U.S. Department of Transportation
Federal Highway Administration

South Carolina

July 26, 2012

1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201
803-765-5411
803-253-3989

In Reply Refer To:
HDA-SC

Mr. Randy Williamson
Environmental Engineer
South Carolina Department of Transportation (SCDOT)
955 Park Street, P.O. Box 191
Columbia, South Carolina 29202

Dear Mr. Williamson:

We have reviewed the Environmental Assessment (EA) for the Proposed I-95/U.S. 301 Interchange Improvements and U.S. 301 Connector to SC 6 in Orangeburg County, South Carolina and find that it adequately addresses the potential impacts of the proposal. Based on the analysis provided in the EA and supporting documents we concur that an Environmental Impact Statement (EIS) is not required. The EA is approved and acceptable for public availability and comment. Copies of the EA shall be made available for public review for a minimum of 30 days before FHWA makes its final decision. The public availability shall be announced by a notice similar to a public hearing notice. Also, please provide Notice of Availability of the EA to the affected units of government, and to the State intergovernmental review contacts as specified in 23 CFR 771.119(d).

All project commitments documented in the EA are mandatory and the SCDOT will need to ensure that they are ultimately carried out. The public hearing may be scheduled fifteen (15) days after the document is made available for public review. Enclosed is a copy of the signed document. Please address any questions you may have concerning this project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

(for) Robert L. Lee
Division Administrator

Enclosure

cc: Ms. Heather Robbins, NEPA Manager (via e-mail)
File 38.036984
Reading File

ENVIRONMENTAL ASSESSMENT

I-95 / US 301 Interchange Improvement & US 301 Connector to SC 6
Orangeburg County, South Carolina

Submitted Pursuant to 42 U.S.C. 4332(2)(c)
by the
U.S. Department of Transportation
Federal Highway Administration
and
South Carolina Department of Transportation

SCDOT PIN No. 36984
SCDOT File No. 38.036984

7/26/12
Date of Approval

Randall D. Williamson, PE
Environmental Engineer
South Carolina Department of Transportation

7/26/12
Date of Approval

(for) Patrick L. Tyndall
Planning and Environmental Team Leader
Federal Highway Administration

The following individuals may be contacted for additional information concerning the project:

Mr. Patrick L. Tyndall
Planning and Environmental Team Leader
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201
(803) 253-3187

Mr. Randall Young, P.E.
Program Manager
S.C. Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202
(803) 737-1827

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Date of Approval	Randall D. Williamson, PE Environmental Engineer South Carolina Department of Transportation
_____	_____
Date of Approval	Patrick L. Tyndall Planning and Environmental Team Leader Federal Highway Administration

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Planning and Environmental Team Leader
Federal Highway Administration
1835 Assembly Street, Suite 1270
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(803) 253-3187

Mr. Randall Young, P.E.
Program Manager
S.C. Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202
(803) 737-1827

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ENVIRONMENTAL COMMITMENTS

This page contains all known commitments agreed to in the document.

1. A Phase II Environmental Assessment would be conducted by the Design-Build Contractor prior to construction to further evaluate the project's potential impacts on hazardous materials within the project corridor. In the event that hazardous materials are uncovered during construction activities, the contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. *(page 3-42)*

2. The relocation program would be conducted in accordance with the Federal Uniform Relocation assistance and Real Property Acquisition Policies Act of 1970, as amended. *(page 4-3)*

3. The 66-dBA contour line is indicated on Figure 4-3, enclosed, and hereby made available to local officials for their land use planning. *(page 4-19)*

4. Impacts to streams, wetlands, and open waters would be minimized. Road design would incorporate 2:1 slopes and reduced median widths (where practicable) in sensitive areas to minimize aquatic impacts. *(page 4-24)*

5. It is anticipated that a USACE Section 404/401 permit will be required to authorize impacts to wetlands and streams within the Preferred Alternative alignment. The Design-Build contractor will be responsible for obtaining this permit on behalf of SCDOT. *(page 5-2)*

6. Unavoidable impacts to wetlands and streams would be mitigated through the debiting of credits from a designated mitigation bank or through a permittee responsible mitigation plan (if needed). A detailed stream and wetland compensatory mitigation plan would be developed once final plans are complete and permitting has commenced. *(page 4-24)*

7. Obligations under Section 7 of the Endangered Species Act must be considered if (1) new information reveals impacts associated with this project may affect listed species or critical habitat in a manner not previously considered, (2) the project is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the proposed widening. *(page 4-26)*

8. Section 402 compliance would be completed prior to construction of the project. An NPDES NOI permit would be submitted to SCDHEC and approved prior to the initiation of any construction activity. *(page 4-25)*

9. During construction, contractors would be required to utilize Best Management Practices approved by the South Carolina Department of Transportation to minimize any water quality impacts that may occur from erosion of unstabilized cuts or fills, disturbance of previously filled areas, accidental spills of fuels or oil, and other construction activities that could affect water quality. *(page 4-29)*

10. SCDOT would verify that there are sufficient undeveloped uplands and/or SCDHEC permitted mines within haul distance of the project to provide the construction contractor with a reasonable opportunity to acquire borrow materials in a practicable manner while minimizing impacts to wetlands. In accordance with EDM Number 30, the "Special Provision for Borrow Pits on Larger Projects" would be included in the contract documents along with the statement "Borrow Pit Locations – Borrow materials for this project shall not be obtained from wetlands, streams or rivers." *(page 4-29)*

11. All areas disturbed during construction activities would be seeded according to the SCDOT *Supplemental Technical Specifications for Seeding* (SCDOT, 2011) to minimize impacts to aquatic resources. *(page 4-29)*

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LIST OF ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
APPR	Advanced Project Planning Report
ASTM	American Society for Testing and Materials
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CBG	Census Block Group
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	United States Code of Federal Regulation
CT	Census Tract
CWA	Clean Water Act
dBA	A-weighted decibels
EA	Environmental Assessment
EDM	Engineering Directive Memorandum
EDR	Environmental Data Resources
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
FTZ	Foreign Trade Zone
FW	Freshwaters
GIS	Geographic Information System
HUC	Hydrologic Unit Code
L_{eq}	Average A-weighted sound level
L_{Aeq1h}	Average equivalent sound levels for 1 hour
LOS	Level of Service
IRIS	Integrated Risk Information System
LRTP	Long Range Transportation Plan
LSCOG	Lower Savannah Council of Governments
LWCF	Land and Water Conservation Fund Act
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAP	Noise Abatement Policy
NATA	National Air Toxics Assessment

NB	Northbound
NEPA	National Environmental Policy Act
NLEV	National Low Emission Vehicle
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge and Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Place
NWI	National Wetland Inventory
OCDC	Orangeburg County Development Commission
OHWM	Ordinary High Water Mark
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFG	Reformulated Gasoline
ROW	Right of Way
RPW	Relative Permanent Water
SARA	Superfund Amendments and Reauthorization Act of 1986
SB	Southbound
SCBCB	S.C. Budget and Control Board
SCDHEC	S.C. Department of Health and Environmental Control
SCDNR	S.C. Department of Natural Resources
SCDOT	S.C. Department of Transportation
SCSHPO	S.C. State Historic Preservation Office
SIP	State Air Quality Implementation Plan
STIP	Statewide Transportation Improvement Plan
TAC	Technical Advisory Committee
TCM	Transportation Control Measure
THPO	Tribal Historic Preservation Office
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TNW	Traditional Navigable Water
USACE	U.S. Army Corp of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UT	Unnamed Tributary
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

1.1 Project Overview

The South Carolina Department of Transportation (SCDOT), in partnership with the Lower Savannah Council of Governments (LSCOG) and Orangeburg County (County) proposes to improve the Interstate 95 (I-95) / United States Highway 301 (US 301) Interchange and construct the US 301 Connector to South Carolina Route 6 (SC 6), south of the Town of Santee in Orangeburg County for a total of approximately 1.8 miles (Figure 1-1).

This Environmental Assessment (EA) is being submitted pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, in accordance with Federal Highway Administration (FHWA) regulations in 23 CFR §771 and Council on Environmental Quality (CEQ) regulations 40 CFR §1500. The project, as proposed, would result in certain modifications to the human and natural environment. However, SCDOT has not identified any significant impacts that would occur and; therefore, the project meets the criteria under 23 CFR §771.115(c) for processing as an EA.

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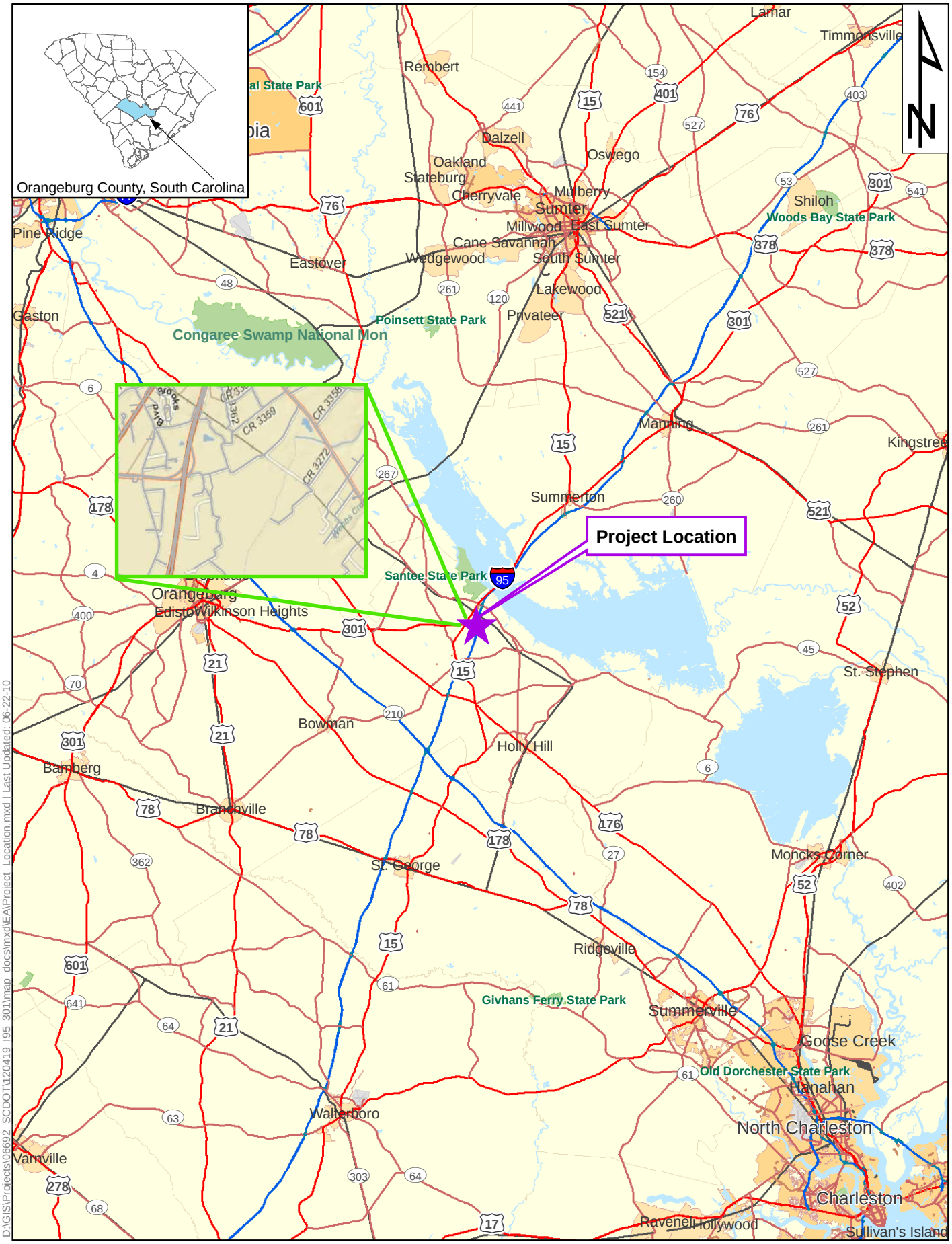

Project Location

Figure 1-1

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1.1.1 Existing Facility

I-95 is the main interstate corridor on the East Coast of the United States, paralleling the Atlantic Ocean for approximately 1,927 miles from Miami, Florida to Houlton, Maine at the Canadian border. Within the proposed project area, I-95 is a four-lane divided roadway with paved shoulders and ditches. The posted speed limit along I-95 within the proposed project area is 70 miles per hour.

The US 301 corridor runs through the south Atlantic states from Sarasota, Florida to Glasgow, Delaware. In South Carolina, US 301 is generally parallel to I-95. The section of US 301 within the proposed project area (not concurrent with I-95) is a four-lane divided roadway with earthen shoulders and ditches. Beginning at the interchange included in the proposed project (I-95, Exit 97), US 301 runs concurrently with I-95 across Lake Marion for approximately 5 miles (Figure 1-2). At that point (I-95, Exit 102), US 301 diverges from I-95 and continues on a parallel alignment to the West of the interstate. The existing US 301 bridge over I-95 was constructed in 1970 and is in very good condition, per the SCDOT Bridge Maintenance Section.

The existing I-95 / US 301 Interchange (I-95, Exit 97) is a three-leg interchange that provides access to northbound (NB) I-95 from NB US 301 and to southbound (SB) US 301 from SB I-95. Currently, there are no ramps to access I-95 SB from NB US 301 or to access US 301 SB from I-95 NB.

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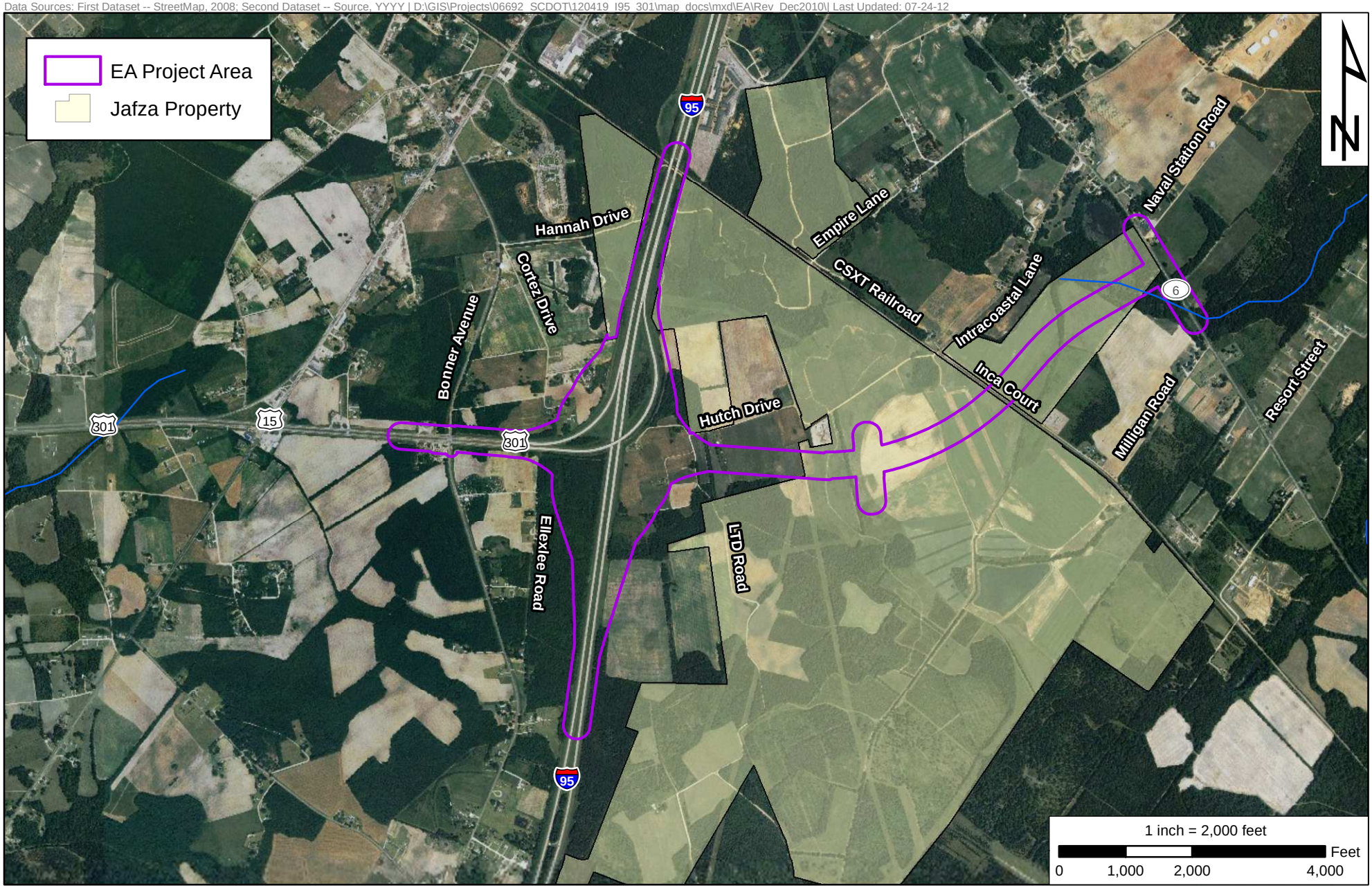
Data Sources: First Dataset -- StreetMap, 2008; Second Dataset -- Source, YYYY | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_Dec2010\| Last Updated: 07-24-12



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Project Area

Figure 1-2

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1.1.2 Project Description

The proposed improvements consist of modifying the I-95 / US 301 interchange from a partial access interchange to a full access interchange. The proposed interchange facility design is a partial cloverleaf that would address the increasing and future traffic demands of the area. The proposed improvements also include building a new location roadway to connect existing US 301 to SC 6 near Naval Station Road, bridging over I-95. Initially, the US 301 Connector would be constructed as a five-lane section from I-95 to the proposed inland port intermodal facility just west of the CSX railroad crossing and taper down to a three-lane section from there to SC 6. The three-lane section may be widened to five-lanes in the future, as warranted by increasing traffic demands. A grade-separated bridge over the CSX railroad is also proposed as part of the US 301 Connector. SC 6 would be improved by the inclusion of turn lanes

1.1.3 Project History

The LSCOG identified the need for the extension of US 301 from I-95 to SC 6 as a priority in its Long Range Transportation Plan (LRTP) (LSCOG, 2006) and in its regional Transportation Improvement Program (TIP) (LSCOG 2009). According to the LSCOG, the rapid growth and development in Orangeburg County and aggressive economic development strategies have brought significant industrial development and related infrastructure to Orangeburg County.

As outlined in the December 2011 Eastern Orangeburg County Sustainability Study (Clarion, et. al., 2011), the trend of economic development in Orangeburg County is largely driven by factors external to the County: the widening of the Panama Canal, expected demand for an inland port facility (Jafza), and production of new Boeing aircraft components in nearby North Charleston. In Eastern Orangeburg County, economic development efforts are focused on development of new businesses in the Global Logistics Triangle (GLT) (Figure 1-3) and other targeted sites. The Global Logistics Triangle was created by the Orangeburg County Development Commission (OCDC) to meet the demand of anticipated business growth in the County. As of 2007, the County was already home to nine international companies with more

The GLT was created by the OCDC to meet the demand of anticipated business growth in the County. It is situated in Orangeburg County between the highly active commerce corridors of I-95 and I-26.

than $700 million in capital investment and more than 4,000 jobs. Since the establishment of the GLT, several additional international companies such as GKN Aerospace, the manufacturer of HondaJet fuselages for the HondaJet business jet, have opened facilities in the County based in the GLT.

Figure 1-3 Orangeburg County Global Logistic Triangle

Note: Figure referenced from December 2011 Eastern Orangeburg County Sustainability Study

Currently the GLT is comprised of four sites including the Big Buck Boulevard Site, Orangeburg County/City Industrial Park, Matthews Industrial Park and Jafza Magna Park. The three key business parks that comprise the GLT are being actively marketed by the OCDC and are summarized below.

Orangeburg County/City Industrial Park: This 445 acre development is located at the intersection of I-26 and US 301. Approximately 1 million square feet have been developed and the site is expected to accommodate another 500,000- 750,000 square feet at full buildout. In November 2011, GKC aerospace became the most recent international company to locate a facility in the park by signing an agreement to locate in

a 151,000 square foot building across from the existing facilities of Allied Air and H.T. Hackney.

John W. Matthews Industrial Park: This 556 acre property is located at the intersection of US 176 and US 301 near the I-95/I-26 interchanges. This park has not yet been developed and currently lacks wastewater infrastructure. Water infrastructure was recently run to the park. At buildout, the park is expected to accommodate 1.5 million square feet of development.

Jafza Magna Park (Jafza): This 1,324 acre Logistics Park is located on I-95 at US-301 near Santee. This park will be the first of its kind and will serve as a transportation and logistics hub – an "inland port" – for shipments coming through the Ports of Charleston and Savannah. Construction of the first building was completed in 2010. The 16,000 square foot building, the Jafza Enterprise Center, is located within Phase I of the development located on the west side of I-95 and is home to the S.C. Technical Institute. As of the writing of this document Jafza had determined, through coordination with the U.S. Army Corps of Engineers (USACE) Charleston District, that impacts to Waters of the U.S. will be avoided and thus no permit is required. Personal conversation with Jafza's consultants on May 24, 2012, Applied Technology Management and S&ME, Inc. confirmed that discussions took place with Mr. Nat Ball of the USACE Charleston District indicating that no permit would be required since impacts to jurisdictional waters would not occur.

1.1.3.1 Development of the Jafza Magna Park

Capitalizing on the need for an inland port facility to serve the Port of Charleston and the transportation infrastructure in Orangeburg County, Dubai-based transportation and logistics company, Jafza, purchased 1,324 acres just outside of the town limits of Santee in the fall of 2007. Jafza has plans to build a logistics, light manufacturing and distribution hub inside a proposed Foreign Trade Zone (FTZ) at the site located near I-95 at Exit 97. In total the development of the site is planned to provide 16,592,700 square feet of light, medium and large scale industrial developments and 100 acres of commercial development. Site development has been phased to address the impacts of the national and global recessions on the project. The first building was completed in 2010, a 16,000

square-foot, multitenant building consisting of 12,000 square feet of industrial space and 4,000 square feet of office and conference space, with room for expansion. Additional detail on the overall site Jafza plan and land use program at full build out is contained in Appendix A, Figure 2 and Table 1. While the Jafza facility is being pursued and developed by others, the project's proposed impact to traffic has been evaluated and is considered by this EA. Traffic associated with the proposed Jafza facility is summarized in subsequent chapters of this document with details included in Appendix A, Jafza Design Traffic Technical Report.

Foreign Trade Zones are duty free commerce areas not in the U.S. Customs territory. The benefit for the users of these zones is that customs fees and duty are only paid when imports actually leave the zone and enter the Customs territory. There are presently three FTZs with 32 strategically located sites throughout SC including one in Orangeburg County.

1.1.4 Reasonably Available Funding

FHWA requires demonstration of fiscal constraint at the NEPA stage of project development. Fiscal constraint is met when the LRTP, TIP and the STIP have sufficient financial information for demonstration that a project in the Metropolitan Transportation Plan (MTP), TIP and STIP can be implemented using committed, available, or reasonably available revenue resources. FHWA's Office of Planning, Environment, and Realty issued an informational memorandum on January 28, 2008, explaining the relationship between certain Transportation Planning and Air Quality Conformity regulations and the timing of a final NEPA decision (Record of Decision (ROD), FONSI or Categorical Exclusion (CE)). The memorandum outlined the requirements summarized in the following table.

Table 1-1 Fiscal Constraint Requirement before Approving the NEPA Decision[1]	
Before a Final Environmental Decision (ROD, FONSI, CE) is approved in:	**Fiscal Constraint must be demonstrated by:**
Metropolitan Areas	• Entire Project is in the MTP • At least one subsequent phase of the Project is in the TIP (more if within TIP timeframe) • Full funding is reasonably available for the completion of the entire Project
Non-Metropolitan Areas (Outside MPO)	• Project is consistent with the SLRP • At least one subsequent phase of the Project is in the STIP (more if within STIP timeframe) • Full funding is reasonably available for the completion of the entire Project

The proposed project's current estimated total cost is $33.4 million. Federal and non-federal dollars in the amount of $33.5 million have been committed to the project. At this time, SCDOT intends to proceed with the project as Design-Build. The following represents a summary of the reasonable and available funding that has been identified in the various local and state plans for the proposed project:

- LSCOG 2005 - 2030 LRTP
  - I-95/US 301 Int. Improvements INCLUDED/UNFUNDED
- LSCOG FY 2009-2015 TIP
  - I-95/US 301 Int. Improvements $5.1M (Earmark & IMD Funds)
  - Extension of US 301 to SC 6 $3.0M Approved
  - Extension of US 301 to SC 6 $7.5M (presented to LSCOG TAC on April 3, and then LSCOG at the end of April to be amended in STIP, June '12)
- April 2008 Earmark $4.0M (match by Orangeburg of $402,453 included in $4.0M; to be amended in STIP, Apr '12)
- STIP FY 2010-2015
  - I-95/US 301 Int. Improvements $1.8M (Earmark)
- TIGER III Grant FY 2011
  - I-95/US 301 Int. Improvements $12.1M (to be amended in STIP, Apr '12)

[1] (FHWA 2011).

1.1.5 Design Criteria

US 301 as currently configured is a four-lane divided roadway with earthen shoulders, ditches and a posted speed limit of 55 miles per hour within the project area. US 301 is classified as a Minor Arterial which indicates that it carries a mix of local and through traffic linking Collectors, and sometimes Local Streets, with Principal Arterials. I-95 is a four-lane divided roadway with paved shoulders, ditches and a posted speed limit of 70 miles per hour within the project area. It is classified as a Principal Arterial.

Design features of the proposed project are based on design criteria and policies of the SCDOT and American Association of State Highway and Transportation Officials (AASHTO). In addition, design criteria outlined in SCDOT's Highway Design Manual would be evaluated prior to preparation of the preliminary design plans.

1.1.6 Logical Termini

According to 23 CFR §771.111(f), a project shall "connect logical termini…, have independent utility…, and not restrict…other reasonably foreseeable transportation improvements." Logical termini are defined as rational endpoints for transportation improvements as well as rational endpoints for environmental impacts.

The existing I-95 / US 301 interchange is a three-leg interchange that provides access to NB I-95 from NB US 301 and to SB US 301 from SB I-95. Currently, there are no ramps to access I-95 SB from NB US 301 and US 301 SB from I-95 NB. The proposed project would provide opportunity to make all the movements at this interchange location and would also connect US 301 to SC 6.

1.2 Project Purpose and Need

As identified in the LRTP, rapid growth and development in Orangeburg County and aggressive economic development strategies implemented have brought significant industrial development and related infrastructure to the county. The existing interchange has experienced some moderate growth due to Orangeburg County's aggressive economic development strategies and industrial recruitments and with its use as a connector between I-26 and I-95. A new interchange design is needed to provide full access to I-95 and to adequately handle the increased traffic volumes from these industrial recruitments, particularly the proposed GLT Jafza South Carolina Logistics and Distribution Park.

The proposed project would serve to accommodate increased traffic that will be generated by the Jafza facility, one of the key industrial parks within the GLT, while secondarily improving the efficiency of intermodal freight movement in South Carolina by providing some relief for the rapidly increasing Port of Charleston congestion which is being generated by recent and ongoing expansion activities at the Port of Charleston's facilities. In addition, the proposed project would provide a connection of US 301 to SC 6, allowing for an optional and alternative access to I-95. Lastly, the proposed project would also accomplish completion of the existing interchange with construction of a fourth leg. Detailed traffic information under the No Build condition and specifically for US 301 is provided in Appendix A and summarized in Chapter 2 of this document.

As indicated in the LRTP, the LSCOG's Technical Advisory Committee (TAC) unanimously supports the inland port concept and as such endorsed inclusion of the interchange proposal at I-95 and US 301 in the LRTP. The proposed project would provide a safe, efficient vehicular connection to the proposed $250 million, 1,324-acre Jafza intermodal facility located just east of the existing I-95 / US 301 interchange (Figure 1-2). The Jafza facility will consist of an intermodal rail yard, warehouse related development and office/manufacturing space to facilitate the storage and logistics of the operations. The Jafza facility would serve the Port of Charleston and transportation infrastructure needs of Orangeburg County.

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2.0 ALTERNATIVES

Chapter Two discusses the alternatives that were considered for the proposed improvements to the I-95/US 301 Interchange and US 301 Connector to SC 6. In addition, this chapter identifies the Preferred Alternative for the construction of the proposed project.

2.1 Alternatives Considered

The identification, consideration, and analysis of alternatives were a key component to the decision-making process implemented by SCDOT for the proposed project. In considering alternatives, SCDOT evaluated several options for a solution that would satisfy the transportation needs and protect the environmental and community resources of the project area. Criteria used to evaluate alternatives developed for this project included options that balanced engineering and economic factors with potential impacts to the natural and human environment and consideration of public and agency input. Preliminary studies conducted by SCDOT included completion of preliminary alternative studies for five potential interchange alternatives and six potential US 301 Connector alternatives. An additional seventh alternative for the US 301 Connector was introduced and evaluated in July 2012. Traffic studies for the proposed project were also completed by SCDOT and supplemented withthe traffic analysis completed for the improvements under the Jafza development effort. The following documents were developed during the Alternatives Analysis process:

- Advanced Project Planning Report, January 2007
- I95/US301 Interchange Project & US 301 Extension Report, December 2007
- Jafza Design Traffic Technical Report, June 2009
- Draft Interchange Modification Report, March 2012

A summary of the process undertaken by SCDOT for considering and eliminating alternatives, as presented in the referenced documents, is presented in the following subsections.

2.1.1 Preliminary Interchange Alternatives

Interchange type selections for the project were developed based upon the criteria provided in the *SCDOT 2003 Highway Design Manual* and are based on providing the capacity and level of service that is consistent with the type of highway and anticipated traffic movement between the two facilities. Based on the criteria, five preliminary

interchange alternative designs were developed and evaluated by SCDOT and included the following (Figure 2-1):

- Full Clover Leaf Interchange;
- Diamond Interchange;
- Partial Cloverleaf A Interchange;
- Partial Cloverleaf A with Directional Flyover; and
- Partial Cloverleaf Advance/Beyond (AB) with Directional Flyover

All of the preliminary interchange alternatives evaluated would provide full NB and SB access from US 301 to I-95 and vice versa. Preliminary assessments of the impacts associated with the full clover leaf design were also evaluated by SCDOT and are described in the Advanced Project Planning Report (APPR) for this project (SCDOT, 2007b, Appendix B).

As a result of SCDOT's preliminary assessment of the full clover leaf interchange, this option was eliminated from consideration due the impact potential to resources and preliminary cost estimates that were determined to be challenging to project development and ultimately prohibitive. Preliminary anticipated impacts are shown in the following table as summarized from the SCDOT APPR.

Table 2-1 Proposed US 301 Improvements Resource Impact Matrix for Full Cloverleaf Interchange Alternative[2]	
Resource Area of Concern	**Impact Potential**
Wetlands	**Possible**
Water Bodies (streams, ponds, etc.)	**Possible**
Threatened & Endangered Species	**Possible**
Potential Historic Sites	**Possible**
Other Potential Cultural Resources	**Possible**
Environmental Justice	**Possible**
Residential Displacements	**Certain**
Business Displacements	**Possible**
Hazardous Materials Sites	**Possible**
Railroad Tracks	**Certain**

Key:

Possible (Yellow): This resource is or may exist near the proposed option and impacts may occur, be minimized or avoided if this is the preferred alignment selected.

Likely (Orange): This resource has been identified near or within the area of the proposed option and an impact is more likely to occur even with avoidance and minimization considerations incorporated if this is the preferred alignment selected.

Certain (Red): This resource has been identified within the area of the proposed option and impacts will occur to the resource if this is the preferred alignment selected.

SCDOT continued with alternative evaluation by examining the remaining four interchange alternatives. These are described and compared in the December 2007 I-95/US 301 Interchange Project and US 301 Extension Project Report compiled by SCDOT (SCDOT, 2007a, Appendix C).Through the process, two of four interchange alternatives, the Partial Cloverleaf A with directional Ramp and the Partial Cloverleaf AB with Directional Ramp, were eliminated on the basis of cost and magnitude of displacements which were determined to be prohibitive. In addition, both alternatives would likely require the addition of frontage roads to accommodate dislocated properties thus increasing cost estimates by approximately $5.2 million per alternative. A preliminary matrix of the factors considered during evaluation and elimination of the remaining four interchange alternatives are shown in the following table as summarized from the SCDOT report.

[2] SCDOT Advanced Project Planning Report, January 2007.

Table 2-2 I-95/US-301 Interchange Alternative Matrix[3]								
Interchange Design	**Escalating Factor**	**LOS @ ADT**	**I-95 Conflict Points**	**Continuous or Free Flow Movements**	**Costs**	**Environ-mental Document**	**R/W Impacts**	**Basis of Elimination**
Diamond	Upgrade partial interchange to full interchange	C @ <15,000	4	4 of 8	$ 42.4	EA	8	Recommended for further evaluation
Partial Cloverleaf A	Provide continuous flow from Jafza to I-95	C @ 15,000 to 25,000	6	6 of 8	$ 48.2	EA	8	Recommended for further evaluation
Partial Cloverleaf A with Directional Ramp	Accommodate heavy movement from/to I-95 SB	C @ >25,000	5	6 of 8	$ 56.2	EA	8	Cost prohibitive, Frontage roads required
Partial Cloverleaf AB with Directional Ramp	Provide continuous flow to/from Jafza on US 301 and I-95	C @ >25,000	6	7 of 8	$ 62.0	EA	10	Cost prohibitive, Displacements, Frontage roads required

To further evaluate the remaining two project alternatives, SCDOT completed an Interchange Modification Report (IMR) (SCDOT, 2012, Appendix D). The IMR evaluated the current geometric and operating conditions for the purpose of justifying modifications to the current I-95 and US 301 interchange in Orangeburg County. The two remaining interchange alternatives considered in the IMR are the Diamond Interchange and the Partial Cloverleaf A Interchange with both alternatives providing full-access to I-95 and an extension of US 301 to Route SC 6. In both alternatives, driveways for the Jafza Development are located east of I-95 on the new US 301 Extension.

The result of the preliminary analyses conducted and subsequent IMR analysis indicate that the Partial Cloverleaf A design as the preferred interchange alternative. Based on engineering constraints identified, the Diamond Interchange was determined to adversely effect the overall interchange operation as it would require trucks to travel SB and cross two lanes of traffic to access US 301. For this reason, the Diamond Interchange alternative was eliminated.

[3] (SCDOT, 2007a)

Reasoning for selection of the Partial Cloverleaf A interchange configuration includes the following:

- Rural nature of the surrounding area;
- Best option to continue the relationship of I-95 with US 301, a minor roadway;
- More efficient use of space;
- Avoidance of the interweaving traffic flows; and
- Future traffic projections for the area to support this type of facility.

The Partial Cloverleaf A design also better accommodates the projected high traffic volumes from the Jafza facility entering southbound I-95, particularly heavy trucks from the site, provides loop entrance ramps, eliminating the need for left turns on US 301 and best meets the overall project Purpose and Need as identified in Chapter 1.

2.1.2 US 301 Connector Alternatives

Once the preferred interchange configuration was determined, six alternative corridors for the connection of US 301 to SC 6 were developed and evaluated. Due to the close proximity of the corridors to one another, two alternatives were eliminated and four remaining alternatives were carried forward for additional analysis including a fifth alternative added in July 2012. The five US 301 Connector alternatives are depicted on Figure 2-2.

All of the alternatives evaluated in this document consist of the combination of constructing the I-95 / US 301 interchange as a partial cloverleaf A interchange and one offive US 301 Connector alternatives, bridging over I-95, and merging into a five-lane highway ending at SC 6. Initially, the five-lane section would end just west of the railroad crossing and taper down to a three-lane section continuing east from the Jafza entrance to the SC 6 intersection. The typical section for the project would accommodate a five lane roadway allowing the constructed three-lane section to be widened to five-lanes in the future as warranted by increasing traffic demands. A grade-separated bridge over the CSX railroad is also proposed. SC 6 would be improved by the inclusion of turn lanes northbound and southbound on the new US 301 Connector.

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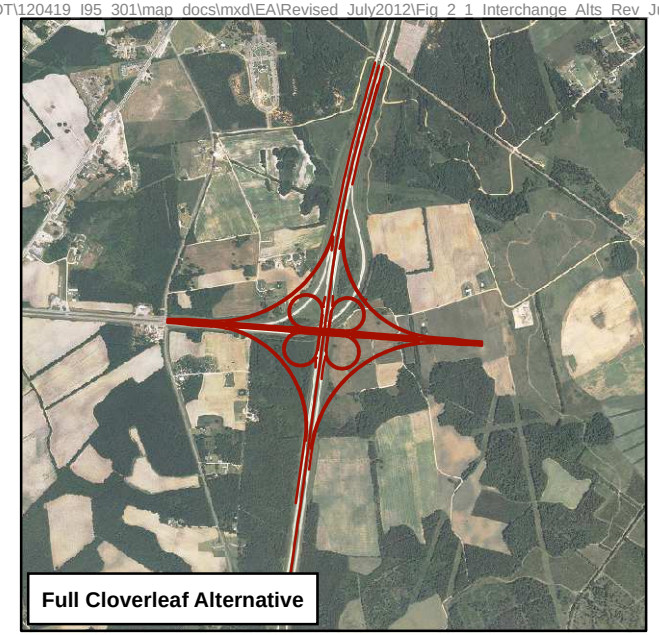

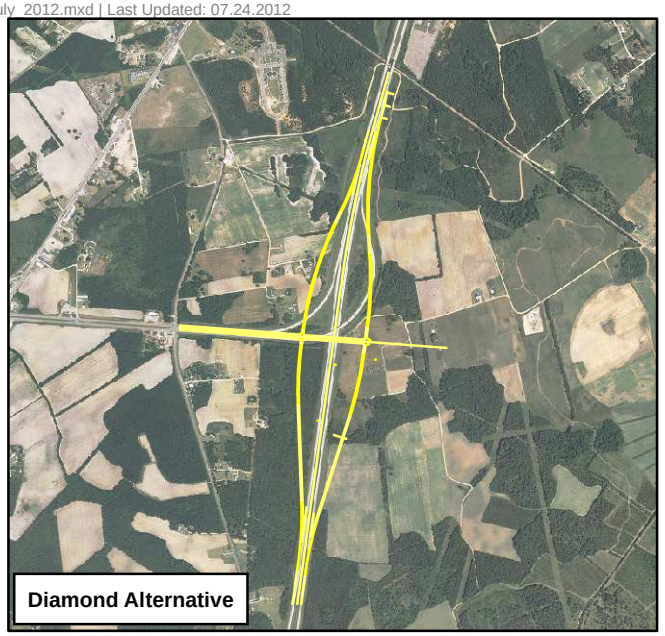

1 inch = 3,000 feet
Feet
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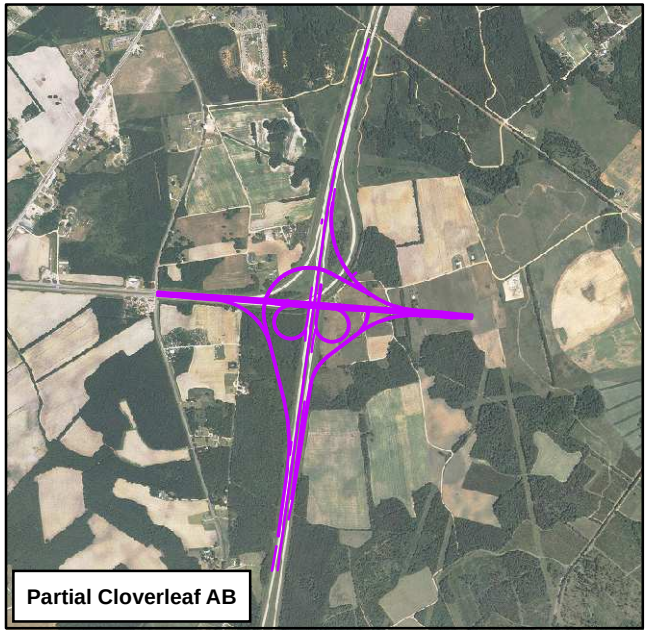

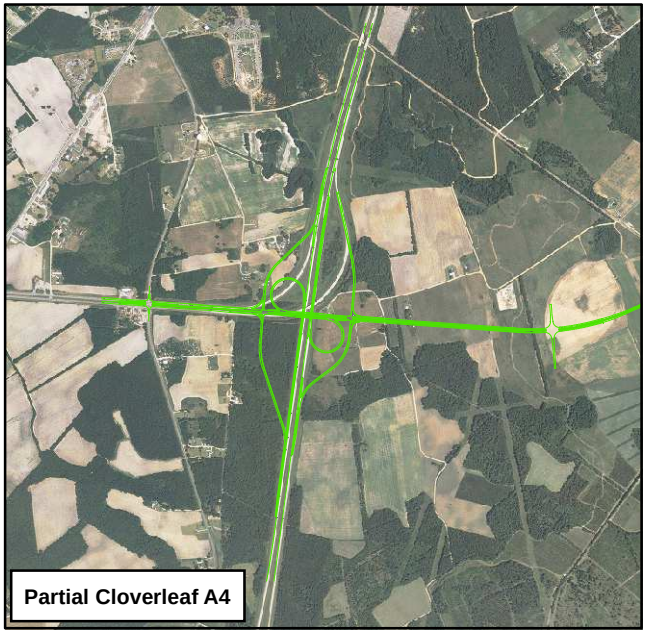

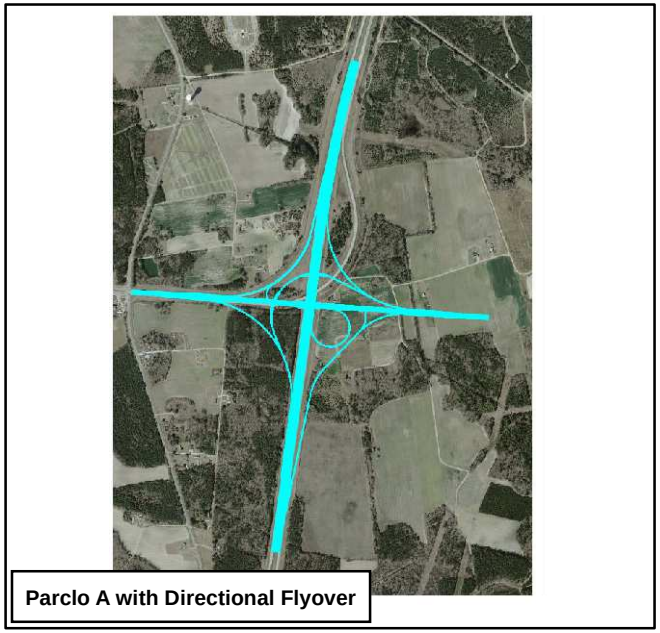

Preliminary Interchange Alternatives

Figure 2-1

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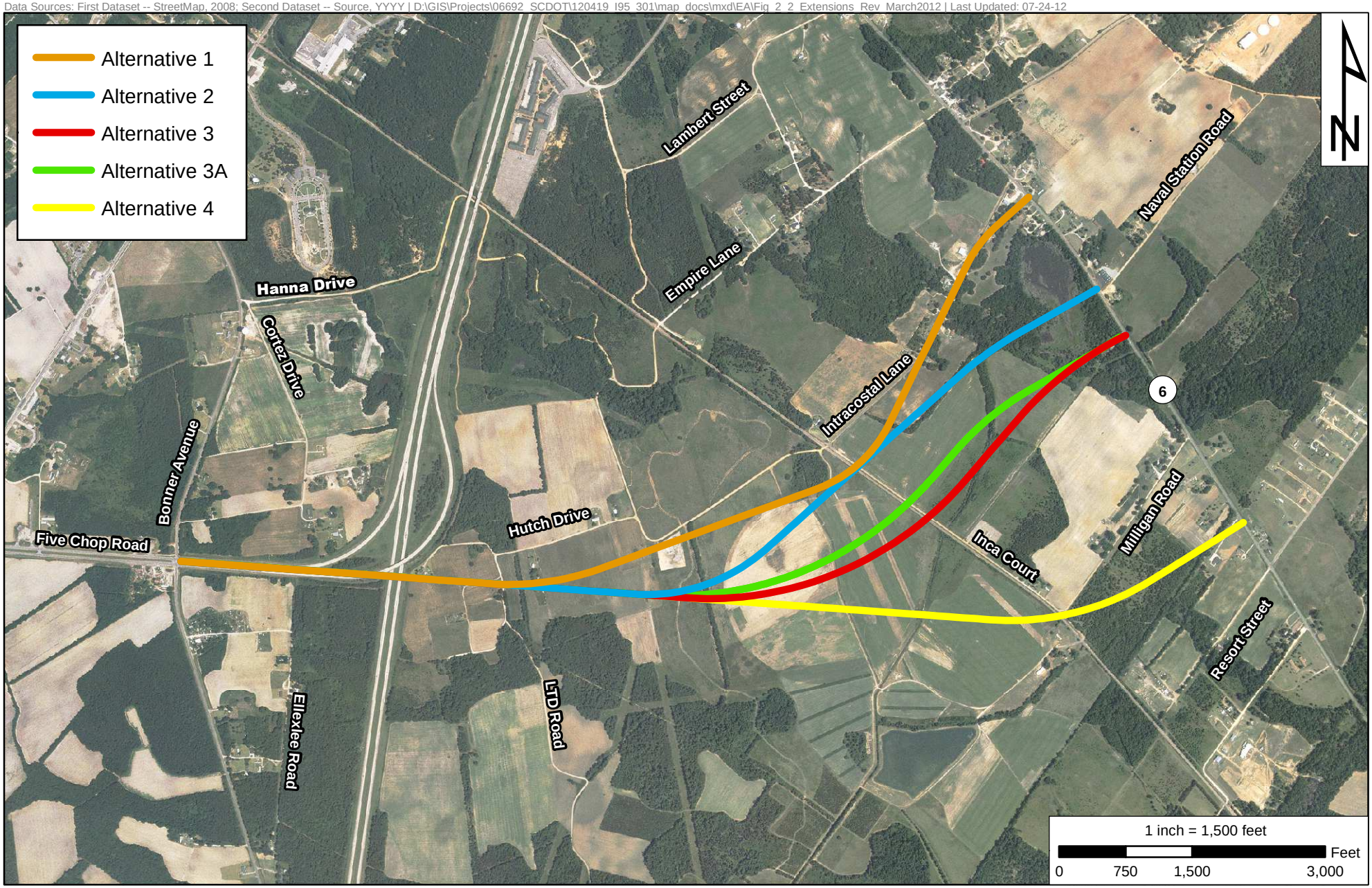
Data Sources: First Dataset -- StreetMap, 2008; Second Dataset -- Source, YYYY | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Fig_2_2_Extensions_Rev_March2012 | Last Updated: 07-24-12



Connector Alternatives

Figure 2-2

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The typical cross sections for the five- and three-lane segments are provided in Figures 2-3 and 2-4, respectively. The five-lane segment has four 12-foot travel lanes, one 15-foot center turn-lane, paved shoulders, and ditches. The three-lane segment has two 12-foot travel lanes, one 15-foot center turn-lane, paved shoulders, and ditches. Dedicated pedestrian/bike facilities were considered but ultimately not included because of the rural nature of the project and consideration that the planned developments would be mostly industrial. However, it is important to acknowledge that the typical sections for the project do not preclude the future accommodation of such facilities with 2'-0" paved shoulders, an additional 20' wide grassed shoulder and a wide outside shoulder on the bridges.

