

**INFRASTRUCTURE MASTER PLAN
FOR EXIT 8 OFF OF INTERSTATE 95
IN
JASPER COUNTY, SOUTH CAROLINA**



Prepared For:

Jasper County
Post Office Box 1149
Ridgeland, South Carolina 29936

and

The City of Hardeeville
205 East Main Street
Post Office Box 609
Hardeeville, South Carolina 29927

Prepared By:

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23 Plantation Park Drive, Suite 204
Bluffton, South Carolina 29910



Project Number 13178-0027
January 2014



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I. EXECUTIVE SUMMARY

In their vision to promote continued economic growth and development in the County and to provide a first class venue to attract residential, commercial and industrial prospects, Jasper County and the City of Hardeeville commissioned Alliance Consulting Engineers, Inc. with developing an Infrastructure Master Plan for the Exit 8 Area, achieving the following objectives:



- Review existing land use features
- Conduct meetings with local regulatory and utility providers
- Prepare project planning and implementation support materials
- Publish the Infrastructure Master Plan

Alliance Consulting Engineers, Inc. conducted reviews of existing land features such as existing development, existing utilities, topography, existing transportation network, zoning and net buildable area. Maps were created of these existing features and included in the Infrastructure Master Plan for Exit 8. After completion of the maps and reviews, Alliance Consulting Engineers, Inc. conducted a site visit to inventory the existing site features for incorporation into the study and consulted with local utility providers for capacity and infrastructure improvement plans in the Exit 8 Area. In conjunction with ROI Consultants, Inc., Alliance Consulting Engineers, Inc. has discussed the current topography of the site in addition to the current developed area, net buildable area, existing utility infrastructure, and the existing transportation network.

Alliance Consulting Engineers, Inc. then conducted meetings on October 17, 2013, and October 18, 2013 for the Stakeholders and Regional Planners respectively. Questionnaires were issued at these meetings and collected thirty (30) days later. Another meeting was held at the Joint Hardeeville and Jasper County Planning Commission Meeting on October 8, 2013. Representatives that could not attend the meetings were contacted individually



by Alliance Consulting Engineers, Inc. staff. Furthermore, Alliance Consulting Engineers, Inc. staff, ROI, Consultants, Inc. staff, and representatives from Jasper County and the City of Hardeeville attended the International Council of Shopping Centers (ICSC) 2013 Southeast Conference Deal Making Conference in Atlanta, Georgia between October 28th – 30th, 2013. These meetings were conducted to input and feedback concerning the development of Exit 8 Area to incorporate into the Infrastructure Master Plan.

Project planning and implementation support materials such as property plats and SCDOT right-of-way maps were collected from Jasper County Tax Assessor’s website and SCDOT’s Plans Online website. In addition infrastructure cost opinions, including soft costs, project phasing, and preliminary schedules were prepared by Alliance Consulting Engineers, Inc. These items were then incorporated into the phased conceptual plan for infrastructure and development of Exit 8. **Table A** – Overall Cost Opinion summarizes the cost opinions for the eight (8) phases for infrastructure improvements associated with the Exit 8 Area. The total cost for improvements associated with all eight (8) phases is approximately \$89,867,000.

Table A – OVERALL COST OPINION

Exit 8 Infrastructure Master Plan	
Overall Cost Opinion	
Description	Cost
Phase I	\$ 14,784,000
Phase II	\$ 11,972,000
Phase III	\$ 16,767,000
Phase IV	\$ 10,411,000
Phase V	\$ 6,573,000
Phase VI	\$ 8,903,000
Phase VII	\$ 7,203,000
Phase VIII	\$ 3,097,000
Cherry Pointe Connection	\$ 5,682,000
Hareville Connection	\$ 4,475,000
TOTAL IMPROVEMENTS COST	\$ 89,867,000



Once supporting material had been acquired, Alliance Consulting Engineers, Inc. then conducted a utility capacity analysis and density study along with a conceptual bubble plan to be presented in the Infrastructure Master Plan.

Alliance Consulting Engineers, Inc. recommends Jasper County and the City of Hardeeville consider the following:

- Lot size and road access should be designed to provide unity, and flexibility for future development of the Exit 8 Area. Roadways should be constructed only to the extent necessary to demonstrate the objective for the development of the Exit 8 Area while maintaining a large degree of flexibility concerning the future layout of the Area.
- A traffic study should be completed in accordance with the Institute of Traffic Engineers (ITE) Traffic Impact Analysis to evaluate any potential impacts to current and projected traffic volumes along US Highway 278, US Highway 17, Interstate 95, and other associated roadways due to the development of the Exit 8 Area. Additional items that should be addressed in the traffic study include the impact the development of the Exit 8 Area may have on the surrounding intersections and roadways which provide access to the Exit 8 Area.
- Placement of various indicator signage along US Highway 278 as soon as possible to promote the visibility and overall recognition of the Exit 8 Area to the Jasper County public and prospective developers which may wish to locate within the Area.
- Seek funding sources to implement early phases of the project and program in the long term infrastructure needs accordingly.



II. INTRODUCTION

Jasper County is located in the Lowcountry Planning Region of South Carolina, approximately fifty (50)-miles south of the Capital City of Columbia, and approximately twenty (20)-miles east of Savannah, Georgia. Jasper County covers roughly 655 square miles, and has an estimated population of approximately 24,777 (2010 Census).



The Exit 8 Area is approximately 1760-acres in size and is located north of the City of Hardeeville, at the US highway 278 and Interstate 95 interchange. SC Highway 278 is a four (4)-lane divided highway that provides direct access to Interstate 95 via Exit 8. Interstate 95 and US Highway 278 are located within the Exit 8 Area. The Vicinity Map is depicted within in **Exhibit A**.

The Site Location Map depicted in **Exhibit B** illustrates the location of the Exit 8 Area within Jasper County, which includes approximately 1760-acres, of which, approximately 338-acres are considered developable for residential, commercial and industrial facilities. The Aerial Map in **Exhibit C** illustrates the surrounding land use including types of existing businesses overlaid with the aerial photograph of the area.

The Exit 8 Area is comprised of approximately 113 parcels. These parcels are both publicly and privately owned and are included in the Parcels Map in **Exhibit D**. Additional tracts non within the Exit 8 Area such as Morgan Tract and Hilton Head Lakes North (formally Known as Traditions) are located to the west of the Exit 8 Area as shown in **Exhibit E**, Adjacent Tract Map. Elevations within the Exit 8 Area range from approximately 5 feet (2 meters) above Mean Sea Level (MSL) to approximately 35 feet (11 meters) above MSL as shown on the Topographic Map shown in **Exhibit F**.

Alliance Consulting Engineers, Inc. and ROI Real Estate Consultants, Inc. were retained by Jasper County and the City of Hardeeville to prepare an Infrastructure Master Plan with the following objectives:



- Review existing land use features
- Conduct meetings with local regulatory agencies, local utility providers, stakeholders, property owners, and the Jasper County and Hardeeville Joint Planning Commission.
- Review of project planning and implementation support materials
- Publishing of Master Plan

Alliance Consulting Engineers, Inc. prepared maps for the review of the existing land features. These maps are included throughout the body of this report. After completion of the map sets, Alliance Consulting Engineers, Inc. personnel conducted a site visit to inventory the existing site features for incorporation into the study. Furthermore, Alliance Consulting Engineers, Inc. consulted with local utility providers for capacity and infrastructure improvement plans in the area.

Alliance Consulting Engineers, Inc., in coordination with ROI Real Estate Consultants, Inc. attempted to meet with regulatory agencies, utility providers, county agencies, and local municipalities as well as stakeholders and owners of property within the Exit 8 Area in order to gain consideration, recommendations, and any future improvements plans to summarize and incorporate into the Exit 8 Master Plan.

An overview of the planning and support materials such as property plats, deeds, ownership information, conceptual use bubble plan, and infrastructural conceptual costs including estimated soft costs, preliminary schedule and project phasing was conducted. Upon comments from local planning agencies, Alliance Consulting Engineers, Inc. incorporated the comments into the Master Plan.

The above mentioned materials have been incorporated into the body of this report as the published Exit 8 Master Plan. Furthermore, conclusions and recommendations have been included in this report. Any additional information to complete a particular project as well as funding opportunities are discussed within the Master Plan.

INFRASTRUCTURE MASTER PLAN EXIT 8 JASPER COUNTY, SOUTH CAROLINA VICINITY MAP

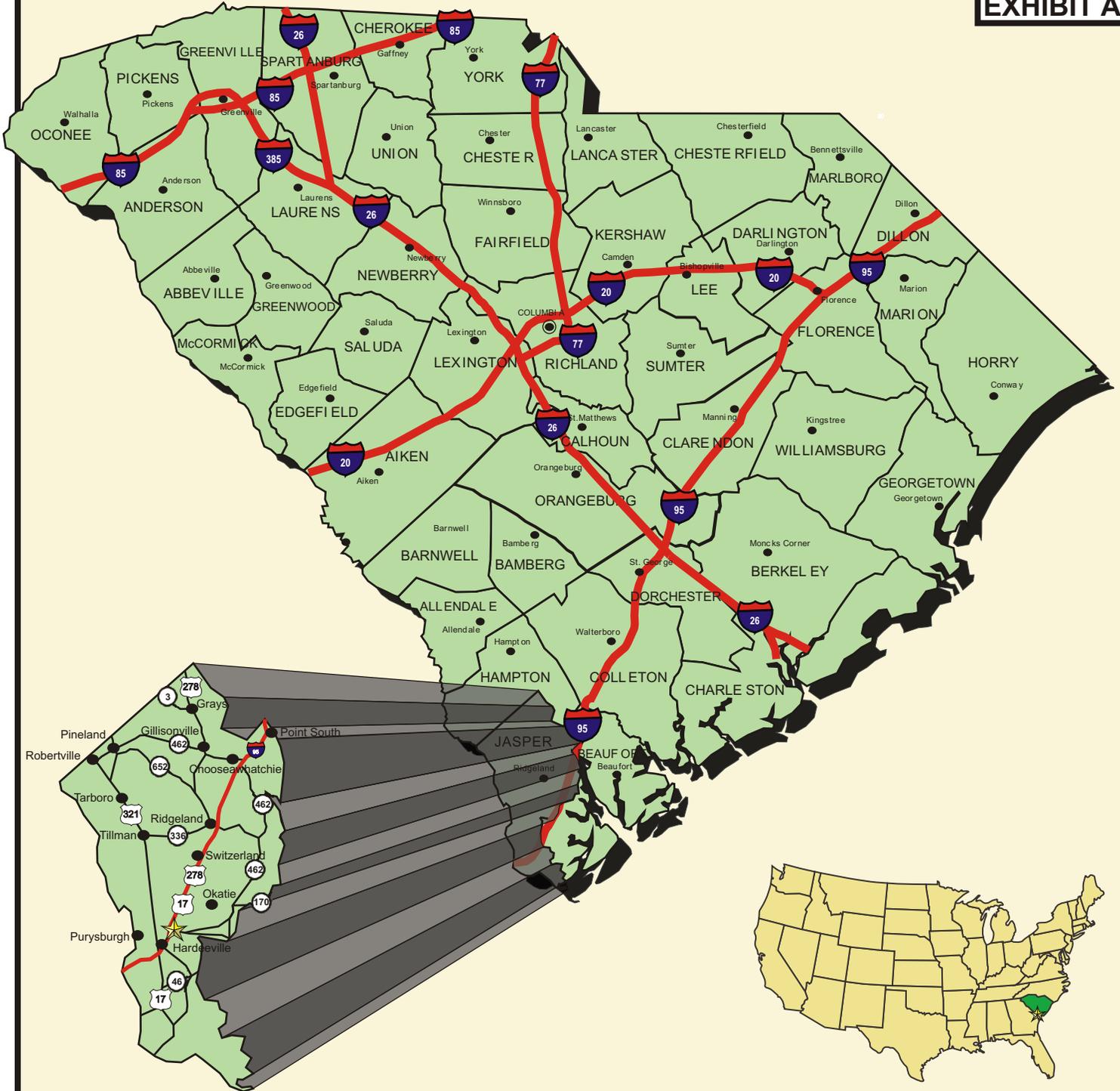


+/- 1,760 Acres



PREPARED BY:
ALLIANCE CONSULTING ENGINEERS, INC.
SEPTEMBER 17, 2013

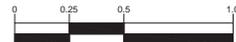
EXHIBIT A



INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
SITE LOCATION MAP



+/- 1,760 Acres



GRAPHIC SCALE (MILES)
SEPTEMBER 13, 2013

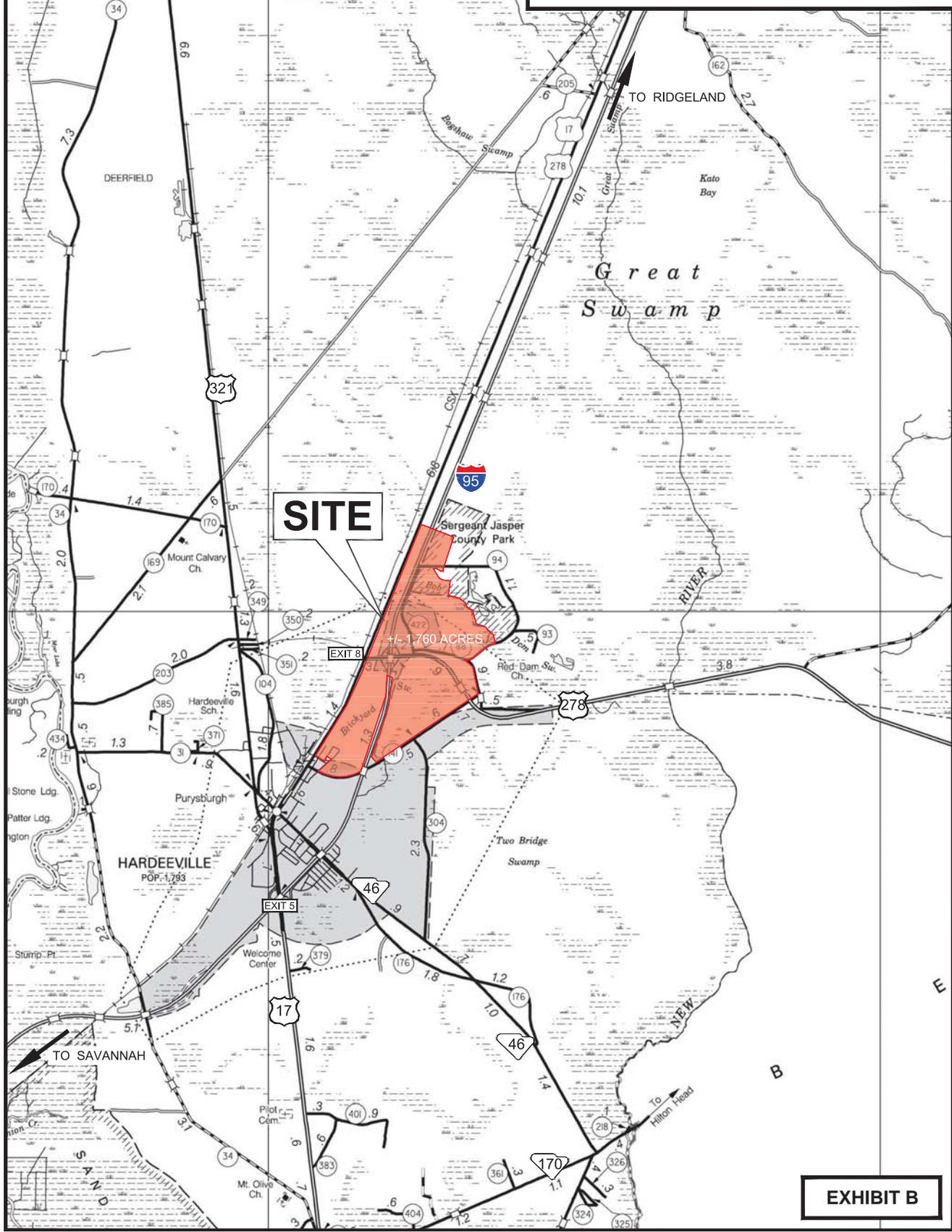
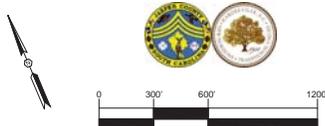


EXHIBIT B

95 ↑ 90 MILES TO CHARLESTON, SC

INFRASTRUCTURE MASTER PLAN EXIT 8 JASPER COUNTY, SOUTH CAROLINA AERIAL MAP



+/- 1,760 Acres

ALLIANCE
CORPORATE STRATEGIC ENGINEERS
REGISTERED PROFESSIONAL ENGINEERS, P.C.
ALLIANCE CONSULTING ENGINEERS, P.C.
10000 W. PARKWAY
JASPER COUNTY, SOUTH CAROLINA
29020
SEPTEMBER 16, 2013



+/- 1,760 ACRES

SITE

CSX RAILROAD

20 MILES TO HILTON HEAD ISLAND, SC

95 ↓ 20 MILES TO SAVANNAH, GA

EXHIBIT C

ACREAGE	
WETLAND/FLOODPLAINS:	489 ACRES
DEVELOPED ACRES:	120 ACRES
NET BUILDABLE UNDEVELOPED:	1,447 ACRES
UNDEVELOPED PLANNED AREA:	1137 ACRES
NET BUILDABLE UNDEVELOPED PLANNED AREA:	338 ACRES
TOTAL ACRES:	1,760 ACRES

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
PARCELS MAP**



0 300 600 1,200 1,800 2,400
Feet

GRAPHIC SCALE (IN FEET)
DECEMBER 15, 2010

ID	Deed Acres	Name	TMS
0	14.2	DILLON EQUITY LLC	041-00-02-012
1	237.04	DILLON EQUITY LLC	041-00-02-010
2	0.06	BEAUFORT JASPER WATER	041-00-02-002
3	1.4	MAYS CARLA L	041-00-02-011
4	2.2	MCGRAW ROY ETAL	041-00-02-003
5	3.12	ROBERTS LUCILLE	042-00-05-059
6	0.8	BOURNE BOULEVARD PARTNERS LLC	042-00-02-002
7	10.25	AIKEN FANNIE HEIRS ETAL	042-00-05-009
8	1	GREENBERG JOSEPH B & GAIL M	042-00-05-039
9	0.07	CORE COMMUNITIES OF SC LLC	042-00-04-031
10	32	GREENERY INC	042-00-05-043
11	0.39	FORD ANNA A ESTATE ETAL	042-00-04-021
12	0.18	AIKEN FANNIE HEIRS ETAL	042-00-04-029
13	0.99	FORD ANNA ESTATE ETAL	042-00-04-036
14	2.56	WEST ALBERTHA	042-00-04-006
15	1.68	AIKEN JIM HEIRS ETAL	042-00-04-008
16	2	SALUS L MARTIN III	042-00-04-003
17	0.02	BRABHAM OIL COMPANY INC	042-00-02-005
18	2.3	LAWRENCE LAXTON RESTAURANTS	042-00-05-002
19	4.85	R & A ASSOCIATES LLC	042-00-05-050
20	3	WILSON KATHLEEN ETAL	041-00-02-004
21	2.33	PATEL JUSTIN AND PRAVIN	042-00-05-035
22	1	WILSON JAMES R JR	042-00-05-003
23	1	SPENCER CLARENCE & SHIRLEY W	042-00-05-005
24	2.34	PATEL JUSTIN AND PRAVIN	042-00-05-034
25	1	REED WILLIE JR ETAL	042-00-05-027
26	1.35	WILLIAMS HELENA	042-00-04-014
27	1.34	FROST CLIFTON	042-00-04-033
28	19	CAT REAL ESTATE HOLDINGS LLC	042-00-02-011
29	1.4	KARAN INC	042-00-03-001
30	7.9	WILSON KATHLEEN ETAL	041-00-02-009
31	226.83	ICE PLUS PROPERTIES LLC	042-00-04-019
32	10.02	SOUTH CAROLINA DEPT OF PARKS	042-00-06-036
33	0		
34	0.46	JONES MARTIN E	041-00-02-006
35	0.46	JONES MARTIN H	041-00-02-015
36	0.99	KARAN INC	042-00-03-006
37	22.72	ISLAND GATEWAY LLC	042-00-03-004
38	1.22	INTERSTATE LAND CO	042-00-03-003
39	0.34	INTERSTATE LAND CO	042-00-03-007
40	1.39	BNPT HOLDINGS LLC	042-00-04-004
41	0.46	JONES MARTIN H	041-00-02-013
42	0.46	JONES MARTIN H	041-00-02-007
43	1.59	AMERIS BANK	042-00-02-008
44	124.4	JASPER COUNTY	042-00-05-001
45	51.24	JASPER COUNTY	042-00-05-040
46	82.68	ECOLOGICAL INVESTMENTS LLC	042-00-05-042
47	1.1	REED WILLIE JR ET AL	042-00-05-007
48	1	HAMILTON SANDRA REED & LAMAR	042-00-05-029
49	1	REED WILLIE III	042-00-05-028
50	7.02	FISCHER SOUTH CAROLINA	041-00-03-034
51	4.01	BRICKYARD SWAMP RENAISSANCE	042-00-04-023
52	0.45	RILEY JAMES R	041-00-02-005
53	0.6	WILSON KATHLEEN ETAL	041-00-02-008
54	3.4	NESBITT BARBARA W	042-00-05-004
55	5	KENNEDY JOSEPH PATRICK	042-00-05-010
56	3.12	ULTIMATE SEACOAST PROPERTIES	042-00-05-006
57	2.9	BENTON ALBERT EUGENE	042-00-05-008
58	2.9	WOODS SARAH MAGDALENE & LEON	042-00-05-026
59	1	BUSH JACQUELYN REED & RUFUS R	042-00-05-030
60	2.3	TIGER STOP SOUTH LLC	042-00-05-033
61	1.35	PRIMUS ROBIN	042-00-04-032
62	3.34	CARTER OLLIE E	041-03-01-001
63	26	DILLON EQUITY LLC	041-03-03-001
64	9.32	SMITH TYSINGER INC	042-00-04-001
65	21.19	ENTERTAINMENT ADVENTURES LLC	042-00-05-055
66	34.03	CORE COMMUNITIES OF SC LLC	042-00-04-030
67	29.16	JASPER HOSPITAL INC	042-00-05-046
68	14.21	EXIT 8 ASSOCIATES LLC	042-00-05-024
69	68.73	EXIT 8 ASSOCIATES LLC	042-00-05-025
70	5.5	AULD JAMES A JR	042-00-06-015
71	1.2	INTERSTATE LAND COMPANY	042-00-03-002
72	0.42	ZAKKI LLC	042-00-03-005
73	135	BEAUFORT MEMORIAL HOSPITAL	041-00-03-028
74	3.05	AMERIS BANK	042-00-02-009
75	5.05	RILEY ISABELLE	042-00-04-018
76	5.05	NORTON JOSEPHINE	042-00-04-016
77	0.5	ODUM ANGELA V & WILLIE SIMMONS	042-00-04-028
78	0.5	SIMMONS WILLIE	042-00-04-027
79	0.5	SIMMONS ROBIN DENISE	042-00-04-026
80	0.5	SIMMONS PATRICIA ANN	042-00-04-025
81	4.04	FORD BEN HEIRS	042-00-04-009
82	0.5	SIMMONS BARRY L	042-00-04-024
83	4.04	FORD CLINTON JR	042-00-04-004
84	3.03	FORD CHARLIE (FAMILY)	042-00-04-017
85	0.5	SIMMONS WILLIE	042-00-04-015
86	0.5	AIKEN WILLIE MAE	042-00-04-035
87	162.7	CORE COMMUNITIES OF SC LLC	042-00-05-054
88	1.8	SYSTEM CAPITAL REAL PROP CORP	042-00-04-012
89	1.72	BOURNE BOULEVARD PARTNERS LLC	042-00-02-013
90	1.6	BRABHAM OIL COMPANY INC	042-00-02-003
91	6.12	EXIT 8 INVESTORS LLC	042-00-02-014
92	3.12	WILSON BARBARA	042-00-05-058
93	3.03	AIKEN WILLIE MAE	042-00-04-013
94	14.46	AIKEN FANNIE HEIRS ETAL	042-00-04-022
95	6.37	EXIT 8 INVESTORS LLC	042-00-02-017
96	7.72	EXIT 8 INVESTORS LLC	042-00-02-019
97	6.22	EXIT 8 INVESTORS LLC	042-00-02-020
98	7.21	ULMER ALAN A JR LLC	042-00-02-021
99	6.03	EXIT 8 INVESTORS LLC	042-00-02-016
100	6.07	EXIT 8 INVESTORS LLC	042-00-02-018
101	12.14	JASPER COUNTY PROPERTIES LLC	042-00-02-006
102	0.25	JASPER COUNTY	042-00-02-022
103	3.43	BRIGHT VERMEL	042-00-05-031
104	46.2	BOURNE BOULEVARD PARTNERS LLC	042-00-02-001
105	1.35	WOODLANDS BANK	042-00-02-007
106	3	BRYANT DAVID M	042-00-02-010
107	5	BRICKYARD SWAMP RENAISSANCE	042-00-04-007
108	0.06	BEAUFORT JASPER WATER	042-00-05-047
109	1.18	SMITH MALPHRUS LLC	042-00-04-010
110	1.56	ICE PLUS PROPERTIES LLC	042-00-04-011
111	0.75	JASPER HOSPITAL INC	042-00-05-056
112	0.45	CITY OF HARDEEVILLE	042-00-05-032

