2.5.1.A.1.a of the Beaufort Code in that the buildings are located to “break up the site into a series of smaller blocks defined by streets and pedestrian walkways...” This project includes a 35’ buffer along Broad River Boulevard, so the Clubhouse will be the only building that is visible from Broad River Boulevard. Since this does not appear to be a gated community, Staff views the internal Streets as public Streets, which will need to be named. In the absence of naming conventions, the faces of buildings fronting streets with parallel parking must meet frontage requirements per Section 4.4 and 4.5.7. In future submissions, Applicant to provide street names so that internal blocks may be fully understood and referenced.

2. In future submissions, Applicant to show required setbacks per Section 2.4.1-2.4.2 on the proposed site plan. Setback lines appear to be shown, but the actual setbacks have not been labeled along the side and rear of the property, so there is no way for Staff to verify that the setbacks are shown correctly per T5-UC or RMX standards. It appears that the building locations are compliant with RMX standards, but Applicant to verify that this is correct. Although frontage requirements apply to

individual blocks within the property as acknowledged above, Applicant to be aware that the overall setbacks for RMX or T5-UC still must be met at the perimeter of the property.

3. In future submissions, Applicant to ensure and demonstrate compliance with Section 4.5.7.A of the Beaufort Code, which requires that the ground floor of apartment house buildings is elevated 18” above grade. Staff understands that ADA requirements must still be met for these buildings and does not believe that it is the intent of the code to require ADA ramps with railings in front of the building. Staff interpretation of this guideline for this project type is that the 18” elevation must be met at the front of the building, but grade at the rear of the building may be manipulated to accommodate ADA access.
4. Section 4.5.1.B states that other building types that are not represented within Section 4.5 of the Beaufort Code may be permitted by the Design Review Body. The clubhouse, the pool house structure, mail kiosk structure, and the accessory garage building structures do not fit within one of the building types described by Section 4.5 of the Beaufort Code. Staff finds the frontage types of these structures, their relationship to grade, and their relationship to parking location to meet the intent of the Beaufort Code, but these structures and their design must be approved by the Design Review Board per this section.
5. The proposed apartment buildings include a forecourt building frontage, but the provided dimensions do not demonstrate compliance with Section 4.4.B, which requires that a forecourt have a minimum depth of 12’ and a minimum width of 12’. See Staff Diagram for an illustration of Staff’s interpretation of how the requirements would apply to a building with a forecourt that involves a formal entry courtyard. Per Section 9.12.1.B, the administrator has the authority to authorize modification of up to 10% of any numerical standard set forth in Article 4. The administrator approves this 10% administrative adjustment to the dimensions set forth in Section 4.4.B, meaning that a 10.8’ deep and 10.8’ wide forecourt would be acceptable. Applicant to demonstrate compliance with these standards in future submissions and note that if the breezeway meets the minimum required width for a forecourt, a portion of the breezeway may be viewed as part of the required forecourt.
6. In future submissions, Applicant to submit elevations of both Apartment Building sizes so that reviewers may understand how the design will change to create a larger building.
7. Section 5.5.1 of the Beaufort Code requires a 5’ minimum side and rear buffer for T5-UC properties abutting County Residential properties. The property abuts county residential properties on the northeast side. In future submissions, Applicant to demonstrate compliance with this section of the Code.
8. In future submissions, Applicant to ensure and demonstrate compliance with Section 5.7.7 regarding parking lot design, specifically the sections regarding parking stall dimensions, travel lane dimensions, parking space marking, pedestrian corridors, materials, and accessible parking.
9. Section 4.6.3.C.1 of the Beaufort Code requires that “any commercial or mixed-use building elevation facing a street, waterway, or public space shall include a minimum of 40% of transparent fenestration (windows and doors) on the ground floor and 20% on upper floors. Apartment Houses shall conform to these requirements as much as possible, however, the minimum percentage of transparent fenestration on the ground floor may be adjusted at the Discretion of the Design Review Body. It shall not be reduced to lower than 30%.” In future applications, applicant to provide calculations of fenestration percentages for review.
10. In future submissions, applicant to provide plans and elevations of the proposed maintenance storage and car care center.