Figure 2-3 Typical Cross Section for Five-Lane Segment

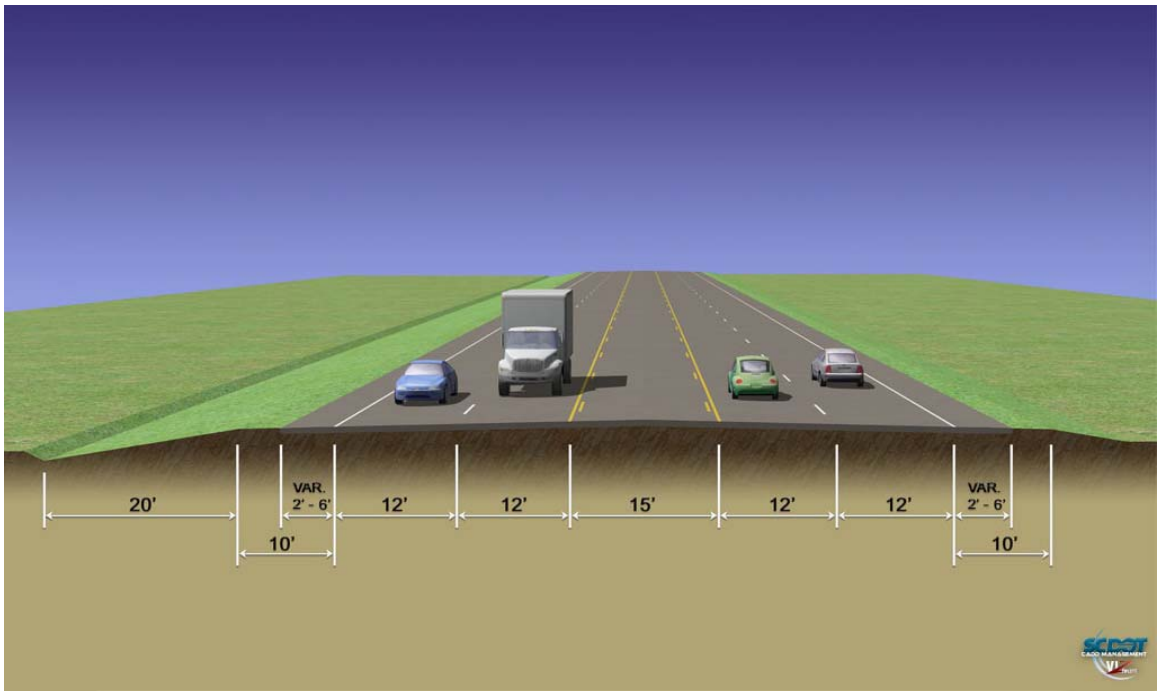
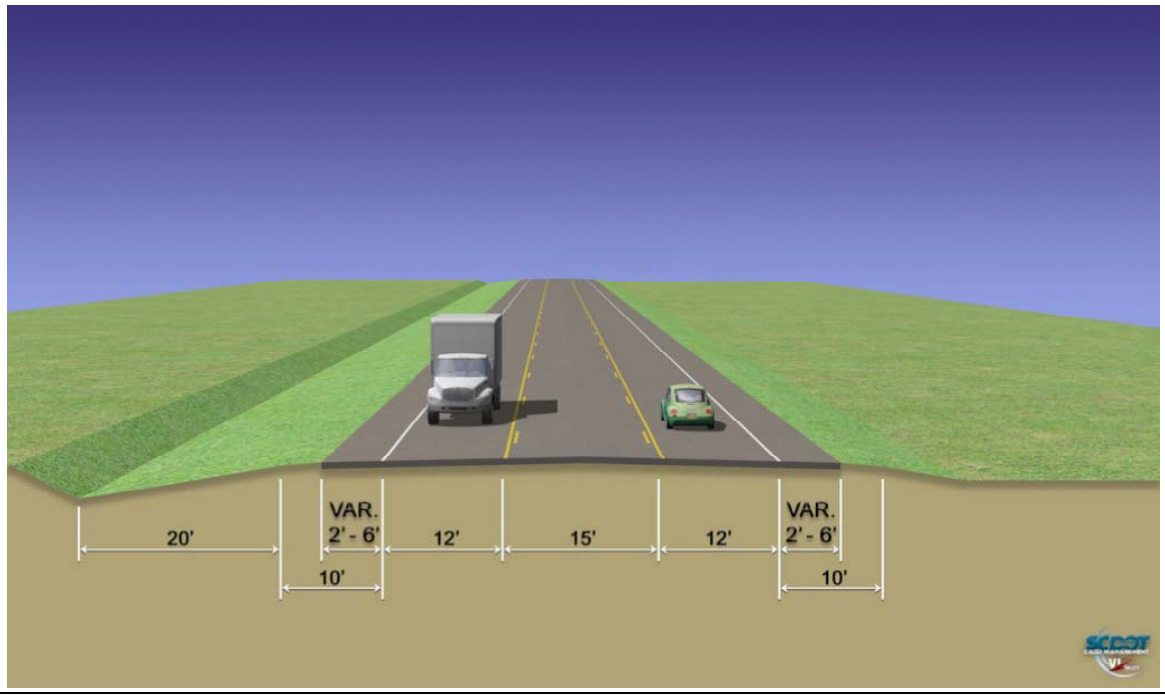
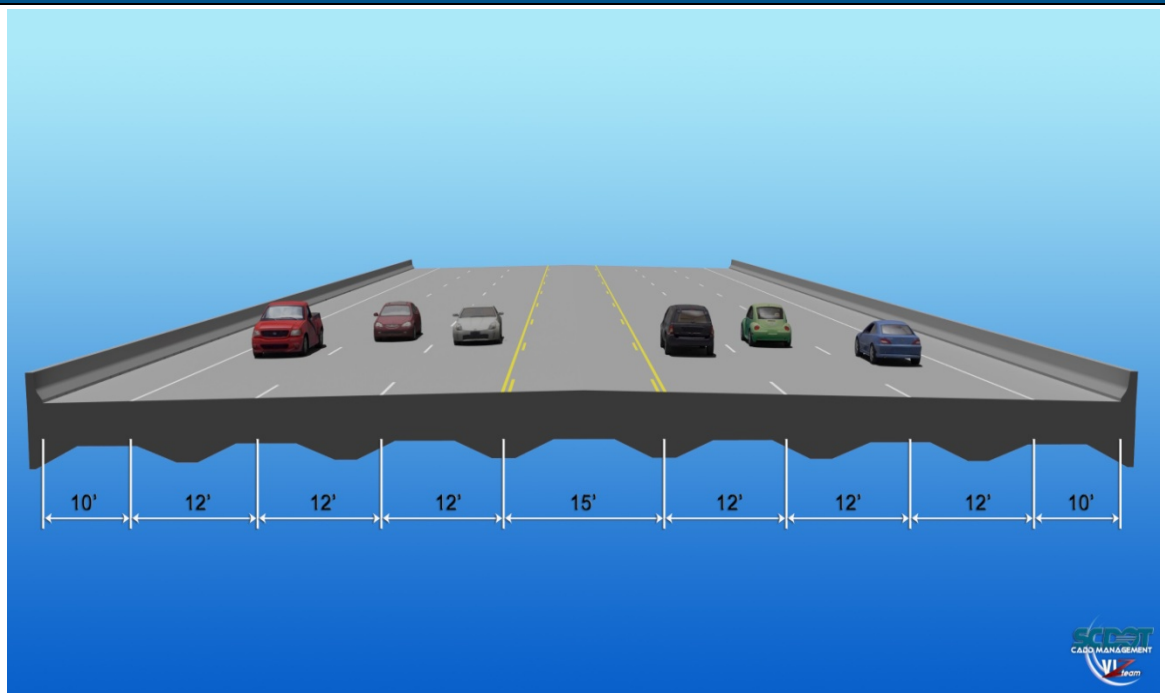


Figure 2-4 Typical Cross Section for Three-Lane Segment



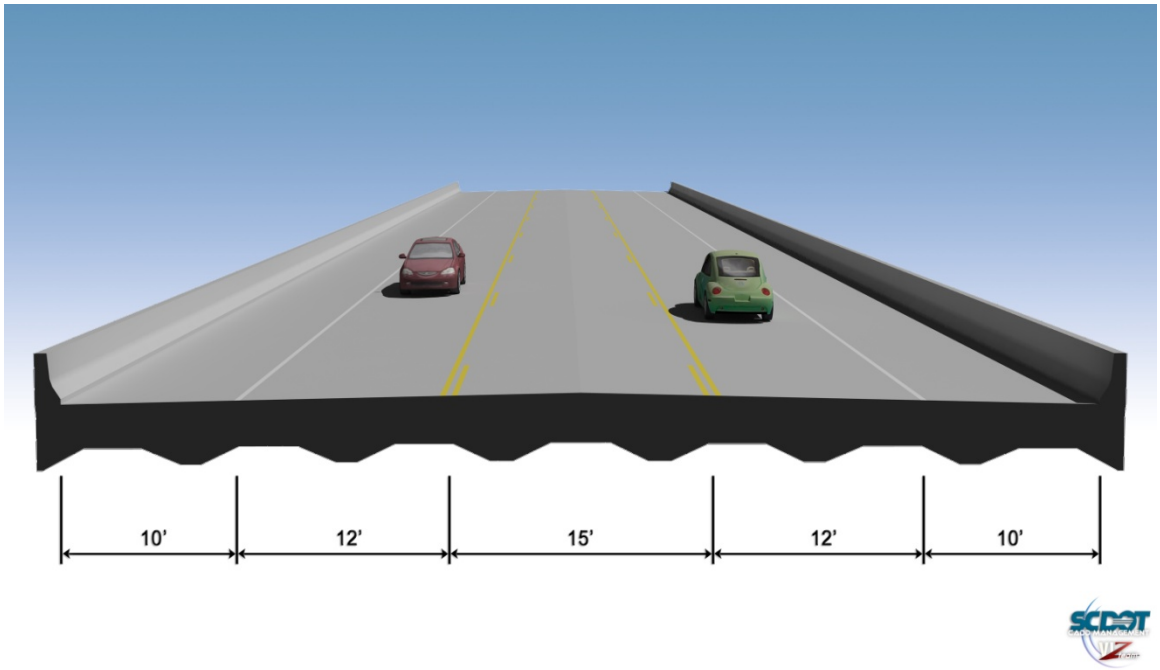
The typical cross section for the US 301 bridge over I-95 is represented in Figure 2.5. It will initially be striped to accommodate five lanes of traffic.

Figure 2-5 Typical Cross Section for US 301 Bridge Over I-95



The typical cross section for the US 301 bridge over the CSX Railroad is represented in Figure 2-6. It will initially be striped to accommodate three lanes.

Figure 2-6 Typical Cross Section for US 301 Bridge Over CSX Railroad



2.2 Alternatives Considered but Eliminated

Some of the Alternatives considered failed to meet the Purpose and Need of the proposed project and were eliminated from further evaluation.

2.2.1 No-Build Alternative

The No-build Alternative is defined as the continuation of existing conditions for the proposed project area. This alternative establishes a baseline against which Build Alternatives can be compared. The No-build alternative assumes that no roadway improvements would be made to the existing facility and the project area would remain in its current condition. The proposed project would require vegetation removal, grading and fill placement. These impacts, as well as temporary sedimentation impacts during construction would not occur with the No-build Alternative. However, the No-build Alternative would not provide additional capacity or improve local connectivity for logistics movement in the area. The No-Build Alternative assumes that the Jafza facility

would be accessed from SC 6 and there would be no extension of US 301 to SC 6 nor reconstruction of the I-95 / US 301 interchange to allow for fully directional movements between US 301 and I-95. The level of service (LOS) of the two existing interchanges on I-95 at SC 6 and US 301 were evaluated with the projected 2035 traffic volumes in the SCDOT Interchange Modification Report (SCDOT, 2012) and the results show that both signalized intersections of I-95 ramps with SC 6 are projected to operate below adopted LOS Standard "D". The 2035 traffic demands of the Jafza facility cannot be met with access only to SC 6 and without a direct connection to I-95 through the proposed US 301 corridor. Based on these results, the No-build alternative would not satisfy the project's Purpose and Need and was eliminated from further consideration as the Preferred Alternative for the proposed project.

2.2.2 Transportation System Management Alternative

Transportation System Management (TSM) can include intersection improvements, carpooling, reversible lanes, traffic signal coordination and high-occupancy vehicle lanes to maximize the capacity and efficiency of the existing roadway network. Typically, the TSM alternative would be implemented to reduce or eliminate the need for new facility construction. Although some of these measures would be included in the proposed project such as intersection improvements and traffic signal coordination, more significant improvements would be necessary to provide sufficient facility capacity and therefore the TSM Alternative was eliminated from further consideration as the Preferred Alternative for the proposed project.

2.3 Reasonable Build Alternatives

The five remaining preliminary alignment alternatives were evaluated as reasonable build alternatives (Figure 2-2). Preliminary cost estimates for the Build Alternatives were evaluated in 2009 for all of the Reasonable Build Alternatives for comparisons. All four Reasonable Build Alternatives would require approximately 157 to 160 acres of right-of-way (ROW) and require a bridge over the railroad.

Each of the four Reasonable Build Alternatives would impact seven residences due to the location of the interchange and the portion of the alternatives that they all have in common. Additional relocations varied based on where each of the alternatives diverted from the section common to all alternatives and how they traversed the landscape to connect to SC 6.

2.3.1 Alternative 1

Alternative 1 is comprised of the I-95/US 301 partial cloverleaf A interchange improvement and approximately 1.6 miles of US 301 Connector to SC 6, including bridges over I-95 and the CSX railroad line and SC 6 turn-lane improvements. This alternative is the northern most of the alternative alignments evaluated. This alternative follows a portion of Intracoastal Lane and intersects SC 6 approximately 1,400 linear feet north of Naval Station Road.

Alternative 1 avoids impacts to jurisdictional streams and wetlands in the project area. However, an additional five displacements would be realized with this alternative because the alternative would be aligned on an existing roadway (Intracoastal Lane) that would need to be widened to accommodate the new facility. The result of the widening would result in the relocation of 12 residences located within the cluster of homes along Intracoastal Lane at the northern edge of the project area. This number of relocations was considerably higher than Alternative 3A (Preferred) which would only impact a total of seven residences. This alternative would also cost approximately $27.1 million dollars, which would be $400,000 more than Alternative 3A (Preferred) based on the preliminary cost estimates.

Alternative 1 would result in the largest number of relocations within the project area and for this reason, among those also related to cost, the alternative was eliminated.

2.3.2 Alternative 2

Alternative 2 is comprised of the I-95/US 301 partial cloverleaf A interchange improvement and approximately 1.6 miles of US 301 Connector to SC 6, including bridges over I-95 and the CSX railroad line and SC 6 turn-lane improvements. This alternative is one of the central alignments and intersects SC 6 immediately north of Naval Station Road.

No additional displacements are associated with this alternative other than the seven in the corresponding section common to all alternatives. This is similar to Alternative 3A (Preferred) that would also only impact seven residences. This alternative would also cost approximately $27.4 million dollars, which would be $700,000 more than Alternative 3A (Preferred) based on the preliminary cost estimates.

Alternative 2 would result in the largest impact to jurisdictional wetlands within the project area and for this reason, among those also related to cost, the alternative was eliminated.

2.3.3 Alternative 3

Alternative 3 is comprised of the I-95/US 301 partial cloverleaf A interchange improvement and approximately 1.6 miles of US 301 Connector to SC 6, including bridges over I-95 and the CSX railroad line and SC 6 turn-lane improvements. This alternative is one of the central alignments and intersects SC 6 approximately 500 linear feet south of Naval Station Road.

This alternative would require 158 acres of ROW to be acquired resulting in the least impact to current access, parking and internal circulation patterns in the project area. Relocations associated with this alternative represent the lowest (a total of seven) of the build alternatives evaluated.

Preliminary cost estimates for the Build Alternatives were evaluated in 2009 and Alternative 3 was determined to be among the the most cost effective options with an estimated cost of $26.7 million dollars.

Stream impacts associated with Alternative 3 represent the highest of the Build Alternatives evaluated (a total of 880 linear feet). Alternative 3 was eliminated for this reason and modified to minimize impacts to the jurisdictional stream located in the area, please refer to the discussion of Alternative 3A in Section 2.3.4.

2.3.4 Alternative 3A (Preferred Alternative)

Alternative 3A is a modification of Alternative 3 and is comprised of the I-95/US 301 partial cloverleaf A interchange improvement and approximately 1.6 miles of US 301 Connector to SC 6, including bridges over I-95 and the CSX railroad line and SC 6 turn-lane improvements. This alternative is also one of the central alignments evaluated and like Alternative 3, intersects SC 6 approximately 500 linear feet south of Naval Station Road.

Similar to Alternative 3, this alternative would require 158 acres of ROW to be acquired resulting in the least impact to current access, parking and internal circulation patterns in

the project area. Relocations associated with this alternative represent the lowest (a total of 7) of the build alternatives evaluated.

The main difference between Alternative 3 and 3A is in the alignment of 3A between LTD Road and SC 6. In this section, Alternative 3A has been shifted north in an effort to minimize impacts to the jurisdictional stream located in this area. While stream impacts are not completely avoided under Alternative 3A, they are minimized to a total of approximately 240 linear feet. This represents a reduction of 640 linear feet from those realized under Alternative 3. Jurisidictional wetland impacts under this alternative total approximately 0.39 acres, representing the second lowest among all alternatives evaluated. While Alternatives 1 and 4 result in complete avoidance and/or lower impacts to wetlands and stream, both would relocate additional residences (a total of 12 and nine) and impact the cluster of homes in the northern and southern areas of the project. In addition Alternative 4 would not provide full access to the Jafza site.

Preliminary cost estimates for the Build Alternatives were evaluated in 2009 and like Alternative 3, Alternative 3A was determined to be among the the most cost effective options with an estimated cost of $26.7 million dollars.

For the reasons summarized in the preceeding paragraphs, Alternative 3A is recommended as the Preferred Alternative. This option results in the lowest relocations while minimizing impacts to jurisdictional waters and represents the most cost effective option of all alternatives.

2.3.5 Alternative 4

Alternative 4 is comprised of the I-95/US 301 partial cloverleaf A interchange improvement and approximately 1.7 miles of US 301 Connector to SC 6, including bridges over I-95 and the CSX railroad line and SC 6 turn-lane improvements. This alternative is the southern most of the alignments evaluated. Alternative 4 intersects SC 6 approximately 1,100 linear feet south of Milligan Road.

This alternative avoids impacts to jurisdictional wetlands and results in slightly fewer impacts to jurisdictional streams than Alternative 3A (a total of 208 linear feet for a difference of only 32 linear feet). Alternative 4, however would require 160 acres of ROW to be acquired resulting in the most impact to current access, parking and internal

circulation patterns in the project area. Relocation impacts associated with this alternative total nine and are associated with the cluster of homes located between Miiligan Road and Resort Street along at the southern edge of the project area. The relocations associated with this alternative represent the second highest of the build alternatives evaluated. Additionally, Alternative 4 does not provide full access to the Jafza site. This alternative would also cost approximately $26.9 million dollars, which would be $200,000 more than Alternative 3A (Preferred) based on the preliminary cost estimates.

Alternative 4 would result in the second largest impact to current access, parking and internal circulation patterns, as well as the second largest impact to residential homes within the project area. For these reasons, among those also related to cost, the alternative was eliminated.

Build Alternatives 1 through 4 have been described in Section 2.3 and the anticipated impacts of each are compared and summarized below in Table 2-3.

Table 2-3 Alternatives Comparison (based on 200 Foot Corridor)

Potential Impact Category	Impacts by Alternative				
	Alternative 1	Alternative 2	Alternative 3	Alternative 3A (Preferred)	Alternative 4
ROW Acquisition (ac.)	157	157	158	158	160
Access/Parking Parcels[1]	4	1	1	1	3
Relocations	12	7	7	7	9
Wetland Impacts (ac.)	0	1.29	0.22	0.39	0
Stream Impacts (lf.)	0	145	880	240	208
Bridge Over RR Required	Yes	Yes	Yes	Yes	Yes
Prelim Estimates Cost (millions)[2]	$27.1	$27.4	$26.7	$26.7[3]	$26.9

Notes:
[1] Access/Parking impacts represent parcels where the access, parking and/or internal circulation patterns may be affected by the project.
[2] Preliminary cost estimates from 2009 Alternatives Analysis. .
[3] The current $33.4 million estimate noted in Chapter 1 for the Preferred Alternative is based on a detailed cost estimate performed in 2011.

2.4 Traffic Analysis

A traffic analysis was completed for the Jafza site and is referenced by this EA as documentation of the evaluated current and projected future operating conditions associated

with the development. As previously noted in Chapter 1, the Jafza Traffic Analysis is provided in Appendix A.

SCDOT prepared an Interchange Modification Report for I-95 at US 301 in Orangeburg County (SCDOT, 2012) to evaluate the current and projected future operating conditions and to justify the modifications to the current I-95 and US 301 interchange in Orangeburg County. The analysis was conducted for two Build Alternatives (Diamond Interchange and Partial Cloverleaf A Interchange) as well as the No-Build Alternative for the US 301 interchange. Due to its close proximity, the SC 6 interchange is included in the analysis to observe impacts from the US 301 interchange modification and the Jafza Development. The US 15 interchange, four miles south of US 301, was not included because it was determined to have little to no impact on study area.

A summary of the IMR findings is included herein. The complete IMR with its appendices is provided in Appendix D.

2.4.1 Freeway Analysis

The results of the Highway Capacity Software Freeway Analysis for the No-Build and Build Alternatives are listed in Table 2-4 below. The table provides the level of service for two lanes on the freeway in each direction at both the US 301 and SC 6 interchanges. The Build Alternatives result in similar levels of service for most freeway segments except SB I-95 north of US 301 (highlighted in the table). This segment of freeway will experience slight improvements from a LOS D in the No-Build to a LOS C in the Build Alternatives in the design year. The analysis confirms that improvements to the US 301 interchange will not negatively affect the interstate.

Table 2-4 HCS Freeway Analysis (No-Build / Build Alternatives 1 and 2)

Location	Two Lanes on the Interstate				
	2015	2020	2025	2030	2035
I-95 Northbound – South of US 301	B / B	C / C	C / C	C / C	C / C
I-95 Northbound – North of US 301	C / C	C / C	C / C	D / D	D / D
I-95 Northbound – North of SC 6	C / C	C / C	C / C	D / D	D / D
I-95 Southbound – South of US 301	B / B	C / C	C / C	C / C	C / D
I-95 Southbound – North of US 301	B / B	C / C	C / C	D / C	D / C
I-95 Southbound – North of SC 6	B / B	C / C	C / C	C / C	C / C

2.4.2 Ramp Analysis

The results of the Highway Capacity Software Ramp Analysis for the No-Build and Build Alternatives are listed in Tables 2-5, 2-6, and 2-7. The No-Build Alternative provides only northbound entrance and southbound exit ramps for US 301. With only partial access available at US 301, the SC 6 interchange handles most of the traffic entering southbound and exiting northbound I-95. Build Alternative 1, a Diamond interchange layout, provides a northbound exit ramp with 440' parallel deceleration length, a northbound taper entrance ramp, a southbound exit ramp with 440' deceleration length, and a southbound entrance ramp with 780' parallel acceleration length. Alternative 2, a Partial Cloverleaf A interchange layout, provides the same ramp design as Alternative 1 with the inclusion of a northbound and southbound loop entrance ramp. Both loop ramps contain 1650' of parallel acceleration length.

Table 2-5 HCS Ramp Analysis (No-Build Alternative)

Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB Exit Ramp	n/a	n/a	n/a	n/a	n/a
	I-95 NB Entrance Ramp	B	C	C	D	D
	I-95 SB Exit Ramp	B	C	C	C	D
	I-95 SB Entrance Ramp	n/a	n/a	n/a	n/a	n/a
SC 6	I-95 NB Exit Ramp	C	C	C	D	D
	I-95 NB Entrance Ramp	B	C	C	C	D
	I-95 SB Exit Ramp	B	C	C	C	C
	I-95 SB Entrance Ramp	C	C	C	D	D

Table 2-6 HCS Ramp Analysis (Build Alternative 1 – Diamond Interchange)

Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB Exit Ramp	B	C	C	C	D
	I-95 NB Entrance Ramp	B	C	C	C	D
	I-95 SB Exit Ramp	B	C	C	C	C
	I-95 SB Entrance Ramp	B	B	C	C	C
SC 6	I-95 NB Exit Ramp	C	C	C	D	D
	I-95 NB Entrance Ramp	B	C	C	C	D
	I-95 SB Exit Ramp	B	C	C	C	C
	I-95 SB Entrance Ramp	C	C	C	C	D

Table 2-7 HCS Ramp Analysis (Build Alternative 2 – Partial Cloverleaf A Interchange)						
Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB Exit Ramp	B	C	C	C	D
	I-95 NB Entrance Ramp A/B	B/B	B/C	B/C	C/C	C/D
	I-95 SB Exit Ramp	B	C	C	C	C
	I-95 SB Entrance Ramp A/B	B/B	B/B	B/C	B/C	B/C

RAMP A= First ramp at the direction of travel (loop ramp) ; RAMP B= Second ramp at the direction of travel
SC 6 results are the same as Alternative 1

2.4.3 Intersection Analysis

The results of the Intersection Analysis for the No-Build and Build Alternatives 1 and 2 are illustrated in Tables 2-8, 2-9, and 2-10. With the No-Build Alternative, the SC 6 interchange area will experience major delays with the phasing in of the Jafza Development, as illustrated in Table 2-8. The ramp intersections with SC 6 will experience unacceptable LOS E in Design Year 2035. Build Alternatives 1 and 2 provide considerable relief to the SC 6 interchange by providing a new access point for the Jafza Development as well as redirecting some background volumes. Table 2-9 shows the ramp intersections with SC 6 operating at LOS B in Design Year 2035 under the Build Alternatives.

Alternative 1 requires left turn lanes on US 301 at the interchange entrance ramps, from northbound US 301 to northbound I-95 and southbound US 301 to southbound I-95. This alternative provides acceptable levels of service until year 2030. Increasing volumes from the Jafza Development will cause levels of service to deteriorate, particularly for the southbound ramp intersection. The I-95 southbound exit ramp intersection is expected to operate at a LOS F in Design Year 2035, as illustrated in Table 2-9. Signalization of this intersection will be necessary in the future, resulting in a LOS B.

Alternative 2 provides loop entrance ramps, eliminating the need for left turns on US 301. The Partial Cloverleaf A design better accommodates the high volumes from the Jafza facility entering southbound I-95, particularly heavy trucks from the site. The loop ramp provides an uninterrupted entrance onto the interstate and removes the left turn

conflict. Without the loop ramp, heavy trucks will see increased delays and fuel usage when attempting to turn left onto the entrance ramp, whether waiting on a gap or signal when one is eventually installed under Alternative 1. Similarly, the northbound loop ramp provides an uninterrupted movement from northbound US 301 onto northbound I-95 while eliminating the left turn conflict. Signing plans for this interchange alternative can be found as an attachment at the end of the report. The improved levels of service for the ramp intersections under Alternative 2 are illustrated in Table 2-10. Along US 301, the unsignalized intersection of Bonner Ave and the signalized intersection of US 15 in the vicinity of the interchange will experience acceptable levels of service in the design year.

Table 2-8 Synchro Intersection LOS – No-Build Alternative – PM Peak

Location		2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	B	C	C
	US 301 @ I-95 Southbound Ramp	N/A	N/A	N/A	N/A	N/A
	US 301 @ I-95 Northbound Ramp	N/A	N/A	N/A	N/A	N/A
	US 301 @ SC 6	N/A	N/A	N/A	N/A	N/A
SC 6	SC 6 @ US 15 (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Southbound Ramps (Signalized)	B	C	C	E	E
	SC 6 @ I-95 Northbound Ramps (Signalized)	B	B	C	D	E
	SC 6 @ Laredo Road	B	B	C	C	C

Intersections are unsignalized unless noted otherwise.

Table 2-9 Synchro Intersection LOS – Alternative 1 Interchange Layout – PM Peak

Location		2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	C	C	D
	US 301 @ I-95 Southbound Ramp	B	B	C	F	F
	US 301 @ I-95 Northbound Ramp	B	B	B	C	C
	US 301 @ SC 6	B	B	C	C	C
SC 6	SC 6 @ US 15 (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Southbound Ramps (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Northbound Ramps (Signalized)	B	B	B	B	B
	SC 6 @ Laredo Road	B	B	B	B	B

Intersections are unsignalized unless noted otherwise.

Table 2-10 Synchro Intersection LOS – Alternative 2 Interchange Layout - PM Peak						
Intersection		2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	C	C	D
	US 301 @ I-95 Southbound Ramp	B	B	B	B	B
	US 301 @ I-95 Northbound Ramp	A	A	A	A	B
	US 301 @ SC 6	B	B	C	C	C

Intersections are unsignalized unless noted otherwise.

2.4.4 Conclusion

In conclusion, Alternative 2 is the preferred design. The Partial Cloverleaf A interchange layout will more effectively handle traffic accessing northbound and southbound I-95 via the loop entrance ramps. The loop ramps eliminate the need for left turn lanes on US 301 and provide uninterrupted access to I-95 for the heavier movements. The proposed Alternative 2 design will provide full access to and from I-95 and improve the traffic operations within the US 301 and SC 6 interchanges without negatively impacting the freeway. The improvements will serve the needs of the motoring public and the surrounding businesses along US 301 and I-95, particularly the proposed Jafza Development, through year 2035. The proposed improvements, including 1) realignment of the existing SB I-95 exit ramp; 2) construction of new SB I-95 entrance ramp; 3) construction of a new SB I-95 entrance loop ramp that eliminates a left turn movement; 4) construction of a new NB I-95 exit ramp; 5) construction of a new NB I-95 entrance loop ramp that eliminates a left turn movement; 6) realignment of NB I-95 entrance ramp; and 7) extension of US 301 to SC 6 will allow for an increased capacity and improvements to overall traffic operations throughout the project area.

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3.0 EXISTING CONDITIONS

The following chapter describes the existing conditions within the Project Limits. The area within the Project Limits is comprised of a corridor width total of 200 feet centered on the proposed alignment.

3.1 Land Use

Orangeburg County is currently in a development phase which is expanding the industrial capacity of the County. The conversion areas for this industrial expansion would occur mostly within existing agricultural areas within close proximity to transportation corridors and established infrastructure. This is evident within the Project Limits with the construction of the proposed intermodal inland port facility (Jafza facility). The following sections describe the existing land uses as well as predicted future land uses for the Project Limits.

3.1.1 Existing Land Use

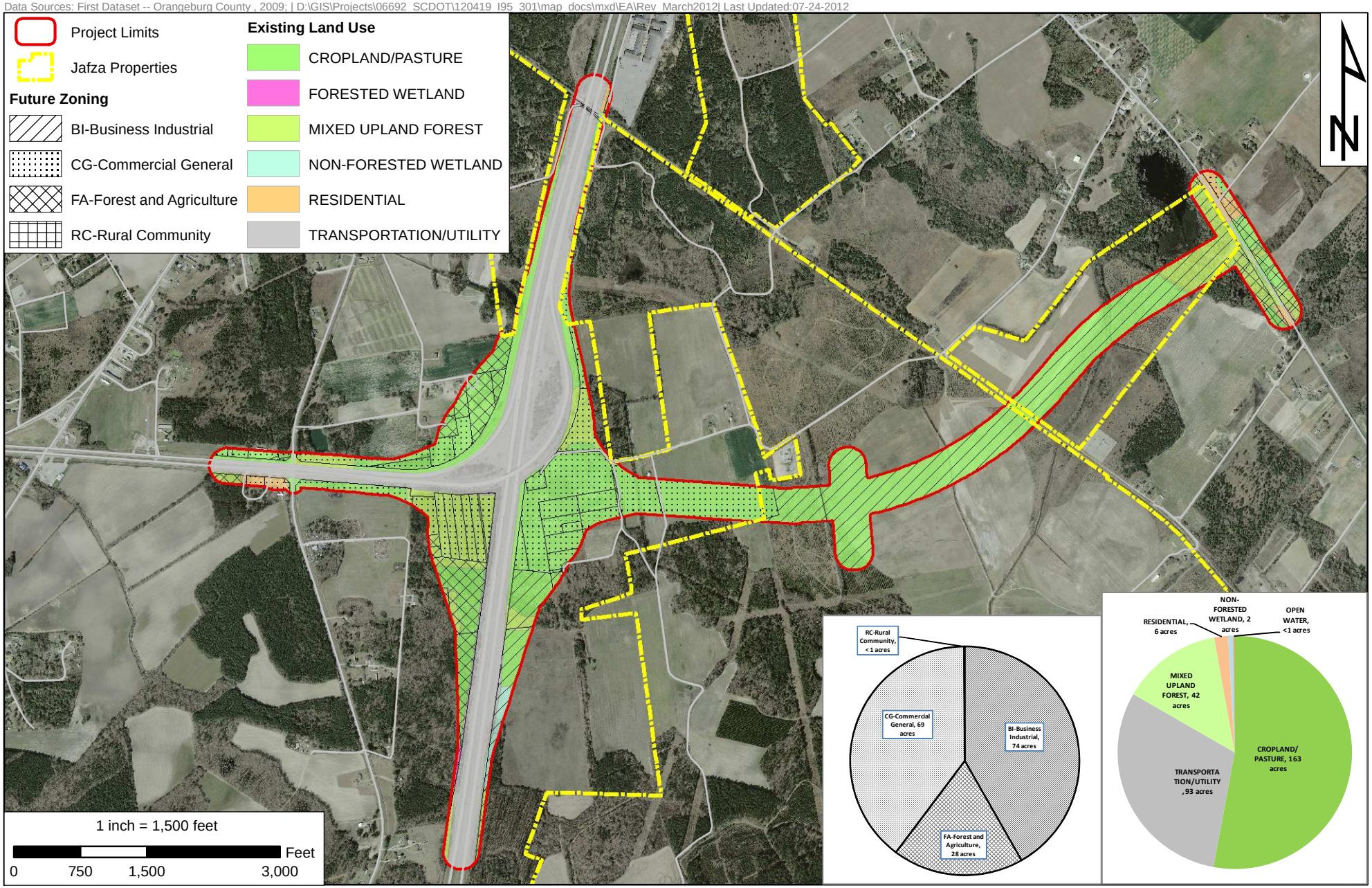
Figure 3-1 depicts the existing land uses within the Project Limits. Fifty-three percent of the Project Limits is comprised of cropland and pasture which spans from the I-95 corridor eastward to the Project Limit's eastern limit along SC 6, as well as several small areas along the east side of I-95. Transportion/utilities comprise thirty percent of the Project Limits and is concentrated along the existing I-95, US 301, and SC 6 corridors. Several areas of mixed upland forest, which make up almost 14 percent of the Project Limits, are located along the western edge of the Project Limits and along the east side of the I-95 corridor. Areas of small isolated non-forested wetlands are also located along the western edge of the Project Limits. Residential land use, dominated by single family detached housing and making up about 2 percent of the Project Limits, is sparse and generally found along SC 6.

3.1.2 Future Land Use

According to zoning data provided by the Orangeburg County Geographic Information System (GIS) Department, the anticipated land use for the Project Limits east of the I-95 corridor is a combination of Commercial General and Business Industrial with a tract of Forest and Agriculture located along SC 6 (Figure 3-1). The portion of the Project Limits

located to the west of I-95 is anticipated to be Commercial General with the remainder maintaining its current land use.