EXHIBIT D

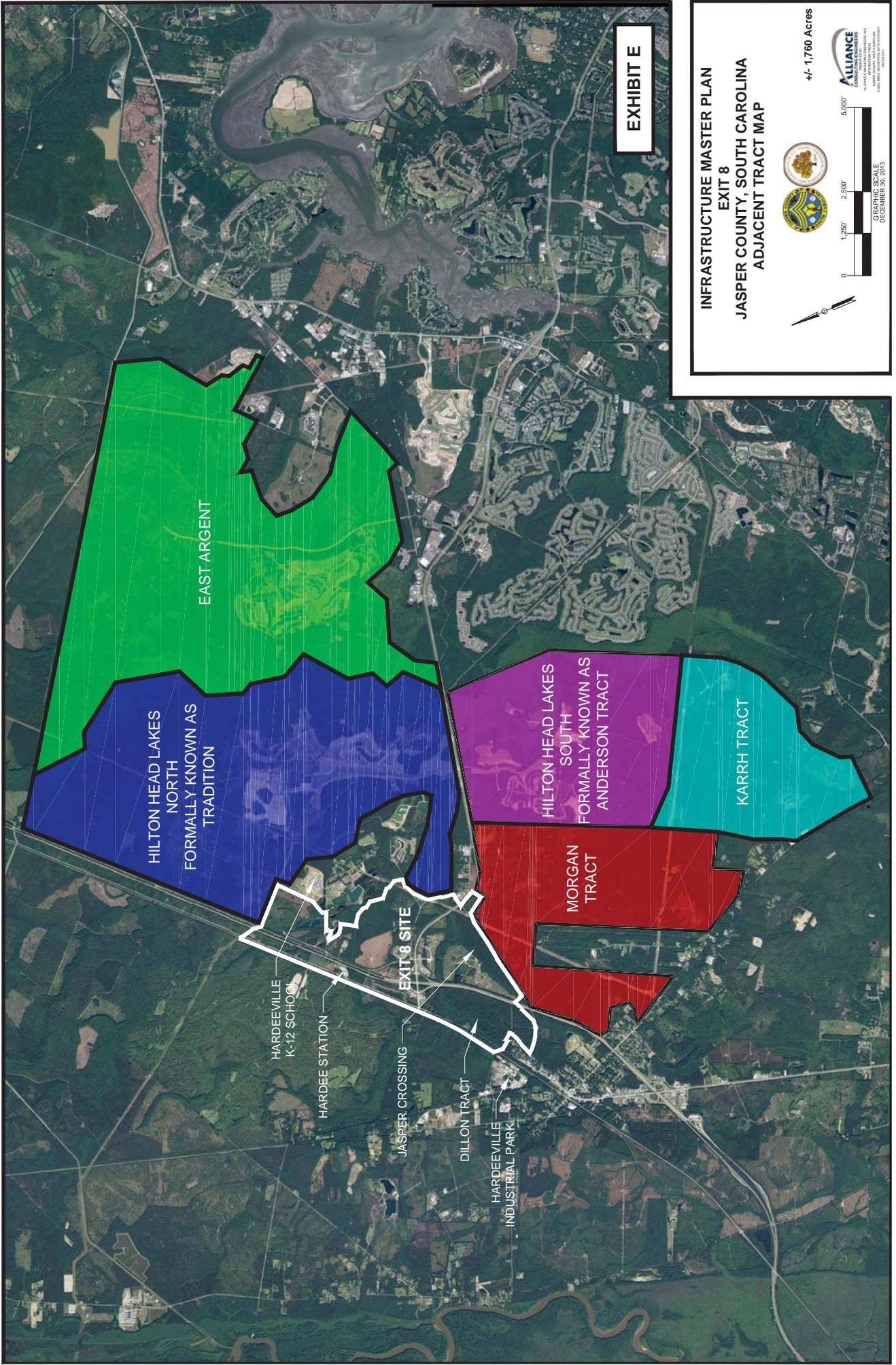


EXHIBIT E

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
ADJACENT TRACT MAP**

0 1,250' 2,500' 5,000'

GRAPHIC SCALE
DECEMBER 29, 2015

4- 1,760 Acres

ALLIANCE
CONSTRUCTION SERVICES, INC.
1000 W. WOODLAND AVENUE, SUITE 100
JASPER, SC 29153
(803) 685-1111

INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
TOPOGRAPHIC MAP



+/- 1,760 Acres



GRAPHIC SCALE
SEPTEMBER 4, 2013

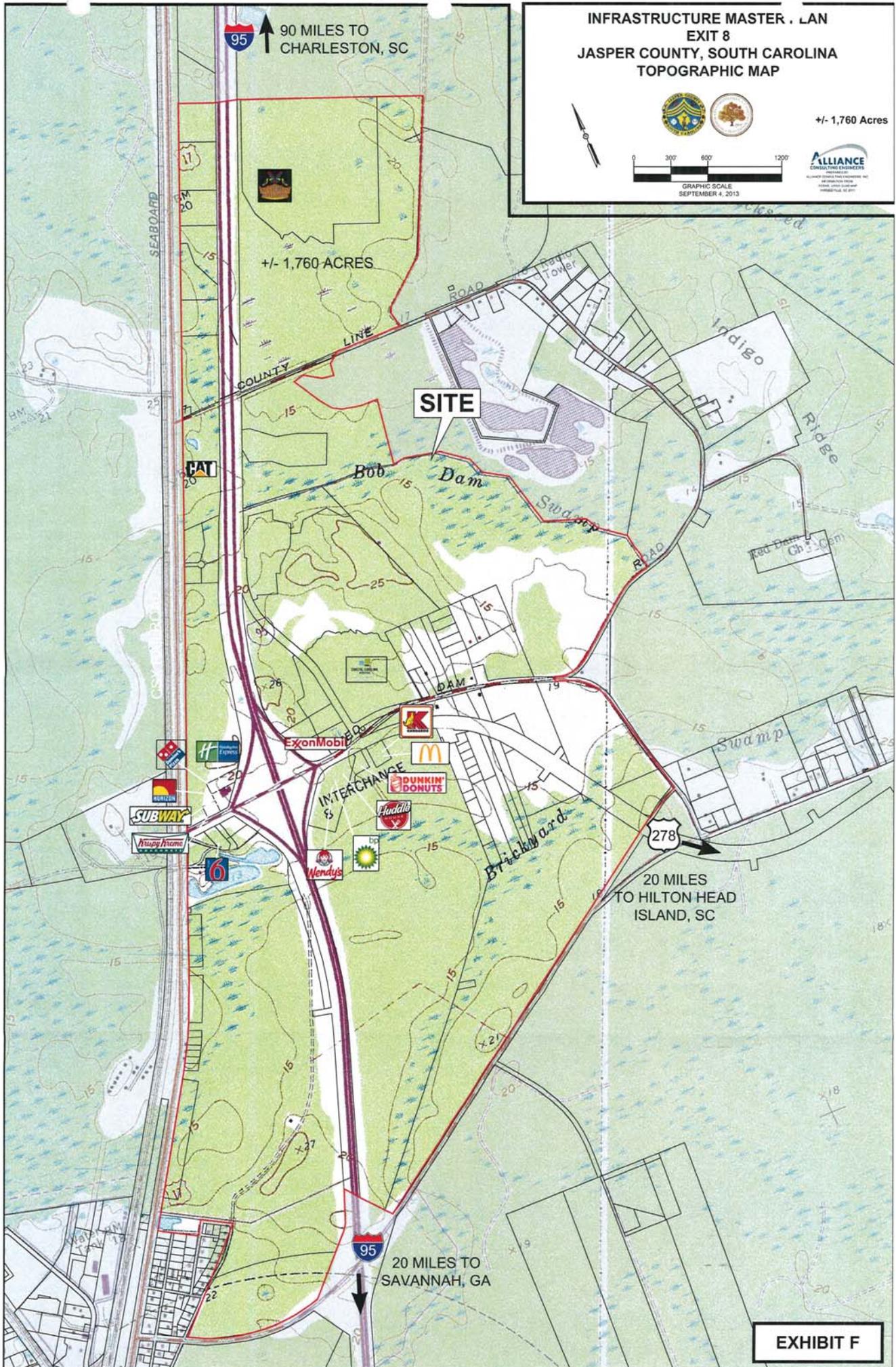


EXHIBIT F



The information, opinions, and recommendations contained in this report are based on current data available from Jasper County and City of Hardeeville personnel, the United States Army Corps of Engineers (USACE), the United States Geological Survey (USGS), the Federal Emergency Management Agency (FEMA), the South Carolina Department of Transportation (SCDOT), South Carolina Department of Health and Environmental Control (SCDHEC) and public and private utilities providing services and facilities in the area.

III. MASTER PLANNING STAKEHOLDER MEETINGS:

Master planning stakeholder meetings were conducted by Alliance Consulting Engineers, Inc. and ROI Real Estate Consultants, Inc. and personnel September 17, 2013 and September 18, 2013 to gather input from stakeholders, property owners affected by the Exit 8 area, and Beaufort County, Town of Hilton Head Island, etc. Furthermore, a preliminary master plan was presented at the Joint Hardeeville and Jasper County Planning Commission Meeting. Questionnaires were distributed to interested parties to complete and return to Alliance Consulting Engineers, Inc. Meeting minutes and the presentation may be found in **Appendix X**. Questionnaires received by Alliance Consulting Engineers, Inc. are included in **Appendix X**. The following considerations/recommendations were raised during the meetings and in the questionnaire responses:

- Exit 8 is to be a destination of its own however, Exit 8 currently lacks identity and does not incise tourists to want to stop and explore.
- The area has signage and bright color clutter, new signage regulations and enforcement of existing signage regulations may aid the Area standout.
- Landscaping and wide buffers are needed to have the Exit 8 Area stand out.
- The City of Hardeeville, in which Exit 8 is located, has had explosive growth (64% growth in 2000-2010) and an additional 34% in the last three (3) years.
- An important first step to the improvement of the Exit 8 Area is to improve the arrival to Exit 8 as the area currently has nothing to attract traffic.



- A frontage road along US Highway 278 is need to be integrated into the existing roadway network to separate local activity from regional traffic.
- The Master Plan is to integrate former master plans and work in conjunction with Jasper County and City of Hardeeville plans as well as other plans such as Beaufort County and Town of Hilton Head Island plans.
- The Exit 8 interchange itself is a concern as interchange frequently fails during summer weekends.
- If US Highway 278 is widened from four (4) lanes to six (6) lanes then the intersection at Medical Center Drive may have to be re-designed.
- The Town of Bluffton and the Town of Hilton Head Island indicated that a frontage road is a very important aspect, as both of their organizations found later after development occurred. The City of Hardeeville indicated that the CHA Traffic Study dated 2007, included with **Appendix L**, was a frontage roadway study and suggested it be incorporated into the recommendations of the Infrastructure Master Plan.
- The intersection at Coastal Carolina Hospital (Red Dam Road (S-27-94)) is a concern as the school uses this roadway and tourists from Hilton Head Island block access to the roadway during peak traffic sometimes on Mondays and Fridays.

IV. EXISTING SITE EVALUATION

A site visit was conducted by Alliance Consulting Engineers, Inc. personnel in September 2013 to assess the availability of utilities and encumbrances of the Exit 8 Area. The findings of the site visit are included in the following sub-sections.

A. SITE CHARACTERISTICS

Site characteristics play an important role in the development of the Exit 8 Area. Site topography, drainage patterns, soil types, and past and present land use will all affect how the property can be developed. This Master Plan includes a review of present land use on and adjacent to the property, site topography, storm drainage



patterns, environmental and ecological considerations, and other site characteristics that may influence the development of the Exit 8 Area. The following sub-sections summarize a review of the site characteristics.

1. PRESENT LAND USE

The Exit 8 Area consists of approximately 1760-acres primarily bound by undeveloped forested land. Information gathered by Alliance Consulting Engineers, Inc. suggests that the current land use at the Exit 8 Area are comprised of cleared and forested land, small areas of developed area and a several relatively small man-made ponds. These areas are illustrated in the Site Location Map and Aerial Map in **Exhibits B** and **C**.



2. ADJACENT LAND USE

The southeastern boundary of the Exit 8 Area is adjacent to John Smith Road (S-27-141). The Hardeeville Industrial Park is located southwest of the Exit 8 Area. The western boundary is adjacent to US Highway 17. The adjacent land to the northeast, east, and north appears to be comprised primarily of undeveloped rural wooded areas with the exception of the Hardeeville K-12 School located on Red Dam Road (S-27-94). The Adjacent Tract Map in **Exhibit E** shows the location of additional adjacent tracts within the vicinity of the Exit 8 Area.

3. SOIL AND FOUNDATION CONDITIONS

The Soils Map depicted in **Exhibit G** is based on the Soil Conservation Service (SCS) Soil Survey for Jasper County, South Carolina, dated 2010, illustrates that the Exit 8 Area consists of several general soil types. The majority of the site is comprised of Argent (AeD, AnD, AoD, and ArD) Series soils, Bladen (BdC) Series Soils, and Eulonia (EuC and EeC) Series soils. There are smaller



quantities of Cape Fear (Ca), Okeetee (Oe), Santee (Se), and Wahee (Wa) Series soils within the Exit 8 Area. The soils in the Exit 8 Area are generally poorly drained soils with the exception of Eulonia which is moderately well drained. The parent material of the soils in the Exit 8 Area are generally clayey marine deposits with the exception of Wahee and Eulonia which are loamy marine deposits.

4. TOPOGRAPHY

The Exit 8 Area appears to have mild to moderate slopes, sloping away from the interchange as illustrated in the Topographic Map in **Exhibit F**. Elevations range from 5 feet (2 meters) above Mean Sea Level (MSL) near the eastern boundary to approximately 35 feet (11 meters) above MSL near the US Highway 278 and Interstate 95 Interchange. The drainage patterns associated with the Exit 8 Area are represented in the Topographic Banding Map depicted in **Exhibit J**. Highest areas on the site trend towards red and lower sites trend toward blue. Runoff general drains away from the interchange which is the highest point within the site. The runoff discharges into wetlands located north and south of US Highway 278. These wetlands then drain east towards the New River which drains to the Atlantic Ocean.

5. ENVIRONMENTAL AND ECOLOGICAL CONDITIONS

Environmental and ecological conditions could limit the potential for development of the Exit 8 Area. Wetlands, possible historic sites, and protected species located on the property must be identified early in the planning process so that the Master Plan can be further developed to minimize impact



to or mitigate sensitive areas within the Proposed Exit 8 Area. No environmental and ecological conditions are known at this time that could limit development.



The nearest water quality monitoring station that will receive storm water discharges from the Exit 8 Area is MD-118. MD-118 is located in the New River, which intersects SC Highway 170 approximately nine (9) miles west of Bluffton. This station is approximately six (6) miles southeast of the Exit 8 Area. MD-118 is not listed on the 303(d) List for Impaired Waters. A total maximum daily load (TMDL) has not been developed for the station.

6. WETLANDS

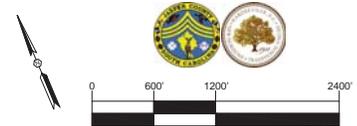


The National Wetlands Inventory (NWI) Map included in **Exhibit H** created from the US Fish and Wildlife Service's Wetlands Mapper indicates potential wetland areas. The map indicates, in green shading, possible wetlands scattered throughout the site. Freshwater Forested Shrub wetlands make up a majority of the wetlands present at the Exit 8 Area in addition to several small freshwater ponds and freshwater emergent areas.

7. FEMA FLOOD AREAS

The Federal Emergency Management Agency (FEMA) Flood Map dated September 19 1986, presented in **Exhibit I**, represents areas which are prone to flooding. A majority of the Exit 8 Area is located within Zone C, which denotes areas of minimal flooding which are outside of the 100-year flood plain. However, some areas are within Zone A, which is located within 100-year floodplain limits. Upon correspondence with SCDHEC, Coastal Stormwater staff did not recall any flooding concerns other than those identified by Jasper County for the Hardeeville Industrial Park south of the Exit 8 Area.

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
SOILS MAP**



+/- 1,760 Acres

ALLIANCE
CONSULTING ENGINEERS
SERVED BY
PALMER CONSULTING ENGINEERS, INC.
INFORMATION FROM
U.S. DEPARTMENT OF AGRICULTURE SOIL
SERIES RECLASSIFICATION DATABASE FOR
JASPER COUNTY, SOUTH CAROLINA
02/2012

GRAPHIC SCALE
DECEMBER 3, 2013

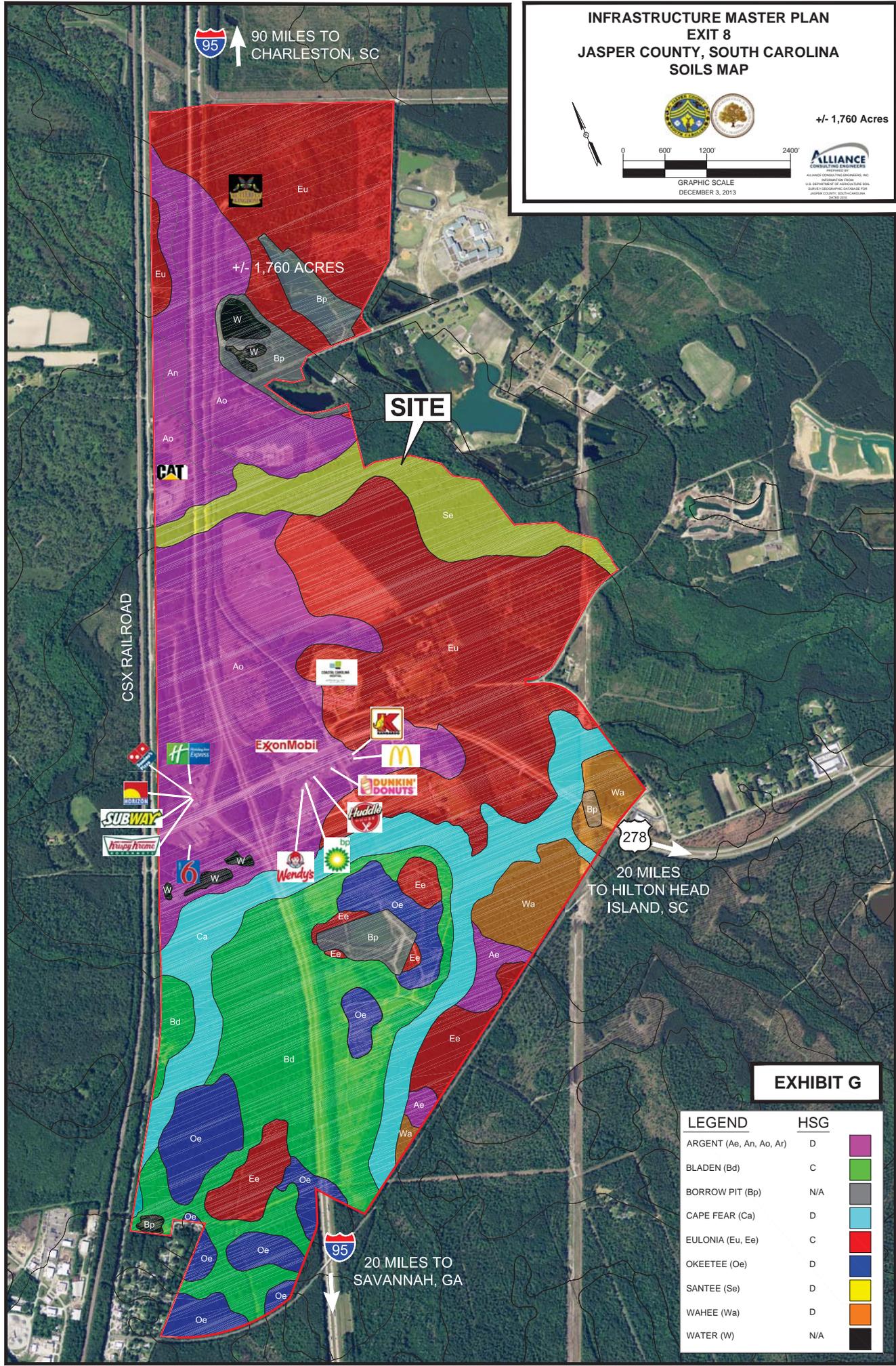


EXHIBIT G

LEGEND	HSG	
ARGENT (Ae, An, Ao, Ar)	D	
BLADEN (Bd)	C	
BORROW PIT (Bp)	N/A	
CAPE FEAR (Ca)	D	
EULONIA (Eu, Ee)	C	
OKEETEE (Oe)	D	
SANTEE (Se)	D	
WAHEE (Wa)	D	
WATER (W)	N/A	