Staff Conditions (Discretionary):

11. Staff preference is that the apartment buildings have either a metal standing seam roof or an asphalt roof within one roof level rather than a mixture of the two as currently drawn on the upper level.
12. Staff has the following comments regarding fenestration on the clubhouse:
 - a. On the front elevation, Sheet A2.04, Staff is not in support of the separated three windows on the left wing and recommends the windows be ganged together.
 - b. On the left side elevation on Sheet A2.04, Staff is not support of the roof terminating directly over the head of the third window from the left because it appears that the roof is not visually supported. Staff recommends shifting the window directly below the roof termination as well as the two windows immediately to the right over towards the front of the building to have a symmetrical relationship to the gable above.
 - c. On the rear elevation, Staff preference is that the six windows on the right side of the elevation be ganged together.

If you have any questions, feel free to call the Development of Community & Economic Development at (843) 525-7011.

Sincerely,

Benjie Morillo, Chair
Design Review Board

Via ryan@andrews-sc.com

cc: file copy

Attachment C

Appendix C: Street Infrastructure Plans | C.5: Street Sections

C.5.7	Neighborhood St. 1 - General (NS1: 50 ft - 62 ft)	
Description	Type 1 Neighborhood Streets are the most common urban street type in Beaufort. These versatile streets are typically unmarked in residential neighborhoods to allow for informal parking, but can be striped with bike lanes and/or a lane of on-street parking as necessary in more urban situations. As Beaufort's neighborhoods begin to fill in and intensify over time, this street type with its formal curbs and sidewalks may be applied as the logical next step in urbanization from Low Impact Development roads with their open swale drainage.	
Curb Type	Curb	
Right-of-Way Width	50 to 62 feet	
Traffic Lanes (Pavement Width)	2 lanes (30 to 36 feet total) - Marked or Unmarked	
Movement (Design Speed)	Slow (25 MPH)	
Parking Lanes (Width)	Informal - 1 side only if bike lane is included; angled parking may be permitted if sufficient R.O.W exists	
Bike Facilities	Signed route or bike lane (5 feet) as needed	
Sidewalk (Width)	2 sides (5 to 6 feet each)	
Planter Type (Width)	Planting strip (5 to 7 feet)	
Street Trees	40 feet on-center max., overstory; 24 feet on-center max., understory or palms	
Specific Applicability	See Street Regulating Plan	



Staff Report for the MPC

From the Director of Community and Economic Development

February 14, 2022

SUBJECT: 2021 Comprehensive Plan

https://www.dropbox.com/sh/zeqyfcnb4sshp9z/AACN4120Sc1_jSd5NFteUikla?dl=0

PURPOSE

The 2021 Comprehensive Plan provides a holistic outlook and the future course for the city. The plan outlines overarching goals to accomplish city council's vision, provides assessments of existing conditions, identifies objectives, and provides an implementation strategy consisting of specific initiatives.

CONTENT AND STRUCTURE

In the spring of 2019, the Metropolitan Planning Commission endorsed a format for the Comprehensive Plan that followed the state's planning enabling legislation. The plan consists of an introduction and separate sections or elements covering:

- *Vision* (overarching goals and objectives for the city)
- *Population* (demographics)
- *Economic Development*
- *Natural Resources*
- *Cultural Resources*
- *Community Facilities*
- *Housing*
- *Land Use*
- *Transportation*
- *Priority Investment*
- *Resiliency*

METHODOLOGY

The Comprehensive Plan focuses on creating a community where all citizens can thrive. This means understanding the needs of all citizens and integrating what the city has learned from previous planning efforts. The city utilizes and builds on 1) lessons learned from public meetings, 2) relevant goals and objectives from the previous comprehensive plan, the *Civic*

Master Plan, and the Strategic Plan, and 3) information gathered through public outreach and engagement.