Data Sources: First Dataset -- Orangeburg County , 2009; | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_March2012| Last Updated:07-24-2012



Land Use

Figure 3-1

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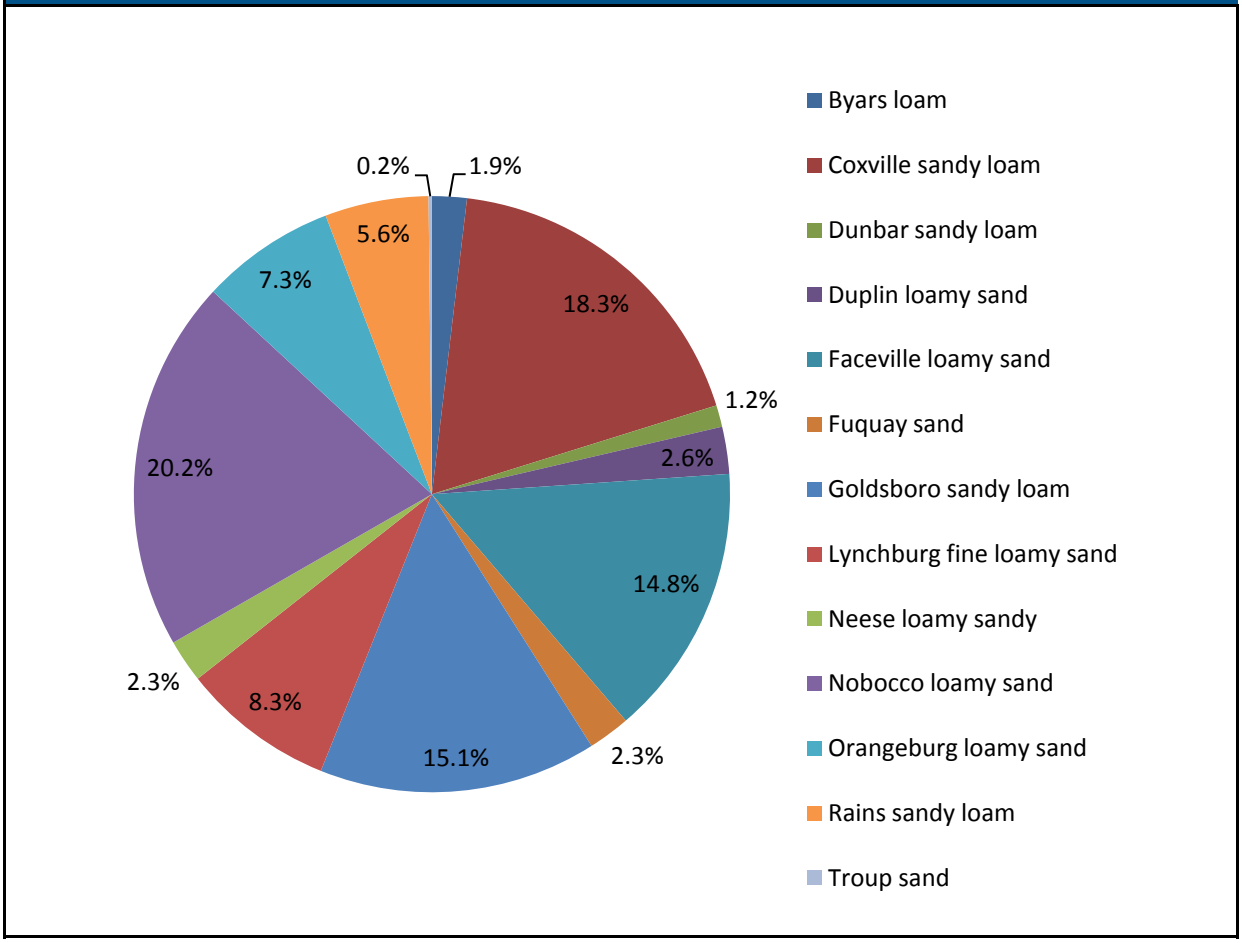
3.2 Soils and Farmland Protection Policy Act

There are 13 soil types found in the Project Limits (Figures 3-2 and 3-3 and Table 3-1). Hydric soils and soils with hydric inclusions make up 86% of the Project Limits acreage (263 out of 307 acres total). Eight of the 13 soil types within the Project Limits appear on the National Hydric Soils List (NRCS 2008) as being hydric or having hydric inclusions. Erosion is not a major resource concern of the soil types present.

Figure 3-2 NRCS Soil Series Acreages Within Project Limits



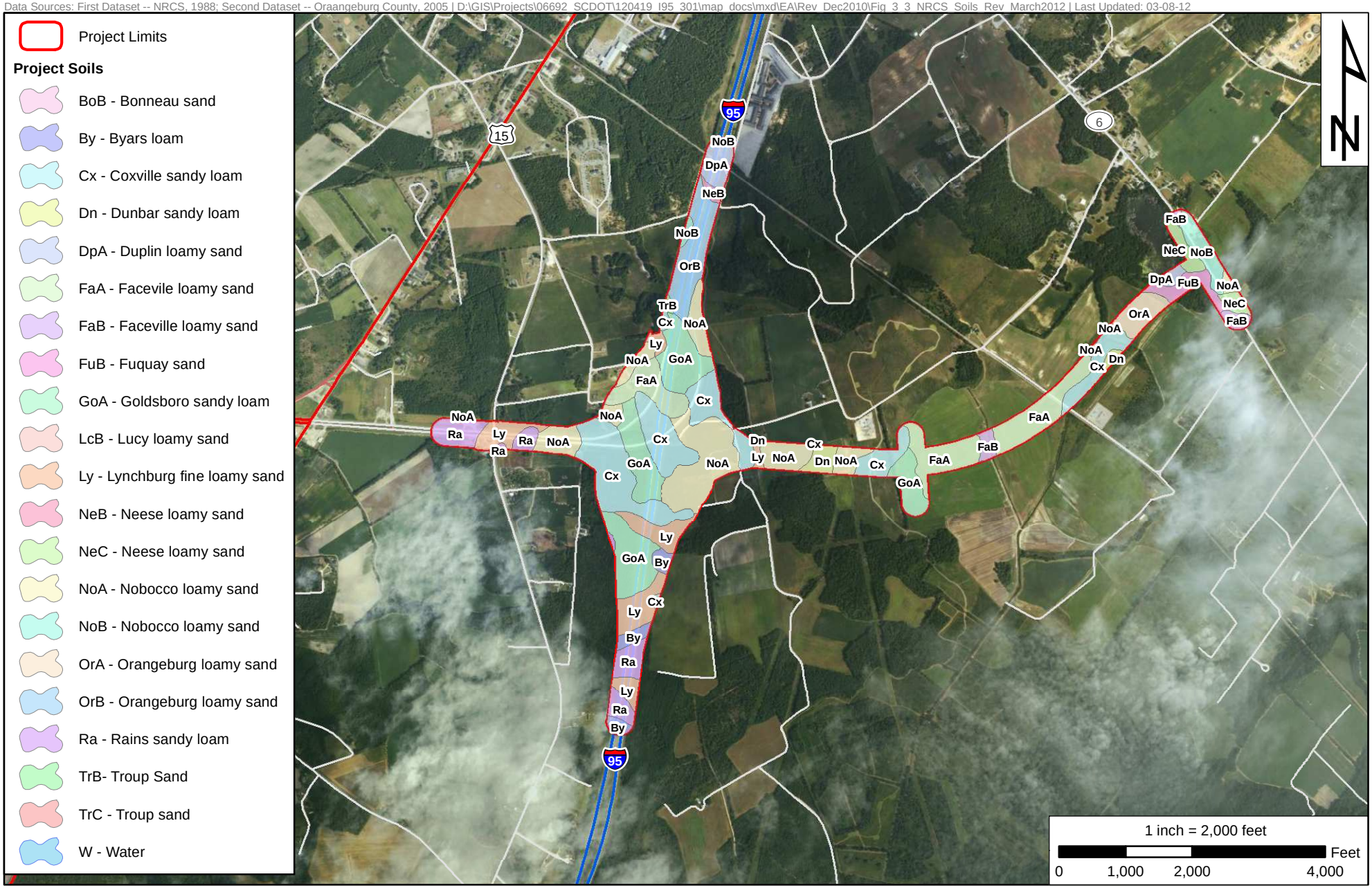
The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Criteria used in determining the prime and unique categories were published in the Federal Register on January 31, 1978, and amended on June 17, 1994.

Section 657.5 of the FPPA describes prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops, and also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water)." Specific soil types are classified according to the propensity for supporting prime farmland or having statewide importance. Based on information from the Orangeburg County soil survey (NRCS, 1998), five soils series within the Project Limits are designated as potential prime farmland soils and five soils series are designated as potential statewide important soil (Table 3-1). Together they comprise approximately 87% of the soils within the Project Limits.

Table 3-1 NRCS Soil Units Within the Project Limits

Symbol	Soil Unit Name	Acres in Project Limits	Hydric Rating	Potential Statewide Importance or Prime Farmland
By	Byars loam	5.76	All Hydric	Prime Farmland
Cx	Coxville sandy loam	56.10	All Hydric	Prime Farmland
Dn	Dunbar sandy loam	3.59	Partially Hydric	Prime Farmland if drained
DpA	Duplin loamy sand	7.84	Not Hydric	Prime Farmland
FaA, FaB	Faceville loamy sand	45.39	Not Hydric, Partially Hydric	Prime Farmland
FuB	Fuquay sand	6.96	Not Hydric	Statewide Importance
GoA	Goldsboro sandy loam	46.20	Partially Hydric	Statewide Importance
Ly	Lynchburg fine loamy sand	25.44	Partially Hydric	Statewide Importance
NeB, NeC	Neese loamy sandy	7.16	Not Hydric	Statewide Importance
NoA, NoB	Nobocco loamy sand	61.82	Partially Hydric	Statewide Importance
OrA, OrB	Orangeburg loamy sand	22.95	Not Hydric	Not Prime Farmland
Ra	Rains sandy loam	17.22	All Hydric	Not Prime Farmland
TrB, TrC	Troup sand	0.56	Not Hydric	Not Prime Farmland

Data Sources: First Dataset -- NRCS, 1988; Second Dataset -- Oraangeburg County, 2005 | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_Dec2010\Fig_3_3_NRCS_Soils_Rev_March2012 | Last Updated: 03-08-12



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NRCS Soil Series Within Project Limits

Figure 3-3

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3.3 Socioeconomics and Demographics

In 2010, the U.S. Census Bureau (USCB) released decentennial population data for the United States including Orangeburg County, SC. Because the USCB only issues population forecasts at the state level and last did so in 2005, the South Carolina Budget and Control Board (SCBCB) produced population forecasts for Orangeburg County, thru the year 2030, based on the 2010 USCB data (SCBCB, 2010). The SCBCB updates the population forecasts annually based on the USCB annual population estimates typically released on July 1 of each year. In December 2011, Orangeburg County completed the Eastern Orangeburg County Sustainability Study (Clarion, et. al., 2011) which contained USCB and SCBCB populations and projections thru 2025 (based on the USCB 2010 data). A combination of this data is represented in Table 3-2 and summarized herein to describe the actual and forecasted growth expected to occur in Orangeburg County.

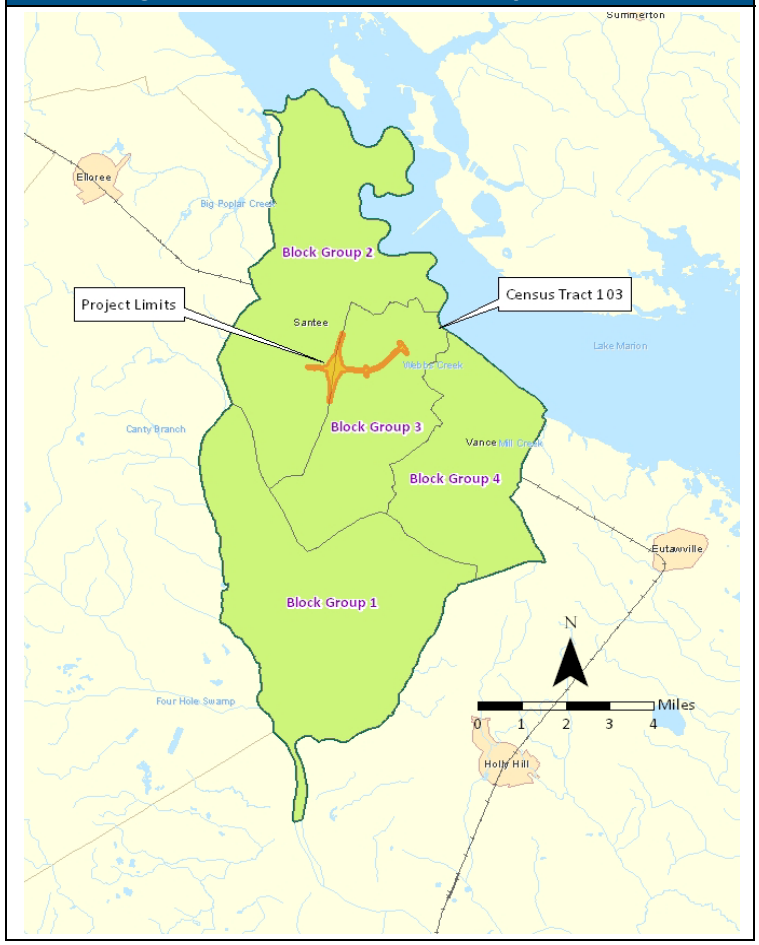
As of 2009, Orangeburg County had an estimated resident population of 90,112, making it the 16th most populated county in the state (out of 46 counties total) (USCB, 2010) (Table 3-2). According to the SCBCB, the population trends from 2000 to 2010 include the collapse of the housing market in 2008 and the lingering effects of the worst economic crisis in the U.S. since the 1930's. Historically, based on the USCB data Orangeburg County has experienced a negative 1.6% growth rate between the years of 2000 and 2009 with an overall 1% positive growth change occurring between 2000 and 2010. The projected population growth is forecasted to increase by 2.3% over the next twenty years (2011 – 2030) and by approximately 10% by the year 2030 (1990 – 2030). As shown in Table 3-2, actual USCB data collected thru 2010 demonstrates that the trend of population decline is starting to reverse with a 2.5% increase experienced between 2009 and 2010. According to the Eastern Orangeburg County Sustainability Study (Clarion, et. al., 2011), it is expected that population will continue to increase in the county as a result of the economic development efforts and recruitment underway to market the GLT among other development initiatives in the area.

Table 3-2 Estimated and Projected Population, Orangeburg County

1990	2000	2005	2009	2010	2011	2015	2020	2025	2030	% Growth 2000-2030
84,803	91,582	90,772	90,112	92,501	91,910	92,800	93,000	93,500	94,100	10

The Project Limits are encompassed within one Census Tract (CT 103) and two Census Block Groups (CBG 2 and CBG 3) (Figure 3-4). Data for these CBGs was obtained from the 2010 Census including population, income, education levels, and housing characteristics for those living in the area (Table 3-3).

Figure 3-4 Census Tracts in Project Limits



There are approximately 3,200 people living in the CBGs encompassing the Project Limits. Minorities make up 65.2 percent and 70.4 percent of the populations of CBG 2 and CBG 3, respectively. The entire Census Tract has a minority population percentage of 73.1 percent. Minorities make up a total of 62.9 percent of Orangeburg County. These data indicate that the Project Limits (and area of potential impact) do not have a greater proportion of minorities than the surrounding areas.

The median age for those living in the CBGs encompassing the Project Limits is 43 years (CBG 2) and 38 years of age (CBG 3). This is in line with the Census Tract, as a whole and slightly older than the median ages for the County and the State.

Median household incomes and poverty levels within in the relevant BCGs are consistent with the Census Tract and County levels.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations directs federal agencies to analyze "the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low income communities" when doing a NEPA analysis. Based on the 2010 U.S. Census Data (Table 3-3), minority and low-income

communities exist within the Project Limits; however, as evidenced by similar levels of these communities in the surrounding Census Tract and Orangeburg County, they would not be disproportionally impacted by this project.

Table 3-3: Select Socioeconomic Characteristics of Census Tracts Containing Project Limits

	Block Group 2	Block Group 3	Census Tract 103	Orangeburg County	South Carolina
POPULATION AND RACE					
Population	2,424	741	5,842	91,509	4,011,816
White	34.8%	29.6%	26.9%	37.1%	67.2%
Black	64.0%	65.2%	71.8%	61.1%	29.5%
AIAN[4]	0.0%	0.0%	0.1%	0.4%	0.4%
Asian	0.4%	0.0%	0.2%	0.3%	0.9%
NHOPI[5]	0.0%	0.0%	0.0%	0.0%	0.0%
Other	0.1%	0.0%	0.1%	0.2%	1.0%
Two or More Races	0.7%	5.3%	1.0%	0.9%	1.0%
AGE, HOUSEHOLD SIZE, AND INCOME					
Median Age	43	38	39	35	35
Average Household Size	2.44	2.63	2.63	2.58	2.53
Median Household Income (in dollars)	$29,034	$25,893	$25,693	$29,567	$37,082
Below poverty Level	26%	24%	27%	21%	14%
EDUCATION LEVELS OF POPULATION 25+ YEARS IN AGE (BY PERCENT)					
Up to 12th Grade, No Diploma	25%	31%	31%	29%	24%
High School Diploma or Equivalent	35%	41%	38%	32%	30%
Some College, No Degree	21%	18%	18%	17%	19%
Associate Degree	4%	5%	3%	7%	7%
Bachelor's Degree	10%	5%	7%	10%	14%
Graduate or Professional	6%	1%	4%	6%	7%
HOUSING CHARACTERISTICS					
Median Home Value (owner occupied; in dollars)	$79,700	$51,400	$52,500	$59,800	$83,100
Number of Housing Units	1,184	369	2,685	39,273	1,753,586
Owner Occupied	69%	67%	69%	66%	63%
Renter Occupied	15%	9%	14%	21%	24%
Vacant	16%	24%	17%	13%	13%

[4] AIAN – American Indian and Alaskan native
[5] NHOPI – Native Hawaiian and Other Pacific Islander

3.4 Air Quality

Orangeburg County meets the national ambient Air Act Amendments of 1990 (40 CFR §51) and is considered to be in attainment with the applicable ambient air quality standards. Therefore, no project level air quality analysis was conducted for this project. It has been determined that this project would have no meaningful potential impacts on air quality. The basis for this determination along with a brief description of the factors considered is included in Section 4.4 of this document.

3.5 Noise

As stated in 23 CFR §772.5(h), a traffic noise analysis is required for proposed federal-aid highway projects that would construct a highway on new location or physically alter an existing highway, which would considerably change either the horizontal or vertical alignment of the road or increase the number of through-traffic lanes. A noise analysis was conducted to evaluate the existing noise levels as well as potential noise impacts associated with the proposed project. The Noise Technical Report (HDR, 2012) detailing this analysis is provided as Appendix E and can also be reviewed at the SCDOT's Columbia Headquarters office. Noise sensitive properties were identified within the project area. A noise sensitive property is any property where frequent exterior use occurs and where a lowered noise level would be of benefit. These are predominantly residential properties.

During peak traffic hours, traffic noise is the dominant noise source in the project area. Field readings were taken at seven monitoring sites to measure existing noise conditions during peak-hour traffic flows. These sites were selected to be representative of areas of differing land uses and traffic characteristics within the project area. Readings were taken on February 24, 2010. Field conditions, including traffic parameters such as peak hour volumes for automobiles, medium trucks and heavy trucks, and operating speeds were recorded. Field conditions, including roadway geometry and topography and traffic parameters were entered in the FHWA approved noise prediction model (TNM 2.5) to replicate the conditions under which the traffic noise measurements were taken. Existing traffic noise levels from the field measurements (ambient noise levels) were then compared to the model's predictions to verify the accuracy of the model for this project. According to the measurements taken at the monitoring sites, ambient noise levels ranged from 45 dBA to 73 dBA (Table 3-4).

Table 3-4 Traffic Noise Model Validation Results			
Monitoring Site	**L_{Aeq1h} (dBA)**		
	Ambient	**Modeled**	**Difference**
A. Business located NW of US 301 and Bonner Ave	68.1	66.4	-1.7
B. In the SE quadrant of the I-95/US 301 intersection	72.9	74.6	+1.7
C. Near residences and SB I-95 to US 301 Off-ramp	63.3	65.5	+2.2
D. Located NE of I-95/US 301 intersection	71.5	73.3	+1.8
[1]E. Near residences SE of the I-95/US 301 intersection	56.2	N/A	N/A
[1]F. Near residences in the NE quadrant of the I-95/ US 301 intersection	55.3	N/A	N/A
[1]G. Off of Inca Ct sand road	44.6	N/A	N/A

Note: [1] Receivers E, F, and G were monitored to represent the existing noise environment at residences not located near the existing roadways, but near the future proposed US 301 Connector.

The ambient and predicted noise levels were found to be within the acceptable + or – 3 dBA tolerance. TNM 2.5 was considered able to accurately predict noise levels for this project.

Approximately nine noise sensitive properties were identified within the project area. These properties were represented by nine receiver locations along the project corridor. Receiver locations were selected to represent places in the project area where residents may be exposed to high traffic-noise levels, such as backyards or patio areas.

Peak hour traffic data as well as the average annual daily traffic (AADT), design hour factor (K), directional factor (D), truck factors (T), and vehicle speeds were determined by HDR in March 2010.

Modeled existing peak-hour noise levels in the project area range from 47 dBA to 64 dBA at the nine receiver locations (Table 4-3). The existing noise conditions are used to determine the level of impact the proposed project and its alternative would have when compared to existing noise conditions. The predicted existing noise levels do not currently meet or exceed 66 dBA, the FHWA threshold of acceptable noise levels for the respective land use categories (See Section 4.5).

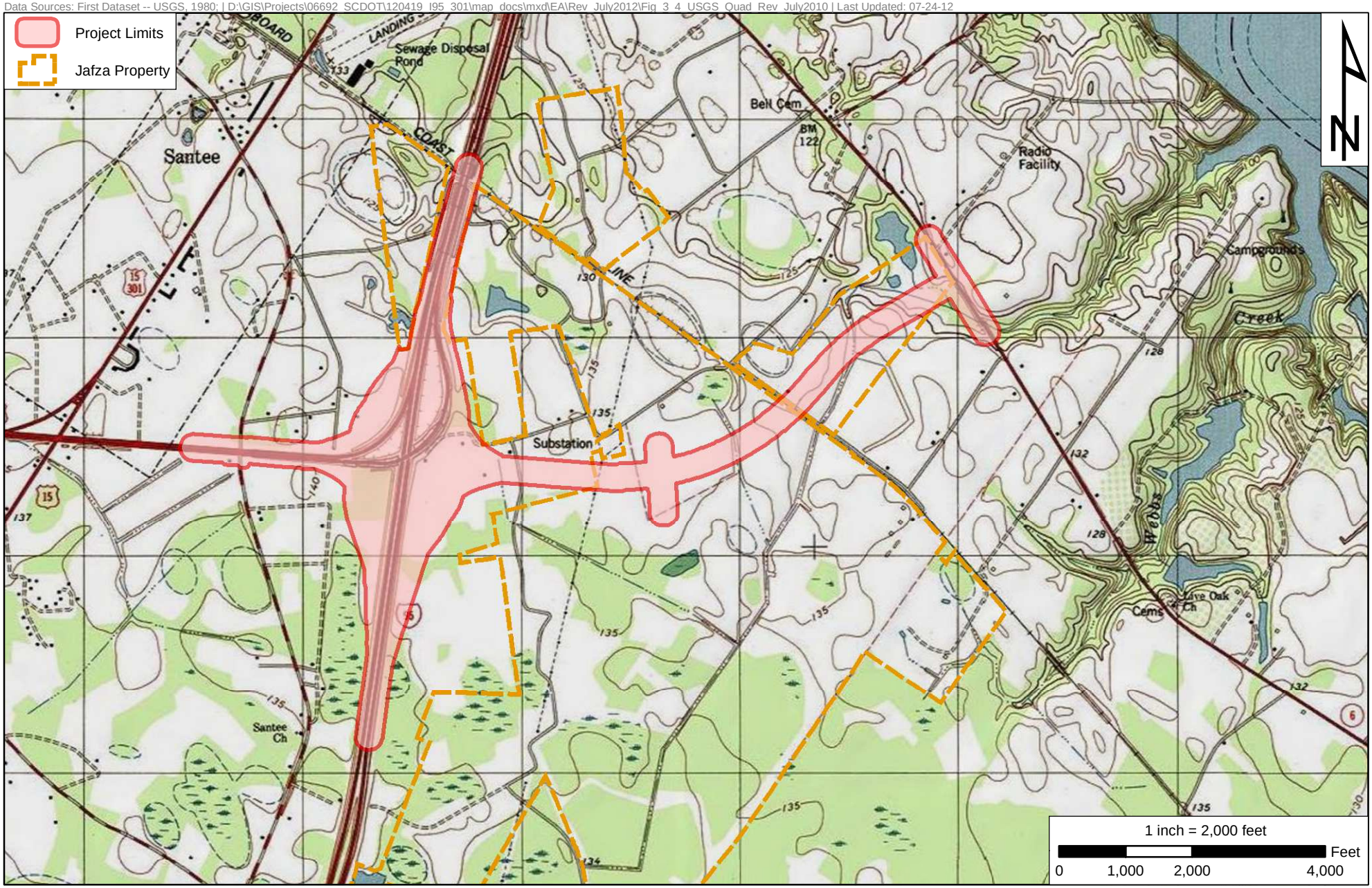
3.6 Topography

The Project Limits are located in the Atlantic Southern Loam Plains and Southeastern Floodplains and Low Terraces of the South Carolina Southeastern Plains ecoregion (Griffith et

al. 2002a; Figure 3-5). The area within the Project Limits is generally flat with elevations ranging from 130 feet to140 feet above mean sea level.

The Atlantic Southern Loam Plains is a major agricultural zone, with deep, well-drained soils and varied flora. The region has a high concentration of Carolina Bays, which are shallow, elliptical depressions, often swampy or wet in the middle with dry sandy rims. Carolina Bays not drained for agriculture often contain rare or endangered plant and animal species. Southeastern Floodplains and Low Terraces comprise a riverine ecoregion composed of alluvium and terrace deposits of sand, clay, and gravel. The region includes large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. It also includes oak-dominated bottomland hardwood forests and some river swamp forests of bald and pond cypress and water and swamp tupelo (Griffith et al. 2002a, b, c).

Data Sources: First Dataset -- USGS, 1980; | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_July2012\Fig_3_4_USGS_Quad_Rev_July2010 | Last Updated: 07-24-12



Vance USGS Quadrangle

Figure 3-5

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3.7 Water Quality

The South Carolina Department of Health and Environmental Control (SCDHEC) is responsible for water quality assessment and protection on a watershed basis. The Project Limits stretch across one Lake Marion watershed [USGS Hydrologic Unit Code (HUC) 03050111-01] in the Santee River Basin and one Four Hole Swamp watershed (HUC 03050206-05) in the Edisto River Basin (Figure 3-6). The northeast portion of the Project Limits is located in the Lake Marion watershed (HUC 03050111-01), a Southern Coastal Plain subbasin that forms at the confluence of the Wateree and Congaree rivers and runs into the head of Lake Marion, the largest lake in South Carolina. The southwest portion of the Project Limits is located in the Four Hole Swamp watershed (HUC 03050206-05), a swamp-stream system separated by a low divide from the Congaree River Valley before joining the Edisto River.

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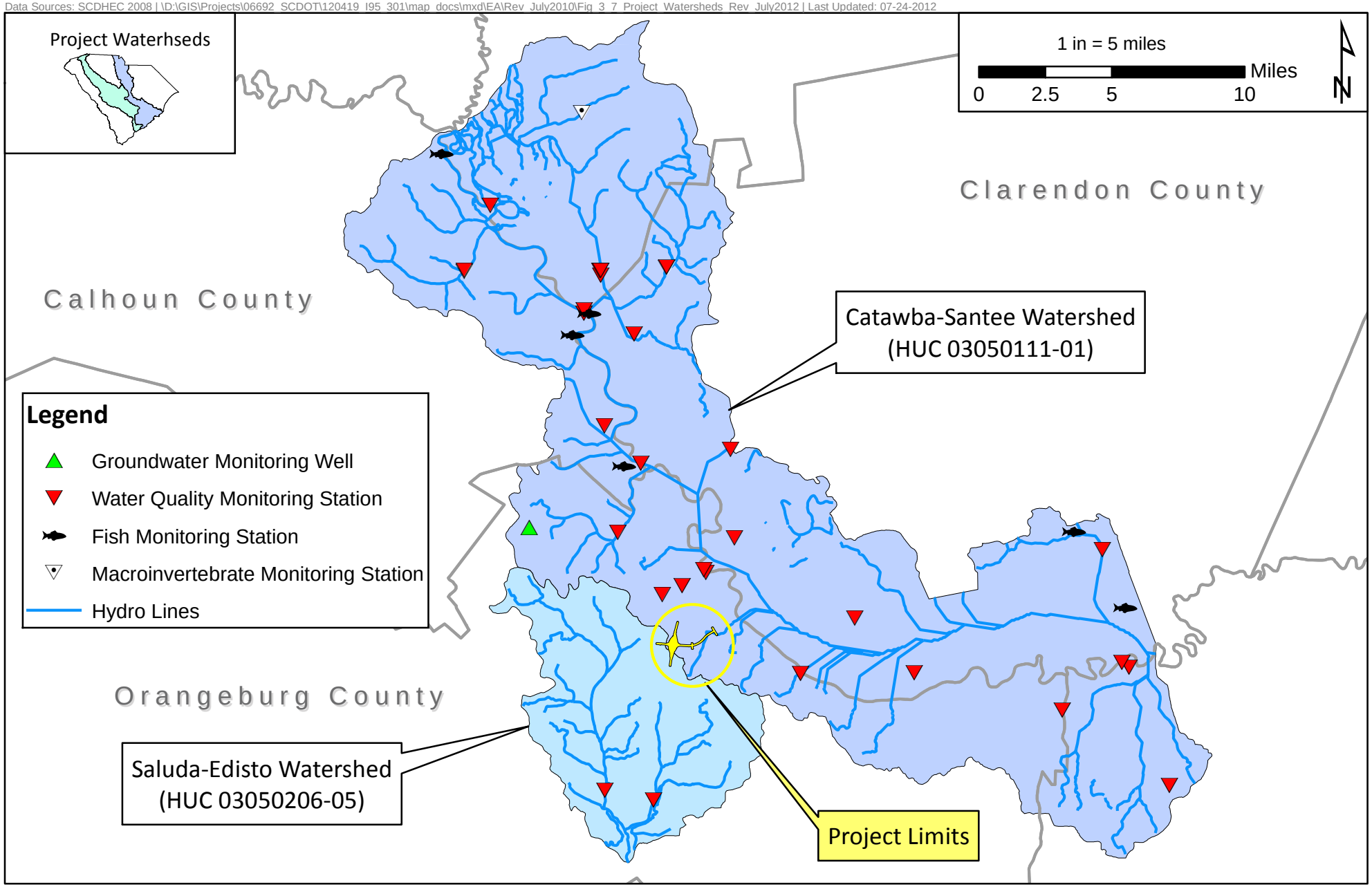

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Project Watersheds

Figure 3-6

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3.7.1 Groundwater

Groundwater is present in the surficial Pleistocene deposits under water table conditions. Water table depths are shallow and close to surficial contaminant sources (on the order of 10 feet below ground surface), recharge rates vary and water quality is generally poor. For these reasons, the approximate 50 foot thick surficial aquifer system is typically not utilized as a potable water source throughout the Orangeburg County area. An approximate 40 foot thick depositional sequence of middle Eocene age sediments serves as a confining unit between the overlying shallow aquifer system and the underlying semi-confined to leaky aquifers of Paleocene to upper Cretaceous age (S&ME, 2009).

SCDHEC established an ambient groundwater quality monitoring network for the purpose of obtaining statewide and aquifer-specific baseline values of groundwater quality. The monitoring program is intended to avoid sites that have been known to be contaminated by commercial, industrial, or any other anthropogenic activities. The network is intended to focus on an aquifer's changes in water chemistry related geological materials or natural forces rather than those influenced by man made causes. No ambient monitoring stations are located within the Project Limits.

SCDHEC also compiles an annual report listing contaminated groundwater sites that are associated with industrial or commercial sites. The 2008 South Carolina Groundwater Contamination Inventory Report (SCDHEC 2008) indicates that there are 136 groundwater contamination sites in Orangeburg County. None of these listed sites are located within the Project Limits.

3.7.2 Surface Water

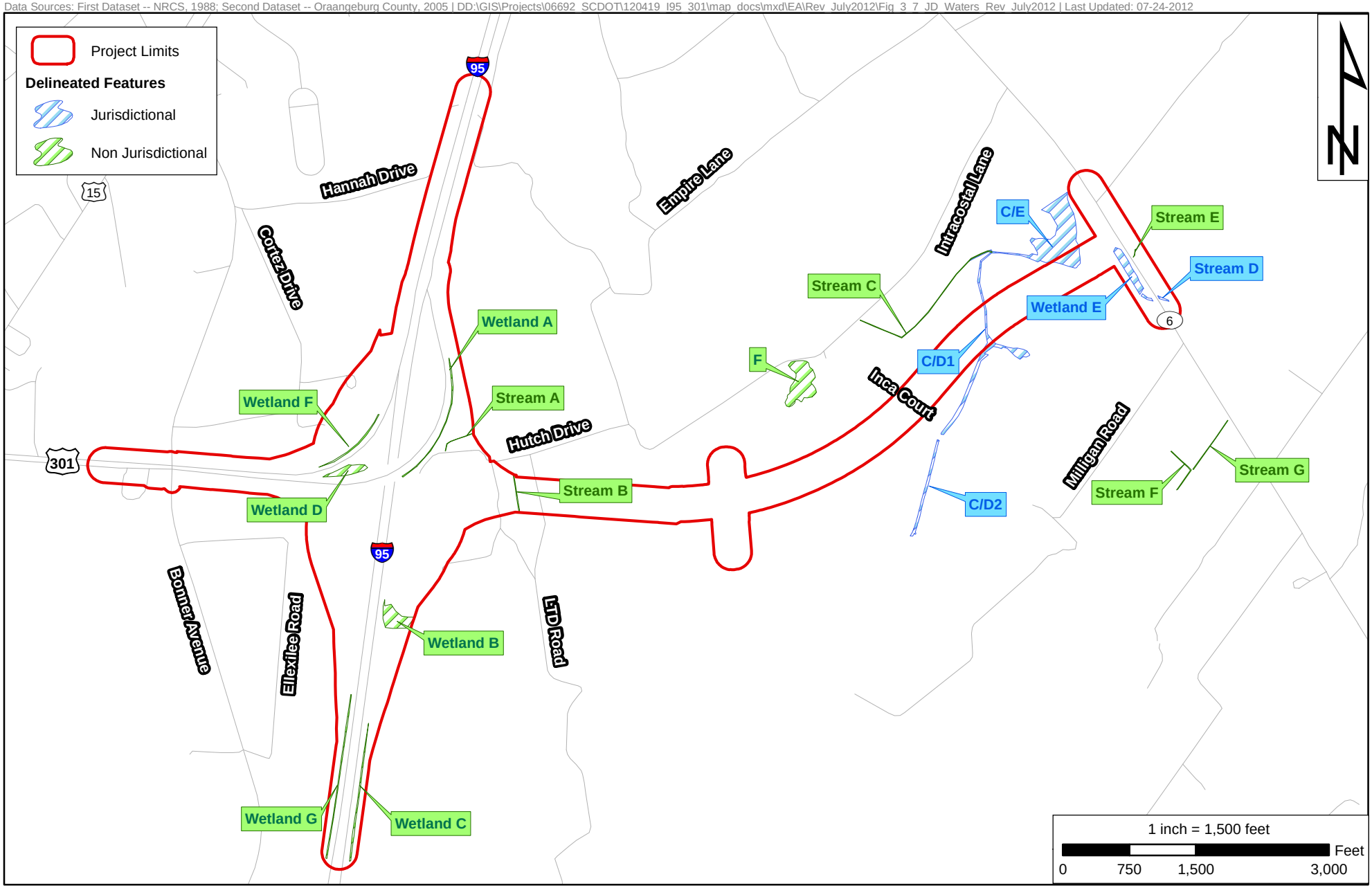
SCDHEC has assigned a classification to each State Water based on the desired uses of each waterbody, not on natural or existing water quality. Classifications protect waters for recreation, ecological resources, fish and aquatic life survival and propagation, and industrial and agricultural uses. Each classification has specific pollutant thresholds. Waters that exceed the threshold for their specific classification are targeted for water quality management action and are listed on the State of South Carolina Section 303(d) List. Monitoring stations around the state provide the date necessary to assess the quality of surface waters.

There are no named streams within the Project Limits. The closest named waterbody in the Santee River Basin is Lake Marion, with a classification of "FW" or "Freshwaters." The closest downstream SCDHEC maintained ambient water quality station to the Project Limits is Station SC-040 on Lake Marion (classified as FW), located in HUC 03050111-01. According to the State of South Carolina's 2008 Integrated Report, Part I: Listing of Impaired Waters, Station SC-040 is listed on the State of South Carolina 303(d) list for aquatic life use impaired due to total phosphorous. A Total Maximum Daily Load (TMDL) has not been approved for this site.

3.8 Jurisdictional Waters of the U.S.

The United States Army Corps of Engineers (USACE), through Section 404 of the Clean Water Act, has regulatory authority over waters of the United States, including wetlands. This authority empowers the USACE to identify wetland/upland boundaries and to regulate alterations of jurisdictional wetlands. These boundaries are established in accordance with the methodology in the 1987 Corps of Engineers Wetlands Delineation Manual. Potential Jurisdictional Waters of the U.S. identified within the Project Limits are depicted in Figure 3-7. An approved verification of the jurisdictional features associated with the SCDOT project was issued by the USACE on June 23, 2010 (SAC 2010-00306-DJE, Appendix F). A Jurisdictional Determination for portions of the project located within the Jafza site was issued on February 24, 2009 and is included in the document appendices (Appendix G) for information only.

Data Sources: First Dataset -- NRCS, 1988; Second Dataset -- Oraangeburg County, 2005 | DD:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_July2012\Fig_3_7_JD_Waters_Rev_July2012 | Last Updated: 07-24-2012



Jurisdictional Waters of the U.S.

Figure 3-7

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3.8.1 Wetlands

Wetlands are defined by Section 404 of the Clean Water Act as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions." The USACE utilizes specific hydrologic, soils, and vegetation criteria in establishing the boundary of wetlands within their jurisdiction as described in the *1987 Corps of Engineers Wetlands Delineation Manual*. Approximately 1.86 acres of jurisdictional wetlands were identified within the Project Limits. These wetlands are summarized in Table 3-5 and described below.

Table 3-5 Jurisdictional Wetlands within Project Limits

Wetland Type	Wetland ID	Area (ac.)
Forested	WE	1.04
Open Pond	*C/E**	*0.93*
	TOTAL	**1.97**

**Covered under the Jurisdictional Determination associated with the Jafza site, issued on February 24, 2009 (Appendix G).*

3.8.1.1 Forested Wetlands

Wetland E is a freshwater forested bottomland seasonally flooded wetland that is adjacent to a Relative Permanent Water (RPW) with perennial flow (Stream D) that is a tributary to Lake Marion, a Traditional Navigable Water (TNW). This wetland is not depicted on the U.S. Fish and Wildlife Services (USFWS) National Wetland Inventory (NWI). Woody vegetation is dominant and consisted of sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), laurel oak (*Quercus laurifolia*), willow oak (*Quercus phellos*), overcup oak (*Quercus lyrata*), water oak (*Quercus nigra*), and bald cypress (*Taxodium distichum*). Vine and herbaceous consisted of honeysuckle (*Lonicera japonica*), catbrier (*Smilax rotundafolia*), soft rush (*Juncus effusus*), and woodoats (*Chasmanthium laxum*). Wetland hydrology indicators included areas with surface water, saturation, water-stained leaves, and drainage patterns. Soils were saturated, exhibiting low chroma colors and reducing conditions. A representative photograph of Wetland E is included as Photograph 3-1.

Photograph 3-1 Forested Wetland E

3.8.1.2 *Open Water Pond*

Wetland C/E is an open water pond with a wetland fringe south of SC 6, immediately east of Intracoastal Road. This wetland has a hydrological connection with Wetland E. Hydrophytic vegetation was dominant and consisted of black willow (*Salix nigra*), sweetgum, red maple, swamp cottonwood (*Populus heterophylla*), wax myrtle (*Myrica cerifera*), cattails (*Typha* sp.), and sedges (*Carex* sp.). Wetland hydrology indicators and hydric soils were present.

3.8.2 *Streams*

Streams within the Project Limits were delineated using the 1987 Corps of Engineers Wetland Delineation Manual and applicable regional supplements as well as recent guidance for the Environmental Protection Agency (EPA). A total of approximately 724 linear feet (lf) of jurisdictional streams were identified and flagged within the Project Limits (Figure 3-7 and Table 3-6).

Table 3-6 Jurisdictional Streams within Project limits			
Classification	**Stream ID**	**Length within Project Limits**	**Total Length of Classification Type within Project Limits**
Perennial RPW	Stream D (UT to Lake Marion)	259 lf	259 lf
Freshwater Ditch	**Ditch/Stream C/D*	465 lf	465 lf
	TOTAL		724 lf

**Covered under the Jurisdictional Determination associated with the Jafza site, issued on February 24, 2009 (Appendix G).*

3.8.2.1 ***Relatively Permanent Waters***

RPWs within the Project Limits provide perennial flow directly or indirectly into the Lake Marion, a TNW. Approximately 259 linear feet of the streams within the Project Limits were classified as having perennial flow (Table 3-6). Riparian areas within the Project Limits have been significantly impacted by agricultural practices. The existing buffers are generally 10 to 25 foot wide forested buffers. Some areas were completely devoid of vegetation. Ordinary high water mark (OHWM) indicators included matted down vegetation, wrack lines, sediment sorting, and scour. Surrounding agricultural practices including channelization and removal of vegetative buffers have had an adverse effect on the RPWs, resulting in channel incision, bank failure, and sedimentation. A representative photograph of Stream D is included as Photograph 3-2.

3.8.2.2 ***Freshwater Ditch/Stream***

Stream C/D is a network of poorly drained agricultural ditches that have been poorly maintained. This ditch network exhibits an ordinary high water mark (OHWM) and has a direct surface water connection with Wetland C/E.

Photograph 3-2 Stream D - RPW with Perennial Flow

3.9 Non-Jurisdictional Features

3.9.1 Freshwater Ditches

Ditches are man-made channels constructed to drain uplands and convey storm water runoff. Ditches (Stream A and Stream B) are located along the I-95 and US 301 right of way (ROW). Some of these areas exhibit hydric soils, standing water and other indicators of hydrology, and hydrophytic vegetation, including sweetgum, loblolly pine (*Pinus taeda*), willow oak, catbrier, blackberry (*Rubus* spp.), Japanese honeysuckle (*Lonicera japonic*a), yellow jasmine (*Gelsemium sempervirens*), soft rush, sedges and sphagnum moss (*Sphagnum* sp). Per USACE guidance, however, these features are not considered jurisdictional as they lack a significant nexus to a navigable waterway.

3.9.2 Isolated Wetlands

Non-alluvial forested wetlands (Wetland A, Wetland B, Wetland C, Wetland D, Wetland F and Wetland G) are located within the Project Limits. These areas are separated by uplands and are greater than 200 feet from jurisdictional streams or wetlands. There are no apparent physical or hydrologic connections between the jurisdictional features and

the isolated features. Vegetation consisted of pond cypress (*Taxodium ascendens*), wouldow oak, laurel oak, sweetgum, loblolly pine, red maple, catbrier, crossvine (*Bignonia capreolata*), and poison ivy (*Toxicondendron radicans*).