95 ↑ 90 MILES TO CHARLESTON, SC

278 → 20 MILES TO HILTON HEAD ISLAND, SC

95 ↓ 20 MILES TO SAVANNAH, GA

+/- 1,760 ACRES

SITE

CSX RAILROAD

6

Wendy's

CAT

ExxonMobil

McDonald's

McDonald's

Dunkin' Donuts

Dunkin' Donuts

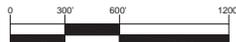
Wendy's

95 ↑ 90 MILES TO CHARLESTON, SC

INFRASTRUCTURE MASTER PLAN EXIT 8 JASPER COUNTY, SOUTH CAROLINA FEMA FLOOD MAP



+/- 1,760 Acres



GRAPHIC SCALE
SEPTEMBER 13, 2013

ALLIANCE
CORPORATE ENGINEERS
PREPARED BY
ALLIANCE GROUP AND ENGINEERS, INC.
CONSTRUCTION TEAM
FEMA FLOOD MAP OUTLINES
PROJECT NO. 13-001
SEPTEMBER 13, 2013

+/- 1,760 ACRES

SITE

CAT

CSX RAILROAD



ExxonMobil



278

20 MILES TO HILTON HEAD ISLAND, SC

95 ↓ 20 MILES TO SAVANNAH, GA

EXHIBIT H

LEGEND

- Zone A - Areas of 100-Year Flood
- Zone C - Areas of Minimal Flooding

INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
FEMA FLOOD MAP

+/- 1,760 Acres



GRAPHIC SCALE
SEPTEMBER 13, 2013



ALLIANCE
CONSULTING ENGINEERS

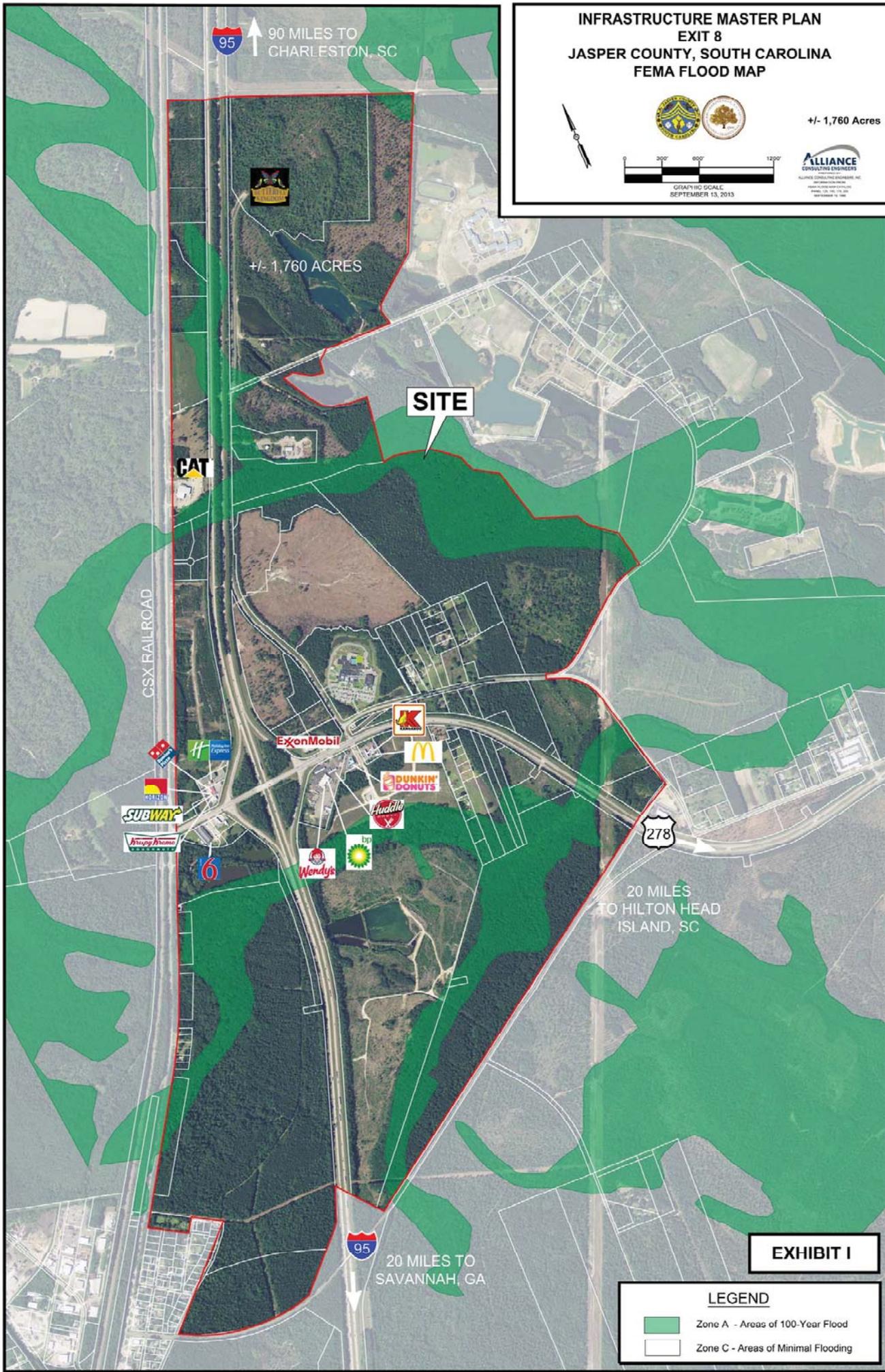


EXHIBIT I

LEGEND

- Zone A - Areas of 100-Year Flood
- Zone C - Areas of Minimal Flooding



8. SITE ACCESS AND VISIBILITY

Access to the Exit 8 Area will be primarily from US Highway 278 which provides a connection between US Highway 17 (Whyte Hardee Boulevard) and Hilton Head Island, SC. US Highway 278 is a four (4)-lane



highway located within the center of the Exit 8 Area. The Exit 8 Area's location along US Highway 278 and Interstate 95 will provide interested businesses and industries visibility from the highway and interstate. Other facilities that do not require or desire visibility from the highway will be able to locate within the interior property sections of the Exit 8 Area. Site access and visibility are important at Exit 8 since many vehicles pass through the area per day and the volume of vehicles has the potential to drive development of the Exit 8 Area. 2012 South Carolina Department of Transportation (SCDOT) average annual daily traffic (AADT) counts for roadways within the area are summarized in **Table B** and includes SCDOT AADT for Roadways within the Exit 8 Area (**Table B**). Note that approximately 23,400 vehicles per day travel US Highway 278 at Medical Center Drive or approximately 8.5 million vehicles annually. In addition Interstate 95 carries approximately 49,600 vehicles per day or approximately 18 million vehicles per year.

INFRASTRUCTURE MASTER PLAN
EXIT 8
IN
JASPER COUNTY, SOUTH CAROLINA
TOPOGRAPHIC MAP



0 300 600 1,200 1,800 2,400
Feet

GRAPHIC SCALE (IN FEET)
DECEMBER 13, 2013

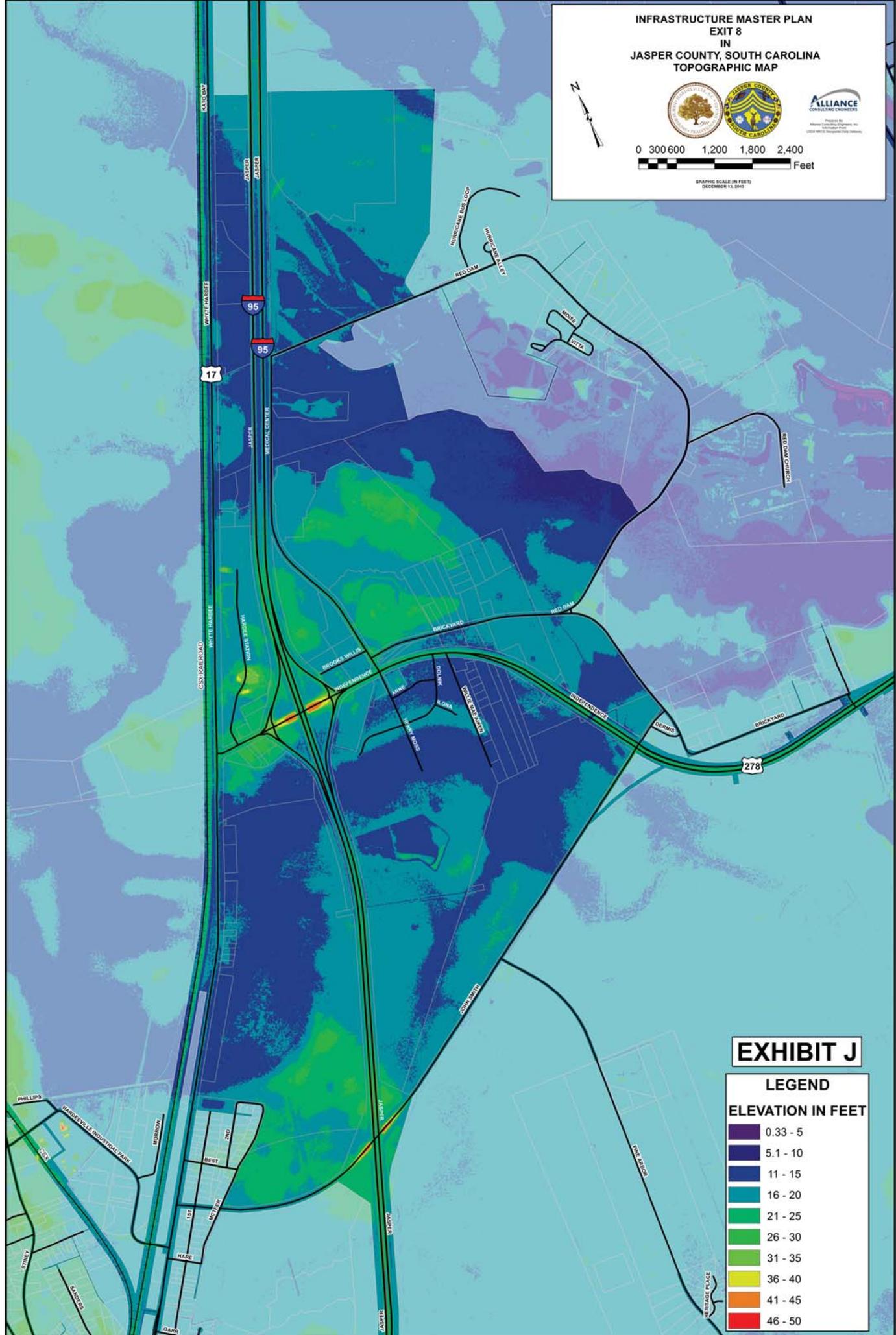


EXHIBIT J

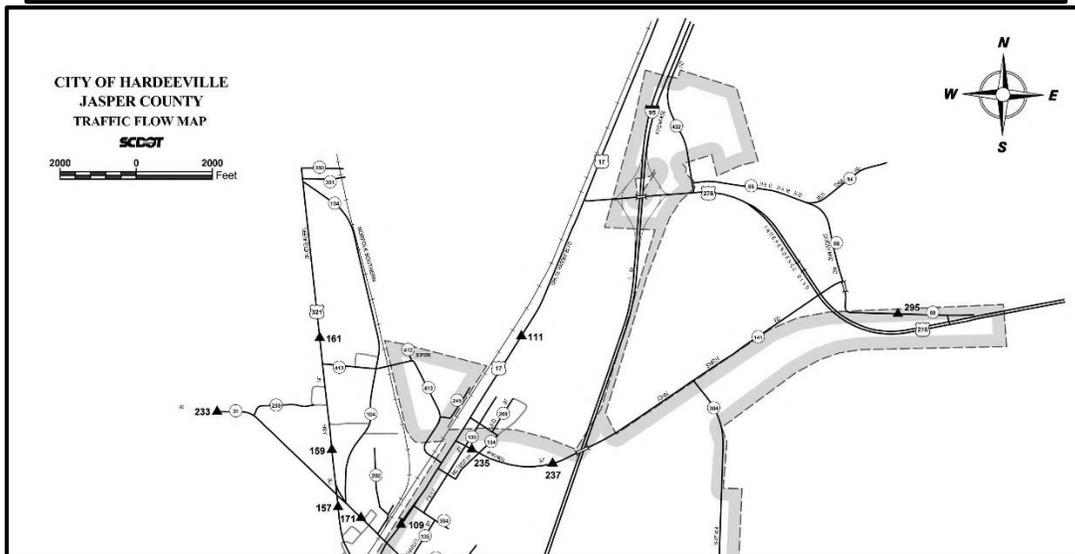
LEGEND
ELEVATION IN FEET

0.33 - 5
5.1 - 10
11 - 15
16 - 20
21 - 25
26 - 30
31 - 35
36 - 40
41 - 45
46 - 50

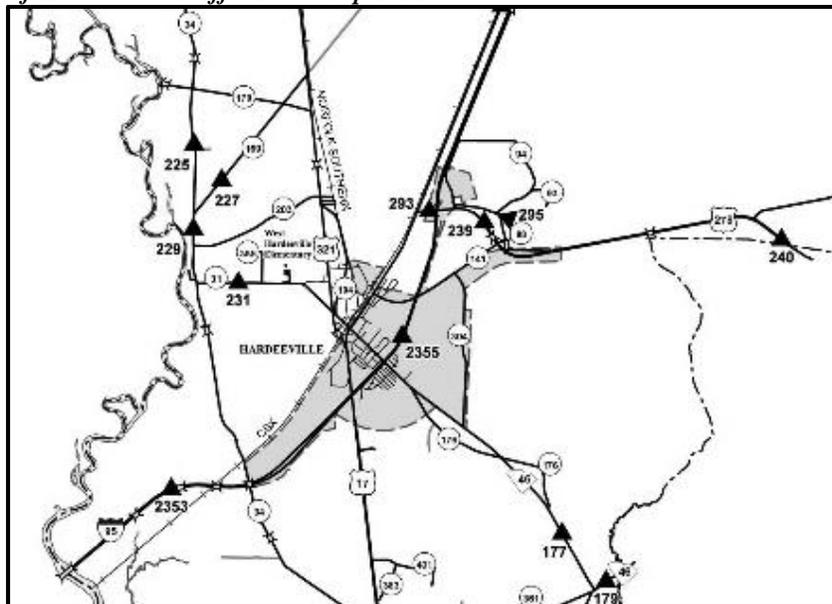


Table B – SCDOT AADT FOR ROADWAYS WITHIN THE EXIT 8 AREA

Route	*SCDOT Station No.	Estimated AADT for Year 2012	Estimated Annual Traffic Per Year
US Highway 17	109	4,300	1,569,500
John Smith Road (S-27-141)	237	4,300	1,569,500
US Highway 278	239	23,400	8,541,000
US Highway 278	145	4,400	1,606,000
Interstate 95	2355	49,600	18,104,000



**SCDOT City of Hardeeville Traffic Flow Map 2012*



**SCDOT Jasper County Traffic Flow Map 2012*



9. COMMUTER ACCESS



Several secondary roads, two (2) major highways and one (1) interstate highway are located within or adjacent to the Exit 8 Area. US Highway 17 is located adjacent to the western border of the Exit 8 Area, and serves as a north-south arterial roadway connecting to Interstate 95. US Highway 278 provides an approximately twenty (20)-mile east-west connection between US Highway 17 and Hilton Head Island, SC. The Exit 8 Area is located at the US Highway 278 and Interstate 95 interchange. The aforementioned highways will also provide access from the multiple communities within a thirty (30)-mile radius of the Exit 8 Area as summarized in the table Cites within a Thirty (30)-Mile Radius of Exit 8 in **Table C**. Among these communities are Savannah, Georgia and Hilton Head Island, South Carolina which have the greatest potential to drive the development of the area. Furthermore, **Table D** Approximate Driving Distances to Major Southeastern Cities lists eleven (11) major cities within a day's drive of the Exit 8 Area. The tourism trade, active in Savannah, Georgia and Hilton Head Island, South Carolina attracts many visitors from these and other cities throughout the Southeastern United States annually.



Table C – CITIES WITHIN A THIRTY (30) – MILE RADIUS OF EXIT 8

Community	Distance	Population
Tybee Island, GA	37 miles	2,990
Ridgeland, SC	13 miles	4,036
Savannah, GA	20 miles	136,286
Hardeeville, SC	2 miles	2,952
Laurel Bay, SC	26 miles	5,891
Pooler, GA	20 miles	19,140
Beaufort, SC	27 miles	12,361
Rincon ,GA	21 miles	8,836
Hilton Head Island, SC	21 miles	37,099
Bluffton, SC	15 miles	12,530
Port Wentworth, GA	16 miles	5,359

**Per 2010 US Census Data*

Table D – APPROXIMATE DRIVING DISTANCES TO MAJOR SOUTHEASTERN CITIES

City	Distance
Charlotte, NC	235 miles
Columbia, SC	140 miles
Florence, SC	160 miles
Augusta, GA	115 miles
Myrtle Beach, SC	210 miles
Charleston, SC	90 miles
Hilton Head, SC	20 miles
Raleigh, NC	305 miles
Savannah, GA	20 miles
Atlanta, GA	260 miles
Wilmington, NC	280 miles
Jacksonville, FL	151 miles





B. AVAILABILITY OF UTILITIES AND ASSOCIATED INFRASTRUCTURE

The availability of utilities and associated infrastructure to Exit 8 aids in determining which businesses and industries will best fit in the overall master plan of the area. This section of the report discusses the existing availability of utilities and services located in the vicinity of Exit 8 including a review of how each will aid in the development of the area.

1. PUBLIC WATER SYSTEM

Potable water service is provided to the Exit 8 Area by the Beaufort-Jasper Water and Sewer Authority (BJWSA). Alliance Consulting Engineers, Inc. project personnel coordinated with Mr. Dick Deuel, P.E. of BJWSA to determine the existing potable water infrastructure serving Exit 8 and the surrounding area. Based on discussions with Mr. Deuel and GIS information provided by Jasper County, existing twenty-four (24)-inch, twelve (12)-inch and eight (8)-inch water mains are located along US Highway 278, Medical Center Drive (S-27-422) and Red Dam Road (S-27-94) as depicted in the Water Utilities Map included as **Exhibit K**. The twenty-four (24)-inch water transmission main yielded a flow of 2,000 gallons per minute (GPM) at 20 pounds per square inch (psi) residual pressure. Similarly, the eight (8)-inch water main yielded a flow of 2682 GPM at 20 psi residual pressure. The existing water supply system has an available excess capacity of approximately 5 MGD to serve potential residential, commercial and industrial developments locating within the Exit 8 Area. Further information received from BJWSA is included in **Appendix B**. BJWSA is willing to serve development which desires to develop within the Exit 8 Area. Monthly water rates for service by BJWSA for Residential, Commercial and Irrigation include a \$6.00 basic facility charge with an additional charge of \$3.46 per 1000 gallons of water consumed. These rate structures are also included in **Appendix C**.



INFRASTRUCTURE MASTER PLAN
EXIT 8
IN
JASPER COUNTY, SOUTH CAROLINA
WATER UTILITIES MAP



GRAPHIC SCALE (IN FEET)
DECEMBER 11, 2015



EXHIBIT K

LEGEND

-  Fire Hydrants
-  Water Main



2. WASTEWATER SERVICE



Beaufort-Jasper Water and Sewer Authority (BJWSA) provides wastewater service to the Exit 8 Area. According to Mr. Dick Deuel, P.E. and GIS information provided by Jasper County, there are existing four (4)-inch, six (6)-

inch and eight (8)-inch force main in addition to eight (8)-inch gravity wastewater line located along US Highway 17, US Highway 278, Medical Center Drive (S-27-422) and Red Dam Road (S-27-94) at the Exit 8 Area as illustrated in the Wastewater Utilities Map in **Exhibit L**. Furthermore according the correspondence with BJWSA in Appendix B, three (3) existing wastewater pumping stations (WWPS) are located within the Exit 8 Area:

- WWPS HD22 located along US Highway 17, north of the intersection with US Highway 278 near Caterpillar.
- WWPS HD04 located along US Highway 17, south of the intersection with US Highway 278
- WWPS HD08 located east of Interstate 95 along Medical Center Drive near US Highway 278.

The force main and gravity lines convey wastewater flows southwest to the Hardeeville Wastewater Treatment Plant. The Hardeeville Wastewater Treatment Plant (WWTP) wastewater system has approximately 0.5 MGD is excess capacity available to serve potential residential, commercial and industrial developments locating within the Exit 8 Area and plans to expand from 1.0 MGD to 4.5 MGD to provide an additional excess capacity. Furthermore, an existing twenty-four (24)-inch force main is available near the eastern extents of the Exit 8 Area. This force main ultimately discharges at the Cherry Point WWTP. The Cherry Point Wastewater Treatment Plant has an excess permitted capacity of 7.5 MGD. The BJWSA has pretreatment requirements for certain types of industrial discharges, and industrial usage should consult with BJWSA for specific requirements.



BJWSA is willing to serve development which desires to develop within the Exit 8 Area. Monthly wastewater rates for service by BJWSA for Residential and Commercial users includes a \$6.00 basic facility charge with an additional charge of \$6.05 per 1000 gallons of water consumed. However, there is a cap of \$48.00 on the monthly bill for residential users. These rate structures are also included in **Appendix D.**

INFRASTRUCTURE MASTER PLAN
EXIT 8
IN
JASPER COUNTY, SOUTH CAROLINA
WASTEWATER UTILITIES MAP



0 295 590 1,180 1,770 2,360
Feet

GRAPHIC SCALE (IN FEET)
DECEMBER 13, 2013



EXHIBIT L

LEGEND

- Wastewater Pump Stations
- Wastewater Manholes
- Wastewater Lines



3. ELECTRICAL SERVICE

South Carolina Electric and Gas (SCE&G) and Palmetto Electric Cooperative currently provide electrical service to the Exit 8 Area.



According to Mr. Parks Moss with SCE&G, there is currently an electrical distribution circuit operating at twenty-three (23)-kilovolts (kV) at the Exit 8 Area. SCE&G territory encompasses portions of Exit 8 Area south of US Highway 278 as shown in the Electric Utilities Map in **Exhibit M**. SCE&G is confident that any additional electric requirements by potential locating residential, commercial, or industrial are can be met by SCE&G, based on the proposed uses. Should underground distribution be requested, the developer will be responsible for the cost of conduit and ground mounted transformers. SCE&G's electric service rates may be found in **Table E** SCE&G Electric Rate Schedule and in **Appendix E**. It should be noted that service voltage and phase provided to the end user are determined by the demands of the end user as shown in **Appendix E**. Non-standard services, such as underground services, will be furnished only when the customer pays the difference in costs between non-standard service and standard service or pays SCE&G the normal monthly facility charge based on such difference in costs.