The city used the latest data from the US Census - American Community Survey, US Economic Census, US Bureau of Labor Statistics, SC Department of Department of Workforce and Employment, SC Department of Transportation, SC Department of Veteran Affairs, and local studies such as the *Beaufort County, SC Housing Needs Assessment, SC Sea Grant Consortium's Flood Vulnerability Assessment, South Coast Cyber Center's South Coast Regional Cybersecurity Education and Development Program, Chamber of Commerce's Lowcountry Prosperity report, the Beaufort County Economic Development Corporation's Update to the City of Beaufort, Marine Corps Air Station Beaufort's Joint Land Use Study and Air Installation Compatible Use Zone Study, the city's Historic Preservation Plan Update, the Lady's Island Plan, the Lady's Island Corridor Study, and Lady's Island Traffic Study.*

The Comprehensive Plan has been constructed in a manner to make the data easily accessible and easily updated. It will serve as a resource document for the City's Council, the city's various boards, and for the Metropolitan Planning Commission.

PUBLIC OUTREACH AND ENGAGEMENT

Beaufort 2030 Vision exercise

To better understand what type of community our citizens want and what concerns they have, the city employed NEXT Generation Consulting, Inc. to conduct a two-day work session (Beaufort 2030) that studied societal trends and, through a collaborative process, determined stakeholders' priorities for the future of Beaufort.

The Beaufort 2030 exercise determined that the top eight trends affecting the City of Beaufort's future are:

1. Increasing K-12 teacher shortage
2. Rising sea level
3. Increasing nursing shortage
4. Lack of affordable housing
5. Increased impacts and frequency of storms
6. Continued need to address flooding
7. Improving K-12 academic performance and career preparation
8. Increased rates of child poverty

The Beaufort 2030 exercise determined the top four priorities for action:

1. Increase the number of affordable housing units for the workforce
2. Increase the number of diverse career opportunities for early and mid-level professionals
3. Increase the retention of locally trained students/graduates for local jobs
4. Reduce childhood poverty

Working Document

Next, the city published the goals and objectives that were still relevant from the city's existing plans (2009 Comprehensive Plan, The Civic Master Plan, and the 2021-2023 Strategic Plan) along with existing conditions organized by element in a working document to be used by staff, City Council, board members, and citizens to help focus discussion and consideration of what needs to be updated in the Comprehensive Plan. The city enlisted the help of the Lowcountry Council of Governments to provide current assessments for the *Community Facilities, Housing, and Transportation* elements and the DesignWorkShop consultancy to create the *Natural Resources, Cultural Resources, and Resiliency* elements.

Public sessions and facilitation

Next, the city conducted three public work sessions to discuss existing conditions, current goals and objectives, and to receive comments and suggestions. To reach citizens who did not attend the public work sessions, the city posted the working document on its website for review and comment. To make it easier for the public to participate, the city created a web-based platform that improved access to the working document and facilitated public review and comment. To inform visitors to City Hall about the update of the Comprehensive Plan, the city placed information boards, maps, and comment cards in the lobby.

Stakeholder Engagement

Next, the city reached out to community stakeholders for interviews.

Stakeholders included:

University of South Carolina – Beaufort,	Military Enhancement Committee
Beaufort Jasper Water Sewer Authority,	Historic Beaufort Foundation,
Beaufort Regional Chamber of Commerce,	Beaufort County Historical Society,
Beaufort County Black Chamber of Commerce,	Coastal Conservation League,
Downtown Merchants Association,	Sea Island Corridor Coalition,
Greater Beaufort-Port Royal Convention and Visitors Bureau,	Lady's Island Business Professionals Association
Beaufort Memorial Hospital	Neighborhood associations
Beaufort Jasper County Realtors,	Residents from apartment complexes
Marine Corps Air Station Executive Team	Northwest Quadrant civic leaders
Open Land Trust	
Local Developers	

Council, Boards, and Commissions Input

- The Metropolitan Planning Commission and City Council endorsed the organizational approach to the update.
- The Metropolitan Planning Commission was involved in reviewing the existing goals and objectives from the 2009 Comprehensive Plan, Civic Master Plan, and Strategic Plan.
- City Council provided comments on the Comprehensive Plan during annual retreat discussions of the strategic plan.
- Members of the Design Review Board, Historic Review Board, the Metropolitan Planning Commission, and the City Council along with staff provided guidance on future land uses in the city and potential annexation areas.
- City Council conducted a public hearing on the comprehensive plan.
- Metropolitan Planning Commission has formally reviewed and crafted the plan during five extensive public workshops. The next step is for the MPC to formally recommend the plan to the city council.
- City Council will consider an ordinance adopting the Comprehensive Plan in two separate readings.