3.10 Floodplains

The 100-year floodplain is the area that would be inundated by the base flood, an event that has a one percent chance of occurring in any given year. Federal regulations permit development in the 100-year floodplain if it is demonstrated through a hydraulic analysis that the development would meet the requirements set forth by FEMA.

In accordance with 1977 Executive Order 11988 entitled *Floodplain Management*,

> *"each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities."*

FEMA Flood Insurance Rate Maps (FIRMs) were reviewed to identify the 100-year floodplain within the project area (Figure 3-8). The proposed project does include several culvert replacements however the Preferred Alternative is contained within two FIRM panels, panel 4501600175B and 4501600275B (FEMA, 2009) and falls within Zone C, defined as areas with minimal flooding.

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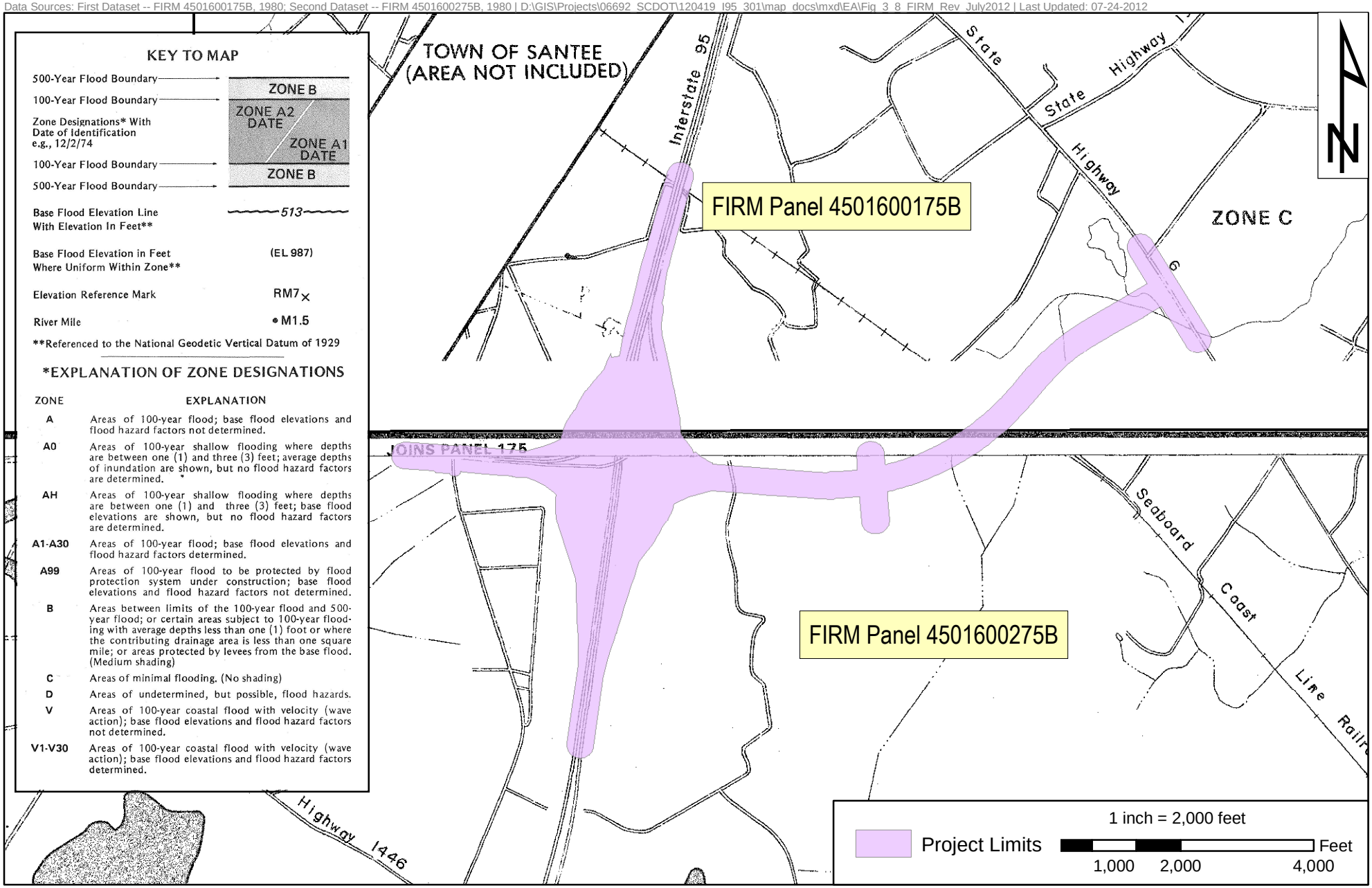
Data Sources: First Dataset -- FIRM 4501600175B, 1980; Second Dataset -- FIRM 4501600275B, 1980 | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Fig_3_8_FIRM_Rev_July2012 | Last Updated: 07-24-2012



Flood Insurance Rate Map (FIRM)

Figure 3-8

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3.11 Wild and Scenic Rivers

The *National Wild and Scenic Rivers Act* of 1968 (16 U.S.C. 1271-1287) federally protects rivers that are listed for their wild, scenic, or recreational values, along with those that are under study for inclusion on the list. In addition, under a 1979 Presidential Directive, federal agencies are required "to take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Inventory". There are no federally protected wild, scenic, or recreational rivers within the Project Limits, nor are there any rivers listed on the Nationwide River Inventory. Therefore, the proposed project would not require compliance with the Act.

The State of South Carolina also designates some state rivers for their cultural or natural resources value under the *South Carolina Scenic Rivers Act of 1989*. There are no state designated scenic rivers within the Project Limits; therefore, no compliance with this Act is required for the proposed project.

3.12 Biotic Communities

The Project Limits are located in the Atlantic Southern Loam Plains ecoregion of the Southeastern Plains (Griffith, et al., 2002a,b,c). The Southern Plains are irregular plains with broad interstream areas exhibiting a mosaic of cropland, pasture, woodland, and forest. Natural vegetation within this ecoregion consists mostly of longleaf pine (*Pinus palustris*) with smaller areas of oak-hickory-pine. The biotic communities found within the Atlantic Southern Loam Plains ecoregion containing the Project Limits are described below. These plant community classifications follow Nelson (1986) where possible.

3.12.1 Pine Flatwoods

The pine flatwoods are essentially flat or rolling terrain with a canopy of pines and well-developed subcanopy of several tall shrub layers. The soil is generally sandy with a high water table. Canopy species are dominated by loblolly pine. Subcanopy species included sweetgum, laurel oak, willow oak, and red cedar (*Juniperus virginiana*). Vine and herbaceous species consist of catbrier, yellow jasmine, and Christmas fern (*Polystichum acrostichoides*).

According to South Carolina Department of Natural Resources (SCDNR) Comprehensive Wildlife Strategy (SCDNR 2005), the highest priority species for conservation concern found in these habitats area: American kestrel (*Falco sparverius*),

Bachman's sparrow (*Aimophila aestivalis*), brown-headed nuthatch (*Sitta pusilla*), Henslow's sparrow (*Ammodramus henslowii*), northern bobwhite (*Colinus virginianus*), red-cockaded woodpecker (*Picoides borealis*), black bear (*Ursus americanus*), and northern yellow bat. High priority classification has been assigned to eastern diamondback rattlesnake (*Crotalus adamanteus*), mimic glass lizard (*Ophisaurus mimicus*), and pine woods snake (*Rhadinaea flavilata*). Moderate priority species in this community include slender glass lizard (*Ophisaurus attenuatus*), eastern fox squirrel (*Sciurus niger*), and eastern woodrat (*Neotoma floridana*).

3.12.2 Agricultural land, early successional fields, and highway ROW

Agricultural land occupies a significant portion of the upland areas within the Project Limits. Crops observed within the Project Limits include winter wheat, soybeans, and corn. Early successional fields included loblolly pine, sweetgum, and red cedar saplings but were dominated by Japanese honeysuckle, blackberry, little bluestem (*Schizachyrium scoparium*), broomsedge (*Andropogon virginicus*), and fescue (*Fescue* sp.). ROW along I-95 and US-301 consisted mostly of grasses with adjacent ditches that drain the surrounding upland areas. Vegetation within these ditched areas consisted of loblolly pine, sweetgum, willow oak, catbrier, blackberry, Japanese honeysuckle, yellow jasmine, soft rush, sedges, and sphagnum moss (*Sphagnum* sp).

SCDNR endows the Highest Priority conservation classification in this habitat to common ground-dove (*Columbina passerina*), eastern meadowlark (*Sturnella magna*), field sparrow (*Spizella pusilla*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), northern bobwhite, and painting bunting (*Passerina ciris*). Barn owl (*Tyto alba*) and meadow vole (*Microtus pennsylvanicus*) are listed as High Priority species. Moderate Priority species include: American woodcock (*Scolopax minor*), Bewick's wren (*Thryomanes bewickii*), and eastern woodrat.

3.12.3 Bottomland Hardwood Forest

The Bottomland Hardwood Forest community is located adjacent to riparian areas in the eastern portion of the Project Limits. Canopy species include sweetgum, wouldow oak, and water oak. Subcanopy species consist of overcup oak, blackberry, Chinese privet (*Ligustrum sinense*). Vines species are common in this community and include catbrier

and yellow jasmine. Non-vining herbaceous vegetation is sparse and no species were positively identified during the field investigation.

SCDNR endows the Highest Priority conservation classification in this habitat to black-throated green warbler (*Dendroica virens wayneii*), eastern wood peewee (*Contopus virens*), Kentucky warbler (*Oporornis formosus*), rusty blackbird (*Euphagus carolinus*), Swainson's warbler (*Limnothlypis swainsonii*), shallow-tailed kite (*Elanoides forficatus*), wood thrush (*Hylocichla mustelina*), worm-eating warbler (*Helmitheros vermivorus*), Chamberlain's dwarf salamander (*Eurycea chamberlaini*), black bear (*Ursus americanus*), and northern yellow bat (*Lasiurus intermedius*). High Priority species include Acadian flycatcher (*Empidonax virescens*), bald eagle (*Haliaeetus leucocephalus*), southeastern bat (*Myotis austroriparius*), and star-nosed mole (*Condylura cristata*). Species with a Moderate Priority conservation classification include Louisiana waterthrush (*Seiurus motacilla*), eastern fox squirrel, eastern wood rat and southern dusky salamander (*Desmognathus auriculatus*).

3.12.4 Non-Alluvial Swamp Forest

A non-alluvial swamp forest community is located along a portion of NB I-95 at Wetland B and Wetland D on the SB I-95 near the US 301 interchange. Canopy and subcanopy species consist of pond cypress, wouldow oak, laurel oak, sweetgum, loblolly pine, and red maple. Vining species are abundant and include catbrier, crossvine, and poison ivy, which, in places, forms dense bowers.

SCDNR Priority endows the Highest Priority conservation classification in this habitat to little blue heron (*Egretta caerulea*), yellow-crowned night heron (*Nyctanassa violacea*), broad-striped dwarf siren (*Pseudobranchus striatus striatus*), Carolina gopher frog (*Rana capito capito*), Chamberlain's dwarf salamander, flatwoods salamander (*Ambystoma cingulatum*) , Florida green water snake (*Nerodia floridana*), and tiger salamander (*Ambystoma tigrinum*). High Priority species include black swamp snake (*Seminatrix pygaea paludis*), chicken turtle (*Deirochelys reticularia*), Florida cooter (*Pseudemys floridana*), Florida softshell turtle (*Apalone ferox*), gulf coast mud salamander (*Pseudotriton m. flavissimus*), mink (*Mustela vison*), southeastern bat, upland chorus frog (*Pseudacris feriarum*), and yellowbelly turtle (*Pseudemys scripta*). Species with a Moderate Priority conservation classification include great blue heron (*Ardea herodias*),

great egret (*Egretta alba*), common snapping turtle (*Cheldra serpentina*), northern cricket frog (*Acris crepitans*), southern dusky salamander, spotted turtle (*Clemmys guttata*).

3.13 Threatened and Endangered Species

The Endangered Species Act of 1973 (ESA), as amended, states that economic growth and development in the United States, combined with an inadequate concern and conservation effort have resulted in the extinction, or the threat of extinction of various species of native fish, wildlife, and plants. The Act gives the Secretary of the Interior, acting through the United States Fish and Wildlife Service (USFWS), and the Secretary of Commerce, acting through the National Marine Fisheries Service (NMFS), the power to protect and conserve all forms of wildlife and plants deemed to be in serious jeopardy. "Endangered" species are defined as any species of fish, wildlife, or plant that is in danger of extinction throughout all or a significant portion of its range. "Threatened" species are any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532).

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

Table 3-7 shows five federally protected species that may occur in Orangeburg County.

Table 3-7 Federally-Protected Species Known to Occur in Orangeburg County

Species	Federal Status	Suitable Habitat Present in Project Limits	Effect
Plants			
Canby's Dropwort *Oxypolis canbyi*	E	Yes	No effect
Animals			
Bald eagle *Haliaeetus leucocephalus*	BGEPA	No	No effect
Frosted Flatwoods salamander *Ambystoma cingulatum*	T	No	No effect
Red-cockaded woodpecker *Picoides borealis*	E	Yes	No effect

Table 3-7 Federally-Protected Species Known to Occur in Orangeburg County			
Species	**Federal Status**	**Suitable Habitat Present in Project Limits**	**Effect**
Shortnose sturgeon *Acipenser brevirostrum*	E	No	No effect

E – Endangered; T – Threatened; BGEPA – protected under the Bald and Golden Eagle Protection Act

Field surveys were conducted for each species for which suitable habitat was found within the Project Limits (Canby's dropwort and Red-cockaded woodpecker). No protected species individuals were identified during the surveys. More details are provided in the Biological Survey (HDR, 2010, Appendix L). The Biological Survey determined that the project would have "no effect" on protected species or Critical Habitat thus no further coordination with USFWS is necessary.

3.14 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to consider the effects of their actions on historic properties and archaeological sites. In accordance with 36 CFR §800.4, archival research and coordination with the South Carolina State Historic Preservation Office (SCSHPO) and the Catawba Indian Nation Tribal Historic Preservation Office (THPO) was conducted to identify and help predict the locations of significant cultural resources in the vicinity of the proposed project. A Cultural Resources Survey Report (Brockington, 2010) is available in Appendix I. Independent of this project, a separate cultural resources survey was conducted for the proposed Jafza facility (S&ME, 2009) which is located within the Project Limits for the proposed interchange improvement and roadway extension.

A review of previous cultural resource surveys was conducted to identify resources within the Project Limits. In addition, a detailed field investigation was conducted within the Project Limits. The Archaeological Survey Universe used for the field investigation includes the Project Limits, which is 200 feet on either side of the proposed Preferred Alternative alignment. The Architectural Survey Universe extends 300 feet on either side of the proposed road centerlines for a total width of 600 feet.

Eleven previously identified archaeological sites and two previously identified historic architectural resources were identified within 0.5 miles of the project area. Of these, only Site

38OR256, Site 38OR294, and Resource 75-0240 are located within the Project Limits. Resource 75-0240 was reassessed during the Brockington architectural field survey. Three additional archaeological sites and three additional architectural sites were identified during intensive archaeological and architectural field surveys (Tables 3-8 and 3-9). Precise locations of the referenced resources can be found on Figure 3-9.

Table 3-8 Archeological Resources Identified Within the Archaeological Survey Universe

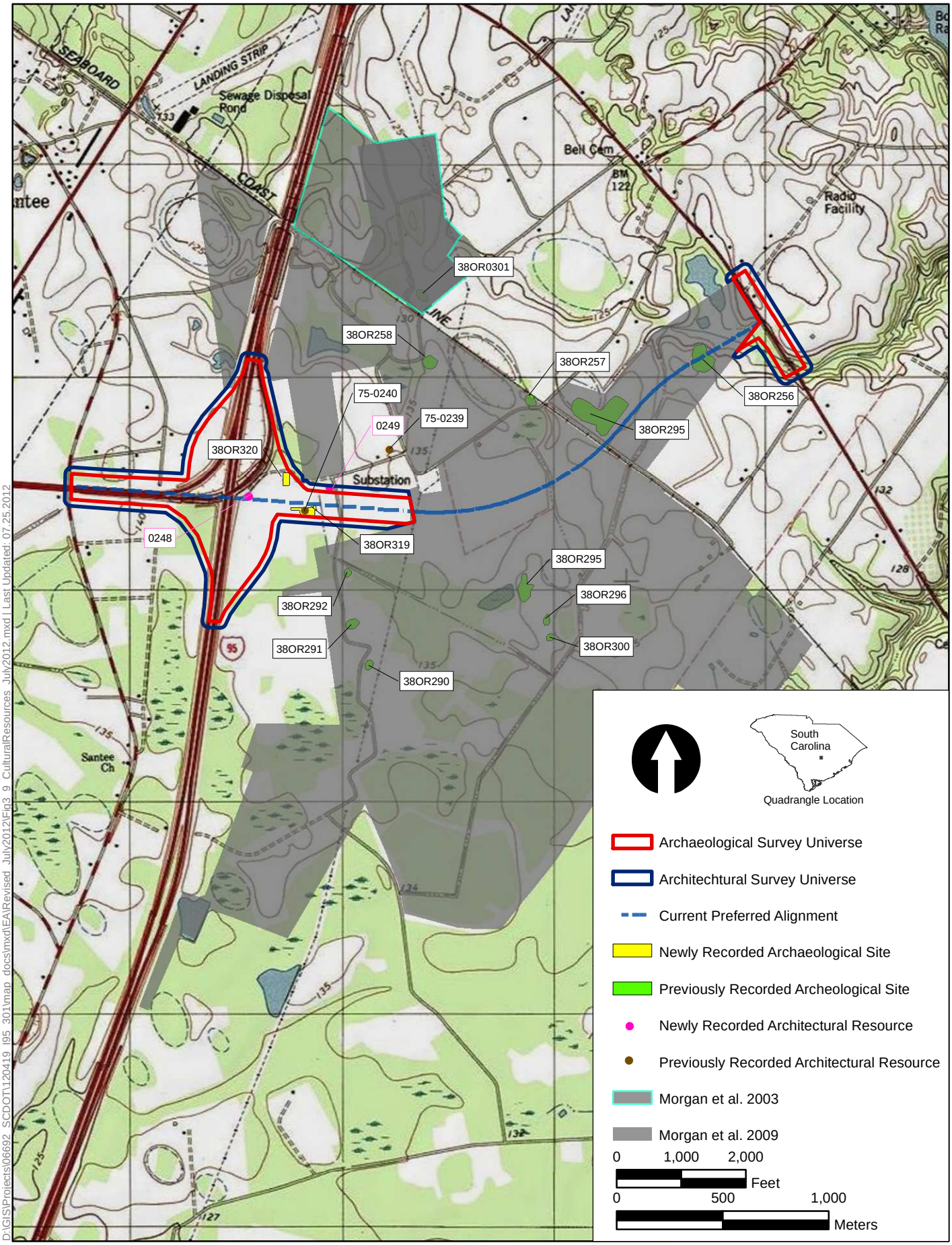
Resource	Common Name	Time Period	National Registry of Historic Places Eligibility
38OR256	House Site	Late 19th to Early 20th Century	Not Eligible
38OR294	House Site	20th century	Not Eligible
38OR318	Short-term resource extraction / house site	Unknown pre-contact / Late 19th to Early 20th century	Not Eligible
38OR319	Extent tenant house / artifact scatter	Late 19th century to present	Not Eligible
38OR320	Tenant house	Early to Mid 20th Century	Not Eligible

Table 3-9 Architectural Resources Identified Within the Architectural Survey Universe

Resource	Common Name	Time Period	National Registry of Historic Places Eligibility
75-0240 / 0240	Unnamed house	ca. 1900	Not Eligible[6]
0248 & 0248.01	Unnamed house (1051 Ltd. Rd.)	ca. 1960	Not Eligible
0249	Unnamed house (161 Hutch Rd.)	ca. 1950	Not Eligible

The SCSHPO concluded that none of the resources are eligible for listing in the National Register of Historic Places (NRHP) and, therefore, no historic properties would be affected by the proposed construction (Appendix J, Agency Coordination). The THPO also concurred with these findings (Appendix J).

[6] S&ME (2009) recommended the resource eligible for listing on the NRHP pending further historical research. Brockington (2010) recommends the structure not eligible for listing on the NRHP due to a lack of historical context.



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Cultural Resources

Figure 3-9

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3.15 Section 4(f) Resources

The basic purpose of Section 4(f) documentation is to protect “publicly-owned public parks and recreation lands, wildlife and waterfowl refuges, and historic sites” from encroachment by public transportation facilities. In addition to mandating the physical protection of certain lands, (avoiding unintended physical "use" of them), Section 4(f) also addresses proximity impacts such as noise and vibration which may constitute a "Constructive Use" without actually intruding into the protected area. The FHWA rules require that when the physical location of a project would produce severe impacts to the activities, features, or attributes of a publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site, then a Section 4(f) Evaluation must be completed.

No Section 4(f) resources have been identified within the Project Limits.

3.16 Section 6(f) Resources

Section 6(f) resources are places such as public parks, trails, courts, and other recreational areas that were purchased in part through grants from the *Land and Water Conservation Fund Act of 1965* (LWCF) and are protected from conversion to non-public recreational uses. No Section 6(f) resources have been identified within the Project Limits.

3.17 Hazardous Materials

Hazardous waste/material sites are regulated by the Resource Conservation and Recovery Act (RCRA), as amended, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and the Superfund Amendments and Reauthorization Act of 1986 (SARA). A Phase I Environmental Site Assessment (Phase I) was conducted to identify recognized environmental conditions (RECs) or locations that have potential or existing environmental contamination due to the presence of hazardous materials or petroleum products (S&ME, 2010). The Phase I was conducted using the American Society for Testing Materials (ASTM) E 1527-05, Standard Practice for Environmental Site Assessments: Phase I Site Assessment Process by reviewing public records to characterize environmental features of the site and identifying past and present land use activities and performing a site reconnaissance to identify visual signs of past or existing contamination on or adjacent to the site.

The Phase I found evidence of RECs present at two locations in connection with the Project Limits (Appendix K, Phase I ESA, Figure 5). One site is the property located at the end of Vernetha Lane where two above ground storage tanks, tires and debris are located. The second site is a former retail gasoline station, now identified as Pure Gold, located 300 feet northwest of US 301 and Bonner Road. Neither of these RECs were identified in the Environmental Data Resources (EDR) Report associated with the Phase I investigation performed. A Phase I was also completed for the Jafza site in which three REC's were identified within the confines of the property. None of the REC's are located within the project limits of the proposed project. The Jafza Phase I ESA can be referenced on the CD of Technical Studies included with this document.

A Phase II Environmental Site Assessment for further analysis of potential hazardous materials sites that may affect the proposed project is recommended.

4.0 ENVIRONMENTAL CONSEQUENCES

This section includes a discussion on the probable beneficial and adverse social, economic, and environmental effects of the Preferred Alternative and describes the measures proposed to mitigate any adverse impacts. Environmental studies were conducted to identify potential impacts associated with this project. These environmental studies are appended to this document by reference. The results of these studies indicate the absence of any significant impact on the human and natural environment. While the proposed location and design of the project represents the best "build" alternative for meeting travel demands, input received during the public hearing process and environmental document availability period has been carefully evaluated during project development and modifications have been made where appropriate.

Table 4-1 summarizes environmental and other technical support studies completed for the project and are included in the Appendices or incorporated by reference.

Table 4-1 Environmental Studies Conducted	
Noise Technical Memo US 301 at I-95 Interchange Improvements and US 301 Connection to SC 6	Appended
Jurisdictional Determination US 301 at I-95 Interchange Improvements and US 301 Connection to SC 6	Appended
Jurisdictional Determination for the Jafza South Carolina LLC Tract	Appended
Biological Survey US 301 at I-95 Interchange Improvements and US 301 Extension to SC 6	Appended
Cultural Resources Survey US 301 at I-95 Interchange Improvements and US 301 Extension to SC 6	Appended
Phase I Environmental Site Assessment US 301 at I-95 Interchange Improvements and US 301 Extension to SC 6	Appended
Farmland Conversion Impact	Appended
Bridge Replacement Scoping Trip Risk Assessment for Floodplains	Appended
Borrow Pit Screening Report US 301 at I-95 Interchange Improvements and US 301 Connection to SC 6	Appended
Environmental Review of Protected Species and Potential Habitat, Jafza Property	Incorporated by reference; included on technical CD
Cultural Resources Survey of the Jafza South Carolina LLC Tract	Incorporated by reference; included on technical CD
Phase I Environmental Site Assessment, Proposed Jafza Logistics Park	Incorporated by reference; included on technical CD
Eastern Orangeburg County Sustainability Study	Incorporated by reference; included on technical CD

4.1 Land Use

The proposed ROW for the interchange improvement and roadway connector is 100 feet on either side of the centerline of the proposed road for a total width of 200 feet. The total amount of acreage needed for the Preferred Alternative is approximately 158 acres. As noted in Chapter 3.0, zoning data provided by the Orangeburg County GIS Department indicates that the anticipated land use for the Project Area west of the I-95 corridor is a combination of Commercial General and Business Industrial. In the future land use plan, two relatively large tracts of Forest and Agriculture are located between the existing CSX railroad line and SC 6. The portion of the Project Area located to the west of I-95 is anticipated to be Commercial General with the remainder maintaining its current land use. Based on the planned changes in land use, the proposed project is not anticipated to have any appreciable affect on land use within the area.

4.2 Farmland

The FPPA outlines several different criteria that determine the presence of Prime Farmland. These criteria were scored on a Farmland Conversion Impact Rating Form for Corridor Type Projects (NRCS-CPA-106). Sites that score above 260 points total are eligible for protection under the FPPA, while sites receiving lower ratings are considered less eligible. Sites that score less than 160 points do not meet the criteria for FPPA protection. The total score is comprised of (1) the Relative Value of Farmland score and (2) the Total Corridor Assessment score. The Relative Value of Farmland (to be converted by the referenced alternative) score is assessed on a scale of 0 to 100. The Total Corridor Assessment score pertains to the use of land, the availability of farm support services, investments in existing farms, and the amount of land that could be rendered non-farmable due to construction of the proposed project. The Total Corridor Assessment has a scale of 0 to 160 points. According to an agreement with NRCS, SCDOT and FHWA policy states that if a site's Total Corridor Assessment score (NRCS-CPA-106 Form Section VI) is less than 60 points, Sections III, IV and V do not need to be completed and no additional assessment by the NRCS district office would be necessary[7].

The proposed project received a Total Corridor Assessment score of 32. Since this Total Corridor Assessment score is under the 60-point threshold described above, further

[7] Assuming a maximum possible Relative Value of Farmland scored of 100 and a Total Corridor Assessment score of less than 60, the total score would always be less than 160 and, therefore, the site would be ineligible for protection under the FPPA.

coordination with NRCS and mitigation actions are not required. Refer to Appendix L for the completed Farmland Impact Conversion Rating Form for Corridor Type Projects (NRCS-CPA-106).

4.3 Socioeconomics and Demographics

The Preferred Alternative was analyzed for its potential social impacts in terms of potential residential and business relocations, alteration of transportation patterns, disruption of planned or established communities, disruption of development, and changes in employment. The relocation program would be conducted in accordance with the Federal Uniform Relocation assistance and Real Property Acquisition Policies Act of 1970, as amended.

There are six relocations that would be required, all surrounding the proposed I-95 / US 301 Interchange. Possible relocation locations can be found on Figure 4-1.

The Preferred Alternative would improve traffic flow through the existing adjacent communities and planned development. Community cohesion would not be adversely affected by the proposed project as the interchange improvements and US 301 connector are proposed for currently open space and do not pass through any established communities.

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, culture, age, and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies. The evaluation of environmental justice responds to Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” In addition, Title VI of the Civil Rights Act of 1964, and related statutes, requires there be no discrimination in Federally-assisted programs on the basis of race, color, national origin, age, sex, or disability.

Environmental justice impacts associated with the proposed project were analyzed using 2010 U.S. Census data. Based on data shown in Table 3-3, low income and minority communities exist in the project area. However, the Preferred Alternative is not likely to have any disproportionate impacts to environmental justice communities.

During this project’s public involvement process, all members of the local community were given ample opportunities to voice their concerns or provide opposition to the project. The public meeting date, time, and location was advertised in the local newspaper. No one from the

disadvantaged population or claiming to represent the disadvantaged population expressed opposition to the project during these public meetings. A summary of the public involvement efforts may be found in Section 5.2 Public Involvement.

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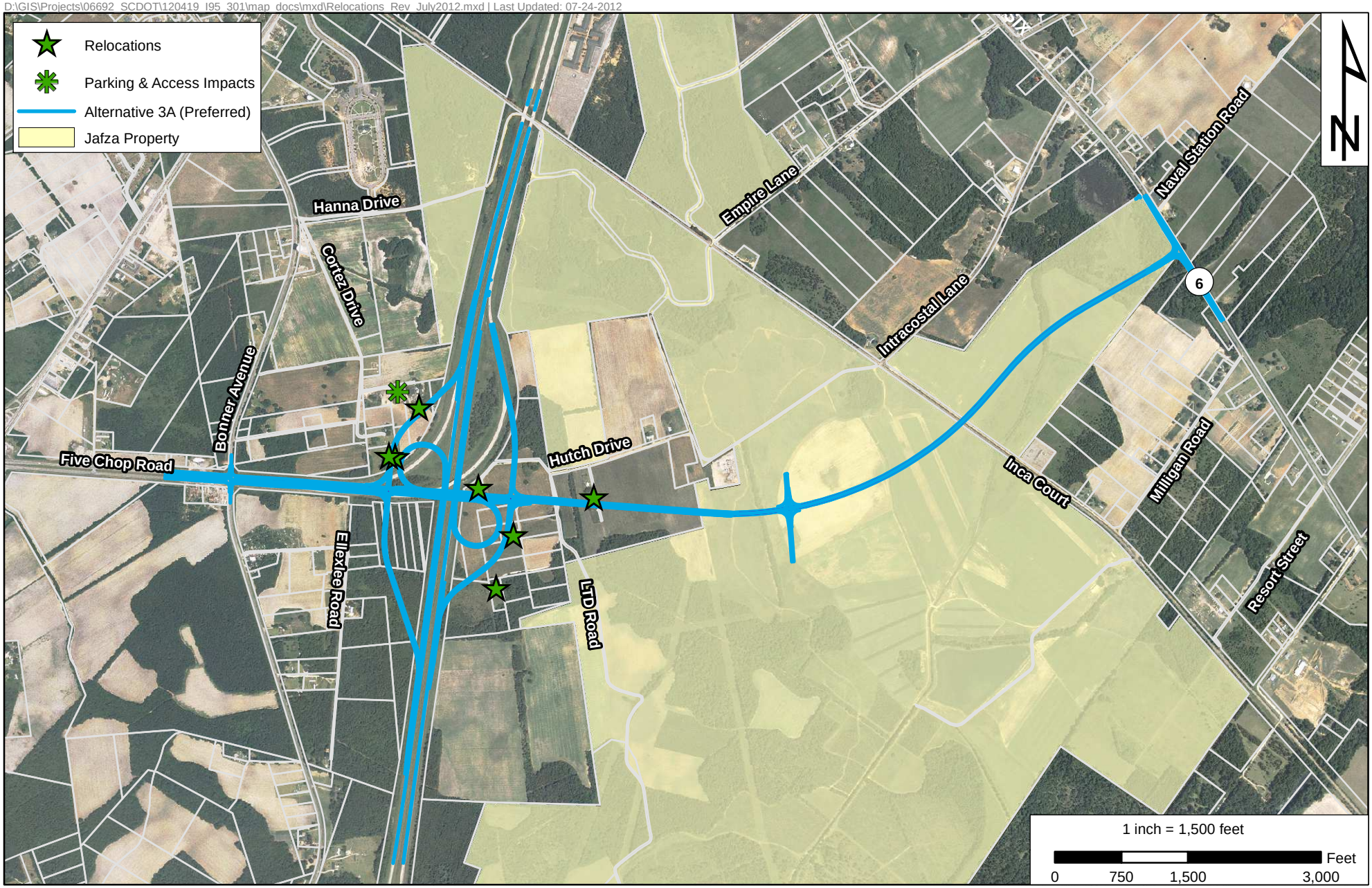

Relocations

Figure 4-1

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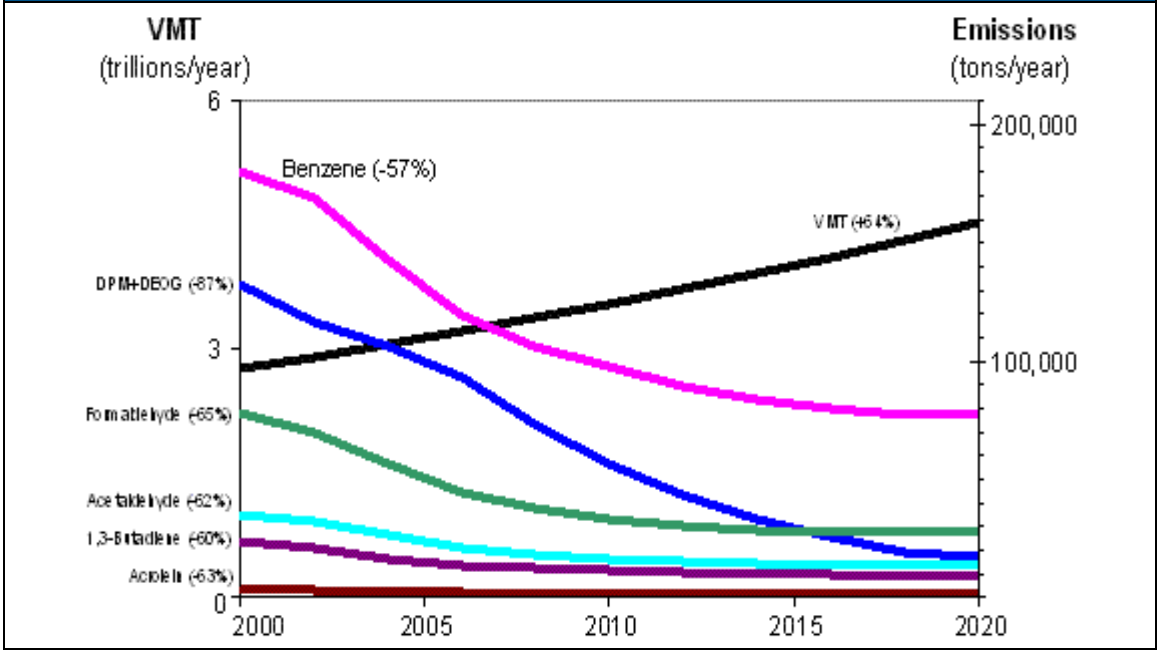
4.4 Air Quality

The EPA established the National Ambient Air Quality Standards (NAAQS) for six pollutants affecting air quality in accordance with the Clean Air Act of 1970 (as amended). The six atmospheric pollutants include carbon monoxide, lead, nitrogen oxides, ozone, particulates, and sulfur oxides. This project would be consistent with the South Carolina State Air Quality Implementation Plan (SIP) regarding the attainment of the NAAQS established by the EPA. Orangeburg County currently meets all air quality standards for automobile related pollutants and SCDHEC has determined that transportation control measures (TCMs) are not required to maintain the area's air quality.

In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs would reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and would reduce on-highway diesel PM emissions by 87 percent, as shown in Figure 4-2.

Figure 4-2 U.S. Annual Vehicle Miles Traveled (VMT) vs. Mobile Source Air Toxics Emissions, 2000-2020



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that would address these issues and could make adjustments to the full 21 and the primary six MSATs.

This EA includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this EA. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR §1502.22(b)) regarding incomplete or unavailable information.

4.4.1 Information That Is Unavailable or Incomplete

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated

emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

4.4.1.1 Emissions

The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

4.4.1.2 Dispersion

The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated

more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also would focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

4.4.1.3 ***Exposure Levels and Health Effects***

Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

4.4.2 Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.

- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes, particularly respiratory problems[8]. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

4.4.3 Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based Upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health

[8] South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, FHWA has provided a qualitative assessment of MSAT emissions relative to the build and no-build alternatives, and has acknowledged that all the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

4.4.4 Project Specific MSAT Impact Analysis

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions-if any-from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives, found at:

www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

MSAT emissions would be proportional to the vehicle miles traveled (VMT) or Average Annual Daily Traffic (AADT), assuming that other variables such as fleet mix are the same for each alternative. The AADT estimated for the Build Alternative on US 301 west of I-95 (22,595 vehicles per day in 2030) would be slightly higher than that for the No-Build Alternative (18,295 vehicles per day in 2030), because the proposed US 301 Connector increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a

corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE 6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Also, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future.

The proposed US 301 Connector contemplated as part of the project alternative would have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under this alternative there may be localized areas where ambient concentrations of MSATs could be higher than the No-Build Alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be accurately quantified due to the inherent deficiencies of current models. In sum, when a highway is extended and/or widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs would be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

4.5 Noise

Noise is unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. A noise analysis was conducted to evaluate the potential noise impacts associated with the proposed improvements to the interchange of US Route 301 (US

301) with Interstate 95 (I-95) and the extension of US 301 from I-95 to South Carolina Route 6 (SC 6), south of the Town of Santee, in Orangeburg County, South Carolina. The existing interchange of US 301 at I-95 is a three leg interchange that provides access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently there are no ramps to access northbound I-95 from southbound US 301 or to access southbound I-95 from northbound US 301. Of the approximately nine noise-sensitive properties found to exist within the corridor, no noise-sensitive property was found to approach, exceed, or substantially exceed the Federal Highway Administration's (FHWA's) Noise Abatement Criteria (NAC) for the design year of 2035.

The South Carolina Department of Transportation's (SCDOT's) Noise Abatement Policy (NAP, 2011) was used for this noise study. The change in relative noise levels for the design year of 2035—the noise level increase or decrease directly attributable to the Build Alternative—is projected to range from 3 decibel (dBA) to 13 dBA greater than the noise levels for the existing conditions in 2009. FHWA's noise abatement criteria (NAC) establishes criteria of acceptable noise levels (in dBA) delineated by land use categories (Table 4-2).

Table 4-2 FHWA Noise Abatement Criteria (NAC)

Land Use Category	Noise Level (L_{Aeq1h})*	Description of Land Use Category
A	57 dBA (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B**	67 dBA (exterior)	Residential
C**	72 dBA (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 dBA (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio structures, recording studios, schools, and television studios
E**	52 dBA (interior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F

* L_{Aeq1h} is the equivalent average sound level measured for 1 hour, approximating the sensitivity of the human ear.

Table 4-2 FHWA Noise Abatement Criteria (NAC)		
Land Use Category	**Noise Level (L_{Aeq1h})***	**Description of Land Use Category**
F	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	Undeveloped lands that are not permitted

Source: Code of Federal Regulations, Title 23, Part 772
* the 1-hour equivalent loudness in A-weighted decibels, which is the logarithmic average of noise over a 1-hour period
***Includes undeveloped lands permitted for this activity category*

The NAC land use category known to occur within the project area is Category B (residences). According to FHWA's noise abatement guidelines, abatement strategies should be considered when the predicted future L_{eq} noise levels "approach" (within 1 dBA) or exceed 67 dBA for a category B land use or 72 dBA for a category E land use. For example, noise levels approaching or exceeding 67 dBA (66 dBA or higher) for the category B land use would be considered for abatement. These guidelines also state that noise abatement should be considered when the noise levels "substantially exceed the existing noise levels". This criterion, as defined by SCDOT's policy, is a 15 dBA increase over existing traffic noise levels.

SCDOT's policy employs FHWA's NAC per land use category According to the SCDOT NAP, indoor noise levels are not normally considered unless special circumstances exist (SCDOT 2011).

Noise levels were evaluated at potentially impacted properties directly adjacent to the proposed project area. Approximately 9 noise-sensitive properties were identified within the project area. These properties were represented by nine receiver locations selected to represent places in the project area where people may be exposed to high traffic noise levels, such as backyards or patio areas (Figure 4-3). These representative sites are used in the noise analysis to determine potential noise abatement measures associated with the project. They also allow a measure for the purposes of establishing a threshold dBA contour line (of 66 dBA) to provide local officials and developers a guide for assisting in the development of compatible future land use criteria.

Three conditions were modeled using the FHWA-approved Traffic Noise Model, version 2.5 (TNM 2.5). The model estimated the peak-hour traffic noise levels for:

- existing condition (2009)

- future condition for No-Build Alternative (2035)
- future condition for Build Alternative (2035)

Existing (2009) and future (2035) traffic volumes as well as the average annual daily traffic (AADT), design hour factor (K), directional factor (D), truck factors (T), and vehicle speeds were determined by HDR in March 2010. Peak hour traffic data were used for the noise analysis. The data input used for building the TNM model included:

- Noise-sensitive receiver locations were identified by land use information and project aerial photographs
- Each receiver (representing human hearing) was placed 5 feet above ground
- Roadway coordinates were placed along the corridor halfway between the centerline and edge of pavement in both directions for each roadway alignment
- Each traffic lane was 12 feet wide
- Traffic volumes were placed at 50/50 directional split
- The traffic was placed in the center of the pair of travel lanes for all alternatives
- The existing and future operating speeds were entered at their posted speeds

The nine noise-sensitive receiver locations were evaluated for traffic noise impacts resulting from 2035 peak-hour traffic conditions. The following criteria designate a noise impact according to the SCDOT NAP:

- The predicted design year noise level is 66 dBA or higher (approaches, within 1 dBA of, or exceeds 67 dBA) (category B).
- The difference between the existing condition and the predicted design year noise level is 15 dBA or greater, resulting in a “substantial increase” in noise levels.

Abatement measures must be considered for noise-sensitive properties meeting these criteria.

The existing (2009) conditions demonstrate that traffic noise levels do not approach or exceed the 66 dBA level at any of the noise sensitive receiver locations (Table 4-3). The predicted 2035 noise levels for the No-Build Alternative approach or exceed the NAP noise-level criteria at two noise-sensitive receiver locations. Predicted noise levels resulting from the design year (2035) No-Build Alternative increase over existing levels from 4 dBA to 5 dBA. The magnitude of this increase is attributable to the traffic increases anticipated along the corridor.