INFRASTRUCTURE MASTER PLAN
EXIT 8
IN
JASPER COUNTY, SOUTH CAROLINA
ELECTRIC UTILITIES MAP



GRAPHIC SCALE (IN FEET)
DECEMBER 11, 2015



EXHIBIT M

LEGEND

-  SCE&G Territory
-  Palmetto Elec. Coop Territory



Table E – SCE&G: RATE SCHEDULE

Schedule	Base Facility	Demand Charge (per KW)	Energy Charge All kWh (¢ per kWh)
	Charge per meter per month		
Low Use Residential Service	\$9.50	\$0.00	9.536¢
Municipal Power Service	\$20.25	\$0.00	10.730¢
Residential Service Time of Use			
Summer Months of June-September On-Peak	\$13.50	\$0.00	29.363¢
Summer Months of June-September Off-Peak		\$0.00	9.739¢
Winter Months of October-May On-Peak		\$0.00	26.429¢
Winter Months of October-May Off-Peak		\$0.00	9.739¢
Residential Service Energy Saver/Conservation Rate			
First 800 kWh	\$9.50	\$0.00	12.347¢
Excess over 800 kWh		\$0.00	11.848¢
Residential Service Time-of-Use Demand			
On-Peak Demand Summer Months of June-September	\$13.50	\$10.99	9.294¢
On-Peak Demand Non-Summer Months of October-May		\$7.93	9.294¢
Off-Peak Billing Demand		\$0.00	7.844¢
Residential Service			
First 800 kWh (Summer - June to September)	\$9.50	\$0.00	12.844¢
Excess over 800 kWh (Summer - June to September)		\$0.00	14.137¢
First 800 kWh (Winter - October to May)		\$0.00	12.844¢
Excess over 800 kWh (Winter - October to May)		\$0.00	12.326¢
General Service			
First 3000 kWh (Summer - June to September)	\$20.25	\$3.56 per KVA over 250 KVA	12.360¢
Excess over 3000 kWh (Summer - June to September)		\$3.56 per KVA over 250 KVA	13.225¢
First 3000 kWh (Winter - October to May)		\$0.00	12.360¢
Excess over 3000 kWh (Winter - October to May)		\$0.00	11.620¢
Municipal Lighting Service	\$20.25	\$0.00	9.958¢
General Service Time of Use			
On-Peak Summer (June-September)	\$23.90	\$0.00	23.413¢
On-Peak Winter (October-May)		\$0.00	17.741¢
Off-Peak - First 1,000 kWh		\$0.00	9.236¢
Off-Peak - Excess of 1,000 kWh		\$0.00	9.713¢
Medium General Service			
First 75,000kWh	\$185.00	17.54 per KVA (all KVA)	5.545¢
Excess of 75,000kWh			5.168¢
General Service Time-of-Use Demand			
On-Peak Summer (June-September)	\$200.00	\$22.28 per KVA	9.741¢
On-Peak Non-Summer (October-May)		\$14.83 per KVA	6.741¢
All Off-Peak		\$4.18 per KVA	4.952¢
Industrial Power Service	\$1,925.00	\$14.76	5.037¢
Large General Service			
On-Peak Summer (June-September)	\$1,925.00	\$17.75	8.340¢
On-Peak Non-Summer (October-May)		\$12.42	6.033¢
All Off-Peak		\$5.38	4.630¢
Small General Service Time of Use Demand			
On-Peak Summer (June-September)	\$23.90	\$18.42	11.278¢
On-Peak Non-Summer (October-May)		\$11.51	11.278¢
All Off-Peak		\$3.68	8.623¢

*Definitions of Off Peak, Shoulder and On Peak Demand, Holidays, and other details available in Appendix X



According to Mr. Tim Hutchinson, System Engineer with Palmetto Electric Cooperative, 7.2/12.47 kV distribution lines currently serve the

Exit 8 Area. Furthermore, Palmetto Electric Cooperative has an electric substation located approximately 1-mile from the Exit 8 Area. Palmetto Electric territory encompasses portions of Exit 8 Area north of US Highway 278 as shown in the Electric Utilities Map.

Palmetto Electric is willing to serve developments locating to the Exit 8 Area and will upgrade to meet any warranted additional requirements by potential locating residential, commercial, or industrial entities. If the distribution system is to be underground, Palmetto Electric designs it to be a looped system. Palmetto Electric has different policies and agreements for different types of electric service starting at “Single Phase Overhead Service to Permanent Establishments” to “Multi-family” to “Underground Service to large Commercial and Industrial Establishments,” which are negotiated individually. If a line extension will not generate enough revenue to cover the installation costs, then Palmetto Electric may require a contribution in aid to construction. Furthermore, with installation of underground facilities Palmetto Electric is entitled to collect an aid-to-construction charge for their installation. However, there are marketing programs offered by Palmetto Electric with incentives to offset the aid-to-construction charges. It should be noted that Palmetto Electric’s policies were under review at the time this master plan was prepared and may change. Also, it should be noted that Palmetto Electric does not own any transmission lines. However if a load warrants construction of transmission lines, Palmetto Electric can get their wholesale provider Central Electric Cooperative involved. Easements will be required by Palmetto Electric Cooperative to expand it facilities. Palmetto Electric Cooperative is due to release new rate schedules January 2014, these rates may be found in **Table F** Palmetto Electric Cooperative Rate Schedule and in **Appendix E**.

Electric distribution lines are located near the eastern boundary of the Exit 8 Area and cross US Highway 278 and run in a northerly/southerly direction. These



distribution lines and their associated easements may limit development in their area.

Table F – PALMETTO ELECTRIC COOPERATIVE: RATE SCHEDULE

Schedule	Facility Charge	All kWh (¢ per kWh)
Residential*	\$17.00	10.89¢
Small General Service*	\$17.00	11.30¢
Large Power Service	<i>Rates available upon request</i>	
Outdoor Lighting	<i>Rates available upon request</i>	
Commercial Time of Use	<i>Rates available upon request</i>	
Net Metering Service	<i>Rates available upon request</i>	
Residential Time of Use*†		
On-Peak Energy Usage (June to September)	\$20.50	24.55¢
On-Peak Energy Usage (October to May)		23.00¢
Off-Peak Energy Usage		7.330¢
*Power Cost Adjustment		
These rates may be increased or decreased by 0.0001¢ per kWh for each 0.0001¢ by which the Cooperative's average purchase power cost per kWh sold exceeds or is less than 8.40¢ per kWh.		
†Definition of On-Peak and Off-Peak Usage Hours		
On-Peak Energy Usage shall be the kilowatt-hours (kWh) used by the consumer, during the following time intervals for Monday through Saturday, excluding holidays, of each month:		
May-September	3:00P.M. to 8:00 P.M.	
October-November and March-April	6:00 A.M. to 10:00 A.M. & 3:00 P.M. to 8:00 P.M.	
December-February	6:00 A.M. to 10:00 A.M.	
Holidays are defined to be New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.		
Off-Peak energy usage shall be the kilowatt-hours used by the consumer during all hours not defined as On-Peak as specified above.		

4. TELECOMMUNICATIONS SERVICE



Hargray Communications provides telecommunications services to the Exit 8 Area. According to Mr. Frankie Denmark, Director of Developer/POA/HOA Relations, telecommunication lines are located at the Exit 8 Area. Fiber optic, copper and coax distribution, and telephone cables are currently available at the Exit 8 Area as shown in the Telecommunications Utilities Map included as **Exhibit N**. Hargray is willing to expand infrastructure to serve the Exit 8 Area. New infrastructure will



be fiber optic. Therefore, the location and size of the current fiber optic cable has been provided by Hargray in the Telecommunications Map depicted in **Exhibit N**.

5. NATURAL GAS SERVICE

Natural gas service is provided to the Exit 8 Area by South Carolina Electric and Gas (SCE&G). According to Mr. Parks Moss, with



SCE&G, a six (6)-inch natural gas distribution line is located at the Exit 8 Area. Gas service is currently available at the Coastal Carolina Hospital, Holiday Inn Express and Hardeeville Industrial Park. SCE&G has expressed its willingness to serve and expand service as necessary to serve the Exit 8 Area. Due to National Security concerns an exact location of the gas distribution main could not be acquired however SCE&G anticipates that the existing main will be able to serve the demands of the Exit 8 area at build out. Furthermore SCE&G will provide an additional six (6)-inch distribution main parallel to the existing main if necessary. SCE&G’s gas service rates may be found in **Table G - SCE&G Gas Rate Schedule** and in **Appendix F**. It should be noted that a weather normalization adjustment applies to the General Service and Medium General Service gas rate schedules.

Table G – SOUTH CAROLINA ELECTRIC AND GAS: GAS RATE SCHEDULE

Schedule	Facility Charge per meter per month	Monthly Demand Charge	Commodity Charge (\$ per therm)
General Service			
November - April	\$22.06	\$0.00	\$0.98717
May - October	\$17.89	\$0.00	\$0.98717
Large General Service			
First 50 dekatherms	\$0.00	\$589.00	\$0.61700
Excess over 50 dekatherms	\$0.00	\$7.93	\$0.61700
Medium General Service	\$28.65	\$0.00	\$0.93717
*Additional information and terms included in Appendix F			

INFRASTRUCTURE MASTER PLAN
EXIT 8
IN
JASPER COUNTY, SOUTH CAROLINA
TELECOMMUNICATIONS UTILITIES MAP



GRAPHIC SCALE (IN FEET)
DECEMBER 11, 2015



EXHIBIT N

LEGEND

 Fiber Optic



6. ZONING, RIGHTS-OF-WAY, AND EASEMENTS

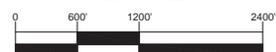
Both Jasper County and the City of Hardeeville have zoning jurisdiction over the Exit 8 Area. A map depicting the zoning of the Exit 8 Area is included in **Exhibit O –Zoning Map**. The zoning map was compiled using the City of Hardeeville Municipal Zoning and Development Ordinance Map dated January 2013 and the Jasper County Zoning Map updated January 9, 2009. The complete Jasper County Zoning Ordinance can be found within **Appendix G**. The complete City of Hardeeville Zoning Ordinance can be found within **Appendix H**. Readily available plats were consulted from Jasper County for wetlands and easement information, these plats are included in **Appendix I**.

Readily available SCDOT rights-of-way were obtained for Red Dam Road (S-27-88), US Highway 278 and Interstate 95, and John Smith Road (S-27-141) via SCDOT Plans Online and are included in **Appendix J**.

Beaufort-Jasper Water and Sewer Authority owns a twenty-five (25)-foot wide easement which traverses east/west north of the US Highway 278 and Interstate 95 interchange. Multiple ingress/egress easements are located throughout the Area. In addition to these easements, the SCDOT also owns rights-of-way associated with US Highway 17, US Highway 278, Red Dam Road (S-27-94), Medical Center Drive (S-27-422), John Smith Road (S-27-141), and Interstate 95. For other property specific information, it is recommended that individual property owners obtain their own ALTA/ACSM Class A Boundary Survey, as available information was limited to several developed and planned to be developed tracts within the Exit 8 Area.

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
JASPER COUNTY AND CITY OF HARDEVILLE
ZONING MAP**

+/- 1,760 Acres



GRAPHIC SCALE
December 3, 2013



95 ↑ 90 MILES TO CHARLESTON, SC

+/- 1,760 ACRES

SITE

CAT

CSX RAILROAD

6

278

20 MILES TO HILTON HEAD ISLAND, SC

95 ↓ 20 MILES TO SAVANNAH, GA

JASPER COUNTY ZONING LEGEND

- RESOURCE CONSERVATION
- GENERAL COMMERCIAL
- RESIDENTIAL
- RURAL PRESERVATION
- COMMUNITY COMMERCIAL
- I-95
- MAJOR ROADS
- LOCAL ROADS

CITY OF HARDEVILLE ZONING LEGEND

- PLANNED DEVELOPMENT DISTRICT
- DOWNTOWN MIXED USE
- DOWNTOWN GENERAL COMMERCIAL
- GENERAL COMMERCIAL
- HIGHWAY COMMERCIAL
- LIMITED INDUSTRIAL
- SINGLE FAMILY RESIDENTIAL 2
- MULTI-FAMILY RESIDENTIAL
- COMMUNITY PRESERVATION
- RURAL AGRICULTURAL
- SCHOOLS

EXHIBIT O



7. TRANSPORTATION SYSTEM

The Area is accessible from US Highway 278 (Independence Boulevard) which is a four (4)-lane highway with each lane measuring twelve (12)-feet in width. US Highway 278 is a heavily traveled road with no known safety hazards. Due to the traffic volumes of approximately 23,400 vehicles per day average annual daily traffic along US Highway 278 as stated in **Table B**, it is recommended that a traffic study be conducted on the section of US Highway 278 located near the Exit 8 Area to assess the need for roadway improvements to accommodate the proposed development. The US Highway 278 interchange with Interstate 95 is located at Exit 8, Interstate 16 is located approximately twenty-one (21)-miles southwest of Exit 8, and Interstate 26 is located approximately seventy-seven (77)-miles northeast of Exit 8.

At the Exit 8 Master Planning Stakeholder Meeting, September 17, 2013, a citizen indicated that she was concerned with the intersection at Coastal Carolina Hospital (Red Dam Road (S-27-94)) as the school uses this roadway and tourists from Hilton Head Island block access to the roadway during peak traffic sometimes on Mondays and Fridays.

At the Exit 8 Master Planning Regional Planners Meeting, September 18, 2013, the Town of Bluffton and the Town of Hilton Head Island indicated that a frontage road is a very important aspect, as both of their organizations found later after development occurred. The City of Hardeeville indicated that the CHA Traffic Study dated 2007, included with **Appendix L**, was a frontage roadway study and suggested it be incorporated into the recommendations of the Infrastructure Master Plan.

The Joint Hardeeville and Jasper County Planning Commission at the meeting held October 8, 2013, expressed concern about the additional traffic potentially generated by the build out of the Exit 8 Area. Specifically the Exit 8 interchange itself was a concern as the Commission stated that the interchange frequently fails during summer weekends. Furthermore, the Commission



expressed concern for the addition of three (3) proposed traffic signals to the existing (1) signal. The Commission stated that if US Highway 278 is widened from four (4) lanes to six (6) lanes then the intersection at Medical Center Drive may have to be re-designed.

Mr. Mark Lester with the SCDOT has indicated that there are no improvements currently scheduled for Exit 8 or Interstate 95 within the Exit 8 Area. Furthermore, the widening of US Highway 278 in the Exit 8 Area is currently listed as a need on the Low Country Council of Governments long range plan, but it remains unfunded due to financial constraint. It is the opinion of SCDOT that the intersection of proposed roadway at US 278 between the interchange ramps and US Highway 17 be eliminated from the plan. Furthermore, existing businesses are opposed to removing existing curb cuts to better facilitate the intersection at this time.

In general, SCDOT recommends that access for each development within the Exit 8 Area be developed in accordance with the ARMS manual and the site generated traffic should be studied in accordance with the ITE Traffic Impact Analysis for access and infrastructure components to mitigate traffic impacts.

8. RAIL SYSTEM

CSX owns a rail line along the eastern boundary of the Exit 8 Area. The rail rating is 286,000 pounds and will need a main line switch, load track, and rail spur to be used by locating industries and is primarily accessible only on the western side of Interstate 95 at this time.



V. CONCEPT MASTER PLAN:

The I-95 and US Highway 278 interchange (Exit 8) in Hardeeville, South Carolina is considered one of greatest economic development opportunities in the Lowcountry. Approximately 2.5 million travelers use this exit to visit Hilton Head Island every year and approximately 29 million travelers pass by this exit every year along Interstate 95. All four quadrants of this interchange (“Exit 8 Study Area”)-which total approximately 1,760-acres contain large amounts of undeveloped land. In order to better understand the potential of this area, Jasper County Council and the City of Hardeeville authorized ROI and Alliance Consulting Engineers, Inc. to conduct a comprehensive analysis of Exit 8 to identify ways that Jasper County, City of Hardeeville and other municipalities can improve the visual appearance of the exit as well as stimulate economic development interest at this exit. The resulting analysis, exhibits and plans included in this report are intended to serve as a visioning document that can be used to help guide and shape the future growth and development of this interchange.

1. IMPROVING THE EXIT 8 EXPERIENCE AND CREATING A SENSE OF ARRIVAL:

Despite the distinction of being known as “The Gateway to the Lowcountry”, Exit 8 lacks any sense of arrival or aesthetic identity. One goal of the Exit 8 Master Plan process was to identify several practical strategies whereby Jasper County and the City of Hardeeville (in partnership with other municipalities) can enhance the visual attractiveness of Exit 8 and essentially brand this interchange. Among these strategies are two (2) conceptual beautification plans to be executed consecutively.

- **Conceptual Beautification Plan I Summary:** The Exit 8 interchange has several existing assets that can be utilized or enhanced to begin to create a stronger sense of arrival for visiting travelers. The first Conceptual Beautification Plan highlights four (4) of these existing assets and illustrates how they can be enhanced. The first existing asset are the uniformly spaced light poles found running along the right



edge of all four ramps as well as along both sides of US Hwy 278 between the northbound and southbound ramps. The uniform spacing and slender design of the cobra light fixtures create the opportunity for introducing banners along all four ramps to communicate a message to travelers. The banners along the off-ramps can be used to welcome travelers while the banners along the on-ramps can be used to thank travelers for visiting. The light fixtures can be further enhanced by painting them a dark color (like the light fixtures at Exit 5) to help provide a nice contrast to the banners. The second asset that can be utilized and enhanced are the large concrete medians found at the end of both off-ramps. Subject to SCDOT approval, the front portion of these medians might be able to be used for a monument sign welcoming travelers to the area. The third existing asset that can be used to enhance Exit 8 are the wide shoulder areas along both sides of the US Hwy 278 overpass. The wide shoulder areas can be used to create a dedicated bike/pedestrian path crossing I-95; which is a stated goal of the City of Hardeeville's Comprehensive Plan. The addition of a dedicated bike/pedestrian path would require the addition of a railing along the top of the existing concrete barriers. The fourth existing asset that can be utilized or enhanced are the tree-covered medians (between ramp and interstate). Once, pruned and cleaned up, these trees create an attractive setting for ornamental perennial, shrub, and understory tree plantings. These trees can also serve as an attractive backdrop to a future pond/water feature and fountain in the north and southbound off-ramp medians.

- **Conceptual Beautification Plan II Summary:** The second Conceptual Beautification Plan highlights areas at the Exit 8 interchange that can be enhanced with ornamental landscaping and selective clearing. The first of four (4) planting opportunities highlighted on the plan include ornamental perennials located at the tips of the internal (on and off-ramp) medians and along the edges of a future pond feature. While these areas are highly visible, they are viewed by those traveling at a high rate of speed; therefore flower color is more important than plant detail. The plants should be of a lower maintenance variety like daylilies, canna lilies, and daffodils. The second planting opportunity highlighted on the plan is the naturalizer



shrubs and flowering understory trees. These areas are found along the edge of the existing tree line within the internal medians. As these tree lines are cleaned up, shade tolerant flowering shrubs like azaleas and flowering understory trees like dogwood and redbud can be introduced to create a more attractive environment. The third planting opportunity highlighted on the plan are the ornamental grasses and perennial beds. These areas are located at highly visible corners of the interchange where traffic is either stopped or moving at a slower rate of speed. These areas serve as focal points and important visual transitions and should consist of plants with great color, texture and variety like lantana, black-eyed susans, lavender, muhly grass, red switch grass, and pennisetum. Serving as a backdrop to the ornamental grasses and perennial beds is the fourth planting category on the plan-the ornamental shrubs and trees. These planting areas are also proposed for the base of the bridge, along the edge of US Hwy 278 between the northbound and southbound ramps, as well as along the outside edge of the on and off ramps. Ornamental shrubs should consist of hardy yet colorful plants like loropetalum, bottlebrush and knock-out roses and ornamental trees should consist of crape myrtles and cabbage palms. Where heavier buffering is needed to screen existing parking lots, service areas, etc., wax myrtles and red cedars should be considered. Adding ornamental shrubs and trees at the base of the I-95 overpass will help create a strong visual impression for people traveling past this exit on I-95, reminding them to visit next time they're passing through the area.

2. CONCEPT PLAN NARRATIVE:

The Exit 8 Concept Plan encompasses approximately 1,760-acres and includes suggested land use designations and a suggested road network reflective of previously initiated traffic studies and road improvement recommendations. The conceptual road cross-sections included on the Concept Plan include designated sidewalks and bike lanes on both sides of the proposed roadways. The four (4) study areas highlighted on the Concept Plan are areas that were master planned in more



detail to be used as a marketing tool for attracting prospective retail, restaurant, hotel and shopping center developers to Exit 8. The following land uses are suggested for the Study Area:

- **Highway Mixed Use:** The Highway Mixed Use category is intended to provide properties that are located adjacent to designated highway corridors with flexibility in high intensity, commercial land uses. These uses might include restaurants, lodging, retail stores, and other regionally significant uses. The Highway Mixed Use designation is directed along the Highway 278 Corridor and the Exit 8 interchange area specifically and away from areas designated as residential or industrial in order to avoid conflicts.
- **Commercial Mixed Use:** The Commercial Mixed Use category is intended to serve as a transitional zoning district providing those properties that abut Highway Mixed Use areas both retail/commercial uses, with some residential uses as well. Uses within this district are predominantly commercial in character and include commercial service, commercial retail, office, professional services. Residential uses might include garden apartments, townhouse developments or institutional housing such as assisted living.
- **Residential Mixed Use:** The Residential Mixed Use category is intended to serve as a district that is predominantly residential in character with some opportunities for non-residential uses. Residential uses shall include both high and moderate density attached housing as well as institutional and detached housing. Located on the perimeter of the Exit 8 planning area, the Residential Mixed Use Category provides an option for additional housing choices in Hardeeville and Jasper County.
- **Industrial Mixed Use:** The Industrial Mixed Use category provides a location for those non-residential uses to locate in close proximity to the highway and interstate corridors without creating incompatibility concerns with commercial and residential mixed use areas. The Industrial Mixed Use District is located to provide access to designated roadways and enough territory to incentivize larger industrial, manufacturing or those uses that are more intense.



- **Institutional Mixed Use:** The Institutional Mixed Use district is centered on the existing regional medical center and is intended to provide a clearly demarcated zone for additional medical, medical office or medical retail oriented uses. This district creates a transitional zone between commercial and residential areas and incorporates important inter-parcel connectivity.
- **Special District:** The Special District category is reserved for those uses that require a specialized planning approach to complex and/or comprehensive uses. Planned Developments shall be located within these special districts. These districts may have residential, commercial, lodging, or other non-industrial uses. An open space and recreational component shall accompany specific planned developments within this district.

The four (4) “Study Areas” were chosen within the Exit 8 corridor because of their ideal location, potential for immediate development and ability to offer a mix of possible land uses. These properties have been identified as the “low hanging fruit” of Exit 8, where existing zoning and infrastructure are in-place or available and the properties are actively being marketed for sale. The idea is to use these detailed master plans to attract prospective retail, restaurant, hotel and shopping center developers to the Exit 8 Area.

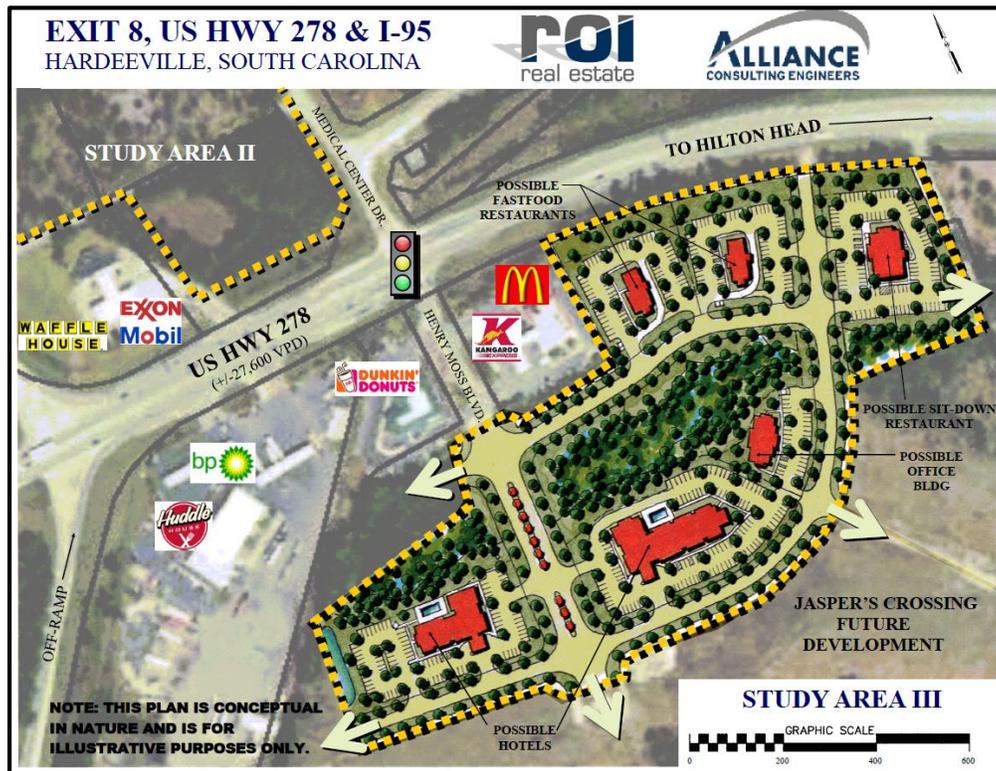
Study Area I (Hardee Station): The conceptual master plan for this portion of Hardee Station PDD includes a grand entryway into the site. The grand entryway helps consolidate the existing access points off of Highway 278 (Refer to US Hwy 278 Curb-cut Study Exhibit) creating a better entry design and customer experience for the Holiday Inn Express hotel as well as the existing restaurant/ Horizon convenience store. Proposed uses within the study area include a hotel and sit-down restaurant. A sit-down restaurant has been recognized by existing hotel owners and prospective hotel developers as an important asset that is presently missing at Exit 8. The parking lot for the proposed hotel located behind the Holiday Inn Express was redesigned and a pond was added to serve as a focal feature and detention pond for the hotels.



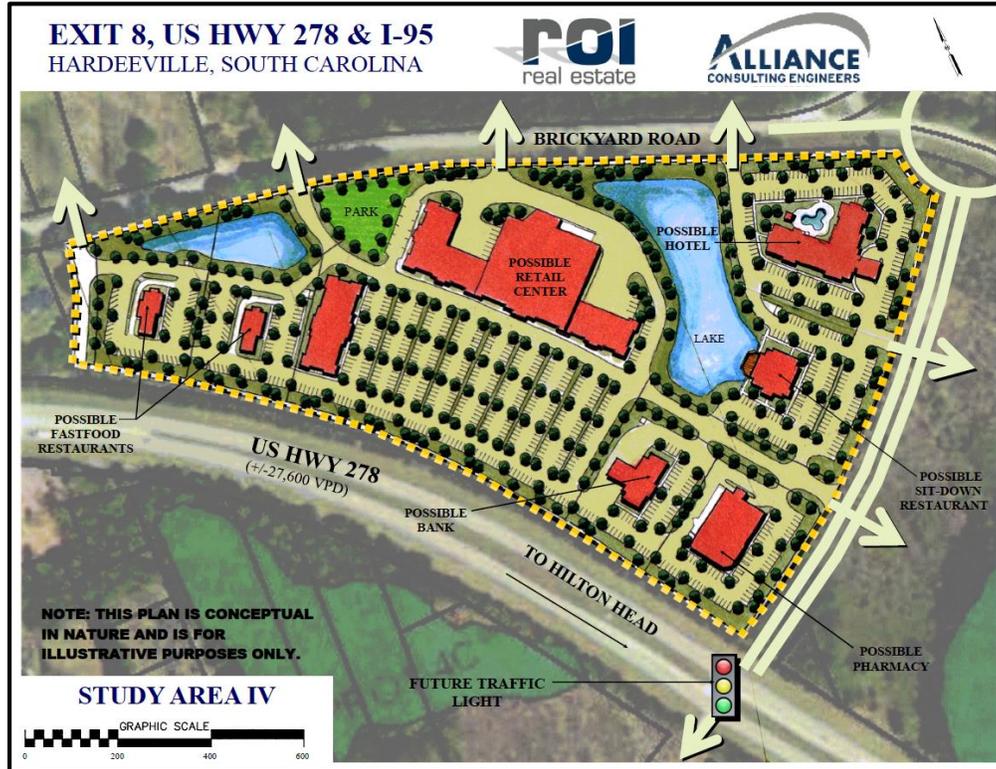
Study Area II (Northeast Quadrant): The conceptual master plan for the northeast quadrant focused on the creation of a connected road network to facilitate inter-parcel connectivity. Land uses were selected for the parcels that are synergistic with the Coastal Carolina Hospital (hotel, pharmacy, medical offices). This plan also demonstrates how four separate parcels (with four separate parcel owners) can be master planned in a comprehensive manner so that all the property owners benefit from shared access drives and shared storm water detention. The plan features a pharmacy, medical office complex, lodging, and a sit-down restaurant.



Study Area III (Phase I, Jasper’s Crossing): The conceptual master plan is an illustrative representation of the front part of Jasper’s Crossing. This plan pays close attention to connectivity both internally and externally and provides for an east/west reverse frontage road designed to take pressure off of US Highway 278. The wetlands are preserved and used as a focal point for the two proposed lodging opportunities. The plan includes two fast food restaurants and a sit-down restaurant on the three outparcels fronting US Highway 278 and a small-scale retail or office building is shown on the second row outparcel.



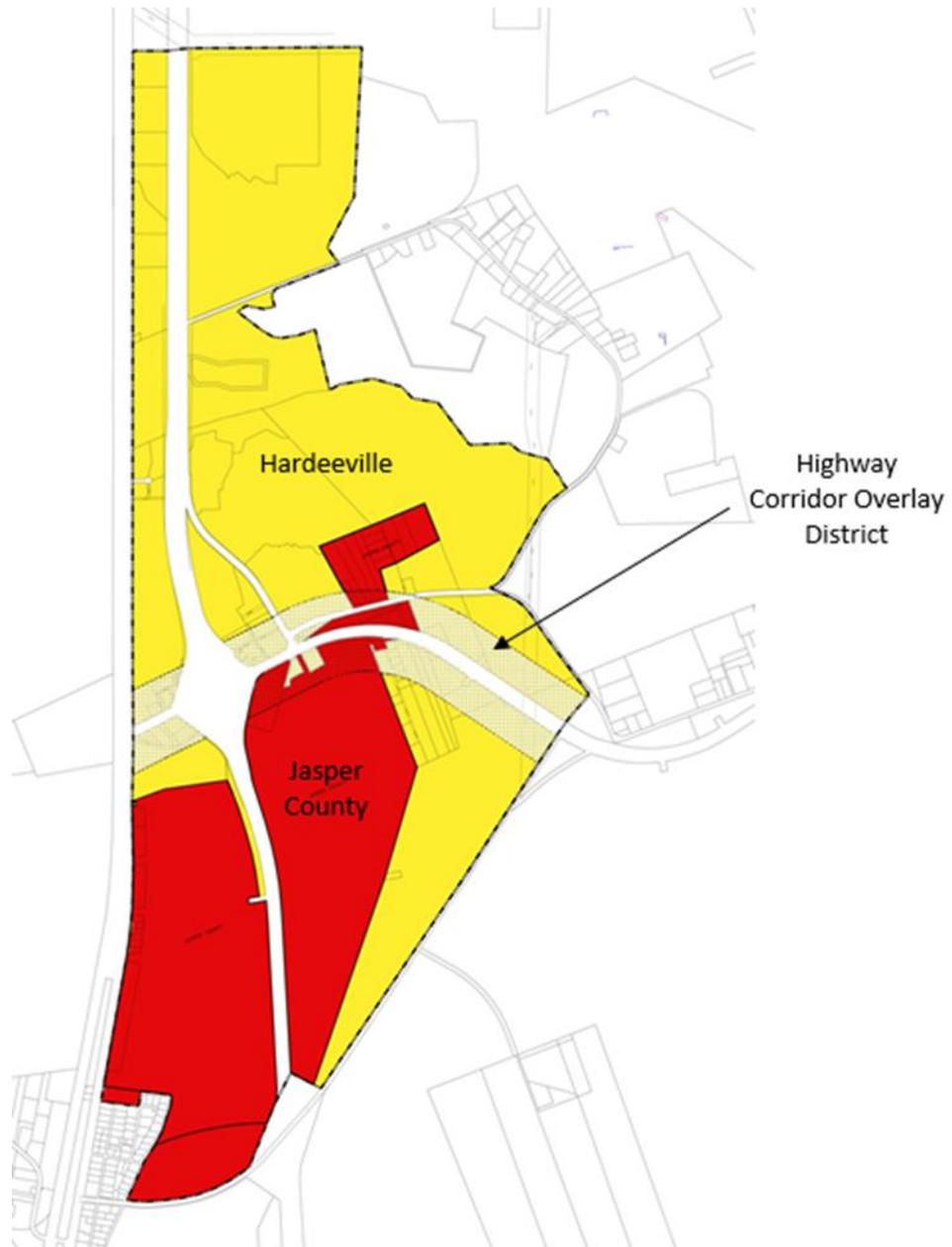
Study Area IV (Possible Shopping Center Site): The conceptual master plan consists of one large consolidated parcel and several smaller out parcels. Together, they were used to create a community retail shopping center as this study area is located within close proximity to several existing residential communities within the Exit 8 study area. This study area is also the farthest from Interstate 95. Consequently, the land uses will be less interstate specific and more neighborhood/community retail in nature. This site serves as a gateway location to points north and east as this site is located along the future north/south collector road intended to serve the northern portion of Hilton Head Lakes. The plan includes a grocery anchored retail center, stand-alone pharmacy, hotel, several restaurants including a larger sit-down restaurant and includes a pocket park along Brickyard Road across from an existing residential neighborhood.



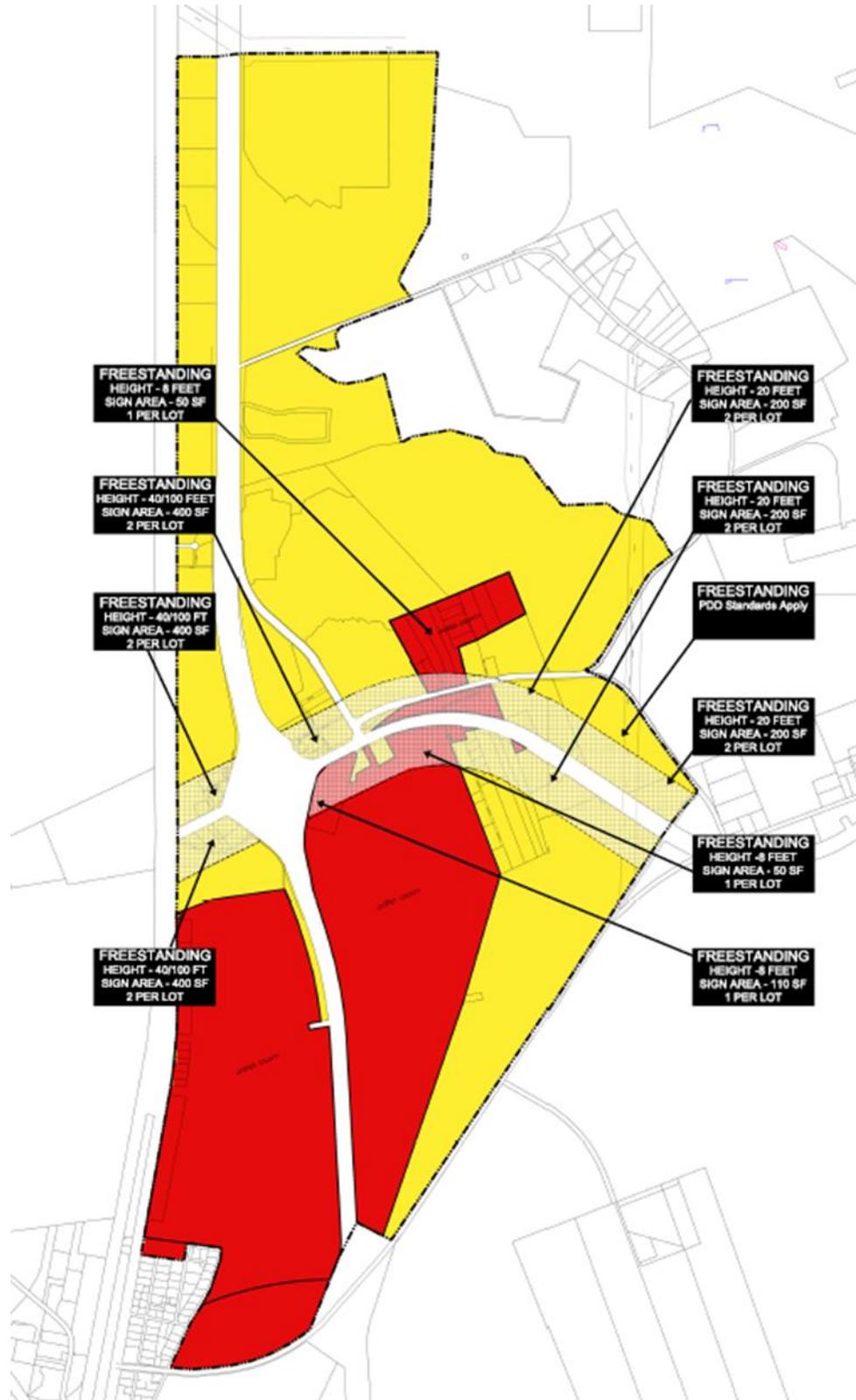
3. HIGHWAY CORRIDOR OVERLAY DISTRICT COMPARISON:

A comparison of the Zoning and Highway Corridor Overlay District Standards between the Town of Hardeeville and Jasper County identifies both successes and areas for improvement.

Section 8:5 establishes specific standards for development within the designated highway corridors within the jurisdiction of Jasper County. Article 2 of the City of Hardeeville’s Municipal Zoning and Development Standards Ordinance establishes specific standards for development within designated highway corridors as well. The map below shows the property that falls within each jurisdiction. The map shows that both Jasper County and Hardeeville have territory along Highway 278. The shaded area indicates the area that is addressed by the specific highway corridor overlay district standards.



Though each jurisdiction has a specific approach to regulating activities within a highway corridor, there are notable differences between the two. For example, the City of Hardeeville only requires a 25 foot vegetated buffer where as Jasper County requires a minimum of 50 feet.





Given the interwoven relationship of properties within the Exit 8 planning area, it would seem to make sense to possibly merge regulatory aspects associated with activities within a designated highway planning area. The Beaufort County approach to a unified Highway Corridor beautification offers important lessons. In cooperation with the municipalities of Beaufort County, joint Highway Corridor Review Boards were established with the intent to coordinate appearance in a unified way.

The comparison table, **Table H**, outlines the specific standards for each area of coverage within the HCOD. The table also includes a column indicating the specific standard provided by Beaufort County for reference.



Table H – HCOD COMPARISON TABLE

Comparison	Hardeeville	Jasper County	Beaufort County
Highway Corridor			
Code Reference	Article 2 (2.4H)	Article 8:5	Appendix B (ZDSO)
Applicability	500ft from ROW	500ft from ROW	500ft from centerline
Administration	Planning Commission & Architectural Review Board (appointed)	Development Services Representative (staff)	Corridor Review Board Design Review Team (staff)
Design Standards			
Landscape			
Buffer Width	25ft	50ft	50ft
	Separate/distinct	Separate/distinct	Inclusive
Buffer Opacity	no spec. standard	no spec. standard	75%
Detention in Buffers	allowed	allowed	allowed
Foundation Buffers Req.	no spec. standard	no spec. standard	8 foot (planted)
Walls/Fences allowed	less than 6 feet high	less than 6 feet high	less than 6 feet high
Pathways/Sidewalks	not allowed	not allowed	allowed
Parking in Buffer	not allowed	not allowed	not allowed
Vehicular Access	perpendicular	perpendicular	perpendicular
Tree Removal	Section 4.8	no tree larger than 6 inches diameter	not mentioned
Plant Density	no spec. standard	specific standards	specific standards
Additional Standards	Ref. Section 4.5	Ref. Section 12.8	Ref. Sub.III Div.4 Art.VI
Parking Standards			
Screening	spec. standard Ref. Sec.	no spec. standard Ref. Section 12.8	15ft perimeter
Stall Dimensions	10' x 20'	9' x 20'	9' x 18'
Tree Islands Req.	not mentioned	not mentioned	9' x 20' (every 8 spaces)
Landscape median	not mentioned	not mentioned	5' minimum
Lighting			
Light Fixtures	allowed	allowed	allowed
Foot-candles	no spec. standard	no spec. standard	specific standards
Fixture Design	not addressed	not addressed	specific standards
Fixture Placement	not addressed	not addressed	specific standards
Signage			
Signage	Section 8	Repealed 12/14/09 See Article 15	Removed from CRB Purview (1999) Article XV (ZDSO)
Approval Authority	Planning Dept.	Dev. Services Rep. (Planning Commission – Billboards)	Zoning Administrator
Square Footage	400 square feet	110 square feet	40 square feet
Height	40' to 100'	35' to 150'	10'
Illumination	not addressed	Low intensity	Moderate intensity
Billboards	Permitted	Permitted (Planning Commission Approval)	Not Permitted
Architecture/Building Design			
Building Height	per zoning district	per zoning district	per zoning district
Prohibited Roofs	flat, unarticulated, partial, unpedimented	flat, unarticulated, partial, unpedimented	flat, unarticulated, partial, unpedimented
Unarticulated facades	no spec. standard	max. 50'	not defined
Colors	Earth Tones	per Sec.16:8:4	Wide Variety/Discretion
Prohibited Fences	Unscreened Chain Link	Unscreened Chain Link	Unscreened Chain Link
Prohibited Material	Reflective material, Highly reflective glass	Reflective material, Highly reflective glass	Reflective material, Highly reflective glass



4. RECOMMENDATIONS:

- **Pre-approved plans for specific sites.** A pre-approved conceptual development site for key sites (not individual parcels) will serve to incentivize development and provide a resource that can provide important marketing leverage. Within the Exit 8 Planning Area, target sites should have conceptual development plans prepared in a collaborative process between the land owner and the municipality in order to create a high degree of development certainty while promoting the specific design and development intentions of the municipality. Minor deviation from the conceptual development may be permitted, and project applicants would need to complete a site specific development plan application, but by working within an existing planning framework using the conceptual development plan prepared collaboratively, the process may be streamlined saving both time and money for a developer as well as the municipality.

Key sites should be chosen in a joint manner and site specific conceptual development plans be prepared for those sites providing a general development program, indicating specific transportation and other infrastructure improvements necessary, and other required open space/community facilities anticipated. The conceptual development plans can then be used as a platform to assess benefits and opportunities and to assess potential revenues made possible by implementing project ideas.

- **Merging Hardeeville/Jasper County standards into Exit 8 Highway Overlay (joint review or specific delegated review).** Hardeeville and Jasper County may wish to merge and modify existing separate Highway Corridor Overlay standards into a single, combined and comprehensive set of Highway Corridor regulations specific to the Exit 8 planning area. A unified set of Highway Corridor regulations will help to create consistency along designated Highway Corridors while providing both predictability and certainty in development decisions. Following the example of Beaufort County, the Town of Bluffton, and the Town of Hilton Head Island, the creation of a joint review board with specific delegated authority will



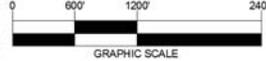
also help to create consistency between Jasper County and the City of Hardeeville minimizing “zone shopping” and other actions that can diminish the viability of economic development projects or create unnecessary delays in an approval process.

Standards should be updated in a collaborative and unified way so as to be consistent with goals stated in the comprehensive plan as well as other specific site development standards contained in each jurisdiction's zoning and land development standards ordinance. A joint review board made up by a representative members from each jurisdiction and staffed by each jurisdiction ensures accountability and consistency in development decisions that affect the appearance of important highway corridors.

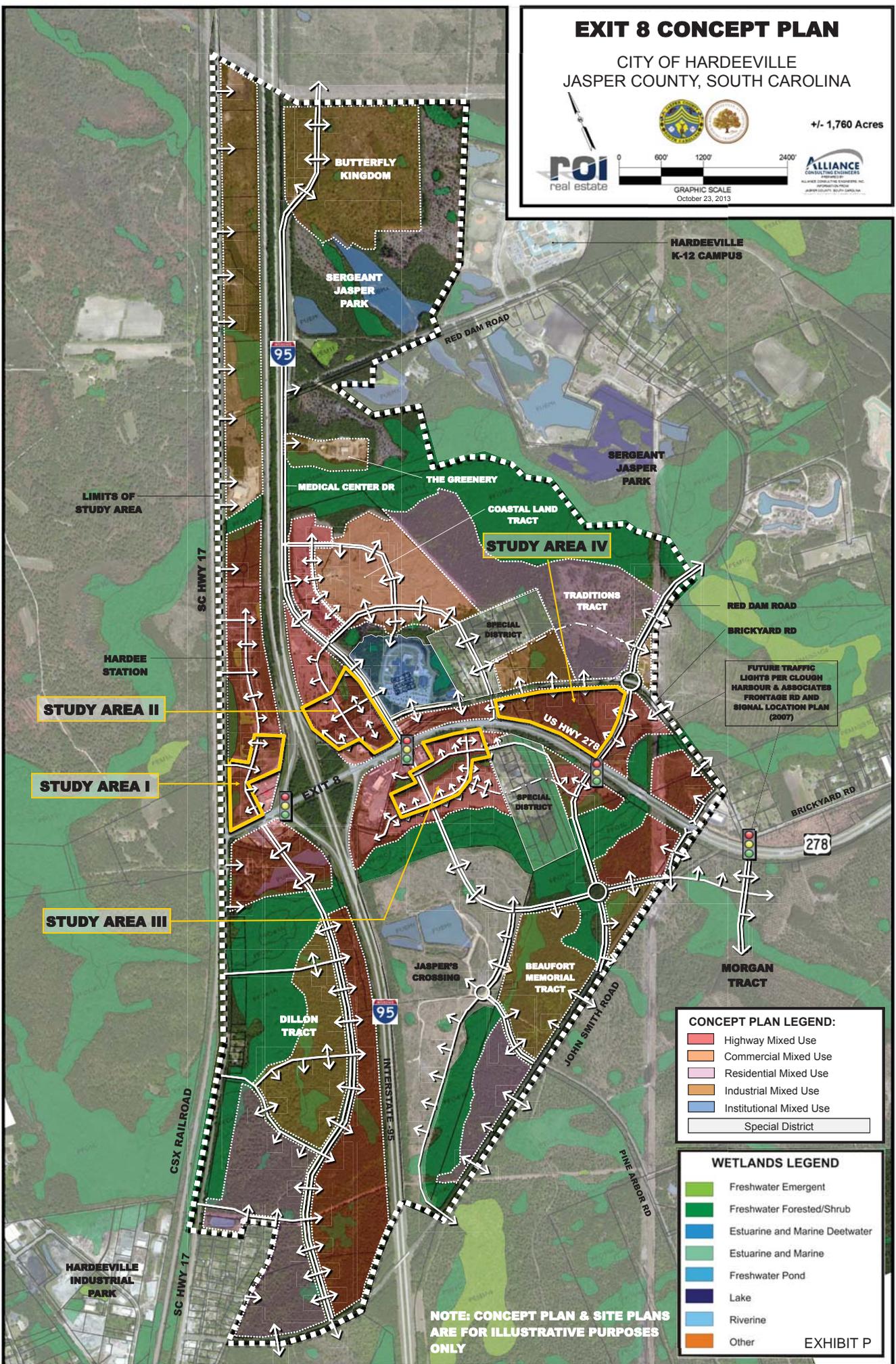
EXIT 8 CONCEPT PLAN

CITY OF HARDEEVILLE
JASPER COUNTY, SOUTH CAROLINA

+/- 1,760 Acres



GRAPHIC SCALE
October 23, 2013



FUTURE TRAFFIC LIGHTS PER CLOUGH HARBOUR & ASSOCIATES FRONTAGE RD AND SIGNAL LOCATION PLAN (2007)

CONCEPT PLAN LEGEND:

[Red]	Highway Mixed Use
[Orange]	Commercial Mixed Use
[Light Orange]	Residential Mixed Use
[Brown]	Industrial Mixed Use
[Blue]	Institutional Mixed Use
[White with border]	Special District

WETLANDS LEGEND

[Light Green]	Freshwater Emergent
[Dark Green]	Freshwater Forested/Shrub
[Blue-Green]	Estuarine and Marine Deetwater
[Light Blue-Green]	Estuarine and Marine
[Light Blue]	Freshwater Pond
[Dark Blue]	Lake
[Medium Blue]	Riverine
[Orange]	Other

NOTE: CONCEPT PLAN & SITE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY

EXHIBIT P



VI. PROPOSED INFRASTRUCTURE IMPROVEMENTS



In order to attract quality industrial, commercial, and residential prospects, infrastructure improvements will be necessary for the development of the Exit 8 Area. The improvements can be phased in order to provide flexibility and affordability of improvements. As the Exit 8 Area develops, the future infrastructure improvements can be implemented as planned, or revised as required, for the particular needs of the potential developments.