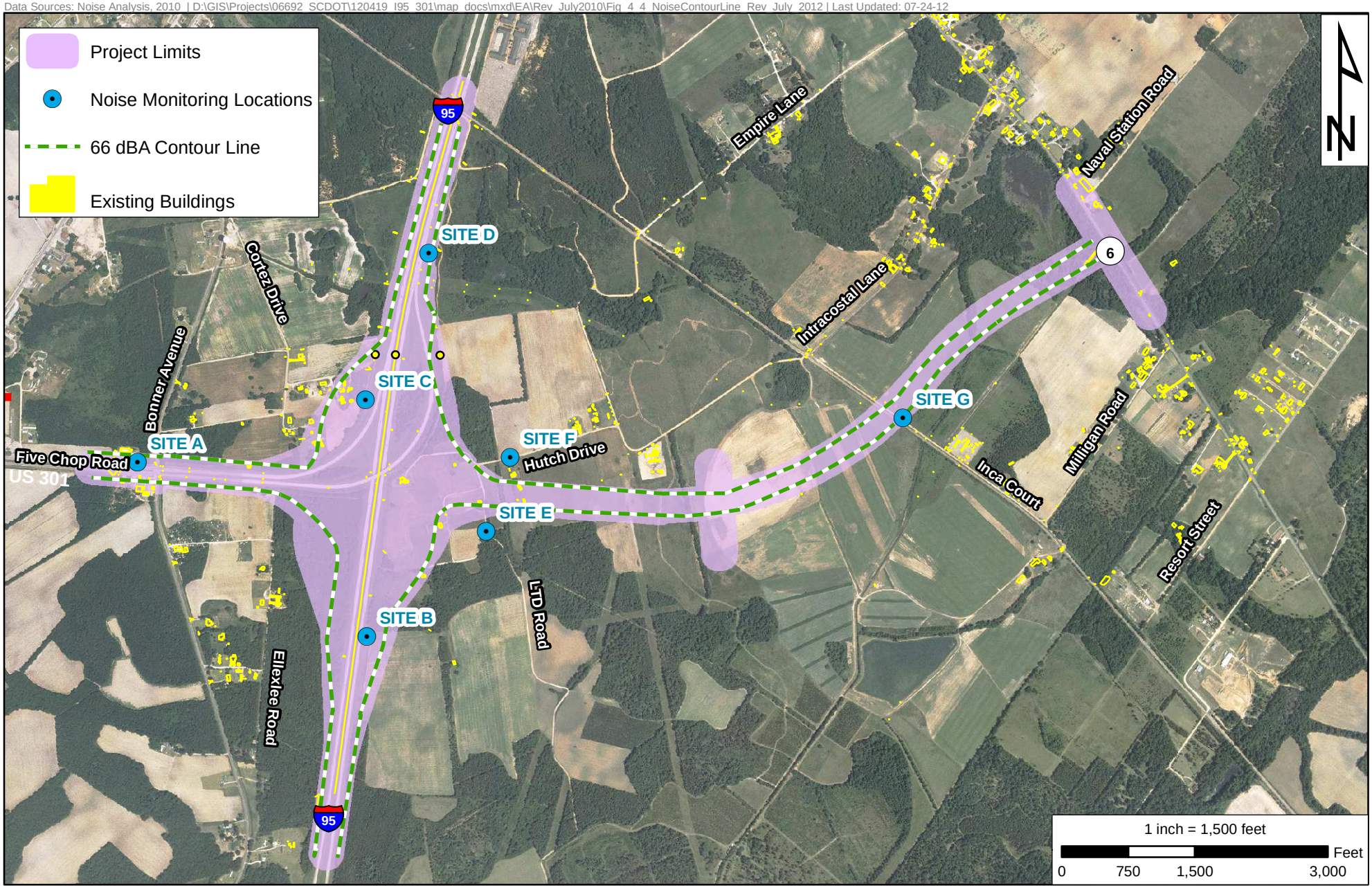
Under the Build Alternative, no noise-sensitive receiver locations exceed the NAP noise-level criteria. As part of the project, four of the receivers will be acquired to accommodate the new interchange. Predicted noise levels resulting from the design year (2035) Build Alternative will increase over existing levels ranging from 3 dBA to 13 dBA. None of the predicted noise level increases resulted in a substantial increase, according to the SCDOT NAP. The noise level at all of the noise-sensitive receiver locations was predicted to be below the SCDOT NAP noise level criteria for the 2035 Build Alternative. No noise abatement is warranted under the SCDOT NAP.

Existing and future noise levels were evaluated for properties in the vicinity of the I-95 at US 301 Interchange Improvements and Extension to SC 6 in Orangeburg County, South Carolina. No noise abatement measures were warranted based on future noise levels and the SCDOT NAP criteria.

Existing and future noise levels were predicted using TNM 2.5. TNM 2.5 predicts an increase in noise levels for the design year (2035) Build Alternative ranging from 3 dBA to 13 dBA above existing noise levels. The increase in noise levels did not meet the substantial increase criterion in the SCDOT NAP.

Construction-related noise would be minimized to the maximum extent possible practicable.

Data Sources: Noise Analysis, 2010 | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\EA\Rev_July2010\Fig_4_4_NoiseContourLine_Rev_July_2012 | Last Updated: 07-24-12



Noise Receivers and 66 dBA Contour Line

Figure 4-3

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Table 4-3 Receiver Noise Locations							
Receiver ID	**Property Represented**	**Distance from existing I-95 centerline (feet)**	**Existing condition (2009) (dBA LAeq1h)**	**No-Build Alternative (2035) (dBA LAeq1h)**	**Build Alternative (2035) (dBA LAeq1h)**	**Difference between existing and proposed Build (dBA LAeq1h)**	**Mitigation consideration under Build Alternative with symmetrical widening**
1	Residential	750	57	61	60	+3	None warranted, below SCDOT NAP
2	Residential	450	61	66	Take	N/A	This receiver falls within the proposed ROW and would be acquired as part of the project
3	Residential	990	54	58	57	+3	None warranted, below SCDOT NAP
4	Residential	925	52	57	57	+5	None warranted, below SCDOT NAP
5	Residential	100[1]	64	68	Take	N/A	This receiver falls within the proposed ROW and would be acquired as part of the project
6	Residential	235[1]	47[2]/55[3]	52	60	+13/+5	None warranted, below SCDOT NAP
7	Residential	70[1]	50[2]/56[4]	54	Take	N/A	This receiver falls within the proposed ROW and would be acquired as part of the project
8	Residential	340[1]	54[2]/56[4]	58	Take	N/A	This receiver falls within the proposed ROW and would be acquired as part of the project
9	Residential	610	56[2]/56[4]	60	61	+5/+5	None warranted, below SCDOT NAP

Notes: Shading indicates the noise level exceeds the South Carolina Department of Transportation Noise Abatement Procedure criterion for noise abatement.

[1] Distance from proposed US 301 centerline
[2] From TNM modeling results
[3] From Site F monitoring data
[4] From Site E monitoring data

4.6 Water Quality

4.6.1 Groundwater

Existing sources of potential groundwater contamination include the two RECs identified on properties within all of the alternative alignments, including the Preferred Alternative. However, it is not anticipated that construction of any of the alternatives would further threaten groundwater quality nor impact the flow of groundwater.

4.6.2 Surface Water

Lake Marion is classified as impaired for aquatic life use due to total phosphorous but does not have an approved TMDL. It is not anticipated that the proposed project would significantly contribute to total phosphorous.

During construction activities, temporary siltation may occur in the ditches, and erosion would be of a greater degree than presently occurring. The construction contractor would be required to minimize this impact through implementation of construction best management practices (BMPs), reflecting policies contained in 23 CFR §650 B and SCDOT *Supplemental Technical Specifications for Seeding* (SCDOT, 2011).

4.7 Jurisdictional Waters of the U.S.

The USACE has adopted, through the CEQ, a wetland mitigation policy that embraces the concept of “no net loss of wetlands” and mitigation sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of waters of the United States, specifically, wetlands. Mitigation of jurisdictional area impacts has been defined by the CEQ to include avoiding impacts, minimizing impacts, and compensating for impacts (40 CFR §1508.20). These three aspects (avoidance, minimization, and compensatory mitigation) have been considered sequentially.

4.7.1 Impacts

Potential stream and wetland impact calculations are based on the quantities of jurisdictional waters of the U.S. located within the corridor of the Preferred Alternative (Table 4-4). It is important to note that because impact quantities are based on the preliminary corridor limits of the Preferred Alternative these quantities should be

calculated in detail and updated upon availability of final design and prior to commencement of permitting.

Table 4-4 Potential Impacts to Jurisdictional Waters of the U.S.	
Feature Type	**Preferred Alternative (Alt 3)**
Stream	240 lf
Wetland	0.39 ac
Total	0.50 ac

Note: Impacts based on preliminary corridor limits. Quantities should be updated upon availability of final design.

4.7.2 Mitigation

In accordance with 67 CFR §2020, §2092; (January 15, 2002), the USACE requires compensatory mitigation when necessary to ensure that adverse effects to the aquatic environment are minimal. The size and type of the proposed project impact and the function and value of the impacted aquatic resource are factors considered in determining acceptability of appropriate and practicable compensatory mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all avoidance and minimization opportunities have been implemented. Compensatory actions often include restoration, preservation, enhancement, and creation of waters of the United States.

4.7.2.1 Avoidance

While other build alternatives resulted in fewer impacts to wetland/stream features, the number of total displacements as well as the estimated cost associated with those alternatives was high compared to the Preferred Alternative. The Preferred Alternative, a modification of Alternative 3,was specifically developed and aligned to minimize impacts to the jurisdictional stream (C/D) identified within the project limits. Due to the orientation of the stream within the project limits, oriented perpendicular to the proposed alignment, complete avoidance was not feasible. In addition, the cost to bridge these features was evaluated and determined to be limiting to the project as a whole. All other appropriate and practicable possibilities for averting impacts to waters of the U.S. have been examined during the design of this project. It is anticipated that impact quantities for the Preferred Alternative will be reduced

upon availability of final design as current quantities are based on the total anticipated construction limits.

4.7.2.2 Minimization

All practicable measures, including design features and construction techniques, would be taken to further minimize impacts to jurisdictional streams and wetlands. Where possible, and where consistent with engineering standards and safety, design modifications will be implemented to reduce wetland and stream impacts. For example, road design would incorporate 2:1 slopes and reduced median widths (where practicable) in sensitive areas to minimize aquatic impacts and where feasible culverts would be used at stream crossings. Appropriate BMPs would be utilized to prevent any additional avoidable impacts and ensure compliance with the policies of 23 CFR §650B. A BMP is a practice or combination of practices that provide an effective, practicable means of intercepting and retaining sediment and other pollutants in runoff from disturbed areas before they enter streams. Examples of BMPs include silt fences, mulch berms, detention ponds, and check dams. During construction, potential temporary impacts to adjacent jurisdictional areas would be minimized by implementing sediment and erosion control measures.

4.7.2.3 Compensation

Compensatory mitigation is required for wetland impacts that exceed the thresholds determined by the *Clean Water Act of 1972* (CWA) permit applied to the project. Such mitigation may consist of wetland preservation, enhancement, restoration, creation, and/or use of mitigation banks. Potential mitigation banks that may be used to compensate for freshwater wetland impacts include a SCDOT-designated bank such as the Black River Mitigation Bank or the privately owned Francis Beidler Forest Mitigation Program. Currently, mitigation banks to compensate for stream impacts in this part of the state are not available. In the event impacts to streams, that exceed the thresholds of the CWA permit applied to the project, are realized during final quantification of impacts, mitigation will be sought through an available in lieu fee program or provided through a permittee responsible mitigation plan.

4.8 Permits and Certifications

Environmental permits and/or certifications from both state and federal regulatory agencies would be needed for the construction of the Preferred Alternative. Permits are required for activities that are located in or affect Waters of the United States, including jurisdictional wetlands.

4.8.1 Section 404 of the Clean Water Act

The USACE is authorized under Section 404 of the CWA to issue permits for the placement of dredged or fill material in Waters of the United States, including jurisdictional wetlands. Jurisdictional wetlands in the project area have been delineated according to the 1987 Corps of Engineers Wetlands Delineation Manual and recent USACE/EPA guidance. Impacts to jurisdictional Waters of the United States will be quantified when the design is finalized. These impacts will require authorization by the USACE through a Section 404 permit, most likely under the SCDOT's General Permit or under a USACE Individual Permit.

4.8.2 Section 402 of the Clean Water Act

Section 402 of the CWA authorizes the EPA to regulate stormwater discharge. The regulatory authority that oversees this regulation in Orangeburg County is the SCDHEC Bureau of Water. Stormwater discharges are regulated through the issuance of National Pollutant Discharge Elimination System (NPDES) permits. Stormwater runoff and discharges can be sources of water-borne pollutants, which lower the water quality of a water body. Section 402 compliance would be completed prior to construction of the project.

4.8.3 Section 401 of the Clean Water Act

In South Carolina, SCDHEC administers the Water Quality Certification program pursuant to Section 401 of the CWA. Section 401 requires that the State issue certification for any activity which requires a federal Section 404 permit and may result in a discharge to state waters. All activities requiring a Section 404 permit result in a discharge to waters or wetlands, so SCDHEC must take certification action on all Section 404 permit applications. The Section 404 permit is not valid until the Section 401 certification is approved.

4.9 Floodplains

The proposed project would not have any impacts on federally-regulated floodplains. As noted in Section 3 of this document, FEMA FIRMs were reviewed to identify the 100-year floodplain within the project area. The proposed project does include several culvert replacements however the Preferred Alternative is contained within two FIRM panels, panel 4501600175B and 4501600275B (FEMA, 2009) and falls within Zone C, defined as areas with minimal flooding. Therefore, the proposed construction would have no impact on the 100-year or the 500-year floodplain. The FHWA/SCDOT Bridge Replacement Scoping Trip Risk Assessment Form is included in Appendix M.

4.10 Biotic Communities

The Preferred Alternative would minimize impacts to biotic communities by being aligned through the proposed Jafza development site and existing highway ROW. The Jafza property has been re-zoned for business commercial development and impacts to the existing biotic communities would be realized through Jafza's environmental consequences. The alignment outside of the Jafza development site would be in close proximity to the I-95 and US 301 ROW with communities already exposed to disturbance. Therefore, the Preferred Alternative is not likely to significantly impact biotic communities.

4.11 Threatened and Endangered Species

Field reconnaissance was performed in January of 2010 and no suitable habitat was found within the Project Limits for three of the five federally protected species. A field survey was conducted for the remaining species: Canby's dropwort and red-cockaded woodpecker. No Threatened or Endangered species were observed or found during this survey; however, one suitable habitat location was found for Canby's dropwort within the preferred alternative's ROW. This species was not observed during the field reconnaissance which remains consistent with the findings from the biological survey performed for the Jafza facility (ATM, 2009). A determination was made that the proposed project would have "no effect" on any of the federally protected species listed for Orangeburg County.

Obligations under Section 7 of the ESA must be considered if (1) new information reveals impacts associated with this project may affect listed species or critical habitat in a manner not previously considered, (2) the project subsequently modified in a manner which was not

considered in the assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the proposed interchange improvements and roadway extension.

4.12 Cultural Resources

The Preferred Alternative would not impact any sites eligible or potentially eligible for listing in the NRHP. The SHPO and THPO have concurred with these findings (Appendix J). In addition, the project designers have ensured that the Preferred Alternative would have no impacts on any cemeteries, regardless of their NRHP eligibility status.

4.13 Section 4(f) / 6(f) Resources

The Preferred Alternative would not have any impact on any Section 4(f) or 6(f) resources.

4.14 Hazardous Material Sites

The Phase I ESA conducted for the Preferred Alternative alternative (S&ME, 2010) identified two possible RECs within the project area. Two above ground storage tanks, tires, and debris are located on the property at the end of Vernetha Lane and a former retail gasoline station, now identified as Pure Gold, is located 300 feet northwest of US-301 and Bonner Road. These sites are located adjacent to the northwest quadrant of the proposed I-95 / US 301 interchange improvements; therefore, they have been recommended for further analysis in a Phase II Environmental Site Assessment.

It is SCDOT's policy to avoid the acquisition of underground storage tanks and other hazardous-material-containing sites, if possible. In the event that unknown hazardous materials or waste is encountered during construction and if avoidance is not a viable alternative, tanks and other hazardous materials would be tested and removed and/or treated in accordance with EPA and SCDHEC requirements. If such a site is uncovered during construction activities, the contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area.

4.15 Construction Impacts

Construction impacts are those impacts that occur during construction and are solely related to the actual construction of the proposed project. These impacts are temporary in nature and tend to diminish as the proposed project is completed. BMPs, along with other proven procedures would be implemented to mitigate potential temporary impacts from construction. In addition,

detailed engineering and construction plans would be developed for the Preferred Alternative, which would specify procedures to mitigate potentially adverse impacts.

4.15.1 Local Economy

Construction of the interchange improvement and US 301 Connector as proposed may affect the region's economy by providing employment during construction, increasing purchases of local goods and services related to the construction process.

4.15.2 Air Quality

Temporary air quality impacts may occur during construction and include emissions from construction equipment, dust from construction embankment, and clearing of areas prior to paving or revegetation.

Emissions from construction equipment are anticipated to have minimal impact on air quality due to the relatively short time period it would take to construct the roadway widening. Construction equipment would be maintained in satisfactory condition to meet minimum exhaust emission standards. In accordance with Section 107.07 of the *South Carolina Highway Department Standard Specifications for Highway Construction*, the construction contractor would comply with *South Carolina Air Pollution Control Laws, Regulations and Standards*. The contractor would also comply with County and other local air pollution regulations. Contractors would be required to comply with all regulations and standards for construction outlined in the *South Carolina Standard Specifications for Highway Construction* to reduce dust. Typically, BMPs include vegetative cover, mulch, spray-on adhesive, calcium chloride application, water sprinkling, stone, tillage, wind barriers, and construction of a temporary graveled entrance/exit to the construction site. Vehicles sitting in queue, waiting to go around construction work, would only temporarily impact air quality. The project area is already in an attainment area for NAAQS (see Sections 3.4 and 4.4), and project construction should not cause an increase in air pollution.

4.15.3 Noise

Impacts to ambient noise levels may occur during construction from the construction activities including grading and scraping operations. Distance would rapidly attenuate noise; however, some residences may experience increased noise levels due to their

proximity to the construction zone. While this would be a short-term adverse impact to noise, construction would occur during the daylight hours between 8am and 5pm while most people are awake or away from their homes. Wildlife species living in the area may also be temporarily disturbed by the noise.

4.15.4 Water Quality

Impacts to water resources in and downstream of the construction zone are likely to result from activities associated with project construction including clearing and grubbing on stream banks, riparian canopy removal, in-stream construction, fertilizer and pesticide use in revegetation, and pavement installation. The resulting impacts may include: increased erosion potential within the construction zone prior to land stabilization; increased sedimentation and siltation downstream of the construction zone; changes in light incidence and water clarity due to increased sedimentation and vegetation removal; alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow; changes in and destabilization of water temperature due to vegetation removal; increased nutrient loading during construction via runoff from exposed areas; and increased concentrations of toxic compounds releases, such as fuel and oil, associated construction equipment and other vehicles.

In order to minimize potential impacts to water resources in the Project Vicinity, the construction contractor would be required to implement strict BMPs, reflecting policies contained in 23 CFR §650 B and SCDOT *Supplemental Technical Specifications for Seeding* (SCDOT, 2011). Limiting in-stream activities, utilizing rock check dams and sediment traps, and stabilizing stream banks immediately following completion of the grading can further reduce impacts to water quality.

The I-95 / US 301 Interchange Improvement and US 301 Connector project meets the criteria given in Engineering Directive Memorandum (EDM) Number 30 as a project that requires screening to determine the availability of potential borrow pit sites in an effort to avoid or minimize impacts to wetlands. A screening of the land area within one mile of the project has been completed to assess NWI features and aerial photography (N, Borrow Pit Screening Report). The results of the borrow pit screening indicate that there is sufficient upland or high ground area near the project from which borrow materials may be obtained.

Additional surveys and agency consultation are necessary to determine the effect that the establishment of borrow pit sites will have on protected species, Critical Habitat, and cultural resources. All efforts will be made to avoid, minimize, and mitigate for any unavoidable impacts to these import resources associated with borrow pit sites for this project.

In accordance with EDM Number 30, the "Special Provision for Borrow Pits on Larger Projects" would be included in the contract documents along with the statement, "Borrow Pit locations – Borrow materials for this project shall not be obtained from wetlands, streams or rivers."

4.16 Indirect and Cumulative Impacts

Indirect impacts are those impacts that occur over a longer period of time and can take place away from the immediate project area. A short-term example would be the development of a small subdivision along a new or widened roadway that would otherwise not have occurred. Closely related is the concept of cumulative impacts, which are the collective effects of multiple events and actions. These may be dependent or independent of the Preferred Alternative. All of the alternatives considered pose the same indirect and cumulative impacts.

4.16.1 Indirect Impacts

Indirect effects, as defined by 40 CFR 1508.8, are caused by the project later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Careful planning during the project's design and construction will help to avoid and minimize impacts to the surrounding human and natural environment. Analysis of these impacts will follow the eight steps outlined in the National Cooperative Highway Research Program Report 466: Estimating the Indirect Effects of Proposed Transportation Projects.

Step 1 – Study Area Boundaries

The area that may experience indirect impacts associated with the Preferred Alternative is defined as an area bounded by US 15 to the west, SC 6 to the east, Lake Marion to the north and US 15 to the south.

Step 2 – Study Area Communities Trends and Goals

This area has been targeted as an economic development zone within the County and is one of four key areas that comprise the Global Logistics Triangle, named for the strategic set of highways (I-26, US 301 and I-95) that position Orangeburg County to be an important part of national trade routes (Clarion, et. al., 2011). With such a strategic location halfway between Columbia and Charleston, Orangeburg County offers businesses easy access to both the center of South Carolina's government and the Port of Charleston. Infrastructure improvements, development of business and industrial parks, and transportation enhancements are focused in this strategic location to take advantage of access to interstates, railroad lines, and developable land. The OCDC is leading the effort to recruit business to the Global Logistics Triangle with the development of three key business parks. The three main business parks targeted for development are currently in various stages of development and include:

- Orangeburg County/City Industrial Park
- John W. Matthews Industrial Park
- Jafza Magna Park

Historically, eastern Orangeburg County has been an area rich in culture, rich in its natural environment, and poor in economic resources. Agriculture has been the traditional, main source of economic activity. However, the viability of agriculture as a source of community prosperity has declined, along with the disappearance of agriculture-related jobs. With little else to take the place of declining agricultural revenues, the area has seen high numbers of unemployed persons, high poverty rates, and little opportunity.

Economic development in Orangeburg County is largely driven by factors external to the County: the widening of the Panama Canal, expected demand for an inland port facility, and production of new Boeing aircraft components in nearby North Charleston. In 2014 the Panama Canal will be able to accommodate container vessels carrying 15,000 containers (current maximum through the Canal is a 6,000 container vessel), and twice the number of ships as can be accommodated daily today. The widening of the Panama Canal will result

in an increase in the volume of goods entering the Port of Charleston – presenting a key economic development opportunity for Orangeburg County to serve as an "inland port" to manage logistics and warehousing of goods.

The Global Logistics Triangle is projected to be a sustainable intermodal and logistics hub that revitalizes the local Orangeburg economy while maintaining quality of life. The project is projected to create a multitude of jobs in Orangeburg County as well as enhance education and workforce training opportunities through several planned programs in partnership with SC State University, Claflin University and Orangeburg Calhoun Technical College. Officials anticipate the investment could reach $600 million to $700 million with the creation of 8,000 to 10,000 jobs and private investment at the site eventually could reach $1.2 billion.

Infrastructure planning has already begun to address existing gaps in service, and to plan for future demands for public water, sewer, and roads. Orangeburg County has plans to develop several new water mains in and around the Global Logistics Triangle and a new elevated water storage tank to serve the Matthews Industrial Park and surrounding areas. Additionally, the surrounding communities of Bowman and Elloree are in the process of implementing significant water infrastructure projects that will tie into the upgrades in Orangeburg County. To date, there is little sanitary sewer infrastructure within the unincorporated areas of the County, but there are several proposals being discussed to construct sanitary sewer infrastructure inside the Global Logistics Triangle. Orangeburg County has a $32 million project application under review with the USDA to construct a new regional wastewater treatment plant near the intersection of US Highways 301 and 176 across Goodbys Swamp. In addition, the nearby Town of Santee has several sanitary sewer infrastructure plans on the table.

The LSCOG's seven-year 2009-2015 TIP lists programmed transportation capital projects and transit capital and maintenance requirements. It is updated every two years, at a minimum. The TIP includes the following roadway projects within the Study Area:

- US 301 Extension from I-95 to SC 6 (new construction)
- US 176 at US 301 (turn lanes and signalization)

- I-95 at US 301 Interchange Improvements (interchange reconstruction)

In addition, the SCDOT STIP includes the following projects within the Study Area:

- I-26 at I-95 (Exit 169) Interchange Reconstruction
- SC 6 Safety Improvement (Santee to Porcher Avenue)

Step 3 – Inventory Notable Features

The indirect impact analysis focuses on ecological resources, including adjacent and downstream streams and wetlands, as well as water quality. Eastern Orangeburg County is mostly rural in character, 73% of the land is in agricultural use or forested and another 21% is wetland, indicating 94% of the land within the study area is undeveloped. The towns are situated at major intersections throughout the eastern part of the County. Industrial development is emerging to the southeast of Santee in the Jafza project site and along Highway 301 in the John W. Matthews Industrial Park. The two most notable natural features are Lake Marion and the Four Hole Swamp running north-south through the center of the study area. Resort-style residential is predominant along the lakeshore, with low-density residential development common through the study area. Significant concentrations of unincorporated residential development are located between Lake Marion and Old Number Six Highway.

Step 4 – Identify Impact Causing Activities of the Preferred Alternative

The proposed project would provide a connection to the proposed Jafza facility, an inland port intermodal facility, located just east of the existing US 301 and I-95 interchange already underway with development. The project would subsequently help reduce the rapidly increasing Port of Charleston congestion. While the proposed project would not instigate the rapid development that is already impacting the region, it would assist in the efficient movement of people and goods in and out of the region. Improved employment opportunities should also be realized as new industrial and commercial development takes place in selected areas in accordance with approved land use plans.

Improvements to the interchange and construction of a new connection to SC 6 would increase the surface area for the accumulation of particulate matter and increase the volume of runoff. Roadways have the potential to impact water quality through stormwater runoff, which may contain elevated levels of pollutants. Highway runoff is dependent upon numerous variables, and therefore the specific impacts are both site- and event-specific.

The proposed project may result in indirect impacts to off-site streams and wetlands. An increase in automobile traffic may result in an increase in toxic materials (e.g., fuels and oils) being deposited on the road surface and eventually washed into the surface water system via stormwater runoff. These impacts would be minimized through the use of erosion and storm water control measures during construction and the establishment/maintenance of vegetated buffers for long-term protection of water resources.

Steps 5-6 – Identify and Analyze Potential Impacts

The above mentioned changes in land use may result in indirect impacts to adjacent and downstream streams and wetlands. The area within the Project Limits is dominated by small- to moderate-sized perennial streams with few adjacent wetlands. Land clearing activities, industrial/commercial byproducts, and landscape maintenance may result in an increase in pollutants, including sediment, entering the surface water system via stormwater runoff. The Preferred Alternative would increase impervious surface area along the corridor, thereby increasing runoff.

Step 7 – Evaluate Analysis Results

Qualitative and quantitative methods were used to analyze the potential indirect impacts of the Preferred Alternative. These methods included:

- Local, state and federal GIS data inventory
- City/County planning documents
- Public involvement

Current zoning and land use designations will provide some restrictions to help control future land uses that would potentially affect the character and integrity of the area.

The effects of reasonably foreseeable indirect actions would result in indirect impacts to environmental resources of concern. Based on the considerations noted previously, they are primarily likely to be stream crossings due to new roads in adjacent private developments. Some habitat types would be converted as a result of the proposed project and subsequent ongoing maintenance but the habitat would still provide for wetland and wildlife functions. Roadway runoff would be remediated through overland sheet flow, grassed side slopes, natural wetland filtration, and appropriate best management practices during construction.

Step 8 – Assess Consequences and Develop Mitigation

Mitigation measures to minimize these impacts during construction include the use of strict BMPs, reflecting policies contained in 23 CFR §650 B and SCDOT Supplemental Technical Specifications for Seeding (SCDOT, 2011). The establishment of vegetated buffers and specific buffer zoning ordinances would provide mitigation of detrimental effects and long-term protection of water resources. Additionally, Orangeburg County's Phase II NPDES program will provide long-term protections from stormwater and construction runoff for these indirect actions in nearby private developments.

4.16.2 Cumulative Impacts

Cumulative impacts are defined by 40 CFR 1508.7 as the impacts on the environment which results from the incremental impact of the Preferred Alternative when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impacts analysis focuses on ecological resources, including adjacent and downstream streams and wetlands and water quality.

Step 2 – Identify Study Area

The area that may experience cumulative impacts associated with the Preferred Alternative is the same as the area mentioned in Step 1 of Indirect Impacts. This area is defined as an area bounded by US 15 to the west, SC 6 to the east, Lake Marion to the north and US 15 to the south.

Step 3 – Current Health and Context of Affected Resources

Orangeburg County is the 16th most populated county in the State (USCB, 2010) and has been experiencing a 1.6% population decline in recent years (see Section 3.3 Socioeconomics and Demographics). However, according to the SCBCB, this trend is expected to reverse with a 10% increase between 2010 and 2030.

This development pattern has the potential to make urban stormwater runoff the most significant source of water pollution in the future.

Step 4 – Identify Direct and Indirect Impacts of the Proposed Project that Might Contribute to a Cumulative Impact

The proposed project would increase the amount of impervious surfaces within the project area and would thereby result in incremental water quality impacts in addition to existing water quality degradation occurring from residential activities such as use of pesticides and herbicides and run-off from existing roadways. Storm water inflows nitrogen, phosphorus, oils, salts, and sediments containing trace amounts of herbicides and pesticides into proximal wetlands (Mitsch and Gosselink, 1993). However, wetlands perform various functions such as transforming, filtering, and storing various nutrients and pesticides (Landers and Knuth 1991, Hook 1993). Contaminants contained in any additional runoff would settle in the numerous water bodies present in the project area, preventing significant cumulative water quality impacts from occurring. Direct impacts would result from placement of fill material into wetlands for the roadway extension.

This action is not likely to cause or contribute to any other actions that would impact aquatic resources or the adjacent upland areas.

Even though Executive Order 11990 proscribing a no-net loss of wetlands and the Section 404 process has dramatically reduced the rate of wetland loss, wetland loss is likely to continue. This is regulated on a case-by-case basis by state and federal agencies. Potential water quality impacts would be regulated by SCDHEC through Section 401 Water Quality Certification and monitored pursuant to Section 303(d) of the Clean Water Act.

Local land use plans and zoning enforcement would be critical to manage the growth that is taking place in Orangeburg County to minimize impacts to the natural and human environments.

Step 5 – Other Reasonably Foreseeable Actions

The Preferred Alternative is designed to encourage development (and in many cases, redevelopment), thereby changing the current land uses to denser, more intensive uses. Several vacant industrial properties within the Project Limits are currently under consideration for purchase or in addition to the already-permitted developments previously described (Jafza Intermodal and Logistics Park).

Impacts associated with the Jafza facility have been determined to be minimal and are discussed in the associated documents included on the CD of technical studies included with this document.

Steps 6-7 – Assess Potential Cumulative Impacts and Report Results

Wetland impacts resulting from the Preferred Alternative, when added to past, present, and reasonably foreseeable future projects, may result in cumulative impacts to wetlands. The Project Limits contain 0.39 acres of wetlands. Stream impacts resulting from the Preferred Alternative, when added to past, present, and reasonably foreseeable future projects, may result in cumulative impacts to streams. The area within the Project Limits contains 240 linear feet of streams. As previously mentioned, not all of the projected impacts would be realized due to minimization and avoidance measures. The potential indirect impact to

wetlands and/or streams would include induced development, change in land use, and/or increased access to the area that result in the alteration or degradation of adjacent wetlands and/or streams.

During construction activities, temporary siltation may occur in the streambed and erosion will be of a greater degree than presently occurring on existing terrain. The contractor would be required to minimize this impact by employing measures discussed below.

Step 8 – Assess the Need for Mitigation

The primary method of mitigating erosion control and stormwater discharges is through the use of BMPs including, but not limited to, silt fence, construction entrances, sediment basins and/or traps, diversion ditches, detention basins, grass swales, sand filters, grass filter strips, prefabricated water quality units, infiltration/groundwater recharge and permanent water quality ponds. The growth within Orangeburg County will require additional discharging permits above and beyond those required for this project, in order to prevent additional stress on already impaired water systems and to meet the NPDES requirements of the local and state regulatory authorities. The following strategies should be implemented to mitigate stormwater discharge in Orangeburg County's urban areas, in accordance with state and federal regulations as appropriate:

- Promote the use of Low-Impact Development (LID) and BMPs by developers, farmers, timber companies, and any other groups whose activities may cause land disturbances
- Enhance public education and encourage public involvement and participation in storm water pollution prevention and rehabilitation
- Enhance illicit discharge detection capabilities and elimination methods
- Improve construction site stormwater control measures
- Improve post construction stormwater management
- Encourage pollution prevention/good housekeeping for public and private facilities

Increases in population and development will stress existing infrastructure; therefore, it will be important to find new and comprehensive ways to safeguard water quality and to improve those waters already impaired by pollution. Orangeburg County will continue to follow its NPDES stormwater program guidelines and implement their strategies to help stem water quality degradation and ultimately provide improvements.

Executive Order 11990 prescribes a no-net loss of wetlands and the Section 404 process has dramatically reduced the rate of wetland loss; however, wetland loss is likely to continue. This is regulated on a case-by-case basis by SCDHEC and USACE. Filling of wetlands and streams may result in increased pollutant loading of downstream waters, flooding, and the loss of wildlife habitat. Potential water quality impacts would be regulated by SCDHEC through Section 401 Water Quality Certification and monitored pursuant to Section 303(d) of the Clean Water Act. Section 404/401 permitting requires that applicants apply an “avoid, minimize, mitigate” strategy for dealing with impacts to streams and wetlands. Effective mitigation plans should account for the loss of specific wetland functions as well as wetland area size.

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5.0 AGENCY AND PUBLIC INVOLVEMENT

5.1 Agency Coordination

On July 10, 2008 an onsite meeting for the proposed project was conducted with representatives of various stakeholder agencies. No significant comments were received as a result of the July 2008 site meeting. In January 2010 a number of state and federal agencies were contacted and asked for their comments on the proposed action. A sample Letter of Intent (LOI), the list of agencies contacted, and copies of comments received from the responding agencies are included in Appendix J. A summary of comments received following the site visit and/or the dissemination of the LOI is provided in Table 5.1.

Table 5-1 Agency Comment Summary

Agency	Comments	Date Received
SCDHEC WQ	Minimize aquatic impacts.	Jul 15, 2008
	Mitigation, comply with NPDES MS4 requirements.	Jan 15, 2010
SHPO	No cultural resources, 2 archaeological sites evaluated as "probably not eligible".	Jan 19, 2010
	Concurrence; all resources recommended "not eligible" and no historic properties will be affected.	Jun 7, 2010
SC Forestry Comm.	No adverse affects; project is favorable to the Commission due to reduction of response time to wildfires via new access.	Feb 1, 2010
SC Parks, Rec. & Tour.	No concerns pertinent to the project; encourage incorporation of bike/ped facilities where feasible.	Feb 2, 2010
USFWS	Provided list of T&E species known to occur in Orangeburg County.	Feb 3, 2010
SCHDEC BLWM	Provided listing of non-vulnerable sites within project area.	Feb 4, 2010
Catawba Indian Nation THPO	Request copies of surveys conducted; copy of SHPO concurrence.	Feb 6, 2010
	Concurrence; no immediate concerns.	Aug 18, 2010

In addition, consultation was also conducted with SHPO and the Catawba Indian Nation THPO in order to evaluate potential impacts to cultural resources. A copy of the Cultural Resources Survey Report submitted to the referenced agencies can be found in Appendix I. SHPO and Catawba THPO concurrence with the report's findings is included in Appendix J.

Informal coordination has been conducted with the USACE for the delineation and verification of wetlands and waters of the U.S. The delineation and survey of coordinates for limits of

jurisdictional wetlands and streams within the Study Area has been completed. An approved verification of the jurisdictional features associated with the proposed project was issued by the USACE on June 23, 2010 (SAC 2010-00306-DJE, Appendix F). A JD for portions of the project that cross through the Jafza site was issued on February 24, 2009 and is included for information only in Appendix G. The JD's for the SCDOT project and Jafza project were obtained separately and any Section 404/401 permits will be submitted and obtained separately for the two projects.

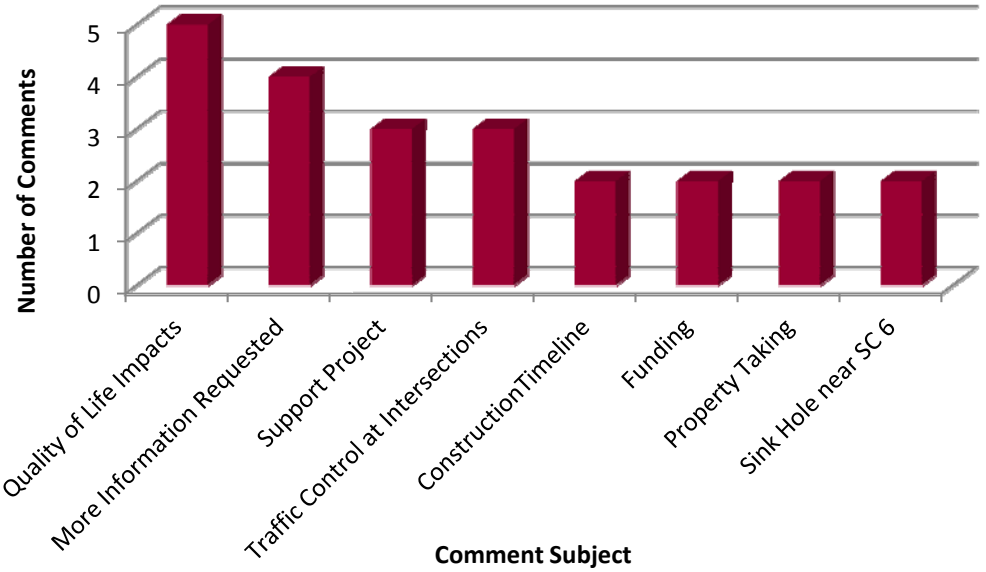
5.2 Public Involvement

The first public meeting associated with this project was held at Lake Marion High School in Santee, South Carolina on December 3, 2009. The meeting was advertised in *Times and Democrat* (Orangeburg, SC). Meeting materials included an information sheet, large-scale maps of the Study Area, meeting sign-in sheets and comment forms.

The meeting was attended by SCDOT staff, LSCOG staff, Orangeburg County staff, Town of Santee staff, FHWA staff, residents, SCDOT consultant staff, and local media. Sign-in sheets indicate that 97 residents or interested parties attended the meeting. A review of the geographic distribution of attendees indicates that approximately 48% of attendees reside in one of two zip codes containing the Study Area. In addition, 22% of attendees were female and 32% were African American. During the public meeting, comment forms were made available to allow the public to provide feedback on the proposed project. Comments were due to be received by December 18, 2009.

As of December 18, 2009, 52 responses had been received. The majority of comments received expressed concerns regarding the potential for an increase in traffic (particularly truck traffic) on SC 6 and associated impacts on quality of life for the existing residents along SC 6 and within hearing of (Figure 5-1). "Design Alternatives and Concerns" accounted for 25 responses; "Vegetation" and "Property Concerns (Takings)" accounted for 9 responses each; "Operation Alternatives and Concerns" and "Safety" accounted for 8 responses each; and "Noise" accounted for 7 responses. Eleven respondents indicated that they were happy with the proposed project. Eight respondents requested additional information or a specific action to be taken and 3 respondents identified information that needs to be corrected.

Figure 5-1 Written Public Comment Topics



It is anticipated that a public hearing would be held in summer 2012. Area residents and stakeholders would be afforded the opportunity for review of the EA and submittal of public comment. Input received would be carefully evaluated in further development of the project. A copy of the EA would be made available to the public in the SCDOT's Columbia and District Offices.

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APPENDIX A

JAFZA Design Traffic Technical Report

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JAFZA LOGISTICS AND DISTRIBUTION PARK
Design Traffic Technical Report

Prepared for:

South Carolina Department of Transportation

Paid for by:

Jafza South Carolina, LLC

Prepared By:

HDR

June 25, 2009

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EXECUTIVE SUMMARY

Jafza South Carolina, LLC (JSC) proposes to construct a logistics and distribution hub for the Global Logistics Triangle (GLT) near the interchange of I-95 and US 301 in Orangeburg County, South Carolina. The site is located approximately 60 miles northwest of Charleston, South Carolina, strategically located with respect to the Port of Charleston and the Interstate System.

The primary purpose of this report is to generate Design Year 2030 Traffic Volumes for the surrounding roadway network. The land uses, traffic volumes and buildout years provided here will replace the findings of a similar report completed in December 2008 for this project. The updated projections in this report reflect the changes arising out of the current economic climate which results in greatly scaled back development program for year 2030. The daily external volumes generated from the buildout of Phase 3 of the project by the year 2030 as documented in this report is 10,347 while the previously completed report had a significantly higher projection of 53,430 daily external project trips by the year 2030. This reduction in volumes is due to the extension of the complete project buildout date from year 2030 to year 2050 with only Phase 3 of the project expected to be built out by the year 2030.

The traffic volumes in this revised report will support the design of new roadways and improvements to existing roadways where needed to accommodate the anticipated future year 2030 traffic volumes. Roadway improvements planned by South Carolina Department of Transportation (SCDOT) include the extension of US 301 to connect with SC 6 and a new interchange at I-95 and US 301. In addition, this report shows that the project phases 1A, 1B and 1C will be accommodated satisfactorily by the existing roadway network.

For the proposed land uses within the JSC Site, the Institute of Transportation Engineers (ITE) Trip Generation (8th Edition) was used to generate anticipated daily (weekday) and PM peak hour trips. The trip generation rates for the Intermodal Yard Development were based on a study of an existing Intermodal Operations Center west of Orlando International Airport in Taft, Florida.