A. Primary Infrastructure Improvements

To develop the Exit 8 Area at the proposed location, site characteristics, available utilities, and associated services must be considered. Compiling this information clarifies the present limitations of the site and provides a basis for the improvements necessary to create an area that will be an asset to Jasper County and the City of Hardeeville. To adequately serve the ultimate build-out development of the Exit 8 Area, the utility infrastructure must be extended and enhanced. The recommendations



included in this report are preliminary findings and will require additional engineering and design to complete the recommendations outlined in this report. Following is a discussion in which utilities are recommended to be included in the initial infrastructure improvements of the Exit 8 Area.

1. PROPOSED TRANSPORTATION SYSTEM IMPROVEMENTS

The Exit 8 Area is illustrated in **Exhibit P** for the Conceptual Master Plan. It is



recommended that the roadway construction be phased so as not to hinder the



flexibility of the development of the Exit 8 Area. Orientation and Phasing of the Roadway Improvements are based on the roadways depicted in the Concept Plan developed by ROI Consultants, Inc. The phased plan for roadway improvements is depicted in **Exhibit Q**. The roadways are proposed to be a network of two (2) lane collector roadways and four (4) divided arterial roadways. Typical cross sections are provided in **Exhibit R**. The collector roadways are to provide access to developments within the Exit 8 Area. The arterial roadways are to collect traffic from the collector roadways, direct traffic through the Exit 8 Area, and provide access to developments within the Exit 8 Area. Furthermore construction of the arterial roadways are to contribute to portion of the US Highway 278A “frontage road” as discussed in the CHA Traffic Study, included in **Appendix L**, to lessen traffic constraints on the Existing US Highway 278. Other arterial roadways located along Medical Center Drive (S-27-422) near Butterfly Kingdom to near Coastal Carolina Hospital are also intended to lessen traffic constraints on the Existing US Highway 278. Furthermore, the roadways were designed with existing master plans within the Exit 8 Area such as Jaspers Crossing as well as adjacent tracts such as Traditions in mind. The arterial roadway proposed at Dillon Tract provides access to the internal areas of the Tract. The traffic generated along this roadway is dispersed along the five (5) proposed collector roadways along US Highway 17. The SCDOT has recommended the intersection of the arterial roadway with US Highway 278 between Interstate 95 and US Highway 17 be eliminated. However, the intersection has been included in the Phase I Roadway Improvements cost opinion since traffic is dispersed along five (5) other roadways along US Highway 17 as well as John Smith Road (S-27-141). Furthermore a traffic study is necessary to determine whether the traffic at the proposed intersection with US highway 278 between Interstate 95 and US Highway 17 should be eliminated or if the interchange with Interstate 95 should be reconfigured. A traffic study for the Exit 8 Area is outside the scope of this Infrastructure Master Plan.



The intersection of Medical Center Drive (S-27-422) and Red Dam Road (S-27-94) is to be relocated north to allow for more staking length at the intersection of US Highway 278 and Medical Center Drive (S-27-422). Furthermore, in order to visually enhance the Exit 8 Area and to provide connectivity to the surrounding setting, signage, landscaping, and roadway lighting is recommended within the proposed right-of-way. Costs for signage, landscaping, and roadway lighting are included under roadway improvements costs.

Roadway improvements will be divided into eight (8) phases and total cost for construction of all the phases is anticipated to be approximately \$71,699,000 as summarized in **Table H**. More detailed cost opinions are included within **Appendix A**. Although water and wastewater improvements are based in the alignment of the roadway improvements, the cost opinions for the Phases have been considered for the individual phases of the roadways themselves.

Table H – TOTAL ROADWAY IMPROVEMENTS COST OPINION

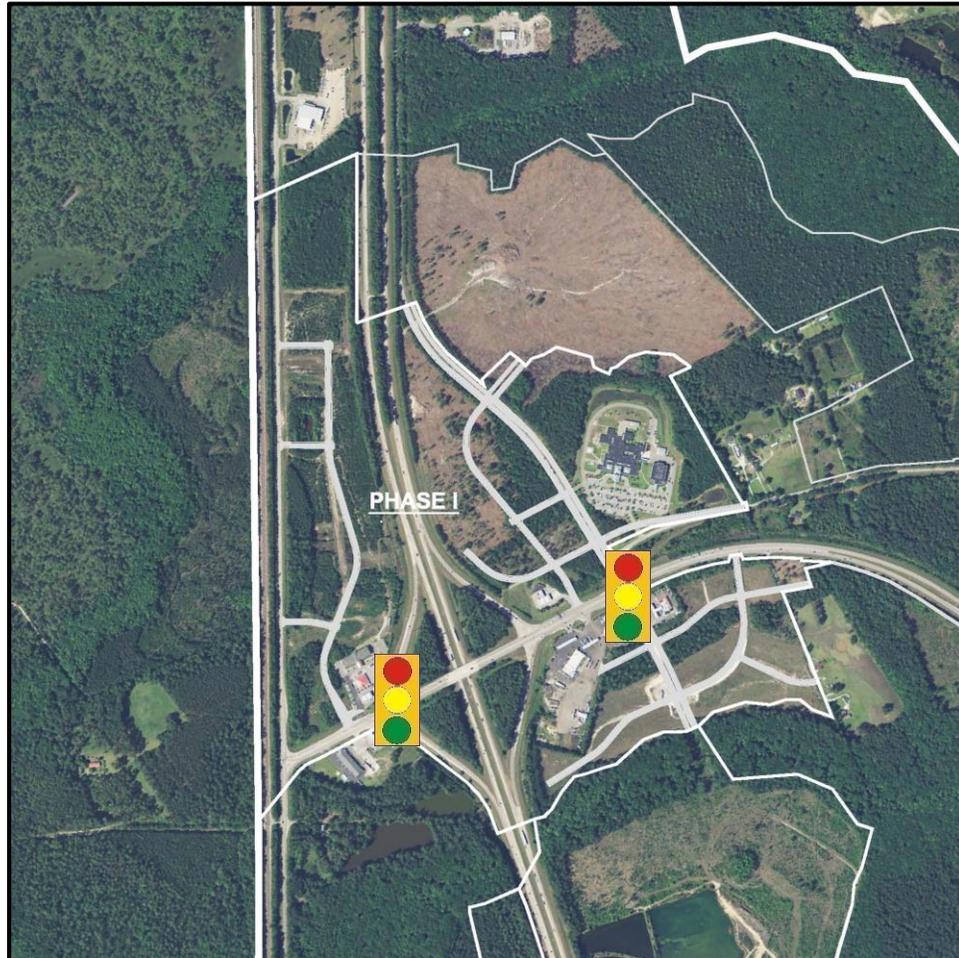
Total Roadway Improvements Cost Opinion		
Description	Cost	Schedule (months)
Phase I	\$ 14,784,000	21
Phase II	\$ 10,490,000	30
Phase III	\$ 15,152,000	27
Phase IV	\$ 9,235,000	30
Phase V	\$ 5,131,000	30
Phase VI	\$ 7,634,000	30
Phase VII	\$ 6,759,000	21
Phase VIII	\$ 2,649,000	21
TOTAL IMPROVEMENTS COST	\$ 71,834,000	
TOTAL IMPROVEMENTS CONSTRUCTION DURATION (MONTHS)	210	



Preliminary cost opinions based on the Conceptual Master Plan, **Exhibit P**, are included in **Appendix A**. The costs for individual line items are based on experience on similar projects over the past several years. Since it is nearly impossible to control the cost of labor, material, equipment, or the contractors' methods of determining price or competitive bidding, proposals and/or bids may vary from the projected preliminary costs. Beautification, landscaping, lighting, and aesthetic improvements to the bridge and interchange at Interstate 95 as well as the proposed roadways are included in the roadway improvements. These preliminary cost opinions should be used for planning purposes only.

The phases for the roadway improvements are as follows:

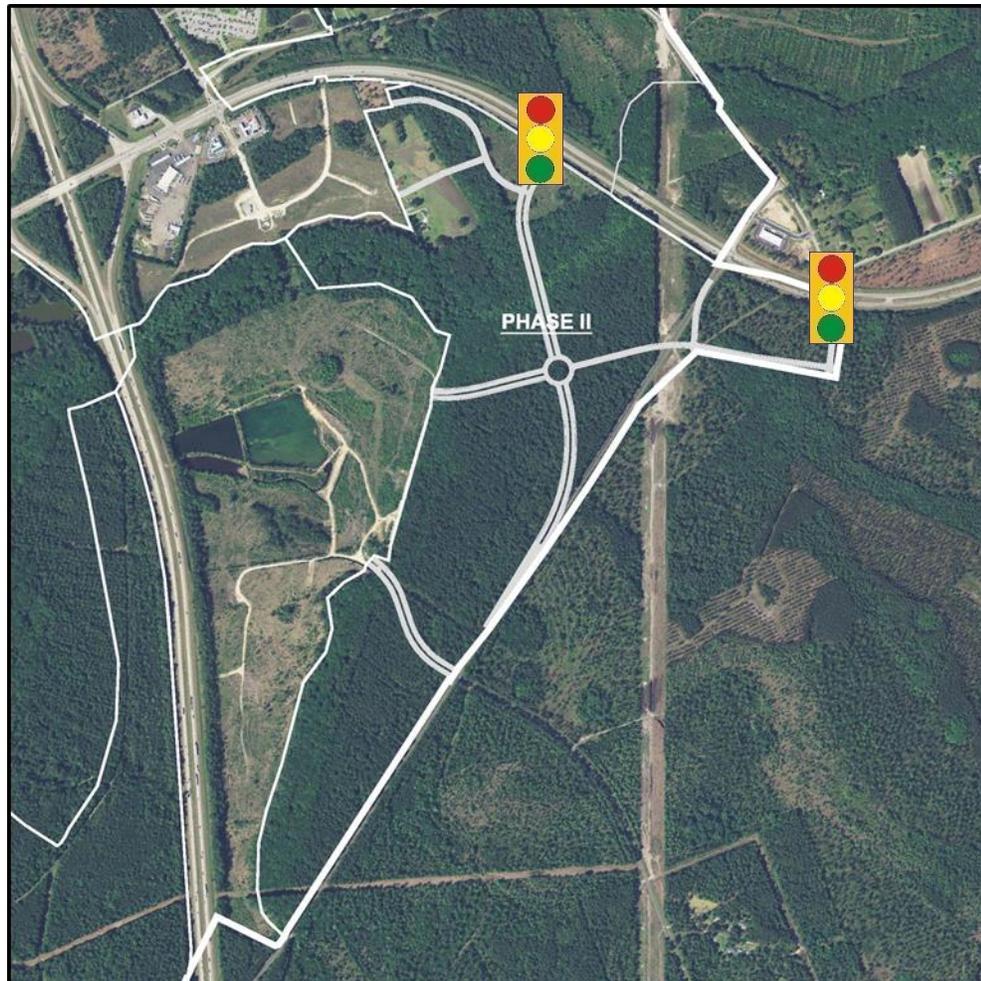
- **Phase I Roadway Improvements:** The Phase I Roadway Improvements provide access for developments from Medical Center Drive (S-27-422) and US Highway 278 as well as interconnectivity throughout Phase I and future phases. Phase I Roadway Improvements begins the first phase of construction of a “frontage road” which parallels the south side of US Highway 278. As illustrated in **Exhibit Q**, the Phase I Roadway Improvements will include widening of Medical Center Drive (S-27-422) from a two (2) lane roadway to four (4) lane divided roadway approximately 2,700-LF north of US Highway 278.



Furthermore the improvements include extension of Medical Center Drive (S-27-422) approximately 1,200-LF south of US Highway 278 and construction of ten (10) interconnecting two (2) lane roadways totaling approximately 12,000-LF, including the relocation of the intersection of Medical Center Drive (S-27-422) and Red Dam Road (S-27-94). Two (2) new traffic signals are proposed for the westernmost on and off ramps for Interstate 95 at US Highway 278 and at the intersection of US Highway 278 and Medical Center Drive replacing the existing signal at Medical Center Drive (S-27-422). The cost of construction of the roadways for Phase I is anticipated to be approximately \$14,784,000. Phase I Improvements are anticipated to be constructed within twenty-one (21) months.



- **Phase II Roadway Improvements:** As illustrated in **Exhibit Q**, the Phase II Roadway Improvements will include construction of two (2) four (4) lane divided roadways totaling approximately 6,500-LF, and four (4) two (2) lane roadways totaling approximately 6,300-LF.



The Phase II Roadway Improvements provide access for developments from John Smith Road (S-27-141) and US Highway 278 as well as interconnectivity throughout Phase II and between other phases. Two (2) new traffic signals are proposed: one (1) for the proposed new intersection at US Highway 278 and one (1) for the intersection with the realigned John Smith Road (S-27-141) and US Highway 278. Phase II Roadway Improvements continues the construction of a “frontage road” which parallels the south side of US Highway 278. The



cost of construction of the roadways for Phase II is anticipated to be approximately \$10,490,000. Phase II Improvements are anticipated to be constructed within thirty (30) months.

- **Phase III Roadway Improvements:** The Phase III Roadway Improvements will include construction of three (3) four (4) lane divided roadways totaling approximately 8,100-LF, and two (2) two (2) lane roadways totaling approximately 2,400-LF.



Approximately 2,100 LF of improvements along Red Dam Road (S-27-94) are also included. The Phase III Roadway Improvements provide access for developments from John Smith Road (S-27-141), Medical Center Drive (S-27-422), Brickyard Road (S-27-88) and US Highway 278 as well as interconnectivity throughout Phase III and between other phases. The cost of construction of the roadways for Phase III is anticipated to be approximately



\$15,152,000 and are anticipated to be constructed within twenty-seven (27) months.

- **Phase IV Roadway Improvements:** The Phase IV Roadway Improvements will include construction of two (2) four (4) lane divided roadways totaling approximately 3,500-LF, and one (1) two (2) lane roadway totaling approximately 3,400-LF.



The Phase IV Roadway Improvements provide access for developments from John Smith Road (S-27-141), and US Highway 278 as well as interconnectivity throughout Phase IV and between other phases. The cost of construction of the



roadways for Phase IV is anticipated to be approximately \$9,235,000. Furthermore, the Phase IV Improvements are anticipated to be constructed within thirty (30) months.

- **Phase V Roadway Improvements:** The Phase V Roadway Improvements will include construction of one (1) four (4) lane divided roadway totaling approximately 1,500-LF, and three (3) two (2) lane roadways totaling approximately 5,300-LF.



The Phase V Roadway Improvements provide access for developments from US Highway 17 and US Highway 278 as well as interconnectivity throughout Phase V and between other phases. The cost of construction of the roadways



for Phase V is anticipated to be approximately \$5,131,000. Phase V Improvements are anticipated to be constructed within thirty (30) months.

- **Phase VI Roadway Improvements:** The Phase VI Roadway Improvements will include construction of one (1) four (4) lane divided roadway totaling approximately 6,100-LF, and one (1) two (2) lane roadway totaling approximately 1,500-LF.



The Phase VI Roadway Improvements provide access for developments from US Highway 17 and John Smith Road (S-27-141) as well as interconnectivity throughout Phase VI and between other phases. The cost of construction of the



roadways for Phase VI is anticipated to be approximately \$7,634,000 and Phase VI Improvements are anticipated to be constructed within thirty (30) months.

- **Phase VII Roadway Improvements:** The Phase VII Roadway Improvements will include construction of one (1) four (4) lane divided roadway totaling approximately 6,100-LF.



The Phase VII Roadway Improvements provide access for developments from Red Dam Road (S-27-88) and Medical Center Drive (S-27-422) as well as interconnectivity throughout Phase VII and between other phases. The cost of construction of the roadways for Phase VII is anticipated to be approximately \$6,759,000. Furthermore, Phase VII Improvements are anticipated to be constructed within twenty-one (21) months.

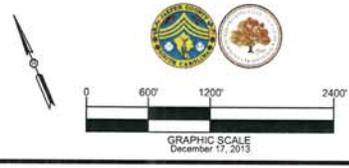


- **Phase VIII Roadway Improvements:** The Phase VIII Roadway Improvements will include construction of one (1) four (4) lane divided roadway totaling approximately 500-LF, and one (1) two (2) lane roadway totaling approximately 2,200-LF.



The Phase VIII Roadway Improvements provide access for developments from John Smith Road (S-27-141) and US Highway 278 as well as interconnectivity throughout Phase VIII and between other phases. The cost of construction of the roadways for Phase VIII is anticipated to be approximately \$2,649,000. Phase VIII Improvements are anticipated to be constructed within twenty-one (21) months.

INFRASTRUCTURE MASTER PLAN
 EXIT 8
 JASPER COUNTY, SOUTH CAROLINA
 OVERALL PHASE MAP



+/- 1,760 Acres

ALLIANCE
 CONSULTING ENGINEERS
 ALLIANCE CONSULTING ENGINEERS, INC.
 1000 W. STATE STREET, SUITE 200
 JASPER, SOUTH CAROLINA 29079
 (803) 685-1111

GRAPHIC SCALE
 December 17, 2013

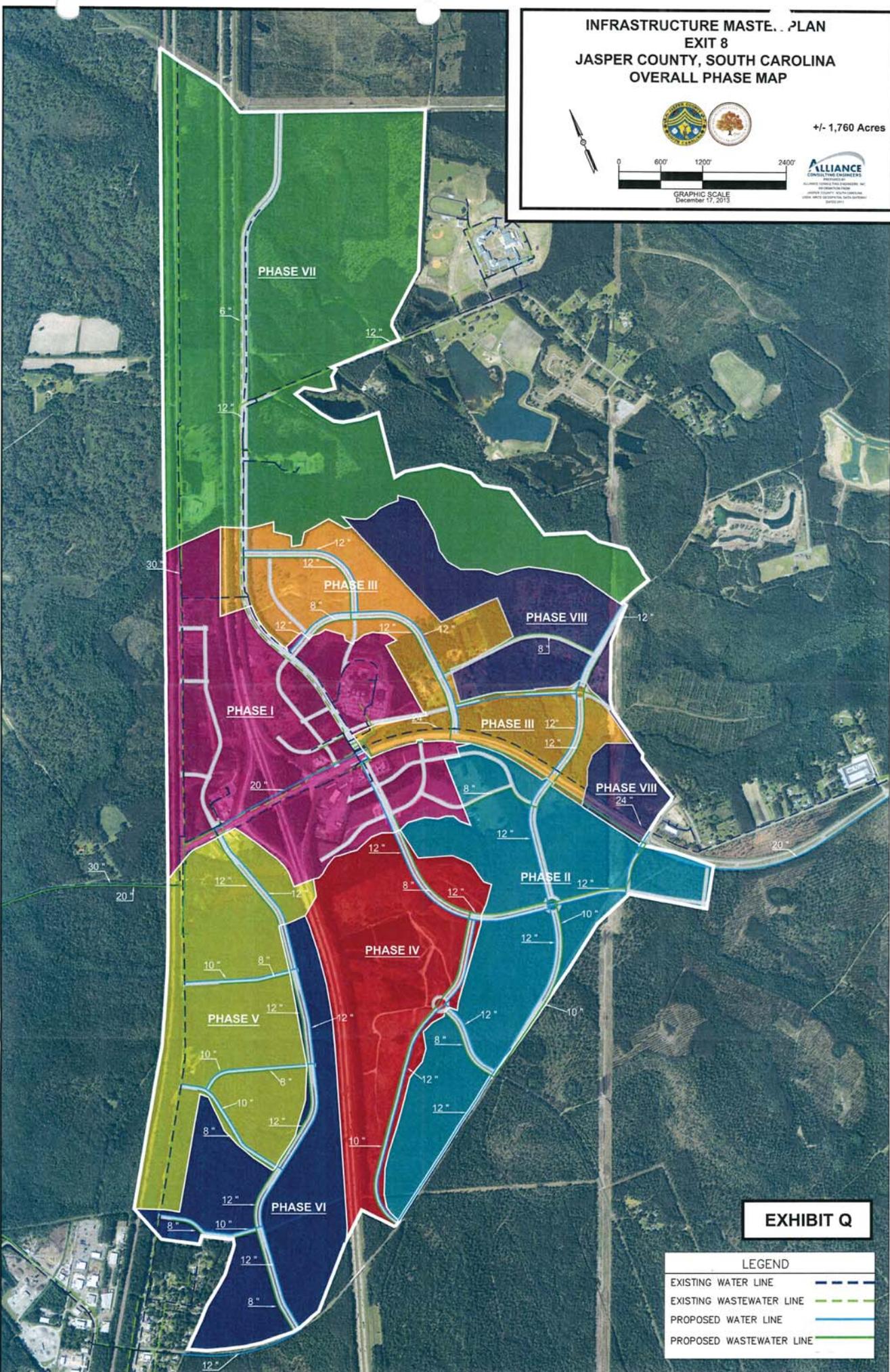
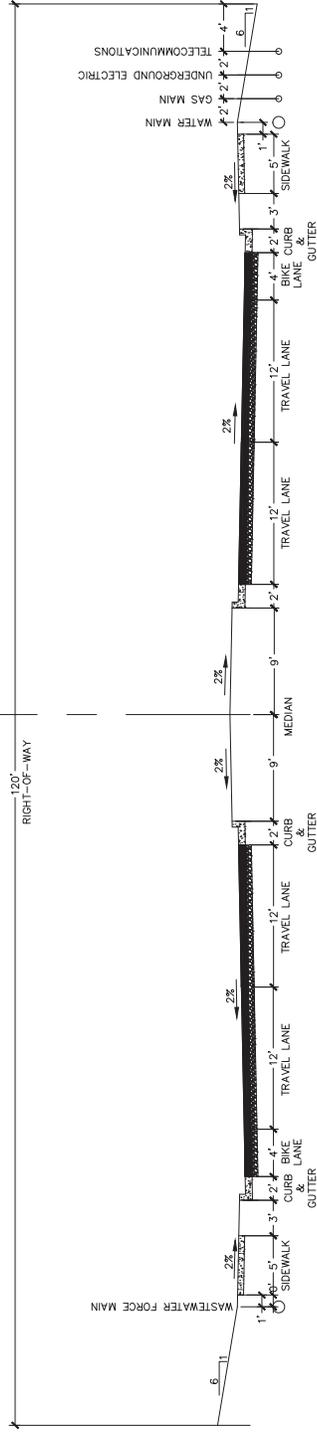


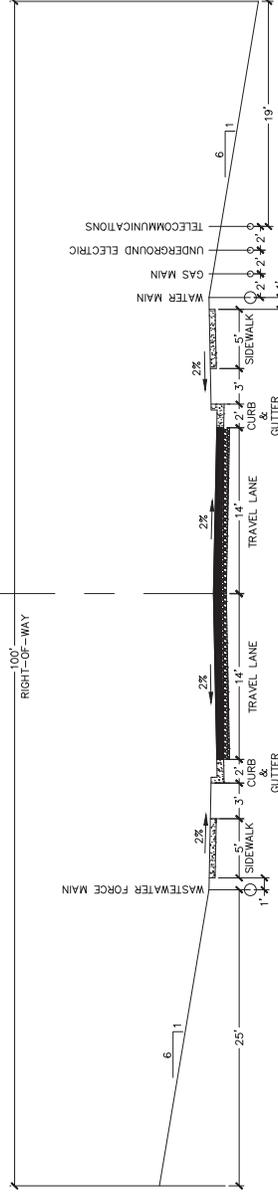
EXHIBIT Q

LEGEND	
EXISTING WATER LINE	--- (dashed blue line)
EXISTING WASTEWATER LINE	--- (dashed green line)
PROPOSED WATER LINE	— (solid blue line)
PROPOSED WASTEWATER LINE	— (solid green line)

4-LANE DIVIDED ROADWAY



2-LANE ROADWAY



TYPICAL CROSS SECTIONS
 INFRASTRUCTURE MASTER PLAN FOR EXIT 8
 IN
 JASPER COUNTY, SOUTH CAROLINA
 (SCALE 1"=10')



Project No.: 13178-0027
 December 10, 2013



EXHIBIT
R



Prepared by Alliance Consulting Engineers, Inc.