Given the nature of the JSC site plan and land uses combined with the size and rural location of the development, a significant portion of the trips generated by the Intermodal Yard Development will actually be internal to the site, meaning a vehicle will simply drive from the Intermodal Yard Development to one of the JSC facilities (Warehouse Development) on the site. For this reason the trips generated from the Intermodal Yard Development and the adjacent Warehouse Development were reduced accordingly before applying them to the external roadway network.

In order to more accurately distribute the traffic on the surrounding external roadway network, the trips generated from the site were split between truck and non-truck traffic. The truck and non-truck traffic distributions were combined with the background traffic projections (calculated using trend growth rates developed from historical traffic count data) to calculate the future traffic projections. Truck traffic into and out of the site is oriented toward the Interstate highways with origins and destinations similar to the Port of Charleston. Passenger vehicles are primarily employees and are distributed on the entire network based on existing and planned residential areas. It should be noted that this study has not taken into consideration the possibility of reduction in Design Year volumes due to any future rail developments.

Based on preliminary capacity analysis, the year 2030 roadway network will satisfactorily accommodate the traffic volumes projected for the design year 2030 with the development induced traffic.

INTRODUCTION

JSC proposes to construct a logistics and distribution park near the interchange of I-95 and US 301 in Orangeburg County, South Carolina. Figure 1 shows the location of the proposed 1,300 acre development. The site is located approximately 60 miles northwest of Charleston, South Carolina and strategically located with respect to the Port of Charleston and the Interstate System.

The JSC project site land uses consist of an Intermodal Rail Yard, Warehouse related development and Office/Manufacturing space to facilitate the storage and logistics of the operations. Additionally, Jafza proposes to reserve a portion of the site for future market driven developments. These developments can range from more warehouse related development to commercial development. The analysis in this report is based on the latest site plan proposed by JSC as shown in Figure 2 with development anticipated through year 2030. Table 1 shows the projected land uses included in the traffic projections by phase through the year 2030. Table 1 also shows the land uses that are projected to occur beyond year 2030. The overall site plan is based on market analysis and geographical location of the site.

The analysis in this report provides projections for traffic generated by the site in addition to traffic distribution to the surrounding roadway network and resulting peak hour operations. This data will be used as a planning tool for transportation improvements to the surrounding roadway network.

Jafza Logistics and Distribution Park

Fig 1- Location Map

LEGEND:

Project Site

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Jafza Logistics and Distribution Park

Fig 2 - Site Plan & Cumulative Phasing Program until Year 2030

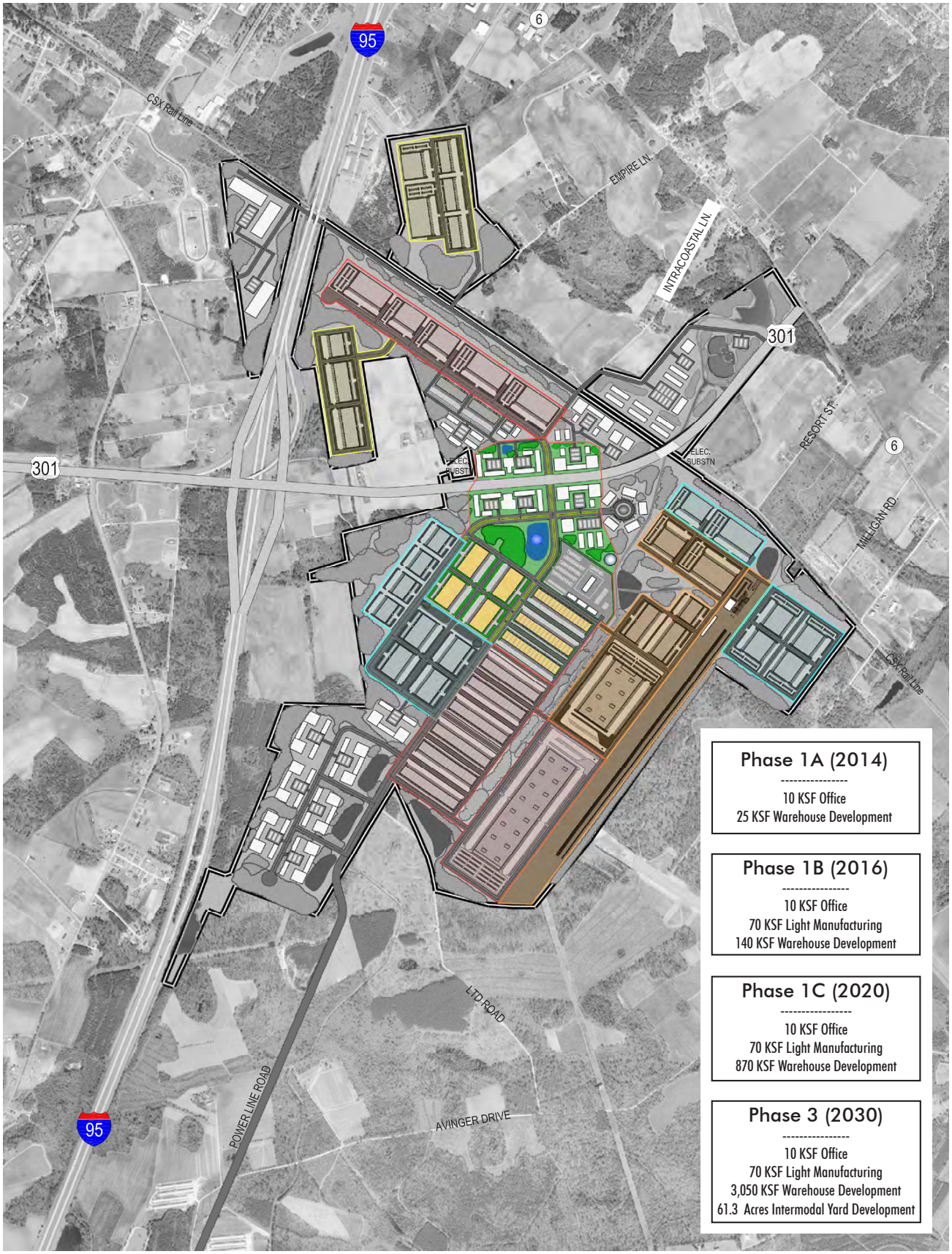


Table 1
Jafza Logistics and Distribution Park – Land Use Program

Buildout Phase & Year	Land Use Program
Phase 1A (2014)	10 KSF General Office 25 KSF Warehouse
Phase 1B (2016) **Cumulative**	10 KSF General Office 70 KSF Light Manufacturing 140 KSF Warehouse
Phase 1C (2020) **Cumulative**	10 KSF General Office 70 KSF Light Manufacturing 870 KSF Warehouse
Phase 3 (2030) **Cumulative**	10 KSF General Office 70 KSF Light Manufacturing 3,050 KSF Warehouse 61.3 acres Intermodal Rail yard
Phase 5 (2040) **Cumulative**	10 KSF General Office 70 KSF Light Manufacturing 7,125 KSF Warehouse 61.3 acres Intermodal Rail yard
Market Driven **Development only** **(2040 - 2050)**	7,205 KSF Warehouse 500 KSF Office Park 360 Room Hotel 200 KSF Specialty Retail 100 KSF R&D Center

TRAFFIC GENERATION

This section discusses the calculation of trip generation for the project.

Trip Generation Methodology

For each proposed land use, the latest Institute of Transportation Engineers (ITE) Trip Generation (8th Edition) was used to generate anticipated daily (weekday) and PM peak hour trips. A trip is considered a vehicle entering or exiting the facility (i.e. a vehicle coming to and from a store is considered two trips). ITE Trip Generation is a collection of traffic studies covering numerous different land uses. For each land use, the vehicle trips were counted and correlated to a number of the facility's characteristics (independent variables) such as number of employees, square footage of the facility, or acreage of the facility's property.

Given the nature of the JSC site plan and land uses combined with the size and rural location of the development, a significant portion of the trips generated by the Intermodal Yard Development will actually be internal to the site, meaning a vehicle will simply drive from the Intermodal Yard Development to one of the JSC facilities (Warehouse Development) on the site. For this reason the trips generated from Intermodal Yard Development and the adjacent Warehouse Development were reduced accordingly before applying them to the surrounding external roadway network.

Warehouse Development

ITE's Land Use Code 150, Warehouse category most closely resembles this land use. The trip generation estimate used was based on the independent variable of square footage. The total trips for Phase 3 (2030) were reduced to account for internal interaction between this land use and the Intermodal Rail Yard.

Intermodal Rail Yard

The land area of the Intermodal Rail Yard Land Use is expected to be 61.3 acres and will employ 100 employees according to the preliminary concept plan. Since limited ITE trip generation data is available for intermodal (rail terminal) operations, it is proposed to utilize trip rates from a previously completed HDR study of an existing Intermodal Operations Center west of Orlando International Airport in Taft, Florida. The HDR study was completed utilizing existing automotive receiving and distribution operations in Taft and Tampa along with the Intermodal operation in Taft. For the purpose of this study, the data from only the Intermodal Operations at Taft was used. Based on the traffic counts, gate reports and surveys at the Taft Intermodal site from the HDR study, a daily truck trip rate of 17.75 per acre, a p.m. peak hour truck trip rate of 0.65 per acre, an employee daily trip rate of 3.33 and an employee p.m. peak hour trip rate of 0.83 was used in this study. The HDR trip

generation study at the Taft and Tampa Sites can be provided upon request. The total trips for Phase 3 (2030) were reduced to account for internal interaction between the Intermodal Rail Yard and the onsite Warehouse Development.

Site Traffic Generation

Based on the methodology above, the trip generation is shown in Tables 2, 3, 4 and 5 for Phases 1A (2014), 1B (2016), 1C (2020) and 3 (2030), respectively. Documentation from the previous HDR trip generation study of the Orlando-Taft Intermodal Operations Center is provided in Appendix A.

Truck Traffic Percentage

In order to more accurately distribute the traffic to the surrounding roadway network, the ADT's generated from the site needed to be split between truck and non-truck traffic. Trip Generation Tables 2, 3, 4 and 5 show the projected percentage of truck and non-truck traffic generated from the site.

Table 2
Jafza Site Traffic Generation for Phase 1A (2014)

Land Use	ITE Code	Intensity	Daily Trip Ends	PM Peak-Hour Trip Ends				
					In		Out	
				Total	%	Trips	%	Trips
General Office	710	10 KSF	227	90	17%	15	83%	75
Warehouse	150	25 KSF	150	25	25%	6	75%	19
Truck Trips (20%)			*30*	*5*	*25%*	*1*	*75%*	*4*
Non-Truck Trips (80%)			*120*	*20*	*25%*	*5*	*75%*	*15*
Total			**377**	**115**	**18%**	**21**	**82%**	**94**

Table 3
Jafza Site Traffic Generation for Cumulative Phase 1B (2016)

Land Use	ITE Code	Intensity	Daily Trip Ends	PM Peak-Hour Trip Ends				
					In		Out	
				Total	%	Trips	%	Trips
General Office	710	10 KSF	227	90	17%	15	83%	75
Light Manufacturing	140	70 KSF	251	39	36%	14	64%	25
Truck Trips (20%)			*50*	*8*	*36%*	*3*	*64%*	*5*
Non-Truck Trips (80%)			*201*	*31*	*36%*	*11*	*64%*	*20*
Warehouse	150	140 KSF	658	74	25%	19	75%	55
Truck Trips (20%)			*132*	*15*	*25%*	*4*	*75%*	*11*
Non-Truck Trips (80%)			*526*	*59*	*25%*	*15*	*75%*	*44*
Total			**1,136**	**203**	**24%**	**48**	**76%**	**155**

Table 4
Jafza Site Traffic Generation for Cumulative Phase 1C (2020)

Land Use	ITE Code	Intensity	Daily Trip Ends	PM Peak-Hour Trip Ends				
					In		Out	
				Total	%	Trips	%	Trips
General Office	710	10 KSF	227	90	17%	15	83%	75
Light Manufacturing	140	70 KSF	251	39	36%	14	64%	25
Truck Trips (20%)			*50*	*8*	*36%*	*3*	*64%*	*5*
Non-Truck Trips (80%)			*201*	*31*	*36%*	*11*	*64%*	*20*
Warehouse	150	870 KSF	3,168	238	25%	60	75%	178
Truck Trips (20%)			*634*	*48*	*25%*	*12*	*75%*	*36*
Non-Truck Trips (80%)			*2,534*	*190*	*25%*	*48*	*75%*	*142*
Total			**3,646**	**367**	**24%**	**89**	**76%**	**278**

Table 5
Jafza Site Traffic Generation for Cumulative Phase 3 (2030)

Land Use	ITE Code	Intensity	Daily Trip Ends	PM Peak-Hour Trip Ends				
					In		Out	
				Total	%	Trips	%	Trips
General Office	710	10 KSF	227	90	17%	15	83%	75
Light Manufacturing	140	70 KSF	251	39	36%	14	64%	25
Truck Trips (20%)			*50*	*8*	*36%*	*3*	*64%*	*5*
Non-Truck Trips (80%)			*201*	*31*	*36%*	*11*	*64%*	*20*
Warehouse	150	3,050 KSF	9,318	531	25%	133	75%	398
Truck Trips (20%)			*1,864*	*106*	*25%*	*27*	*75%*	*80*
Non-Truck Trips (80%)			*7,454*	*425*	*25%*	*106*	*75%*	*318*
Intermodal Rail Yard	Study	61.3 Acres	1,421	123	29%	36	71%	87
Truck Trips			*1,088*	*40*	*57%*	*28*	*43%*	*12*
Non-Truck Trips		100 Emp	*333*	*83*	*10%*	*8*	*90%*	*75*
Total								
Truck Trips			*3,002*	*154*	*38%*	*58*	*62%*	*97*
Non-Truck Trips			*8,215*	*629*	*22%*	*140*	*78%*	*488*
Internal Capture								
Truck Trips	see Note (1)		*870*	*32*	*57%*	*22*	*43%*	*10*
Non-Truck Trips			*0*	*0*	*0%*	*0*	*0%*	*0*
Net External Trips								
Truck Trips			*2,132*	*122*	*30%*	*36*	*70%*	*87*
Non-Truck Trips			*8,215*	*629*	*22%*	*140*	*78%*	*488*
Total			**10,347**	**751**	**23%**	**176**	**77%**	**575**

Notes:

(1) 40% of Intermodal Rail Yard truck trips and an equivalent protion of Warehouse Development truck trips were assumed to be internaly captured as the origin and destination of these trips will be within the project site.

TRAFFIC DISTRIBUTION

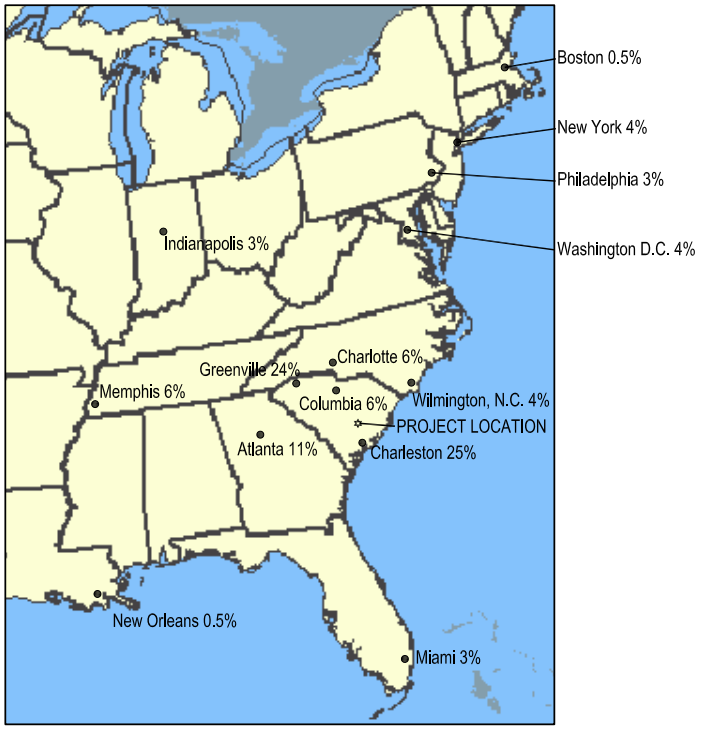
Truck Traffic Distribution

The truck traffic distribution to the surrounding roadway network is determined by the origin/destination of the imports/exports into the site. For this report, the percentages of traffic by city was chosen to model that of the Port of Charleston based on a market study by Transystems, Inc. dated November 2008. Figure 3 represents the percentages of trips to each surrounding regional city by import and export. Based on the percentages in Figure 3, the truck trips were assigned to each roadway on the surrounding roadway network. These distribution percentages can be seen in Figures 4 and 5 for Phases 1A (2014), 1B (2016) and 1C (2020) and in Figures 7 and 8 for Phase 3 (2030).

Non-Truck Traffic Distribution

The non-truck traffic is mostly comprised of employee traffic. The distribution of these vehicles was chosen based on proximity of residential communities in the region. The distribution of these trips can be seen in Figure 6 for Phases 1A (2014), 1B (2016) and 1C (2020) and in Figure 9 for Phase 3 (2030).

Fig 3 - Destination of Imports & Origin of Exports

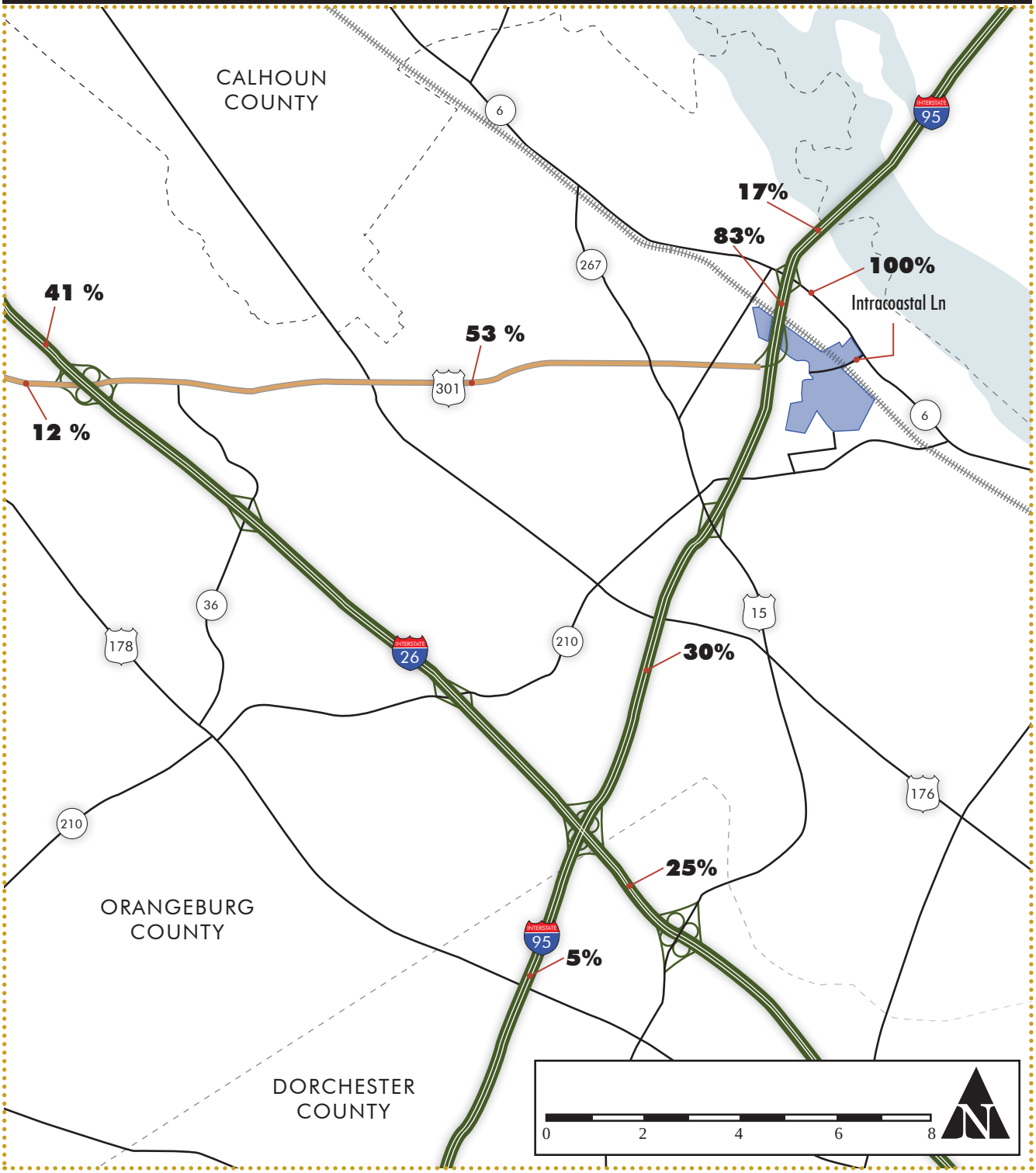


DESTINATION OF IMPORTS

ORIGIN OF EXPORTS

Jafza Logistics and Distribution Park

Fig 4 - Inbound Truck Distribution - Phases 1A, 1B & 1C



LEGEND:

Project Site

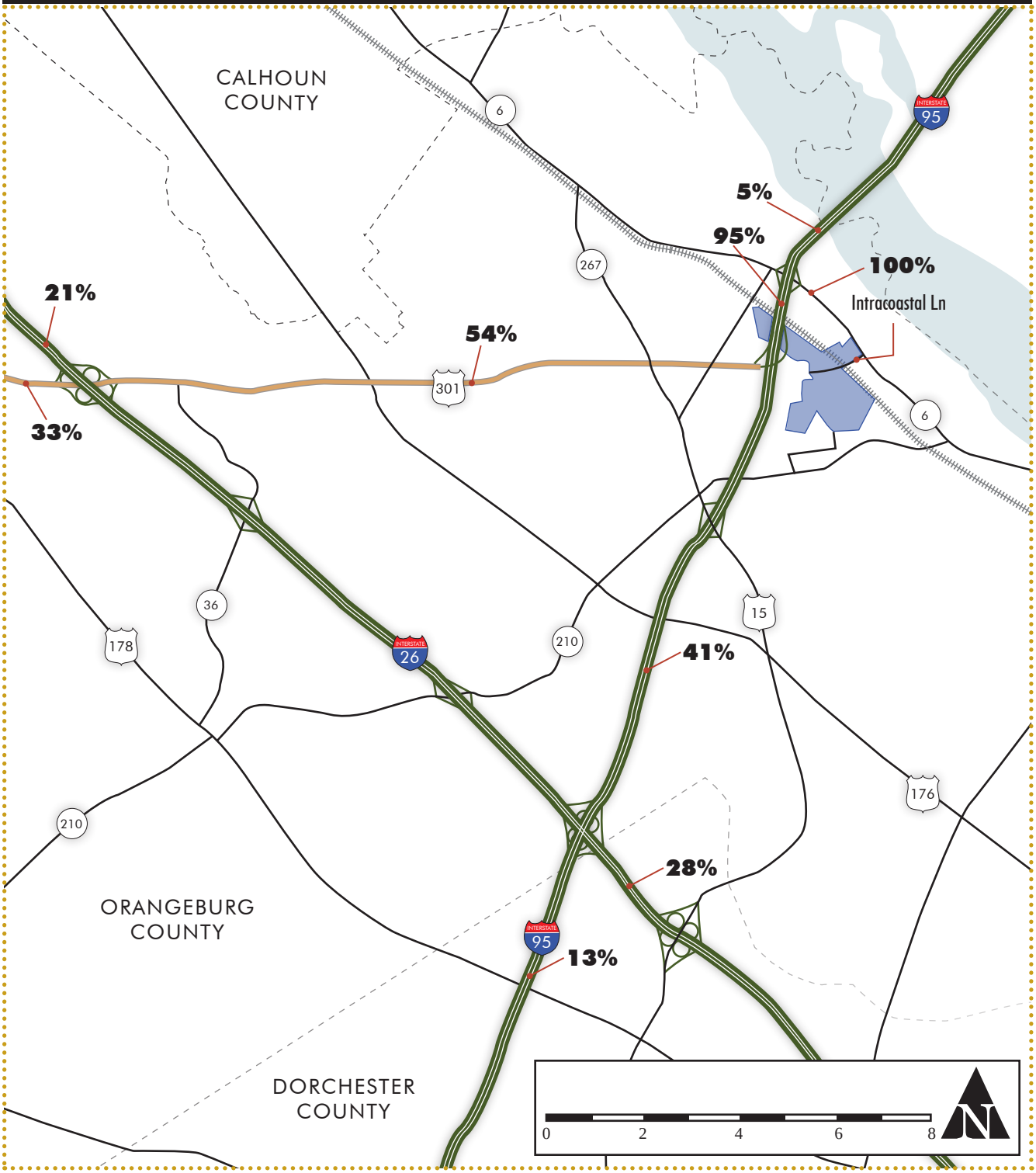
XX% Project Distribution

HDR

JUNE 2009

Jafza Logistics and Distribution Park

Fig 5 - Outbound Truck Distribution - Phases 1A, 1B & 1C



LEGEND:

Project Site

XX% Project Distribution

HDR

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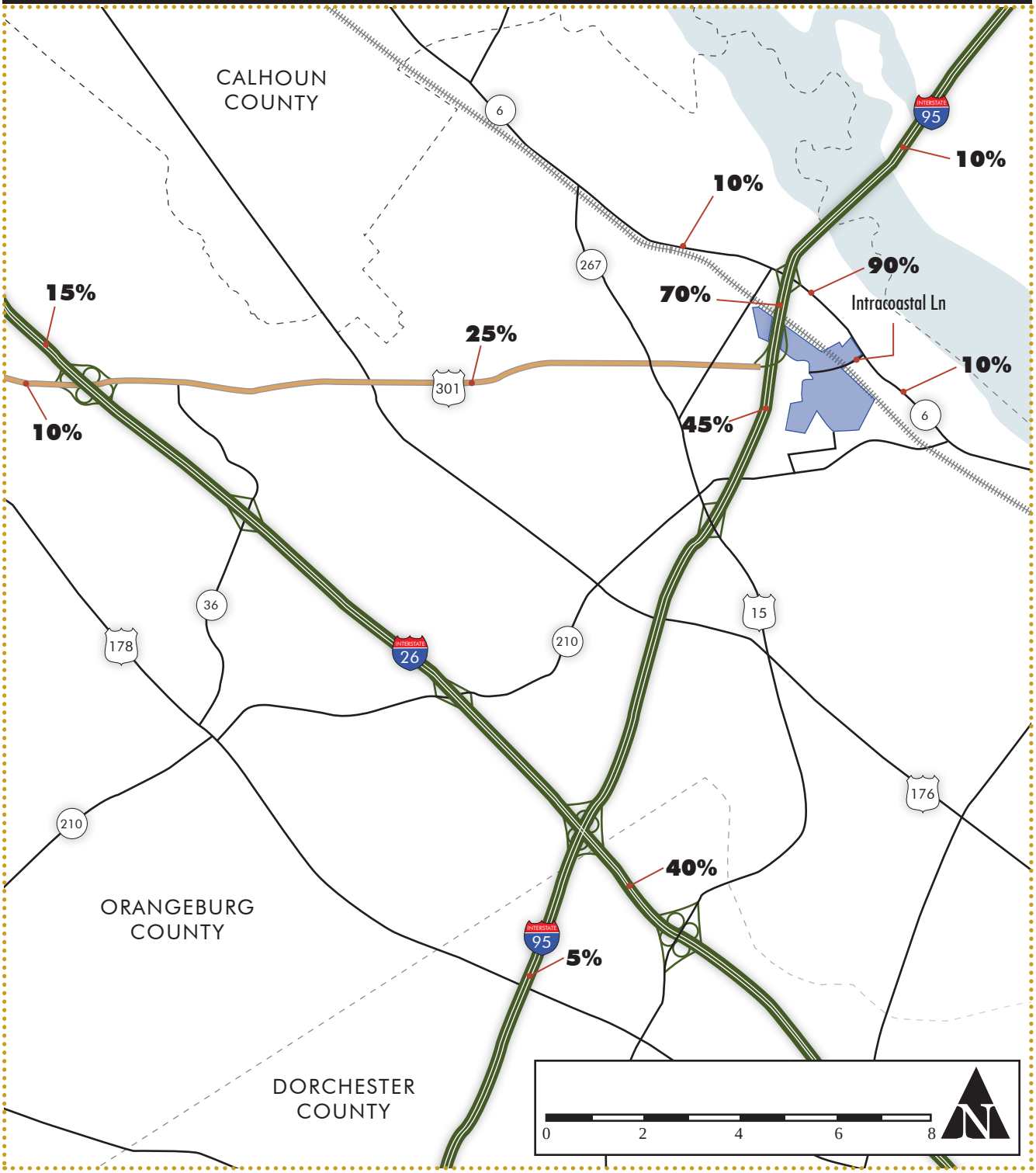
Jafza Logistics and Distribution Park

Fig 6 - Non-Truck Distribution - Phases 1A, 1B & 1C



LEGEND:

Project Site

XX% Project Distribution

HDR

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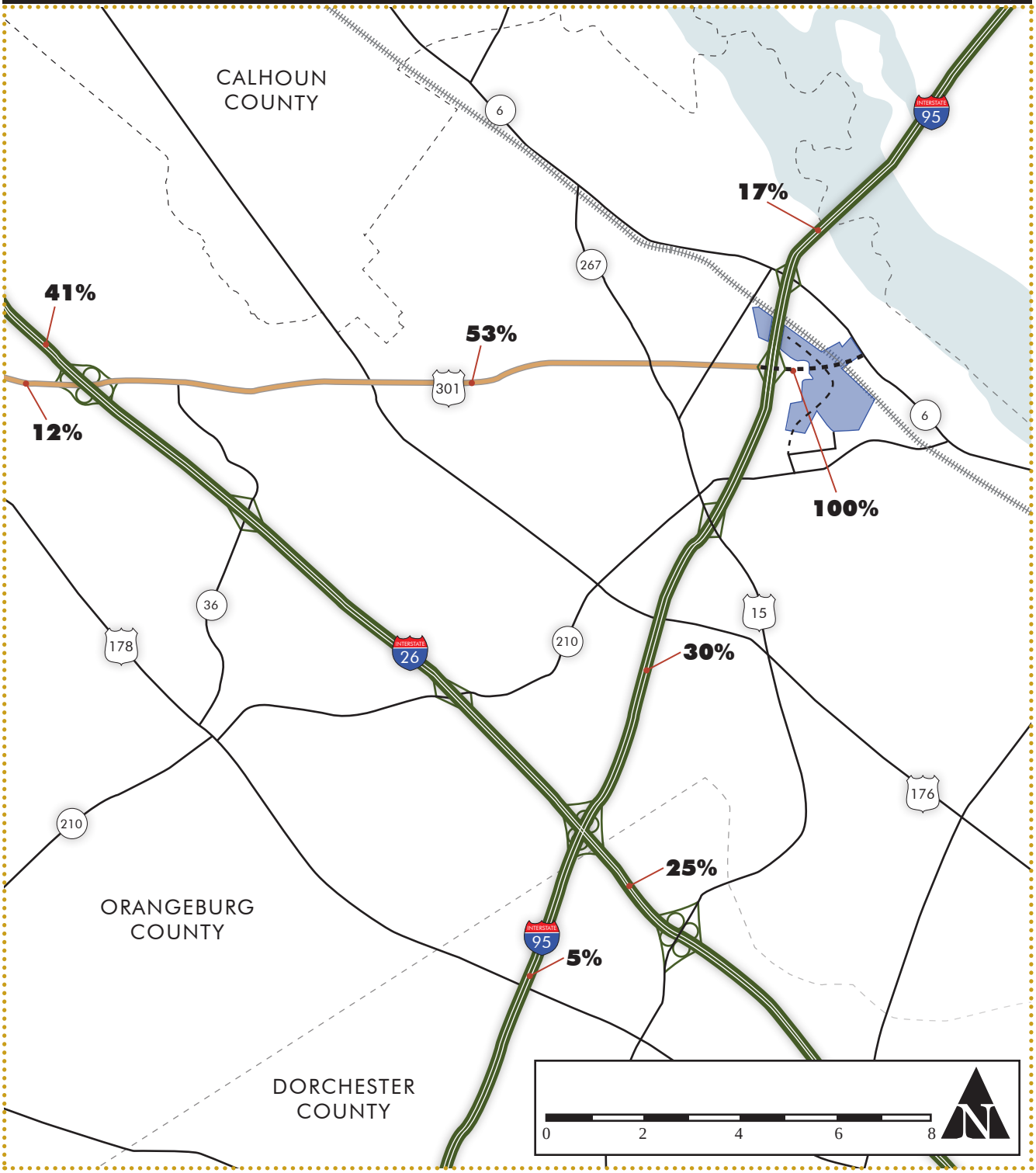
Jafza Logistics and Distribution Park

Fig 7 - Inbound Truck Distribution - Phase 3 (2030)



LEGEND:

Project Site

XX% Project Distribution

HDR

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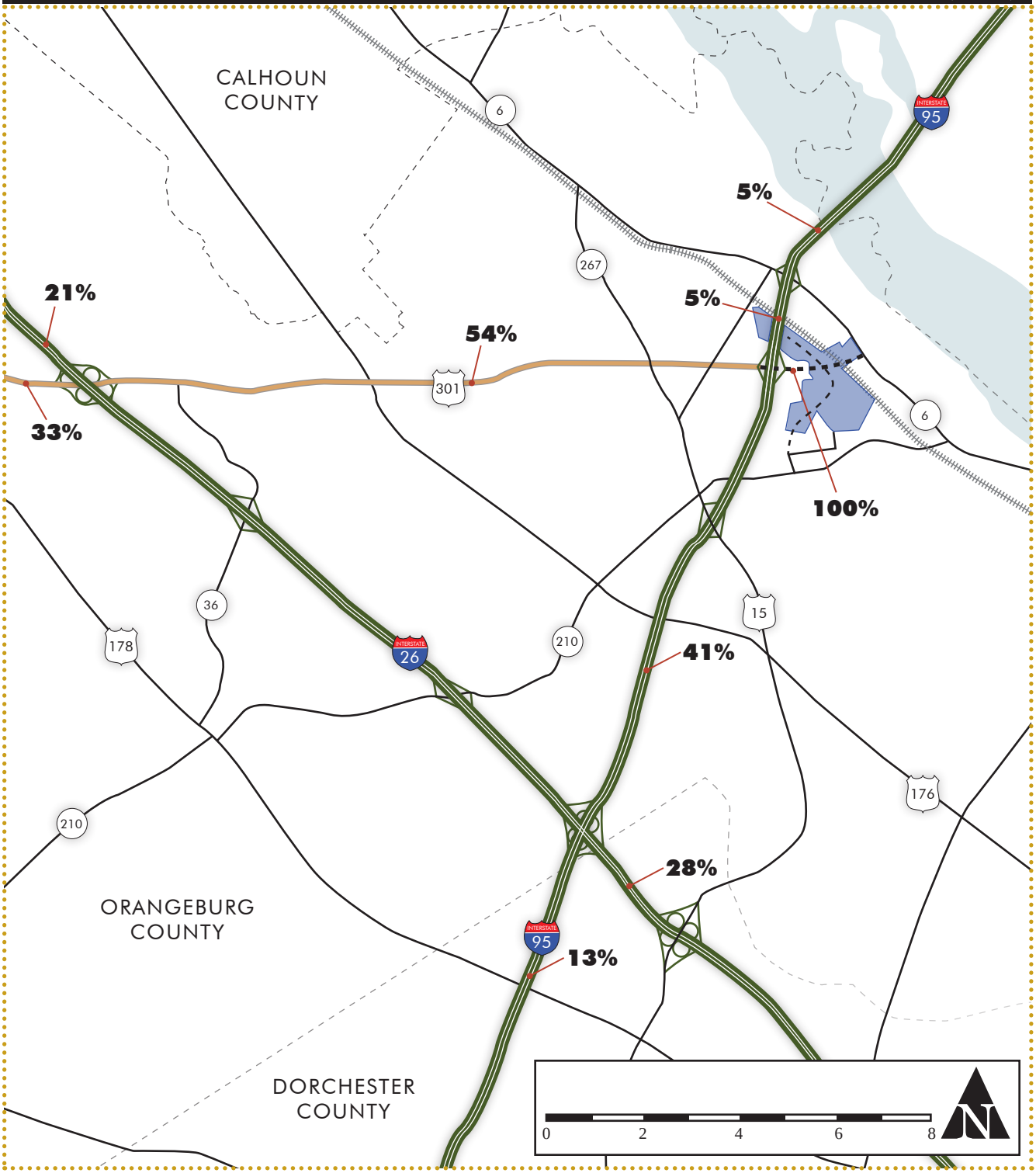
Jafza Logistics and Distribution Park

Fig 8 - Outbound Truck Distribution - Phase 3 (2030)



LEGEND:

Project Site

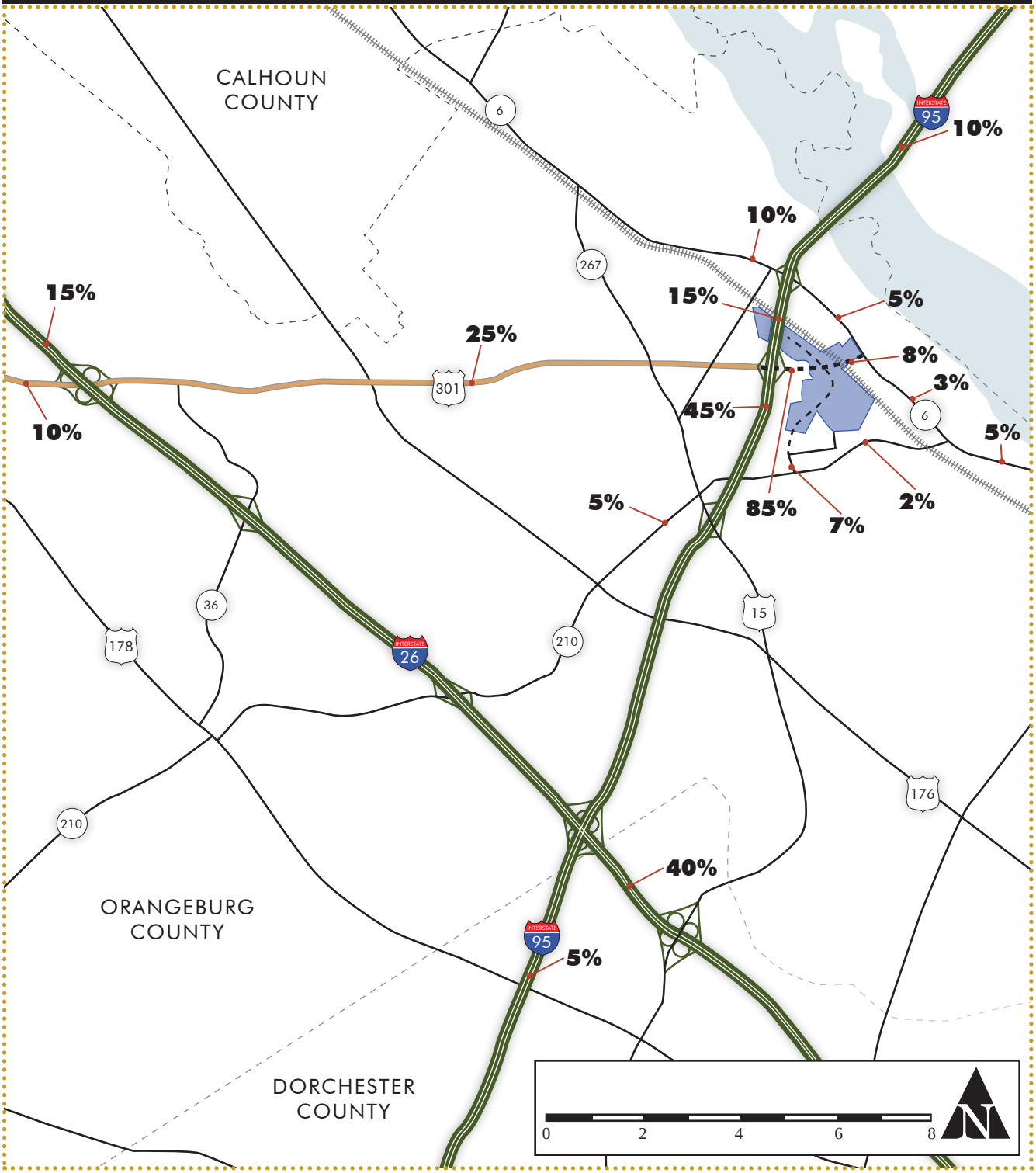
XX% Project Distribution

HDR

JUNE 2009

Jafza Logistics and Distribution Park

Fig 9 - Non-Truck Distribution - Phase 3 (2030)



LEGEND:

Project Site

XX% Project Distribution

HDR

JUNE 2009

TRAFFIC ASSIGNMENT

Background Traffic

The background traffic projections were estimated by applying a linear growth rate to the 2008 ADT's obtained from the South Carolina Department of Transportation (SCDOT) website. Appropriate growth rates were determined after reviewing trend growth rates calculated using historic traffic volumes from SCDOT. Table 6 shows the trend growth rates calculated and the growth rates used for each of the study area segments. The growth rates selected for use in the study generally represent conservative values that are greater than the trends projected using historic traffic counts. The effect of the proposed US 301 extension from I-95 to SC 6 along with the US 301 and I-95 diamond interchange on background traffic volumes on the vicinity area roadways in the year 2030 has been estimated using sound engineering judgment based on the current traffic patterns and volumes and the anticipated shift in traffic with the proposed area roadway improvements.

Planned Improvements

The analysis for the year 2030 assumes that the SCDOT will complete the extension of US 301 from I-95 to connect with SC 6 along with the construction of a new interchange at I-95 and US 301. However, the analysis for the years 2014, 2016 and 2020 do not assume these improvements will be in place.

Future Phase 1A, 1B and 1C Build-out Trip Distribution Volumes

The truck and non-truck traffic distributions were combined with the background traffic projections to create the future traffic projections for Phases 1A, 1B and 1C. The resulting daily and peak hour peak direction traffic volumes for Phases 1A, 1B and 1C can be seen in Figures 10, 11, 12, 13, 14 and 15. For analysis purposes, default planning analysis hour factors (K) and directional distribution factors (D) were used for roadway segments based on area type and facility type when actual count information was not available. For roadway segments on Interstate 26 and Interstate 95, weekday daily count information was obtained from SCDOT and average weekday peak to daily ratio and directional distribution were calculated based on those counts for use in the analysis. Table 7 provides a summary of projected volumes associated with Phases 1A, 1B and 1C.