2. PROPOSED PUBLIC WATER SYSTEM IMPROVEMENTS



The existing potable water distribution system, owned and operated by the Beaufort-Jasper Water and Sewer Authority (BJWSA), currently has a twenty-four (24)-inch, twelve (12)-inch, and eight (8)-inch water main constructed within the US Highway 278 and Medical Center Drive (S-27-422) rights-of-way located at the Exit 8 Area.

Water demands were projected based upon average daily flows for anticipated land use detailed in **Exhibit P** (e.g. commercial mixed use, residential mixed use, industrial mixed use and highway mixed use). Piping was then sized to allow for adequate supply of demand in addition to fire flow. Furthermore piping has been oversized to allow for planning flexibility in the Master Plan to account for larger users which may wish to locate at Exit 8. Projected water and wastewater usage is detailed with the calculations included in **Appendix N**.

As illustrated in **Exhibit Q**, recommended water system improvements are divided into eight (8) phases. Although these phases are coordinated with the roadway phases as it is assumed that the water improvements will be constructed individually. Total cost for construction of all the phases is anticipated to be approximately \$2,792,000 as detailed in **Table I**. These water system improvements will be constructed within the existing SCDOT right-of-way or the rights-of-way of the proposed roadways. These improvements are required to provide adequate water and fire suppression service to facilities within Exit 8.

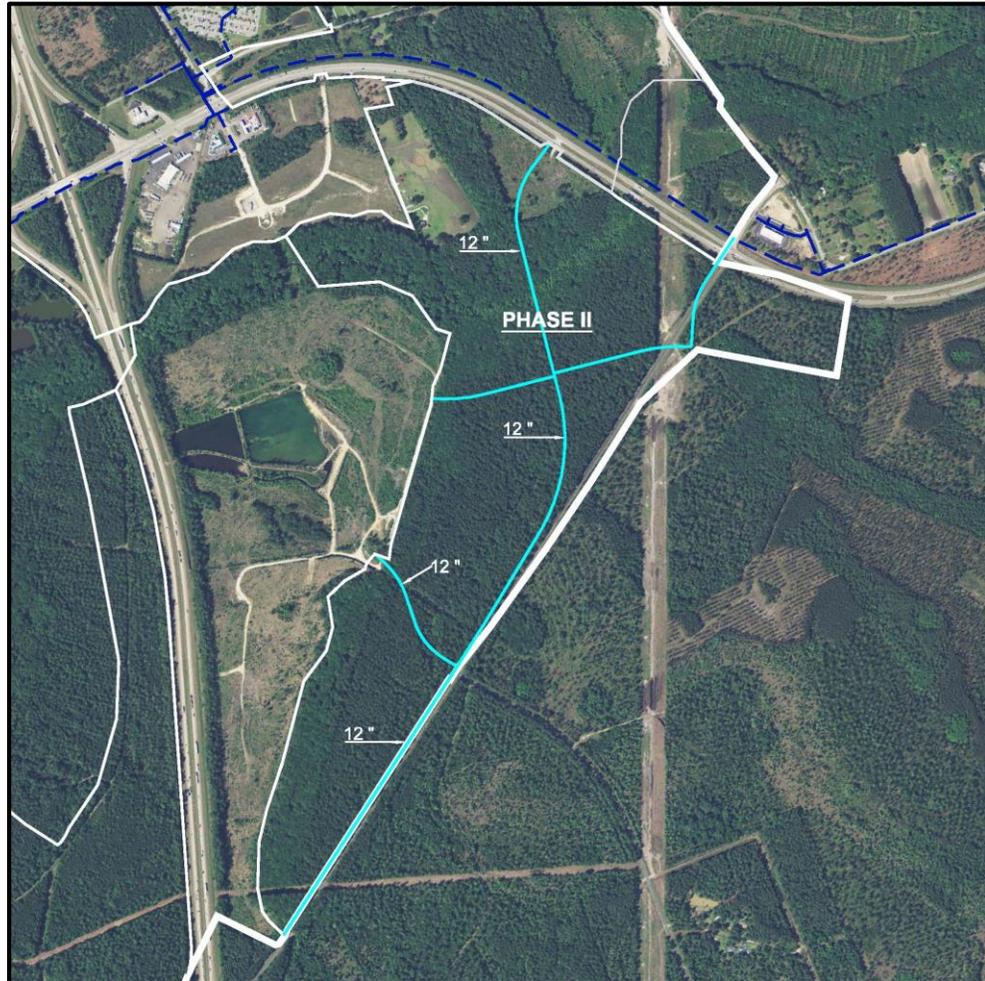


Table I – TOTAL WATER IMPROVEMENTS COST OPINION

Total Water Improvements Cost Opinion		
Description	Cost	Schedule (months)
Phase I	\$ -	0
Phase II	\$ 695,000	9
Phase III	\$ 655,000	9
Phase IV	\$ 602,000	9
Phase V	\$ 548,000	9
Phase VI	\$ 725,000	9
Phase VII	\$ -	0
Phase VIII	\$ 92,000	9
TOTAL IMPROVEMENTS COST	\$ 3,317,000	
TOTAL IMPROVEMENTS CONSTRUCTION DURATION (MONTHS)	54	

The water proposed water system improvements are phased as listed below:

- Phase I Water System Improvements:** Existing water infrastructure is sufficient to provide adequate water and fire suppression service to facilities within Phase I, therefore, no water improvements are required for Phase I. Upon development, water and fire suppression services will need to be extended to the constructed facility.
- Phase II Water System Improvements:** Phase II water system improvements include approximately 11,500-LF of twelve (12)-inch water main with associated appurtenances to serve Phase II as detailed in **Exhibit P**.



- The cost of construction of the Phase II Water System Improvements is anticipated to be approximately \$695,000.
- The Phase II Water System Improvements would take approximately nine (9) months to construct.
- **Phase III Water System Improvements:** Phase III water system improvements include approximately 7,300-LF of twelve (12)-inch water main and approximately 2,200-LF of ten (10)-inch water main with associated appurtenances to serve Phase III as shown in **Exhibit Q**.



- The cost of construction of the Phase III Water System Improvements is anticipated to be approximately \$655,000.
- The Phase III Water System Improvements would take approximately nine (9) months to construct.
- **Phase IV Water System Improvements:** Phase IV water system improvements include approximately 8,200-LF of twelve (12)-inch water main



with associated appurtenances to serve Phase IV as shown in **Exhibit Q**.



- The cost of construction of the Phase IV Water System Improvements is anticipated to be approximately \$602,000.
- The Phase IV Water System Improvements would take approximately nine (9) months to construct.
- **Phase V Water System Improvements:** Phase V water system improvements include approximately 1,600-LF of twelve (12)-inch water main and approximately 5,000-LF of ten (10)-inch water main with associated appurtenances to serve Phase V as shown in **Exhibit Q**.



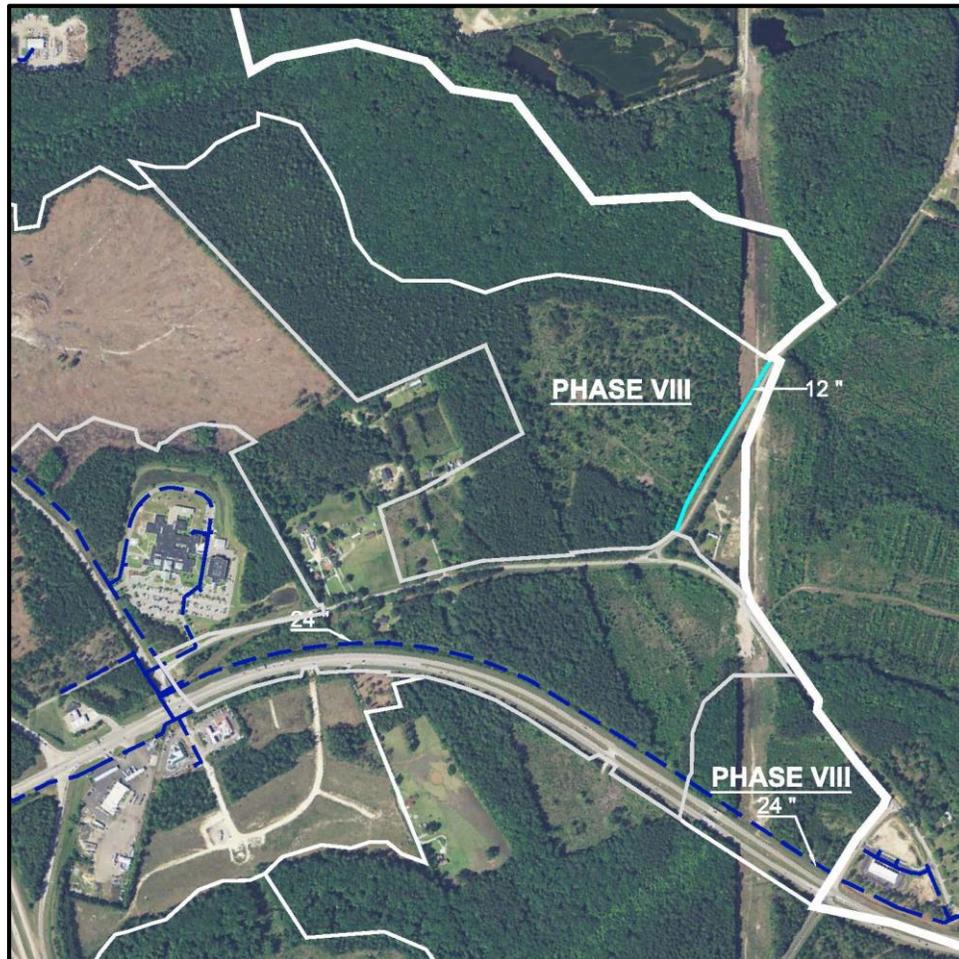
- The cost of construction of the Phase V Water System Improvements is anticipated to be approximately \$548,000.
- The Phase V Water System Improvements would take approximately nine (9) months to construct.
- **Phase VI Water System Improvements:** Phase VI water system improvements include approximately 8,400-LF of twelve (12)-inch water main and approximately 1,600-LF of ten (10)-inch water main with associated appurtenances to serve Phase VI as shown in **Exhibit Q**.



- The cost of construction of the Phase VI Water System Improvements is anticipated to be approximately \$725,000.
- The Phase VI Water System Improvements would take approximately nine (9) months to construct.
- **Phase VII Water System Improvements:** Existing water system infrastructure is sufficient to provide adequate water and fire suppression service to facilities within Phase VII, therefore, no water improvements are required for Phase VII.
- **Phase VIII Water System Improvements:** Phase VIII water system improvements include approximately 1,300-LF of twelve (12)-inch water main



with associated appurtenances to serve Phase VIII as shown in **Exhibit Q**.



- The cost of construction of the Phase VIII Water System Improvements is anticipated to be approximately \$92,000.
- The Phase VIII Water System Improvements would take approximately nine (9) months to construct.



3. WASTEWATER SYSTEM

In order to serve the Exit 8 Area with wastewater service, it is recommended that improvements be constructed in eight (8) designated phases within the Area as illustrated in **Exhibit Q**. Furthermore, the improvements will initially tie into an existing twenty-four (24)-inch force main which ultimately



discharges at the Cherry Point Wastewater Treatment Plant (WWTP). Both the WWTP and the force main have available excess capacity to serve the Exit 8 Area at build out.

Wastewater demand was projected based upon average daily flows for anticipated land use detailed in **Exhibit P** (e.g. commercial mixed use, residential mixed use, industrial mixed use and highway mixed use.) Furthermore, wastewater usage is estimated to be approximately eighty (80%) percent of water demand as projected for the Water System Improvements. Piping was then sized to allow for adequate supply of demand. Furthermore piping has been oversized to allow for flexibility in the Master Plan to account for larger users which may wish to locate at Exit 8. Projected water and wastewater usage is detailed with the calculations in **Appendix N**.

Currently the Hardeeville Wastewater Treatment Plant only has approximately 0.5 MGD capacity. However, the Cherry Point Wastewater Treatment Plant has an estimated 7.5 MGD excess capacity. Upgrading the Hardeeville Wastewater Treatment Plant can be costly therefore, it is recommended that the Exit 8 area utilize the excess capacity available at Cherry Point until the neighboring developments such as Hilton Head Lakes claim the capacity attributed to them. Once capacity required by the neighboring developments exceeds the remaining available capacity of the twenty four (24)-inch force main, a force main connection to the Hardeeville Wastewater Treatment Plant will be built, upon



which the Hardeeville Wastewater Treatment Plant would need to be upgraded. The cost for upgrade of the Hardeeville Wastewater Treatment Plant has not been included.

Although, these phases are coordinated with the roadway phases, it is assumed that wastewater improvements are to be constructed individually. Total cost for construction of all the phases is anticipated to be approximately \$14,251,000 (see **Table J**). These wastewater system improvements will be constructed within the existing SCDOT right-of-way or the rights-of-way of proposed roadways. Wastewater pumping stations will be constructed on property obtained by BJWSA.

Table J – TOTAL WATER IMPROVEMENTS COST OPINION

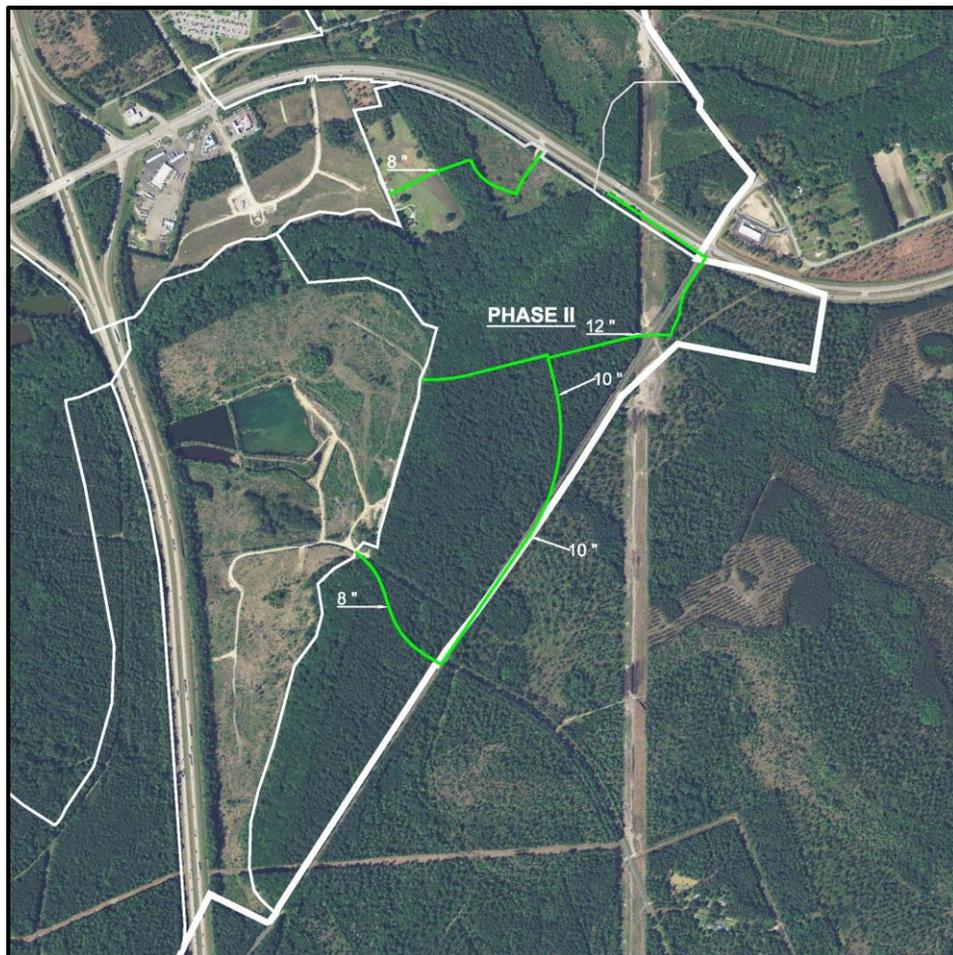
Total Wastewater Improvements Cost Opinion		
Description	Cost	Schedule (months)
Phase I	\$ -	0
Phase II	\$ 787,000	9
Phase III	\$ 960,000	9
Phase IV	\$ 574,000	9
Phase V	\$ 894,000	9
Phase VI	\$ 544,000	9
Phase VII	\$ 444,000	9
Phase VIII	\$ 356,000	9
Cherry Pointe Connection	\$ 5,682,000	18
Hardeeville Connection	\$ 4,475,000	24
TOTAL IMPROVEMENTS COST	\$ 14,716,000	
TOTAL IMPROVEMENTS CONSTRUCTION DURATION (MONTHS)	105	

The wastewater improvements are phased as follows:

- Phase I Wastewater System Improvements:** Existing wastewater infrastructure is sufficient to provide adequate wastewater service to facilities within Phase I, therefore, no wastewater system improvements are required for Phase I.



- **Phase II Wastewater System Improvements:** Phase II wastewater system improvements include approximately 2,900-LF of eight (8)-inch force main, 2,800-LF of ten (10)-inch force main, and 4,600-LF of twelve (12) inch force main with associated appurtenances to serve Phase II. Furthermore, one (1) 190-gallon per minute (GPM) wastewater pump station is proposed as shown in **Exhibit Q**.



- These improvements are required to provide adequate wastewater service to facilities within Phase II and discharge to the proposed 20-inch force main which ultimately discharges to the Cherry Pointe Wastewater Treatment Plant.
- The cost of construction of the Phase II Wastewater System Improvements anticipated to be approximately \$787,000.



- The Phase II Wastewater System Improvements would take approximately nine (9) months to construct.
- **Phase III Wastewater System Improvements:** Phase III wastewater system improvements include approximately 3,000-LF of eight (8)-inch force main, and 6,300-LF of twelve (12) inch force main with associated appurtenances to serve Phase III as shown in **Exhibit Q**.



- One (1) 190-gallon per minute (GPM) wastewater pump station is proposed in addition to upgrade of an existing wastewater pumping station to 460-GPM.
- Force main will be constructed to intercept flow from the existing wastewater infrastructure located in the Phase VII area and discharge the flow to the proposed wastewater pump station upgrade.