Future Phase 3 (2030) Build-out Trip Distribution Volumes

The truck and non-truck traffic distributions were combined with the year 2030 background traffic projections to create the future traffic projections for Phase 3 (2030). The resulting daily and peak hour peak direction traffic volumes for Phase 3 (2030) are shown in Figures 16, 17, 18 and 19. As can be seen in Figures 16, 17, 18 and 19, the interchange of US 301 and I-95 will become heavily utilized with the construction of the JSC Logistics and Distribution Park

and there will be need for US 301 extension to provide for direct access to the project site. The interchange at SC-6 and I-95 will also experience an increase in traffic volumes. Table 7 provides a summary of the projected volumes for Phase 3 (2030) buildout of the project.

Table 6
Background Traffic Growth Rates

Roadway/ Segment	Annual Growth Rate	
	Trend Growth Rate	Used in Study
I-95		
North of SC 6	0.25%	1.5%
SC 6 to US 301	0.69%	1.5%
US 301 to I-26	0.95%	1.5%
South of I-26	1.07%	1.5%
US 301/ US 301 Extension		
West of I-26	1.77%	1.5%
I-26 to US 15	0.00%	1.5%
US 15 to I-95	0.38%	1.5%
I-26		
West of US 301	2.83%	2.5%
East of I-95	2.62%	2.5%
SC 6		
West of US 15/301/SC 6 Con	0.84%	1.5%
US 15/301/SC 6 Con to I-95	0.84%	1.5%
I-95 to US 301 Extension	0.96%	1.5%
US 301 Extension to SC 210	1.06%	1.5%
East of SC 210	1.06%	1.5%
SC 210		
West of Project Driveway	-1.89%	1.5%
Project Driveway to SC 6	0.51%	1.5%

Table 7
Summary Table

Roadway/Segment	2008 AADT	Annual Growth Rate Used	K Factor (1)	D Factor (2)	Phase 1A (2014) Volumes						Phase 1B (2016) Cumulative Volumes						Phase 1C (2020) Cumulative Volumes						Phase 3 (2030) Cumulative Volumes					
					Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction		
					Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project
I-95																												
North of SC 6	30,000	1.5%	0.076	0.555	32,734	38	32,772	1,381	9	1,390	33,647	115	33,762	1,419	15	1,434	35,474	371	35,845	1,496	26	1,522	40,042	1,057	41,099	1,689	53	1,742
SC 6 to US 301	29,600	1.5%	0.076	0.572	32,297	270	32,567	1,404	15	1,419	33,199	830	34,029	1,443	35	1,478	35,001	2,682	37,683	1,522	64	1,586	39,508	1,467	40,975	1,717	77	1,794
US 301 to I-26	25,700	1.5%	0.076	0.572	28,042	167	28,209	1,219	9	1,228	28,825	494	29,319	1,253	20	1,273	30,390	1,576	31,966	1,321	38	1,359	34,303	4,454	38,757	1,491	74	1,565
South of I-26	38,500	1.5%	0.075	0.576	42,009	20	42,029	1,815	1	1,816	43,181	64	43,245	1,865	2	1,867	45,526	210	45,736	1,967	5	1,972	51,388	603	51,991	2,220	9	2,229
US 301/ US 301 Extension																												
West of I-26	13,900	1.5%	0.098	0.550	15,167	42	15,209	818	2	820	15,590	136	15,726	840	5	845	16,437	450	16,887	886	9	895	18,553	1,302	19,855	1,000	18	1,018
I-26 to US 15	11,000	1.5%	0.098	0.550	12,002	103	12,105	647	25	672	12,337	336	12,673	665	44	709	13,007	1,107	14,114	701	81	782	14,682	3,195	17,877	791	169	960
US 15 to I-95	7,100	1.5%	0.097	0.550	7,748	103	7,851	413	25	438	7,964	336	8,300	425	44	469	8,396	1,107	9,503	448	81	529	11,959	3,195	15,154	638	169	807
I-95 to Project Driveway	N/A	N/A	0.097	0.550	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,654	9,115	10,769	88	502	590
Project Driveway to SC 6	N/A	N/A	0.097	0.550	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,654	657	2,311	72	39	111
I-26																												
West of US 301	42,000	2.5%	0.075	0.537	48,431	61	48,492	1,951	15	1,966	50,584	199	50,783	2,037	24	2,061	54,889	656	55,545	2,211	45	2,256	65,651	1,893	67,544	2,644	91	2,735
East of I-95	30,600	2.5%	0.075	0.518	35,286	147	35,433	1,371	8	1,379	36,854	430	37,284	1,432	18	1,450	39,990	1,366	41,356	1,554	34	1,588	47,832	3,851	51,683	1,858	65	1,923
SC 6																												
West of US 15/301/SC 6 Con	4,000	1.5%	0.097	0.550	4,365	35	4,400	233	9	242	4,486	95	4,581	239	14	253	4,730	296	5,026	252	24	276	5,339	822	6,161	285	49	334
US 15/301/SC 6 Con to I-95	13,300	1.5%	0.097	0.550	14,513	35	14,548	774	9	783	14,918	95	15,013	796	14	810	15,728	296	16,024	839	24	863	16,099	822	16,921	859	49	908
I-95 to US 301 Extension	7,400	1.5%	0.097	0.550	8,074	342	8,416	431	19	450	8,300	1,041	9,341	443	44	487	8,750	3,350	12,100	467	82	549	8,223	411	8,634	439	7	446
US 301 Extension to SC 210	5,700	1.5%	0.097	0.550	6,220	35	6,255	332	9	341	6,394	95	6,489	341	14	355	6,741	296	7,037	360	24	384	7,609	246	7,855	406	15	421
East of SC 210	5,700	1.5%	0.097	0.550	6,220	17	6,237	332	5	337	6,394	48	6,442	341	7	348	6,741	148	6,889	360	12	372	7,609	411	8,020	406	24	430
SC 210																												
West of Project Driveway	1,250	1.5%	0.097	0.550	1,364	17	1,381	73	5	78	1,402	48	1,450	75	7	82	1,478	148	1,626	79	12	91	1,669	411	2,080	89	24	113
Project Driveway to SC 6	850	1.5%	0.097	0.550	928	17	945	50	5	55	954	48	1,002	51	7	58	1,005	148	1,153	54	12	66	1,135	164	1,299	61	3	64

Notes:

(1) Planning analysis hour factors (K) was based on default values typically used for roadway segments based on the area type (rural/suburban/urban) and facility type (freeway/uninterrupted flow/signalized).
For segments on I-26 and I-95, where actual count information was available from SCDOT, the weekday daily count information was obtained and average weekday peak to daily ratios were calculated for use in the analysis.

(2) Directional distribution factor (D) was also based on default values typically used for roadway segments based on their area type (rural/suburban/urban) and facility type (freeway/uninterrupted flow/signalized).
For segments on I-26 and I-95, where actual count information was available from SCDOT, the weekday daily count information was obtained and average weekday directional factors were calculated for use in the analysis.

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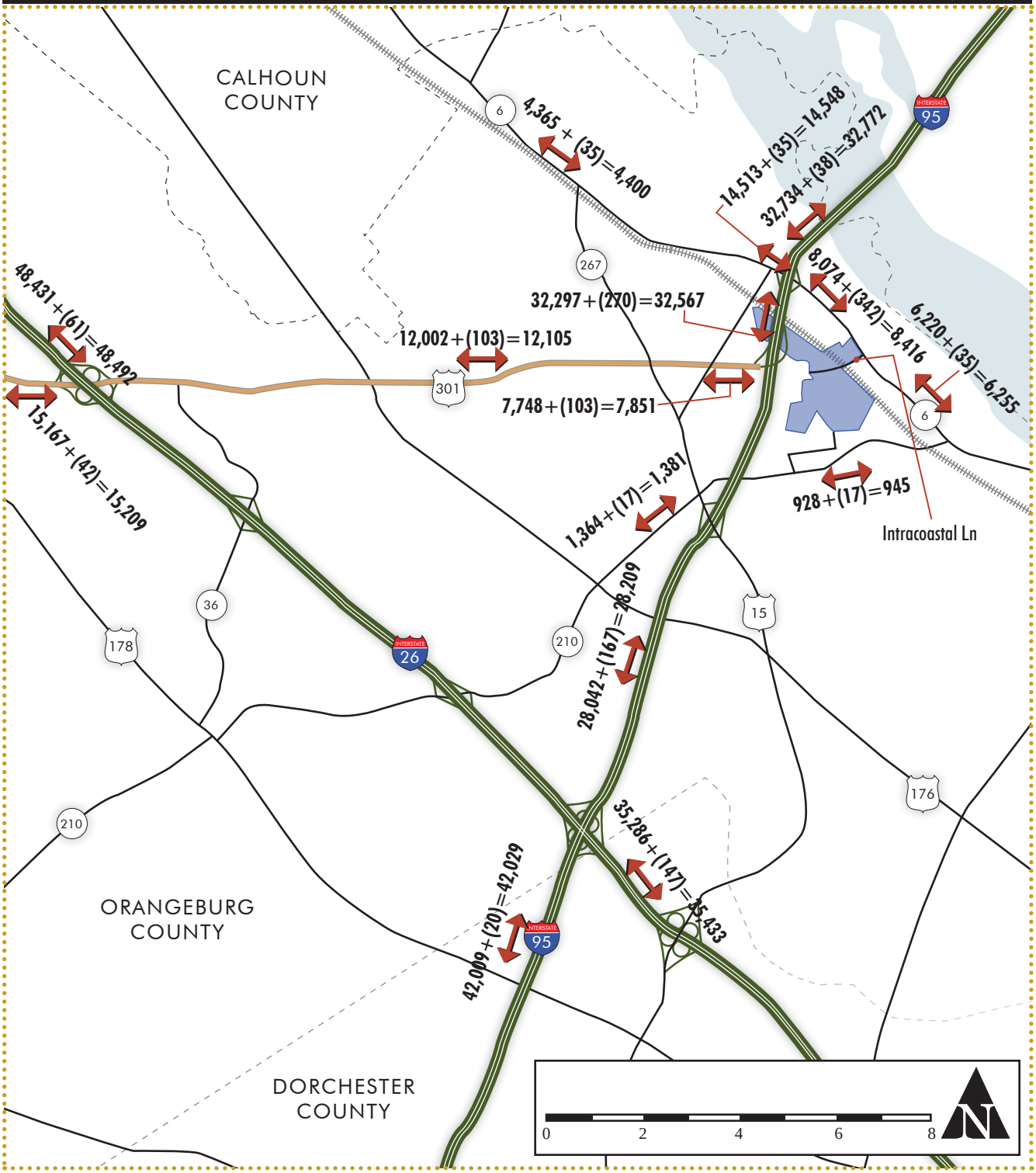
Jafza Logistics and Distribution Park

Fig 10 - Projected Daily Volumes - Phase 1A (2014)



LEGEND:

Project Site

XXX+(XXX)=XXX

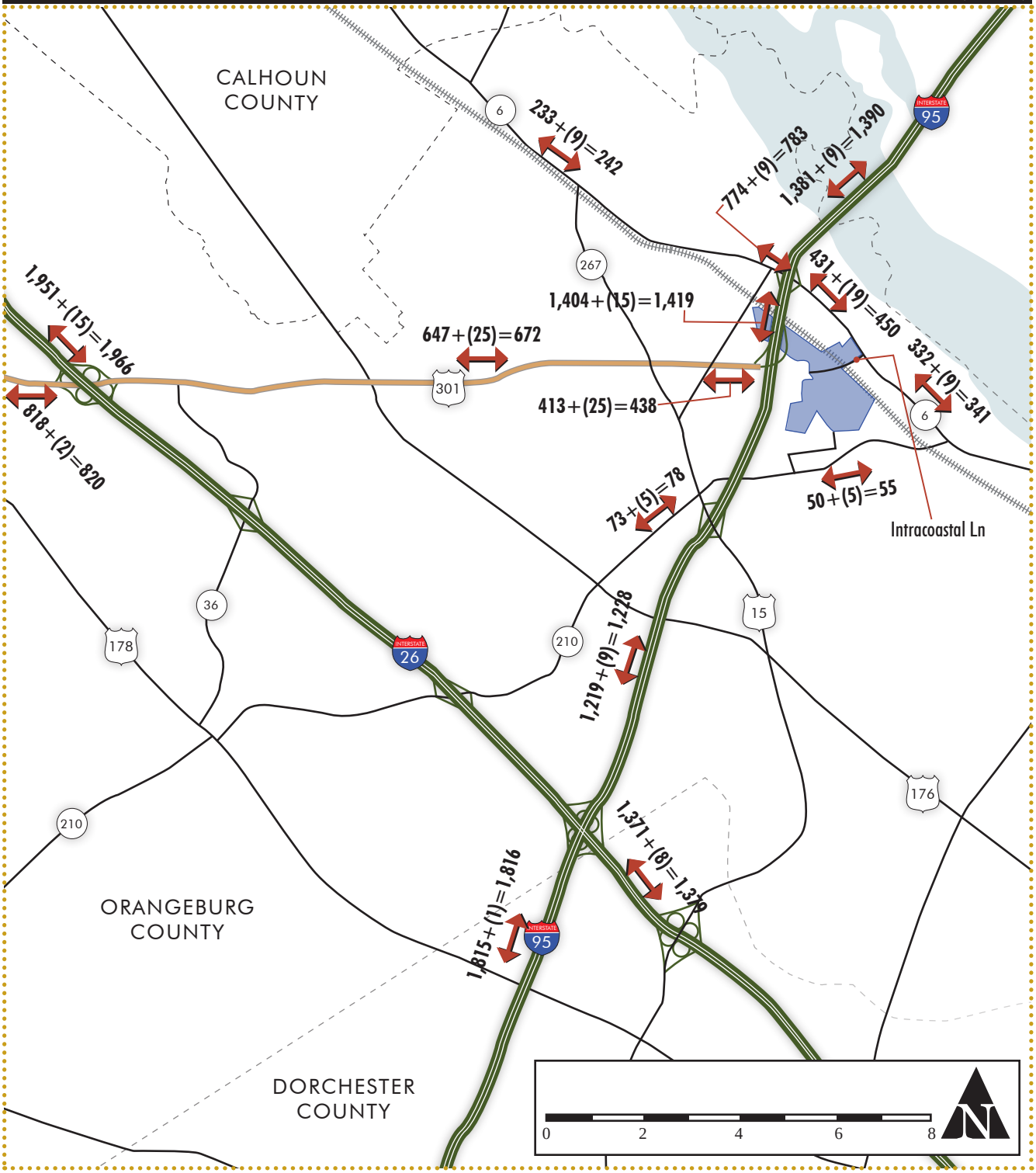
- Total Volume
- Project Volume
- Background Volume

HDR

JUNE 2009

Jafza Logistics and Distribution Park

Fig 11 - Projected Peak Hour Peak Direction Volumes - Phase 1A (2014)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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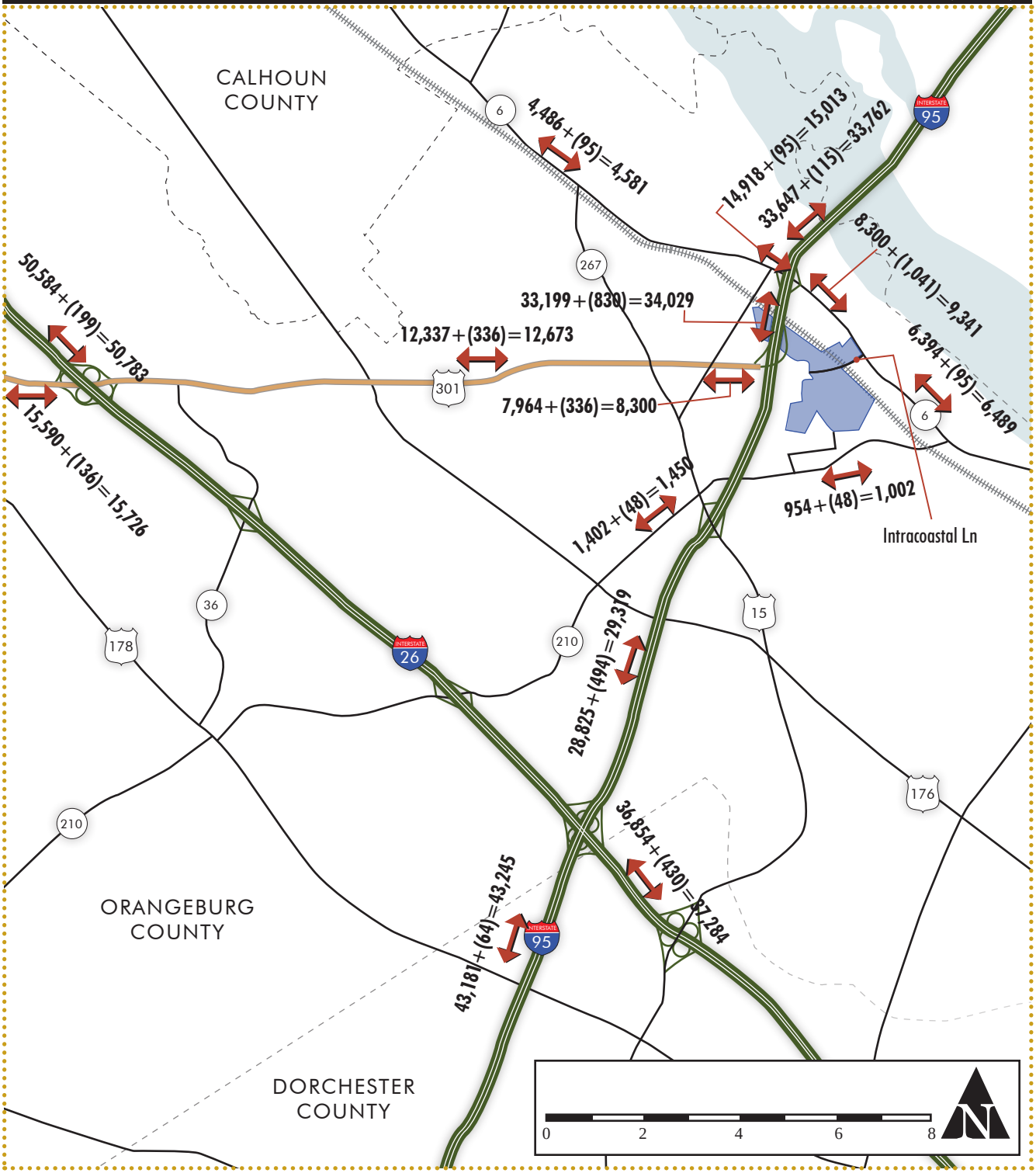
Jafza Logistics and Distribution Park

Fig 12 - Projected Daily Volumes - Phase 1B (2016)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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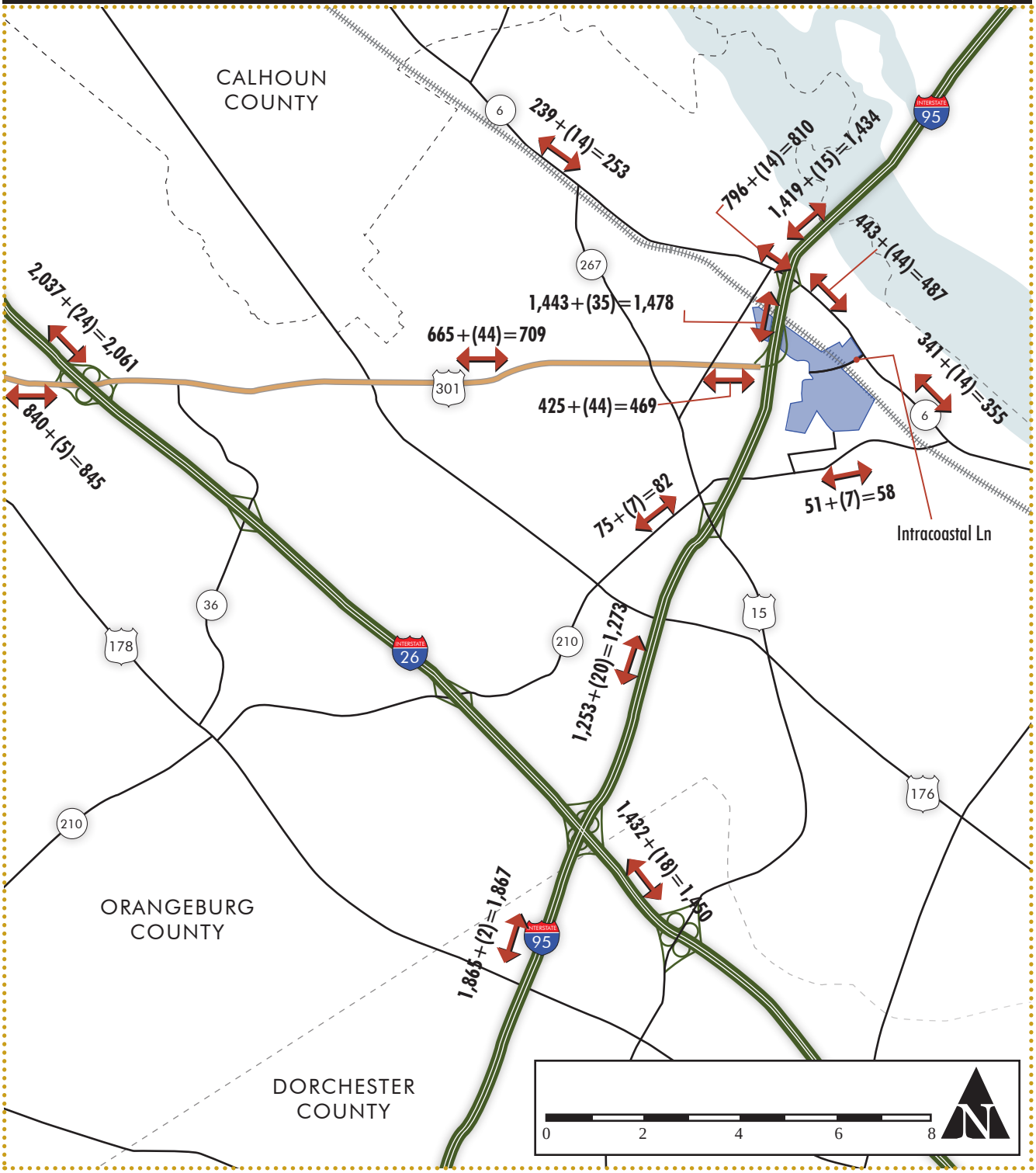
Jafza Logistics and Distribution Park

Fig 13 - Projected Peak Hour Peak Direction Volumes - Phase 1B (2016)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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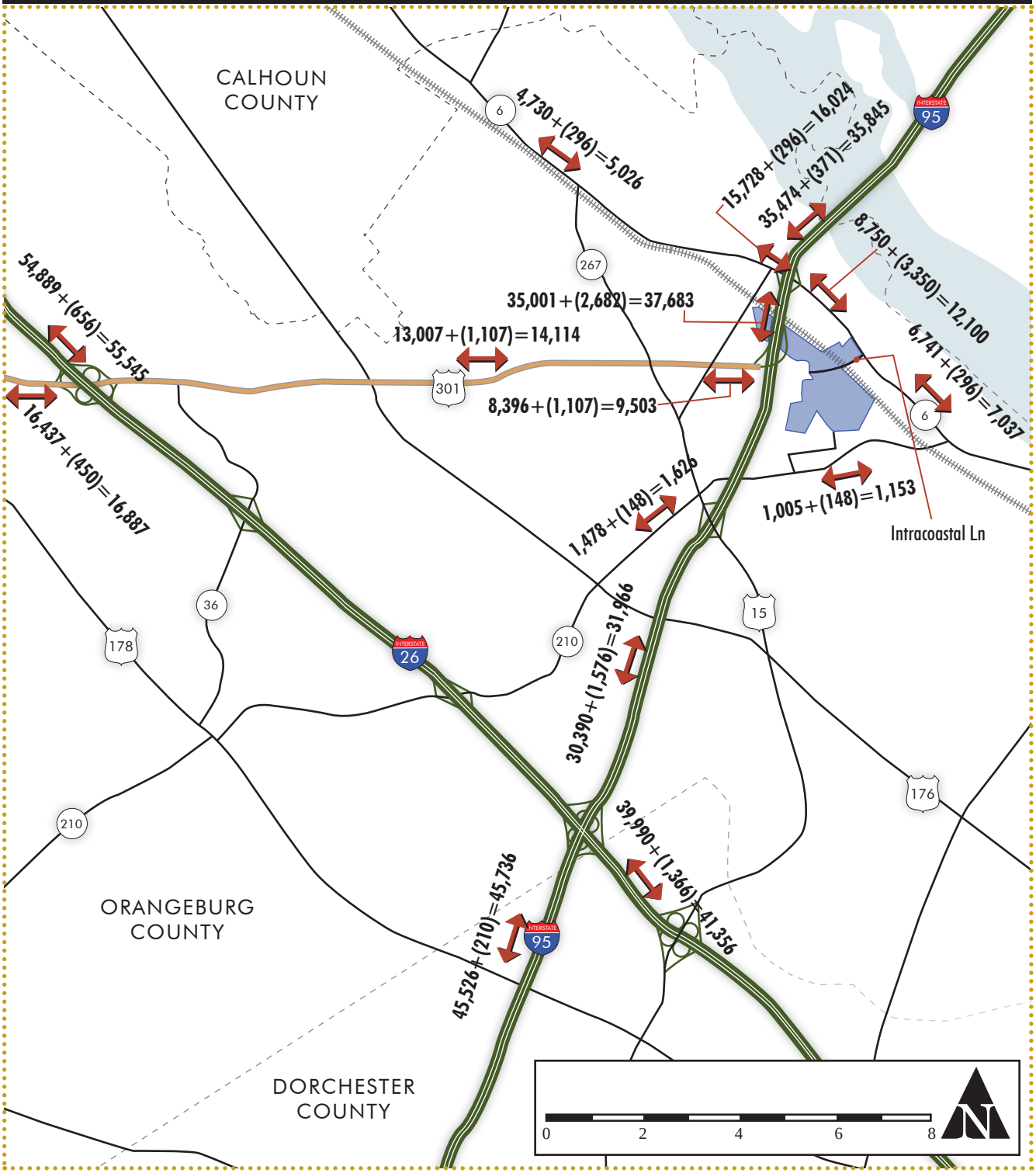
Jafza Logistics and Distribution Park

Fig 14 - Projected Daily Volumes - Phase 1C (2020)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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Jafza Logistics and Distribution Park

Fig 15 - Projected Peak Hour Peak Direction Volumes - Phase 1C (2020)

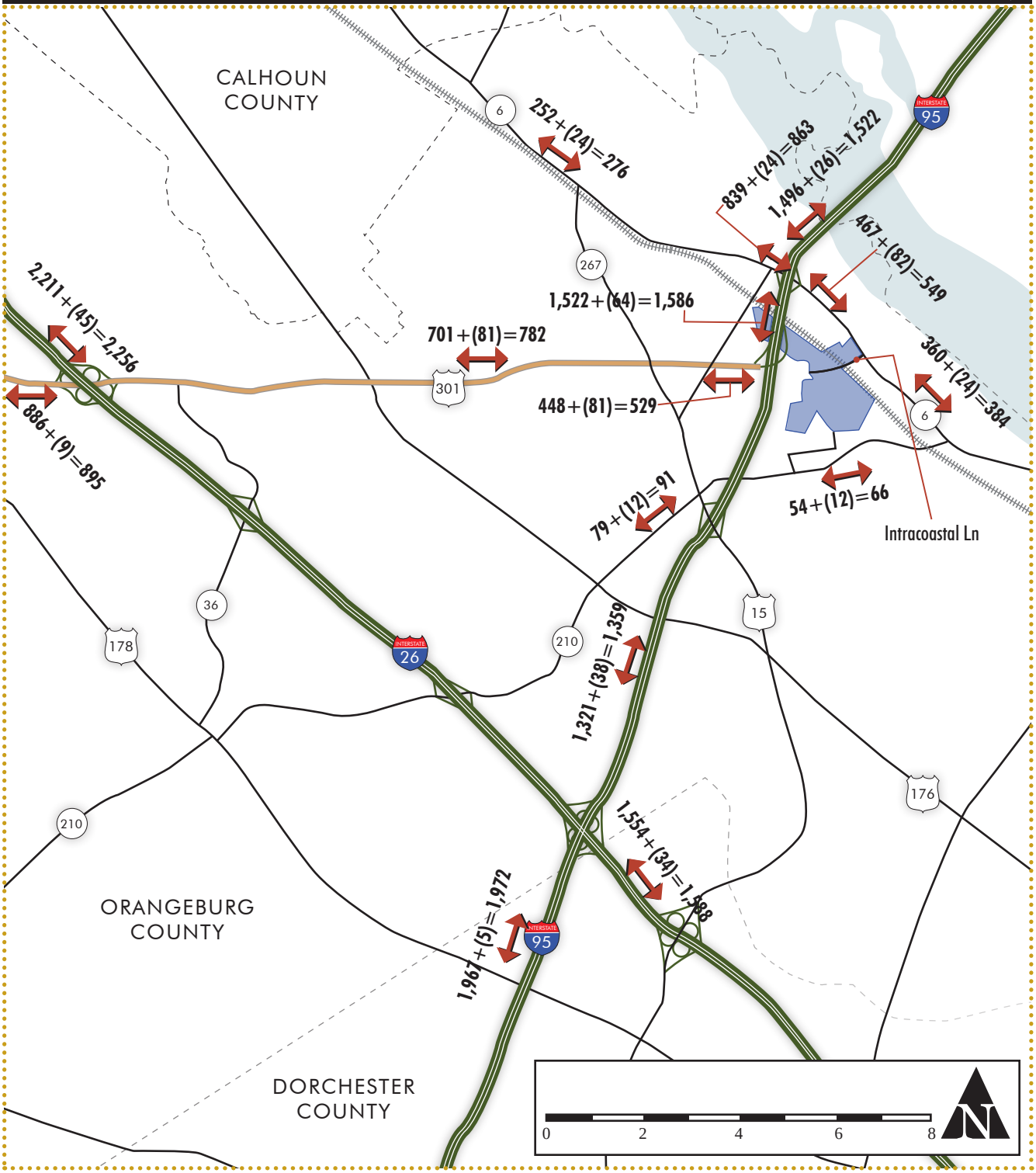

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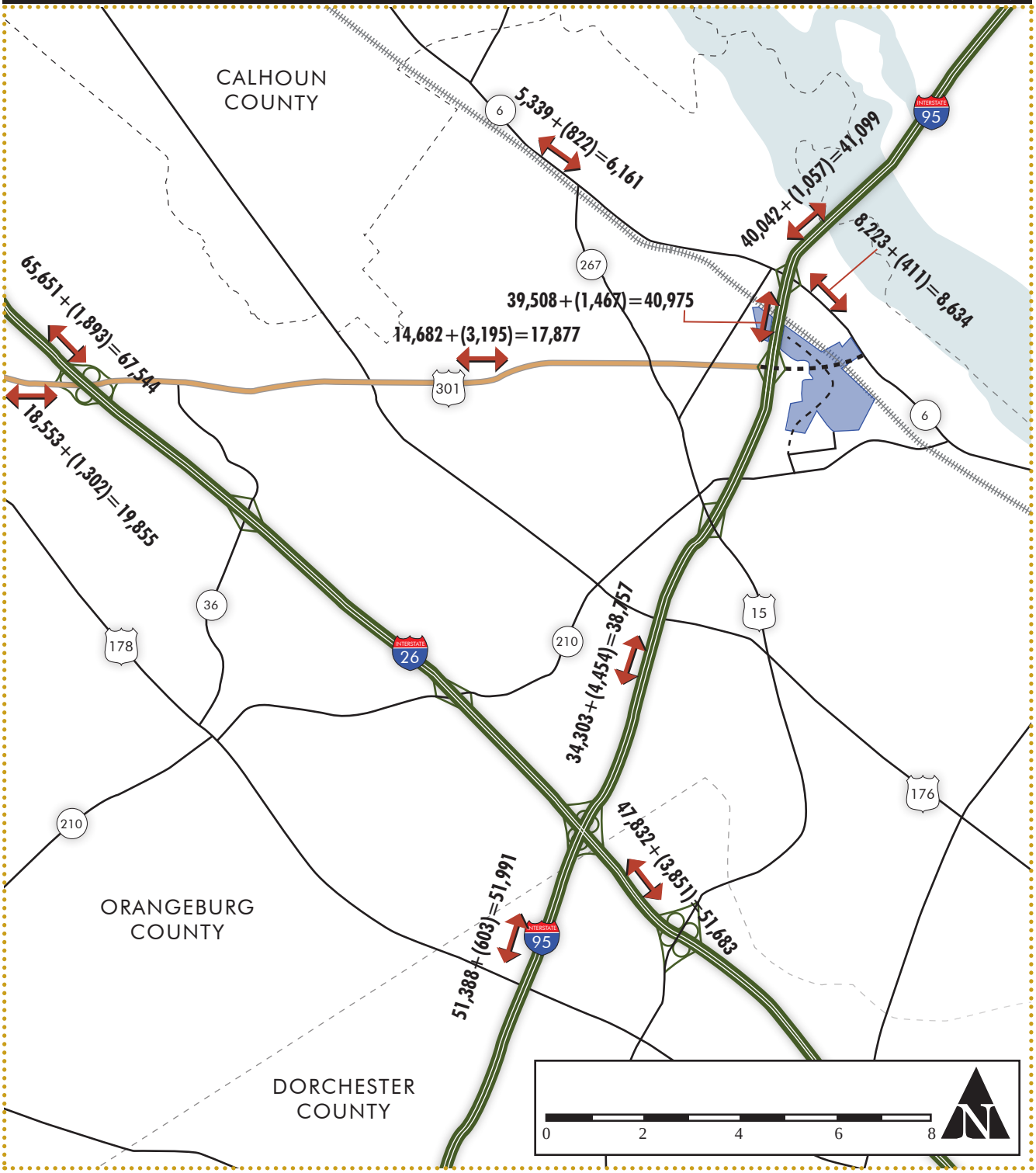
Fig 16 - Projected Daily Volumes - Phase 3 (2030)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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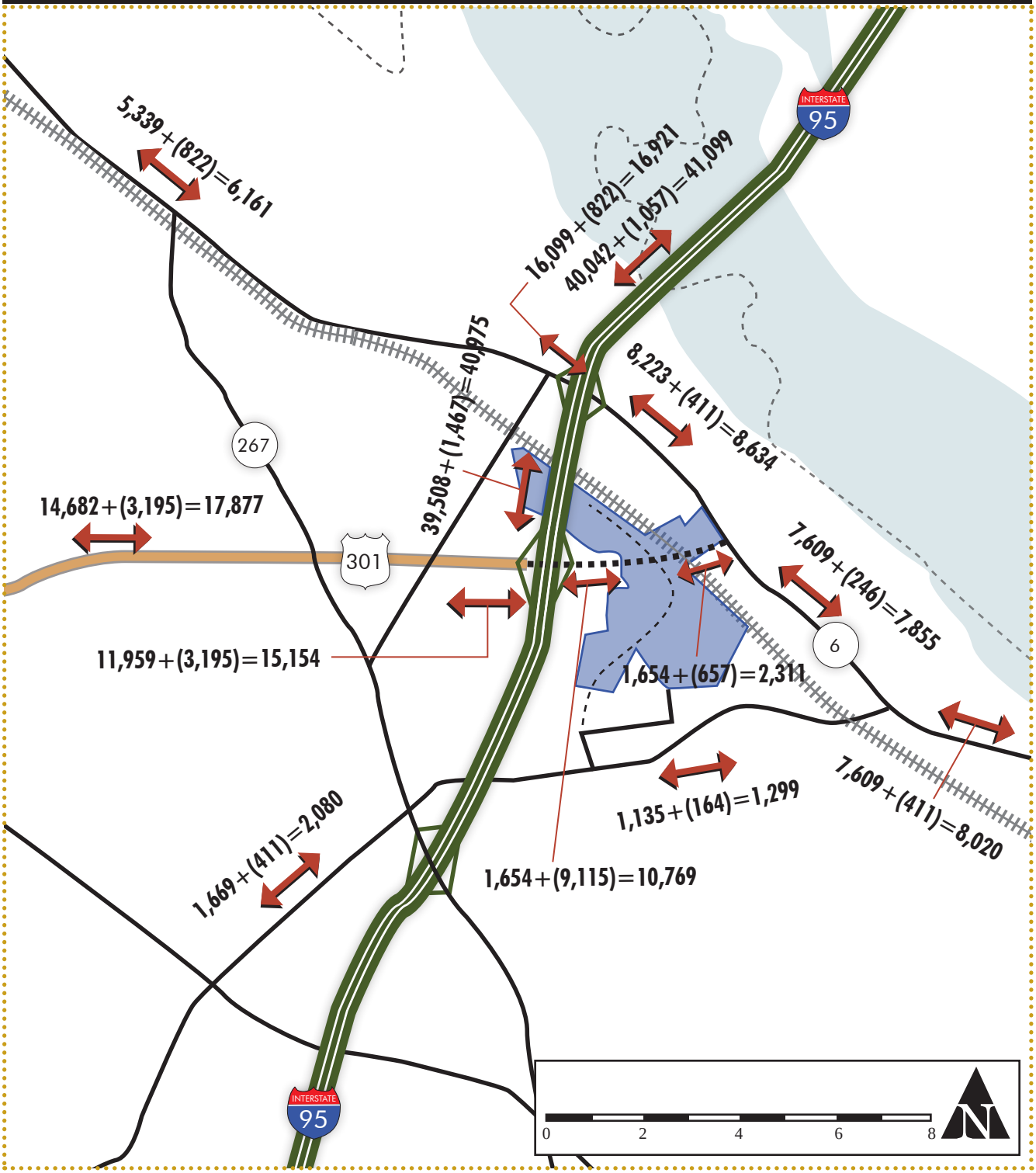
Fig 17 - Projected Daily Volumes Near Site - Phase 3 (2030)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

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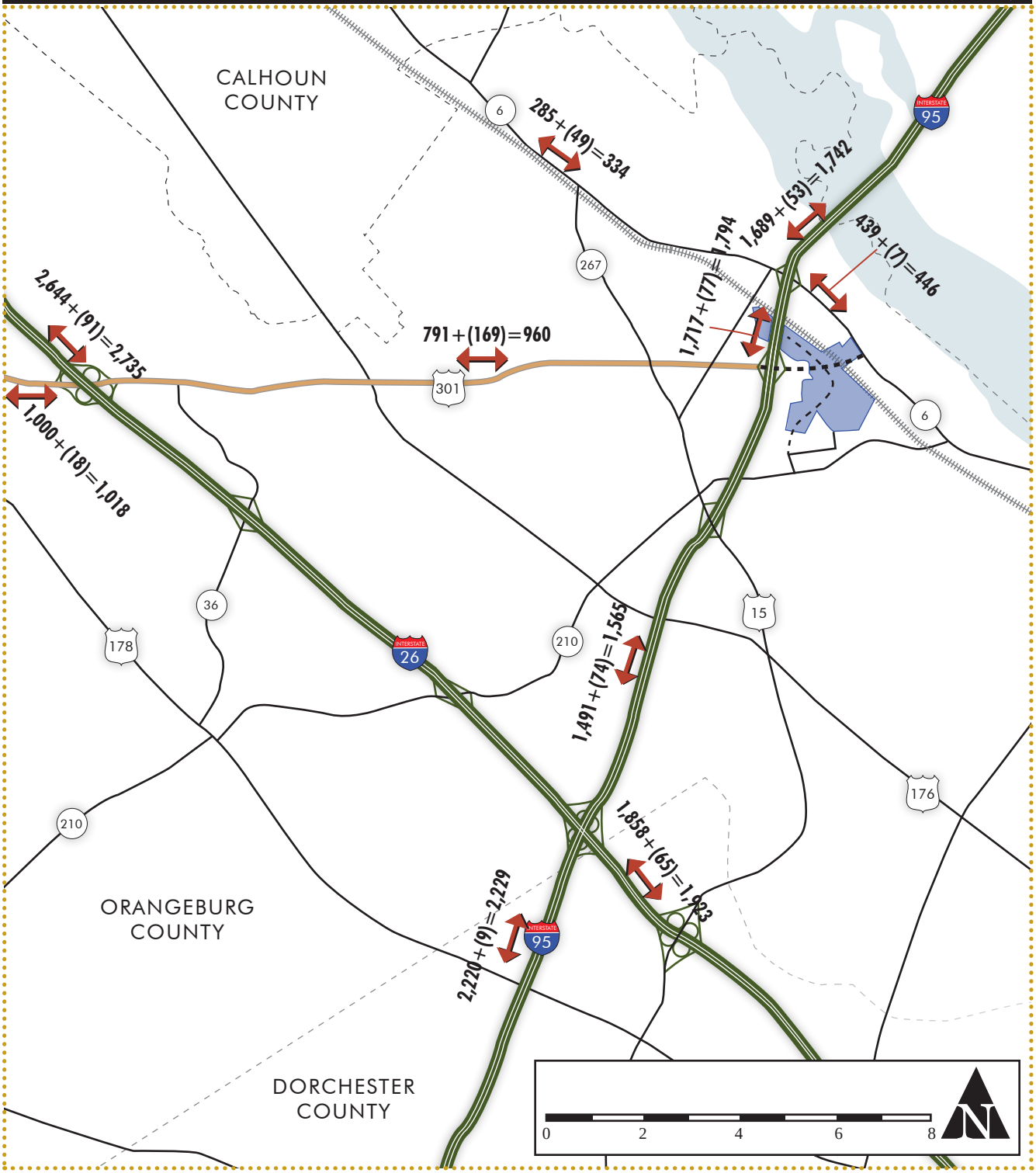
Jafza Logistics and Distribution Park

Fig 18 - Projected Peak Hour Peak Direction Volumes - Phase 3 (2030)



LEGEND:

Project Site

XXX+(XXX)=XXX

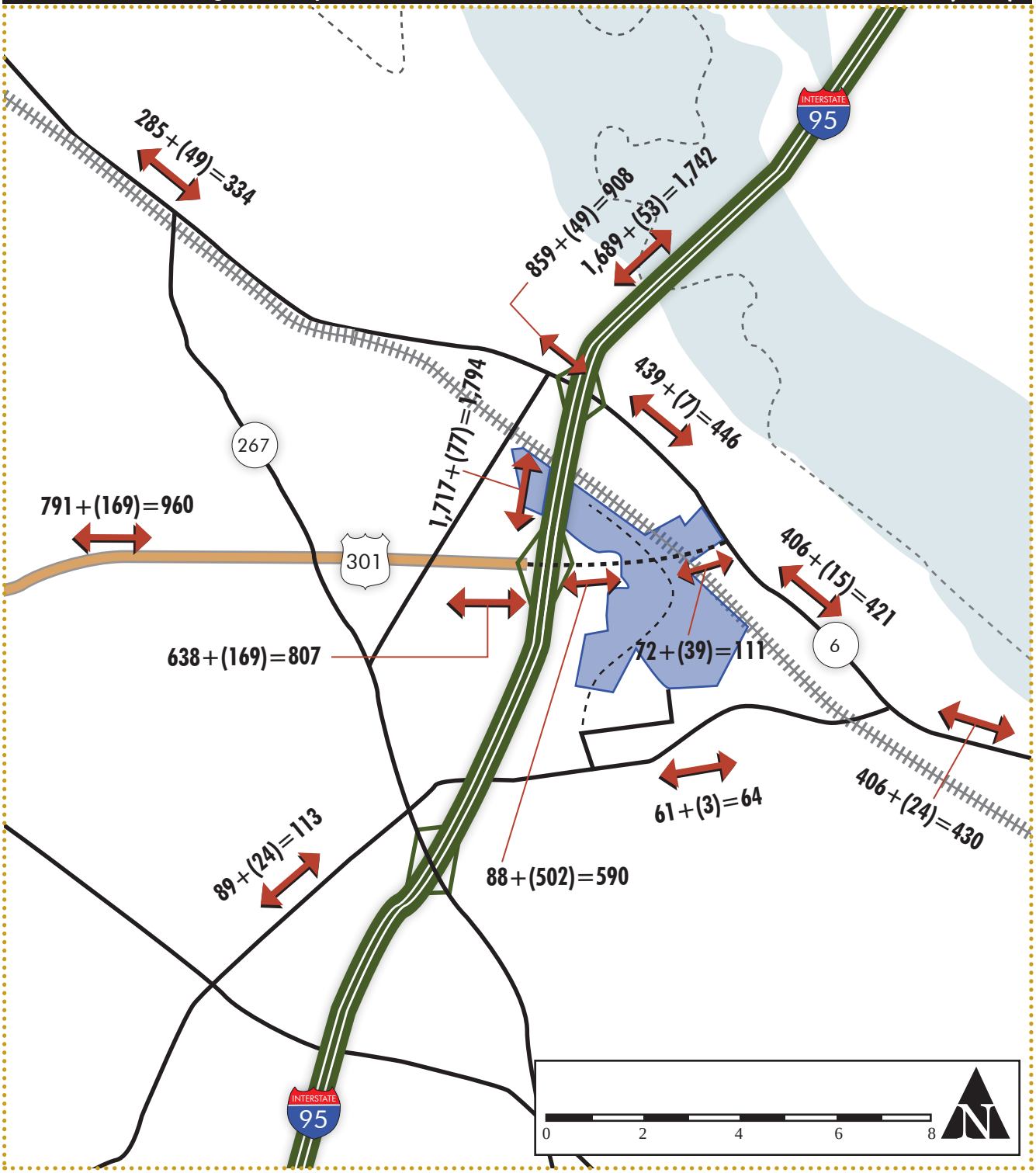
- Total Volume
- Project Volume
- Background Volume

HDR

JUNE 2009

Jafza Logistics and Distribution Park

Fig 19 - Projected Peak Hour Peak Direction Volumes Near Site - Phase 3 (2030)



LEGEND:

Project Site

XXX+(XXX)=XXX

- Total Volume
- Project Volume
- Background Volume

HDR

JUNE 2009

CONCLUSIONS

The conclusions of the report are as follows:

- The JSC Logistics and Distribution Park will generate approximately 2,132 daily external truck trips and 8,215 daily external non-truck trips for a total of 10,347 external daily trips by the buildout of Phase 3 of the project in the year 2030.
- The current projected 2030 volumes with Phase 3 buildout of project are significantly lower than the previously projected 53,430 daily external project trips for the year 2030 due to the extension of the complete project buildout date from year 2030 to year 2050.
- Project phases 1A, 1B and 1C will be accommodated satisfactorily by the existing roadway network.
- Phase 3 of the Jafza project assumes completion of roadway improvements by SCDOT including the extension of US 301 to connect with SC 6 and interchange improvements at I-95/US 301.