- These improvements are required to provide adequate wastewater service to facilities within Phase III and discharge to the proposed 20-inch force main which ultimately discharges to the Cherry Pointe Wastewater Treatment Plant.
- The cost of construction of the Phase III Wastewater System Improvements is anticipated to be approximately \$960,000.
- The Phase III Wastewater System Improvements would take approximately nine (9) months to construct.
- **Phase IV Wastewater System Improvements:** Phase IV wastewater system improvements include approximately 1,900-LF of eight (8)-inch force main, 4,900-LF of ten (10)-inch force main, and 200-LF of twelve (12) inch force



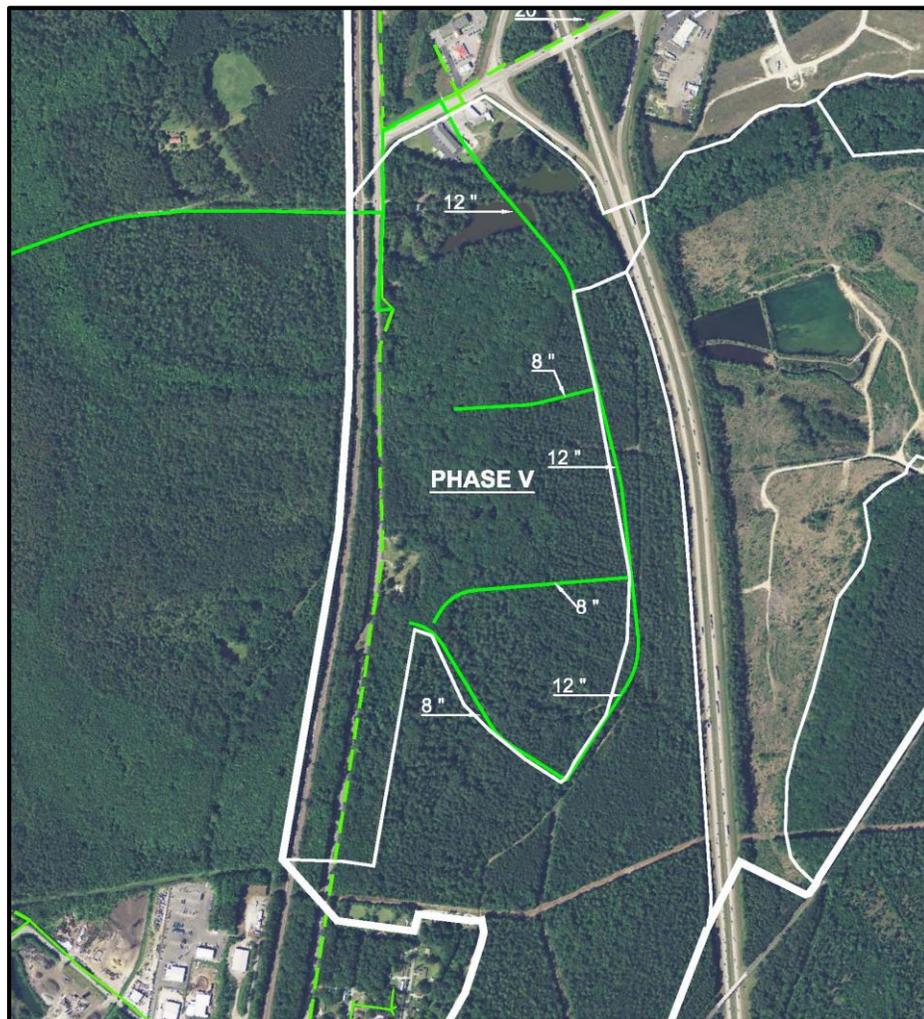
main with associated appurtenances to serve Phase IV as shown in **Exhibit Q**.



- One (1) 175-gallon per minute (GPM) wastewater pump station is proposed. These improvements are required to provide adequate wastewater service to facilities within Phase IV and discharge to the proposed 20-inch force main which ultimately discharges to the Cherry Pointe Wastewater Treatment Plant.
- The cost of construction of the Phase IV Wastewater System Improvements is anticipated to be approximately \$547,000.
- The Phase IV Wastewater System Improvements would take approximately nine (9) months.



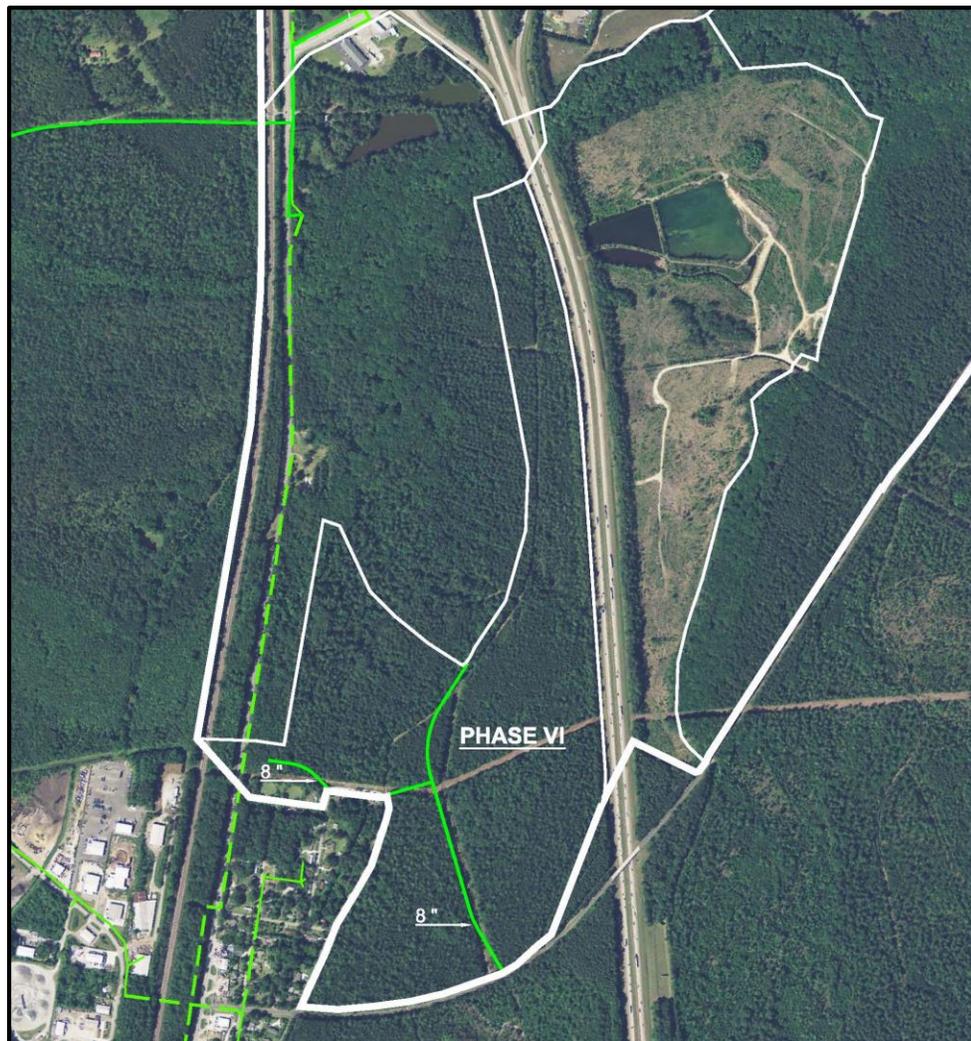
- **Phase V Wastewater System Improvements:** Phase V wastewater system improvements include approximately 4,200-LF of eight (8)-inch force main, and 5,300-LF of twelve (12) inch force main with associated appurtenances to serve Phase V as shown in **Exhibit Q**.



- One (1) 140-gallon per minute (GPM) wastewater pump station is proposed. These improvements are required to provide adequate wastewater service to facilities within Phase V and discharge to the proposed 20-inch force main which ultimately discharges to the Cherry Pointe Wastewater Treatment Plant.
- The cost of construction of the Phase V Wastewater System Improvements is anticipated to be approximately \$894,000.



- The Phase V Wastewater System Improvements would take approximately nine (9) months to construct.
- **Phase VI Wastewater System Improvements:** Phase VI wastewater system improvements include approximately 2,800-LF of eight (8)-inch force main, and 1,000-LF of twelve (12) inch force main with associated appurtenances to serve Phase VI as shown in **Exhibit Q**.



- One (1) 250-gallon per minute (GPM) wastewater pump station is proposed.



- These improvements are required to provide adequate wastewater service to facilities within Phase VI and discharge to the Phase V wastewater improvements.
 - The cost of construction of the Phase VI Wastewater System Improvements is anticipated to be approximately \$544,000.
 - The Phase VI Wastewater System Improvements would take approximately nine (9) months to construct.
- **Phase VII Wastewater System Improvements:** Phase VII wastewater system improvements include one (1) 275-gallon per minute (GPM) wastewater pump station as shown in **Exhibit Q**.





- These improvements are required to provide adequate wastewater service to facilities within Phase VII and discharge to the Phase III wastewater improvements.
- The cost of construction of the Phase VII Wastewater System Improvements is anticipated to be approximately \$444,000.
- The Phase VII Wastewater System Improvements would take approximately nine (9) months to construct.
- **Phase VIII Wastewater System Improvements:** Phase VIII wastewater system improvements include approximately 3,000-LF of eight (8)-inch force main with associated appurtenances to serve Phase VIII as shown in **Exhibit Q**.



- One (1) 225-gallon per minute (GPM) wastewater pump station is proposed.



- These improvements are required to provide adequate wastewater service to facilities within Phase VIII and discharge to the proposed 20-inch force main which ultimately discharges to the Cherry Point Wastewater Treatment Plant.
- The cost of construction of the Phase VIII Wastewater System Improvements is anticipated to be approximately \$356,000.
- The Phase VIII Wastewater System Improvements would take approximately nine (9) months to construct.

- **Cherry Point Wastewater System Improvements:** The wastewater system improvements discharging to Cherry Point Wastewater Treatment Plant include approximately 12,000-LF of eight (8)-inch force main with associated appurtenances to serve Exit 8 Area.
 - One (1) 1435-gallon per minute (GPM) wastewater pump station is proposed as depicted in **Exhibit S**.
 - These improvements are required to provide adequate wastewater service to the phases which it serves.
 - The cost of construction of the Wastewater System Improvements is anticipated to be approximately \$5,682,000.
 - These Wastewater System Improvements would take approximately eighteen (18) months to construct and should occur before Phase II is constructed.

- **Hardeeville Wastewater System Improvements:** The wastewater system improvements discharging to Hardeeville Wastewater Treatment Plant include approximately 800-LF of eight (8)-inch force main and approximately 28,000-LF of twenty (20)-inch force main with associated appurtenances to serve Exit 8 Area as depicted in **Exhibit T**.
 - One (1) wastewater pump station upgrade to 1435-gallon per minute (GPM) is proposed.



- These improvements are required to provide adequate wastewater service to the phases which it serves.
- The cost of construction of the Wastewater System Improvements is anticipated to be approximately \$4,475,000.
- These Wastewater System Improvements would take approximately twenty-four (24) months to construct and should occur once capacity previously given to neighboring developers is required.

Exhibit S cherry pointe connection map

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
CHERRY POINT WASTEWATER CONNECTION**




+/- 1,760 Acres




GRAPHIC SCALE
 DECEMBER 17, 2013

ALLIANCE
 ENGINEERS & ARCHITECTS
 ALLIANCE COUNTY ENGINEERS, INC.
 1000 W. STATE ST. SUITE 100
 JASPER COUNTY, SOUTH CAROLINA
 29020-1000

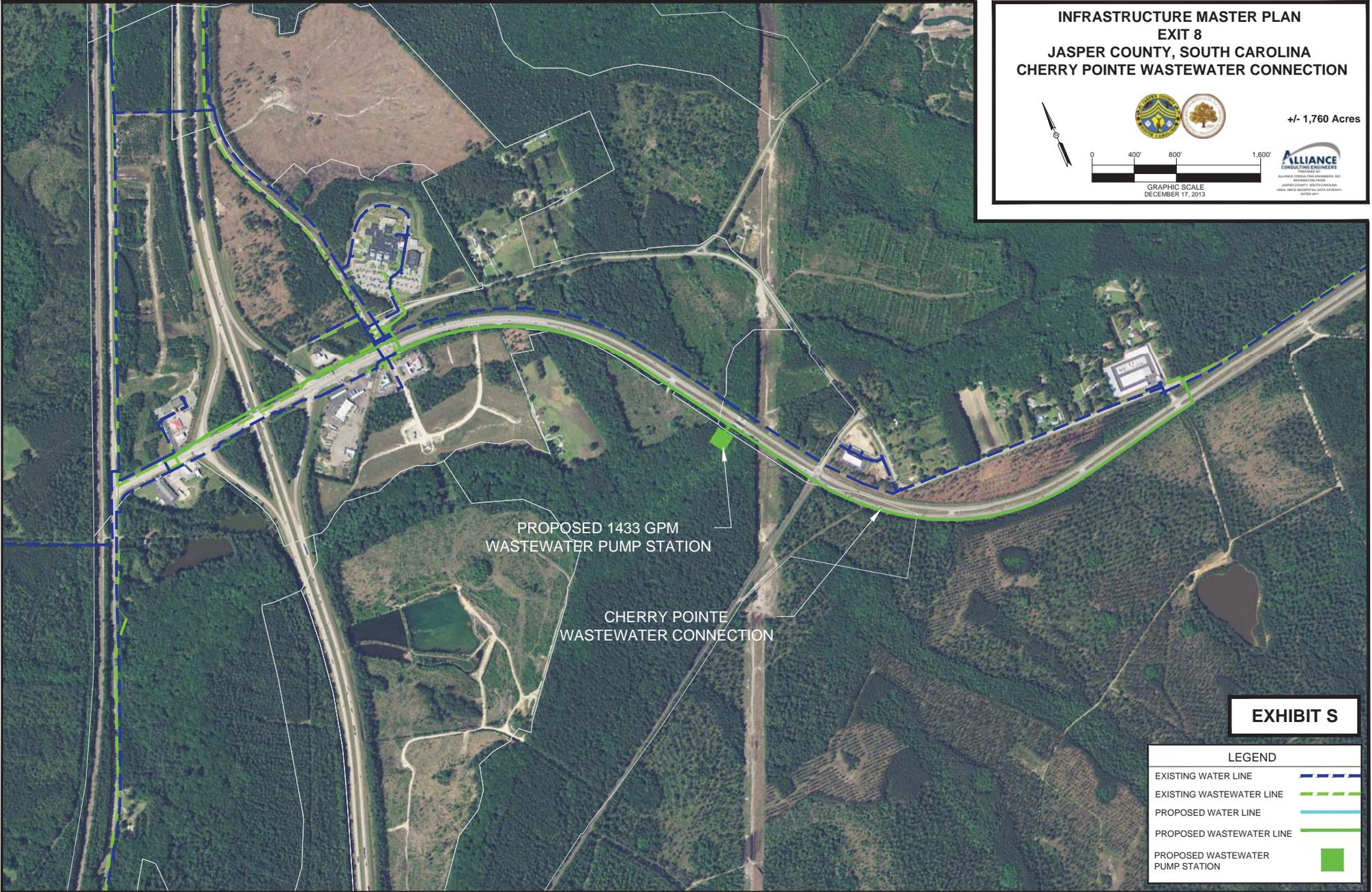


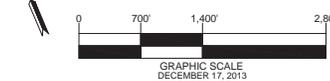
EXHIBIT S

LEGEND	
EXISTING WATER LINE	
EXISTING WASTEWATER LINE	
PROPOSED WATER LINE	
PROPOSED WASTEWATER LINE	
PROPOSED WASTEWATER PUMP STATION	

**INFRASTRUCTURE MASTER PLAN
EXIT 8
JASPER COUNTY, SOUTH CAROLINA
HARDEEVILLE WASTEWATER CONNECTION**



+/- 1,760 Acres



ALLIANCE
CONSULTING ENGINEERS
REGISTERED PROFESSIONAL ENGINEERS, INC.
INFRASTRUCTURE GROUP
JASPER COUNTY, SOUTH CAROLINA
1000 W. WOODS CIRCLE, SUITE 100
JASPER, SC 29079

GRAPHIC SCALE
DECEMBER 17, 2013

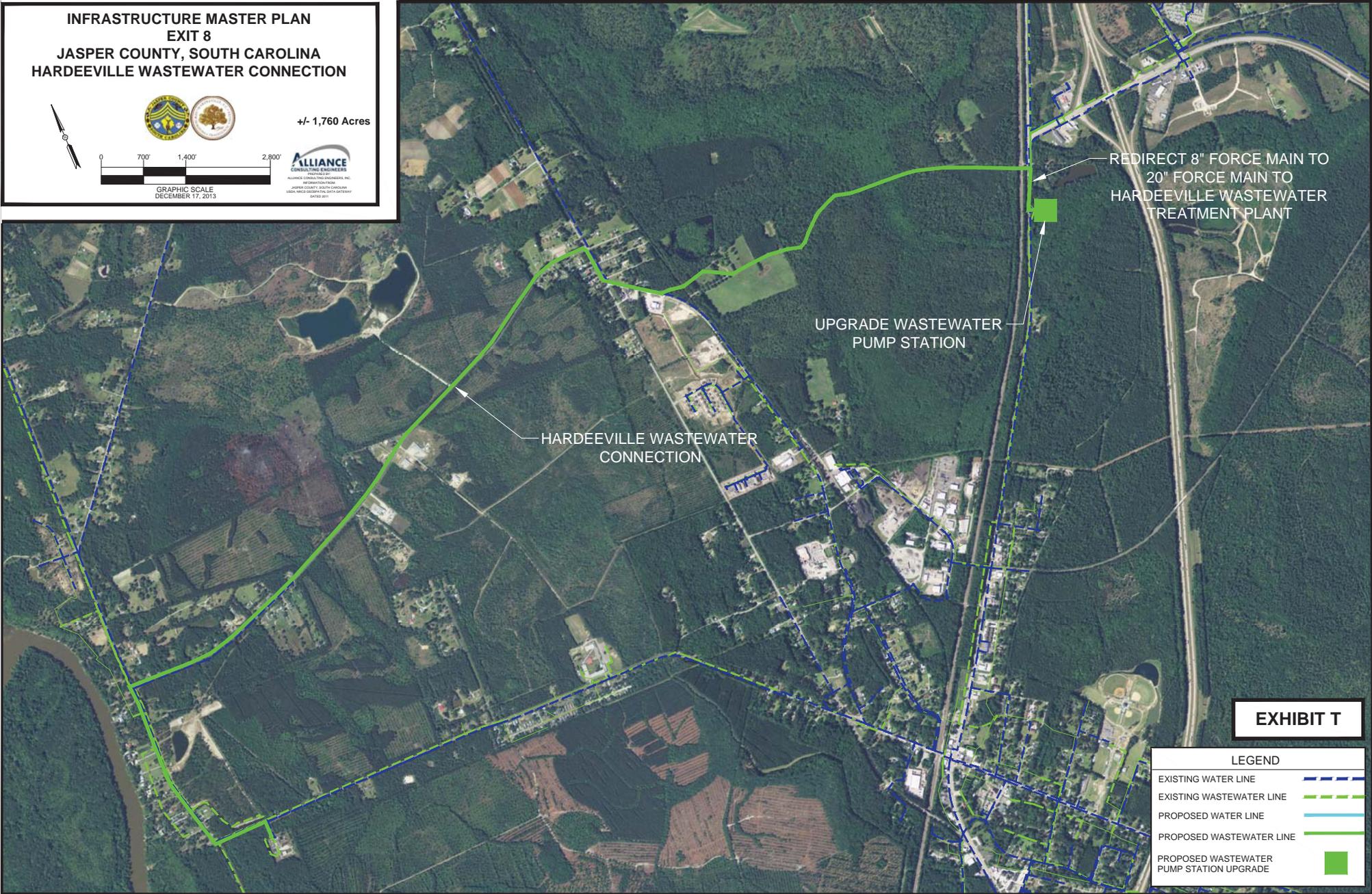


EXHIBIT T

LEGEND	
EXISTING WATER LINE	
EXISTING WASTEWATER LINE	
PROPOSED WATER LINE	
PROPOSED WASTEWATER LINE	
PROPOSED WASTEWATER PUMP STATION UPGRADE	



4. STORM DRAINAGE SYSTEM



The Exit 8 Area will require Storm Drainage Improvements to properly manage the increased runoff rates associated with the Area development. The construction of the Exit 8 Area Roadways will result in an increase in stormwater runoff and flow rates. Temporary Sediment Basins and Sediment Traps should be

constructed to maintain the quality of water that will runoff due to the construction of the Exit 8 Area Roadways. As residential, commercial and industrial entities locate within the Exit 8 Area, storm drainage needs will be assessed on a site-by-site basis. Each development within the Exit 8 Area will be required to design its own storm drainage system in accordance with SCDHEC Regulations. Storm Drainage Improvements concepts and costs are outside of the scope of this report and have not been included in the Roadway Improvements cost estimate. However, twenty (20) percent of land use has been assumed to be attributed to stormwater management and the storm drainage improvements will be integrated into the adjacent developable area.

B. Secondary Infrastructure Improvements

1. ELECTRICAL IMPROVEMENTS



Palmetto Electric Cooperative currently provides electrical service to the Exit 8 Area via existing 7.2/12.47-kV distribution lines. Palmetto

Electric Cooperative will upgrade to meet any warranted additional requirements by potential locating residential, commercial, or industrial entities.



South Carolina Electric and Gas (SCE&G) currently provides electrical service to the Exit 8 Area via existing 23-kV distribution lines. Any additional requirements by potential locating residential, commercial, or industrial are anticipated to be met by SCE&G, based on the proposed uses. Should underground distribution be requested, the developer will be responsible for the cost of conduit and ground mounted transformers.



As shown in the Roadway Cross-Sections, area has been allocated within the proposed roadway rights-of-way for the construction of underground electrical infrastructure for both providers as detailed in **Exhibit R**.

2. TELECOMMUNICATIONS IMPROVEMENTS



Telecommunication technology is a rapidly advancing industry. Hargray Communications currently has jurisdiction over the Exit 8 service area. Hargray Communications' telecommunication services provided to the Exit 8 Area includes fiber optic service, and telephone service. Fiber Optic facilities are available from the US Highway 17, US Highway 278, John Smith Road, Red Dam Road and Brickyard Road right-of-way within the Exit 8 Area. Improvements will be handled by Hargray Communications as required to support development of the Exit 8 Area. As shown in the Roadway Cross-Sections, area has been allocated within the proposed roadway rights-of-way for the construction of underground telecommunications infrastructure as detailed in **Exhibit R**.

3. NATURAL GAS IMPROVEMENTS

South Carolina Electric and Gas (SCE&G) currently has a six (6)-inch natural gas distribution line, at the site. An additional 2nd distribution main can be added to meet demand to the Exit 8 Area depending on requirements of the development. SCE&G anticipates the existing infrastructure will be able to meet the Exit 8 Area's natural gas demands. As shown





in the Roadway Cross-Sections, area has been allocated within the proposed roadway rights-of-way for the construction of gas infrastructure as detailed in **Exhibit R.**



VII. RECOMMENDATIONS

With the development of the Exit 8 Area, Jasper County will provide a state of the art venue to attract quality industrial, commercial, and residential prospects to the County. Provisions have been made to offer amenities that will increase the quality of the Exit 8 Area.

Alliance Consulting Engineers, Inc. recommends the following to be completed prior to the development of the Exit 8 Area:

- Lot size and road access should be designed to provide unity, and flexibility for future development of the Exit 8 Area. Roadways should be constructed only to the extent necessary to demonstrate the objective for the development of the Exit 8 Area while maintaining a large degree of flexibility concerning the future layout of the Area.
- A traffic study should be completed in accordance with the Institute of Traffic Engineers (ITE) Traffic Impact Analysis to evaluate any potential impacts to current and projected traffic volumes along US Highway 278, US Highway 17, Interstate 95, and other associated roadways due to the development of the Exit 8 Area. Additional items that should be addressed in the traffic study include the impact the development of the Exit 8 Area may have on the surrounding intersections and roadways which provide access to the Exit 8 Area.
- Placement of various indicator signage along US Highway 278 as soon as possible to promote the visibility and overall recognition of the Exit 8 Area to the Jasper County public and prospective developers which may wish to locate within the Area.
- Seek funding sources to implement early phases of the project and program in the long term infrastructure needs accordingly.



VIII. KEY CONTACT PERSONNEL

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Mr. Kendall Malphrus
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Jasper County

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Fax: 843-726-7800



alfulghum@jaspercountysc.gov

bushclark1@hargary.com

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Mr. Chris Damgen
Senior Planner
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Hardeeville, South Carolina 29927
Phone: (843) 784-2231
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City of Hardeeville

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