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APPENDIX B

Advanced Project Planning Report for Proposed Improvements to Interchange of US 301 at I-95 and US 301 Extension to SC 65

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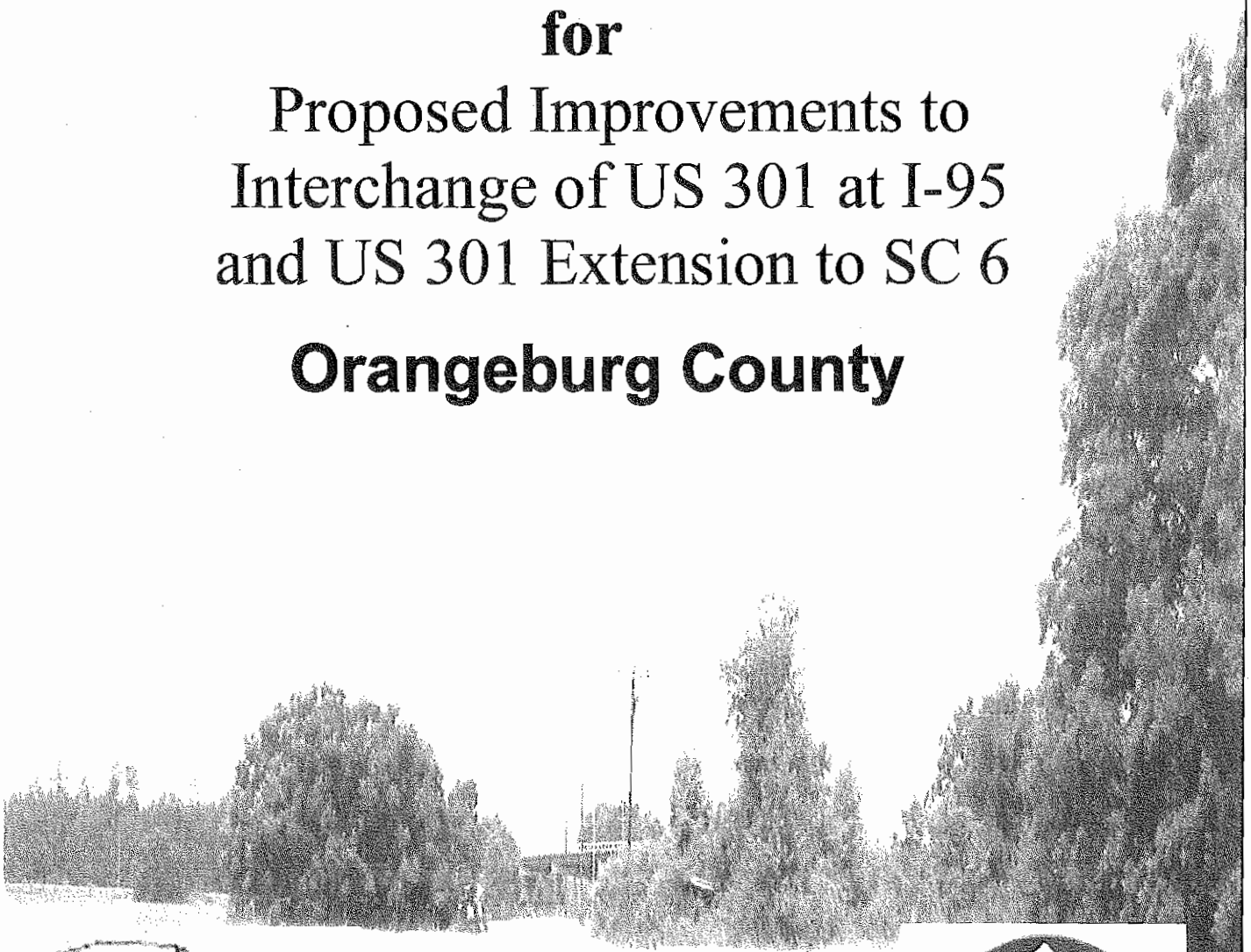
APPR

Advanced Project Planning Report
for
Proposed Improvements to Interchange of US 301 at I-95 and US 301 Extension to SC 6

Orangeburg County



LSCOG

Planning SCDOT Environmental

January 2007

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ADVANCED PROJECT PLANNING REPORT

for

Proposed Improvements to Interchange of US 301 at I-95 and US 301 extension to SC 6

South Carolina Department of Transportation

Lower Savannah Council of Governments

Project Abstract:

The South Carolina Department of Transportation (SCDOT) in partnership with the Lower Savannah Council of Governments (COG) has developed this Advanced Project Planning Report (APPR) for the proposed improvements to US 301 and I-95 Interchange and the extension of US 301 from I-95 to SC 6 in Orangeburg County. This APPR is a preliminary evaluation conducted within a study area to identify the potential benefits, impacts and areas of concern to the human and natural environment by the proposed roadway improvement project. The project's focus is to provide a full interchange in anticipation of future Inland Port near the town of Santee.

Date of Approval	COG/MPO Planner
Date of Approval	COG/MPO Executive Director
Date of Approval	SCDOT Planner
Date of Approval	SCDOT Chief of Statewide Planning
Date of Approval	SCDOT Director of Planning

City/County Official:

Date of Approval	Signature & Title
Date of Approval	Signature & Title

For additional information please contact:
Mr. Michael Dennis, P.E.
Chief of Statewide Planning
S.C. Department of Transportation, P.O. Box 191, Columbia, SC 29202-0191
Telephone: (803) 737-1445

INTRODUCTION

The South Carolina Department of Transportation (SCDOT) in partnership with the Lower Savannah Council of Governments (LSCOG) has developed this Advanced Project Planning Report (APPR) for the proposed improvements to the interchange of US 301 with Interstate 95 and the extension of US 301 from I-95 to S.C. 6, south of town of Santee, in Orangeburg County for a total of approximately 1.8 miles. The APPR is a preliminary evaluation conducted within the study area to identify the potential benefits, impacts and areas of concern to the human and natural environment by the proposed roadway improvement project.

PURPOSE AND NEED

Background- US 301 is a US corridor that starts from Georgia State line at Allendale County and ends at North Carolina state line at Dillon County.

The existing interchange of US 301 at I-95 is a three-leg interchange that provides access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently, there are no ramps to access I-95 southbound from northbound US 301, and access US 301 southbound from I-95 northbound (See location map in **Appendix A**).

Project Goal- In Orangeburg County, the need for a full "cloverleaf" interchange at I-95 and US Highway 301, near the Town of Santee, has been identified in the interest of a proposed $250M investment for an inland port intermodal facility. The rapid growth and development in Orangeburg County and aggressive economic development strategies have brought significant industrial development and related infrastructure to the county. The development of an inland port to alleviate rapidly increasing port congestion would complement existing manufacturing facilities in Orangeburg County as well as improve the efficiency of intermodal freight movement in South Carolina.
The Technical Advisory Committee (TAC) unanimously supports the inland port concept and endorsed inclusion of the interchange proposal at I-95 and US 301 in the LRTP.

Current Roadway Deficiencies- Currently the section of US 301 within the proposed improvements is a four-lane divided roadway with a Minor Arterial classification. No deficiencies were noted at the time of field review. See **Appendix B** for pictures within the proposed improvements.

Funding Priority- LSCOG Board of Directors have approved the addition of $3M to the Lower Savannah TIP for preliminary engineering for the extension of US 301 to SC 6.

EXISTING FACILITY

Roadway Descriptions- US 301 is a four-lane divided roadway with earthen shoulders and ditches along the majority of the proposed improvements. The posted speed limit along US 301 within the proposed improvements is 55mph. Interstate 95 within the interchange is a four-lane divided roadway with paved shoulders and ditches along the majority of the proposed improvements. The posted speed limit along I-95 is 70mph within the interchange (See **Appendix A** for location map).

Mass Transit Accommodations- Mass transit providers in the Lower Savannah Council of Governments region currently provide citizens with several transportation related services. Transportation for the elderly and disabled population as well as job access routes are made available in the region through these mass transit providers. Santee Wateree Regional Transportation Authority (SWRTA) has been providing service in Orangeburg County.

Cross Sections- The existing cross section along US 301 within the proposed improvements consists of a four-12ft. lane divided roadway with 36ft. earth median and earth shoulders on each direction, except at the approach of US 301 to I-95 where 10ft. paved shoulders are provided. Along I-95, the cross section within the proposed improvements consists of a four-12ft. lane divided highway with 64ft. earth median and 14ft. bituminous shoulders.

Traffic Data- In the year 2004 the average annual daily traffic volume (AADT) for the proposed improvements was 7,100 vehicles per day along US 301. On I-95 AADT varied from 28,000 vehicles per day at north of US 301to 32,700 vehicles per day at south of US 301. These AADTs represent a level of service A for US 301 and a level of service B for I-95 at the vicinity of the interchange. Based on the traffic model the projected AADT for the year 2030 will be approximately 11,400 vehicles per day on US 301 and 75,500 vehicles per day on I-95 within this interchange. This AADT will result in a level of service A for US 301 and a **level of service E** for I-95.

Crash Data- In the past three years (2003-2005), there were a total of 12 crashes within 0.2 mile of the interchange of I-95 and US 301. These crashes have resulted in 4 injuries and 10 property damage only crashes (see **Appendix E**).

Rights of Way- According to older roadway plans (1965, SCDOT Plan Library), the existing rights of way at the approach of US 301 to I-95 interchange is 100ft. on the right and 100ft. on the left of the centerline for a total of 200ft. Interstate 95's rights of way at its approaches to US 301 interchange varies at each side of the roadway's centerline (see **Appendix E** for drawing showing right a way information).

Pavement Condition- Based on the data provided by the SCDOT's Pavement Management Unit, the Pavement Quality Index (PQI) within the project, along US 301 and I-95, varies between 1.99 and 3.49. This indicates that the existing pavement is between poor and fair condition.

Bridges/Other Structures- the existing US 301 Bridge over I-95 was constructed in 1970 and per Bridge Maintenance Section it is currently in a very good condition. However, the existing bridge may need to be replaced in order to build a full cloverleaf or a diamond interchange. No other structures were noted at time of field review.

Railroads- CSX operates an east-west rail line that runs through Elloree, Santee, and Vance in Orangeburg County. This railroad will affect the extension of US 301 to SC 6. A grade separated crossing or at grade crossing will have to be considered for this improvement (see location map in **Appendix A** for location of the railroad).

CORRIDOR ASSESSMENT OF SOCIAL, ECONOMIC AND ENVIRONMENTAL CONCERNS

Information was collected about the study area utilizing a geographical information system (GIS) platform, aerial photos, and photographic and written data collected from site visits.

SCDOT in partnership with state and federal regulatory and resource agencies have begun sharing GIS databases to improve communication and reduce potential conflicts during the project development process. SCDOT has created four maps using this data in order to identify the existing data on human and natural resources within the study area.

The first map is the Natural map for the study area. This map identifies points or areas of environmental importance. Wetlands, streams, water bodies and threatened or endangered species are the most common elements found on this map.

The second map is the Cultural Resources map for the study area. This map identifies such resources as churches, schools, and hospitals as well as known local landmarks. It also identifies known archaeological sites and parcels of property and districts that are potentially eligible for or have been registered with the National Register of Historic Places.

The third map is the Socioeconomic map. This map identifies areas of social and economic importance. Such as key industries to an area, low income and minority population centers, and established neighborhoods.

The fourth map is the Hazardous Materials map for the study area. This map identifies potentially hazardous material locations and generators of potentially or known hazardous waste. This map may also identify underground storage tank locations and business that may generate infectious wastes.

All four maps described above are located in the **Appendix A** of this report.

On June 15, 2006, a survey of the proposed improvements was conducted by SCDOT employees as well as a representative from Lower Savannah Council of Government. Based on their review, see attached memo in **Appendix E**, the proposed improvements would serve the planned inland port intermodal facility, and should alleviate rapidly increasing port congestion. The outcome of the survey is also summarized below.

Noise – *Due to the close proximity of several residences to the proposed new location roadway, a noise study will be required*

Water/Wetlands – *There are wetlands in the project vicinity. Secure comments from liaisons.*

Archaeological/Historical- *Reconnaissance level-work has been completed in much of the area of the proposed new location roadway. Three sites (38OR256, 38OR257, 38OR258) were identified by Tom Covington and Nicole Southerland in 2003 during investigations for the Town of Santee Industrial Development Project. Site 38OR258 was recommended not eligible for the NRHP by the archaeologists. Intensive testing of sites 38OR256 and 38OR257 was recommended. In 2005, TRC investigated an 87 acre tract in the proposed project vicinity. Shovel tests were excavated around 38OR256, and based on results of shovel-testing, TRC recommended this site not eligible for the NRHP. When a preferred alignment for the project has been established, an intensive cultural resources survey should be done. If 38OR257 is to be impacted by the project, further work needs to be done so that a final determination of eligibility can be made.*

Endangered Species- *According to maps provided by your office, there are no known threatened or endangered populations in the project vicinity. A field survey needs to be conducted to determine if any threatened or endangered species will be affected by the current project.*

Relocations- *There appears to be three potential relocations (2 along Hutch Rd. and 1 near the proposed cloverleaf) with the proposed alignment.*

Farmlands- *The project will be assessed under the provisions of the Farmland Protection Policy Act of 1981.*

USTs/Hazardous Waste- *There may be environmental liabilities (pollution liabilities and/or hazardous wastes/materials) associated with the proposed right of way for the referenced project. A request will be made to Right-of-Way office for sufficient assessment of potential environmental liabilities associated with the proposed right of way for the referenced project to include up to All Appropriate Inquiry (AAI) pursuant to 40 CFR Part 312. This information is needed for inclusion in the environmental document and should be carefully evaluated, together with the results of any necessary Phase II Environmental Site Assessment (subsurface sampling & analysis) prior to right-of-way acquisition.*

Cumulative and Secondary Impacts- *These impacts are defined as those that are reasonably foreseeable later in time as a result of the project. The inland port project and the proposed roadway project may spur additional growth in the area. Cumulative and secondary impacts will need to be discussed in the Environmental Assessment for this project.*

Additional Comments- *There needs to be other alternative analysis for the project. There may be an alternative that would avoid the beaver pond and wetland impacts. In addition, utilizing the existing roads for the extension of US 301 to SC 6 could minimize the number of relocations. It is also possible that relocation of utilities could be avoided by paving existing roads. Any alternatives that are considered but eliminated need to be discussed as well. A public involvement plan, in coordination with the city, should be developed as soon as possible.*

Low-Income Populations- Per LSCOG, the Census 2000 data within the study area (Orangeburg County Census Tract 103, Block Group 3) indicates that this area contains 68 households with median incomes below poverty level and 40 family households with median incomes below poverty level. Additionally, the population of the study area is 65% African-American and 70% non-white (African-American and others).

Please see **Appendix F** for additional comments from Liaison Agencies and LSCOG that are assisting SCDOT on the proposed improvements.

PROPOSED FACILITY

The proposed facility for US 301 extension can consist of either a four lane divided, a five-lane section, or a combination of both cross-sections. The consultant, Alliance Consulting Engineers, has provided conceptual alignment for the extension of US 301 to SC 6 (see **Appendix E**). The consultant has also proposed a full clover interchange for the interchange of US 301 at I-95.

After the site review with the resource agencies, it was determined that the proposed US 301 alignment, shown by the Consultant, may have impacts on the existing creek and a pond that appears to be a shelter for wild life habitat. The overall consensuses among resource agencies were that other alternatives be explored in order to minimize the environmental impacts for the proposed extension of US 301.

In addition, CSX operates an east-west rail line that runs through Elloree, Santee, and Vance in Orangeburg County. This railroad will be affected by the extension of US 301 to SC 6. A grade separated crossing or at grade crossing will have to be considered for this improvement.

Design Criteria- US 301 is classified as a Minor Arterial. Based on this functional classification, widening the US 301 to a four-lane divided facility or a five-lane facility is expected to provide more emphasis on land access than the higher system does and offer lower traffic mobility. Such a facility may carry local bus routes and provide intracommunity continuity but ideally does not penetrate neighborhoods.

Proposed Cross Section- The proposed cross sections can consist of a five-lane curb and gutter section within the Santee town limits and a four-lane divided section near or at the interchange. It is recommended that 14ft. outside shared lanes be provided to accommodate bicyclists where five-lane section is considered. See **Appendix D** for typical cross sections.

Proposed Rights of Way- The proposed rights of way should be sufficient to accommodate the selected cross-section requirements.

However, in order to depict possible rights of way impacts based on a full cloverleaf and or a diamond interchange, possible footprints of rights of way impacts are shown on the aerial photo in **Appendix C** for illustration purposes.

Traffic Data- The year 2030 traffic volume projections, based on the Traffic Model, indicate that the improved segment of US 301 (five-lane section/four lane divided) will operate at a level of service A, and I-95 (four-lane divided) will operate at a **level of service E** within the area of the proposed improvements.

Operational effects and changes to traffic patterns to surrounding area (i.e.: I-95 at SC 6, etc.) due to the construction of the full clover interchange and the extension of US 301 to SC 6 were not considered in this report.

Bicycle and Pedestrian Facilities- a 14ft. shared lane should be incorporated into the design of the project to accommodate bicyclists if a five-lane section within the town limit is selected. Currently there are no existing sidewalks along SC 6 where US 301 may be extended.

PROJECTED PROJECT COST

Preliminary Engineering	**$ 2,000,000**
Rights of Way	**$ 1,000,000**
Construction	**$57,000,000**
Total	**$60,000,000**

PUBLIC INVOLVEMENT / SCOPING

No public involvement has been initiated as of this date.

SUMMARY

The proposed improvements to US 301 and I-95 interchange and the extensionThe rapid growth and development in Orangeburg County and aggressive economic development strategies have brought significant industrial development and related infrastructure to the county. The development of an inland port to alleviate rapidly increasing port congestion would complement existing manufacturing facilities in Orangeburg County as well as improve the efficiency of intermodal freight movement in South Carolina.

A resource impact matrix was developed for the project from all the data collected and analyzed. This color-coded matrix (see **Appendix E**) identifies the likelihood of environmental concerns that could impact the project development process for each identified option.

APPENDIX A

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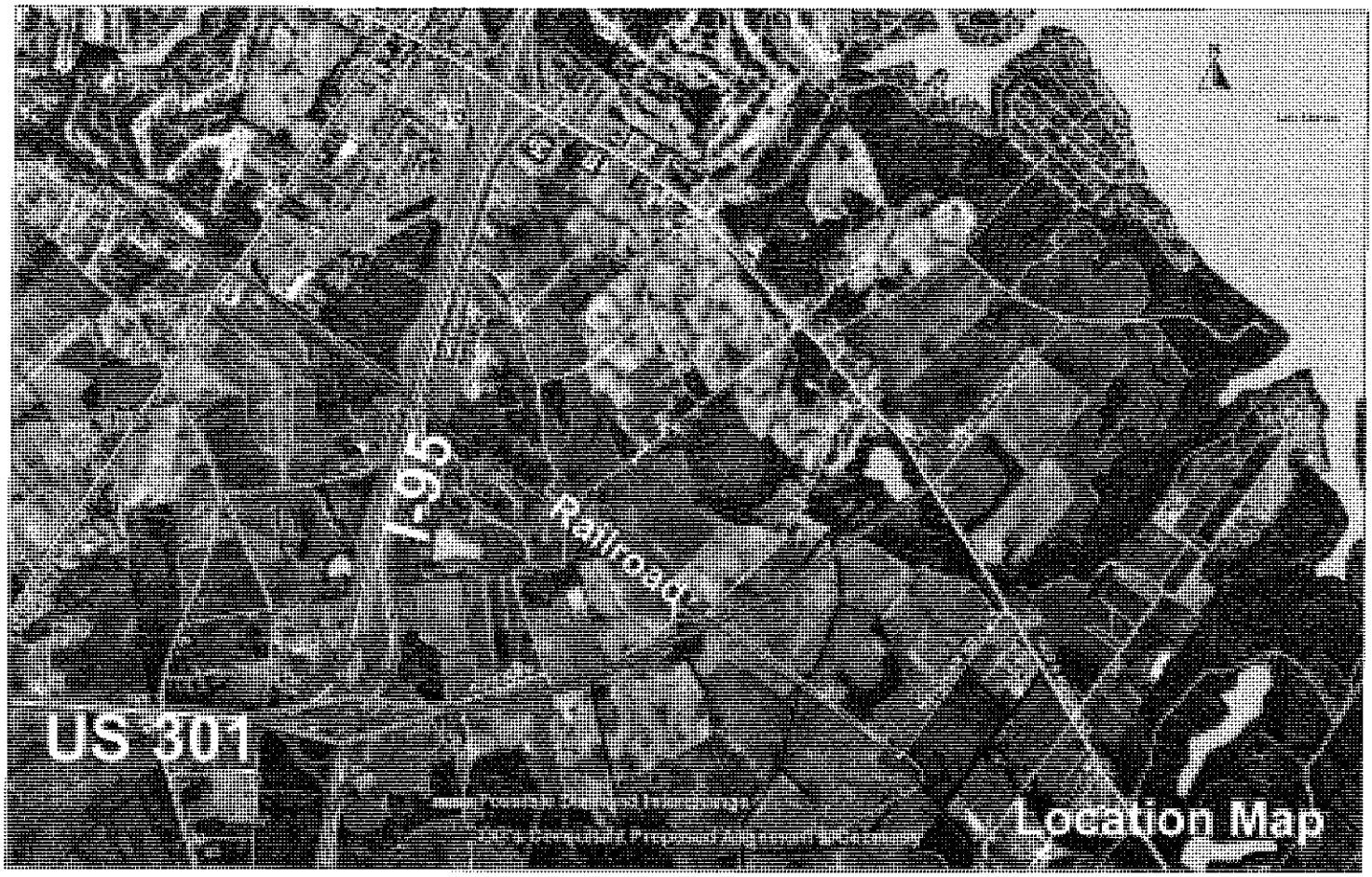
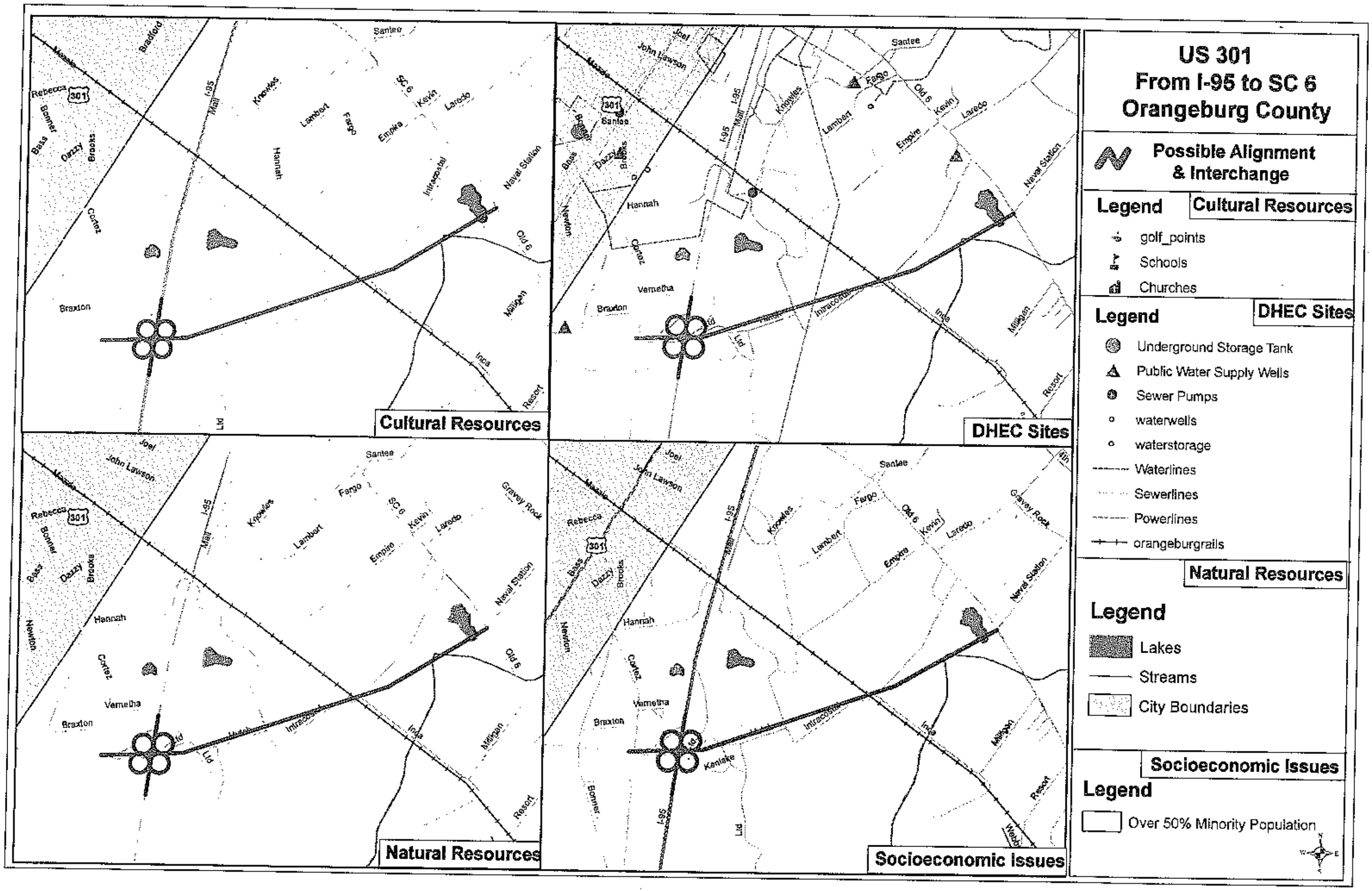

US 301
Railroad
Location Map


US 301
From I-95 to SC 6
Orangeburg County
Possible Alignment & Interchange
Legend
Cultural Resources
golf_points
Schools
Churches
Legend
DHEC Sites
Underground Storage Tank
Public Water Supply Wells
Sewer Pumps
waterwells
waterstorage
Waterlines
Sewerlines
Powerlines
orangeburgrails
Natural Resources
Legend
Lakes
Streams
City Boundaries
Socioeconomic Issues
Legend
Over 50% Minority Population
Cultural Resources
DHEC Sites
Natural Resources
Socioeconomic Issues

APPENDIX B

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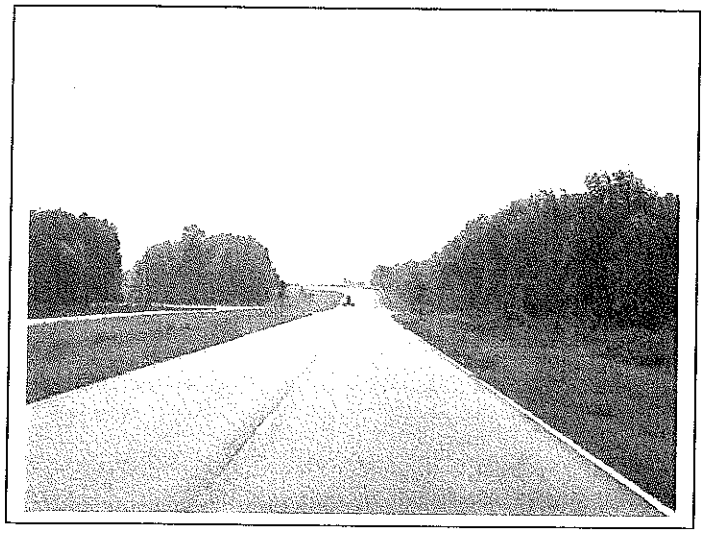
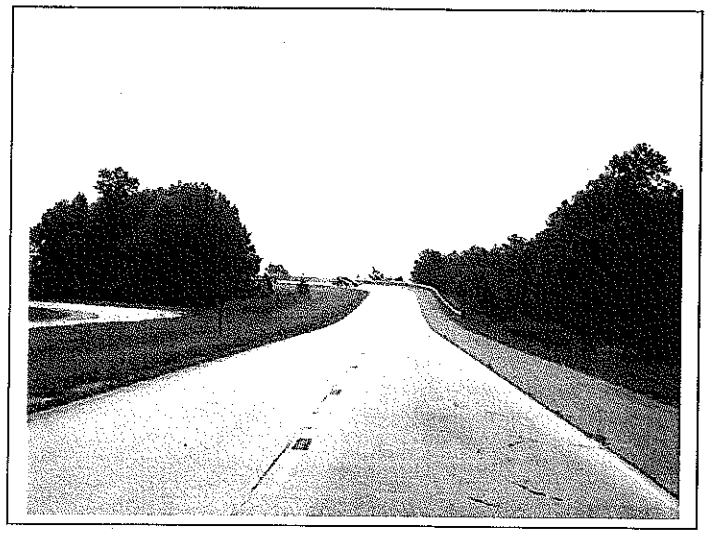
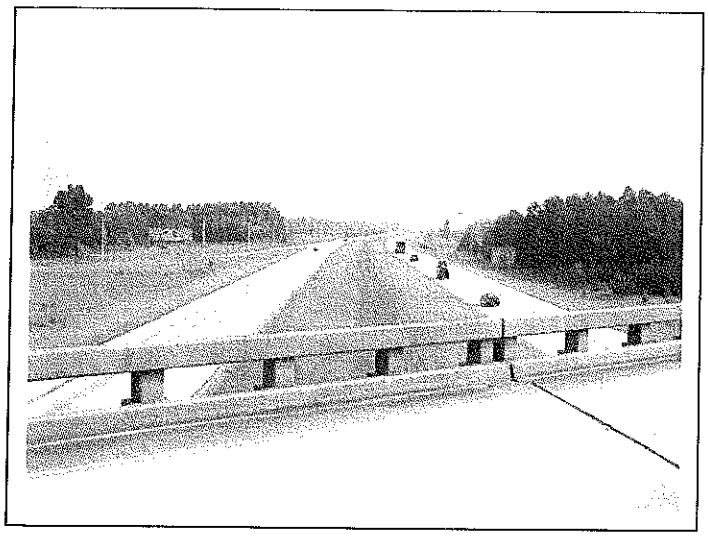


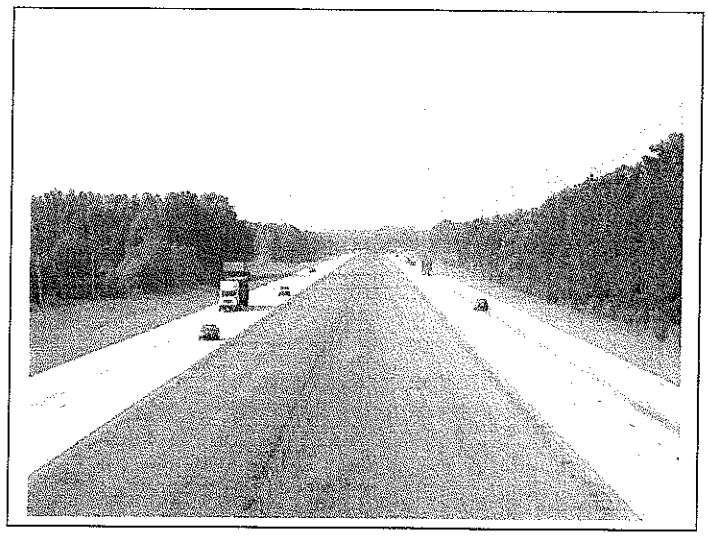
Looking Toward I-95 Interchange From US 301 NB



Looking Toward I-95 Interchange From US 301 NB

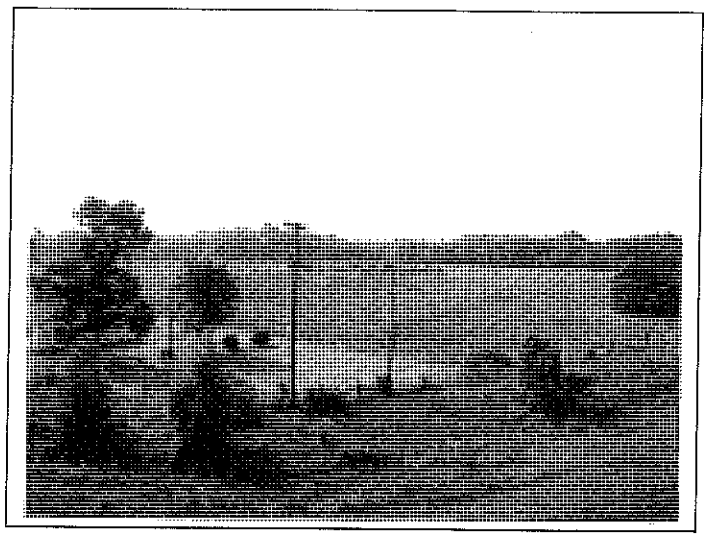


Looking Toward I-95 NB From US 301

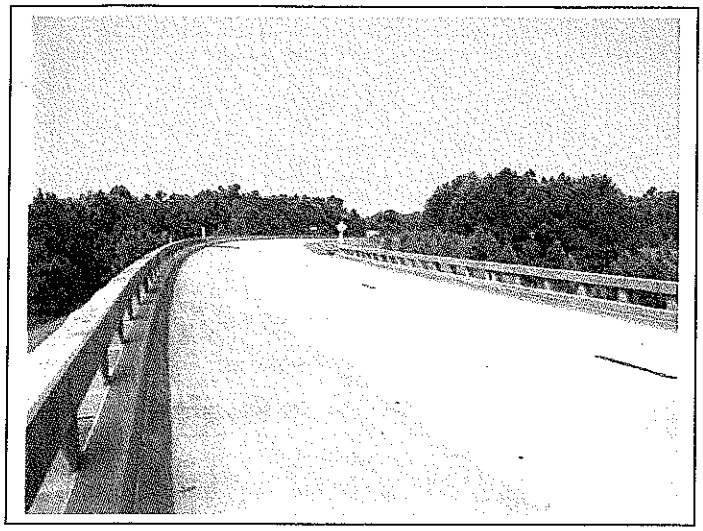


Looking Toward I-95 SB

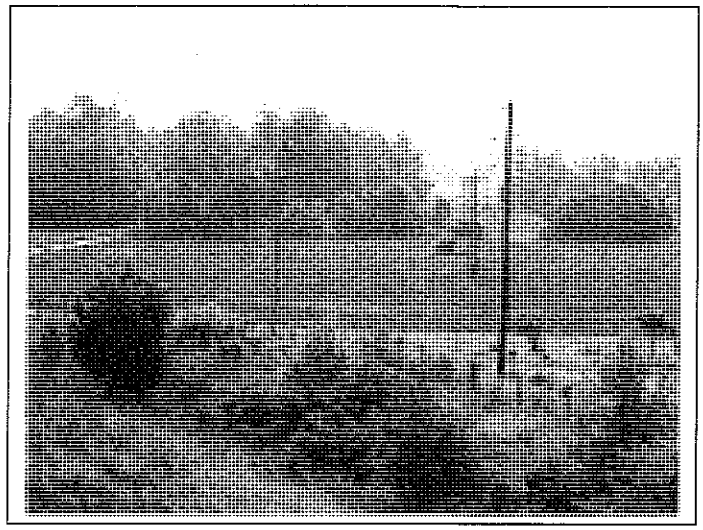
Possible Location of US 301 Extension



Possible Location of US 301 Extension

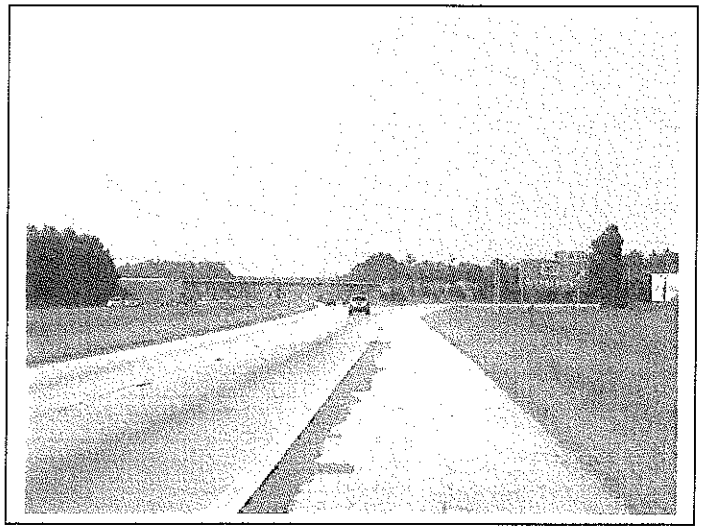


Existing US 301 Bridge Over I-95

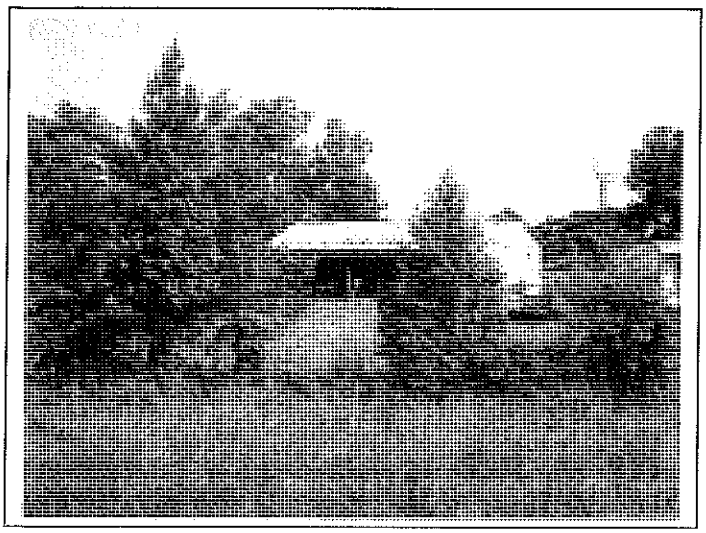


Possible Location Of US 301 Extension

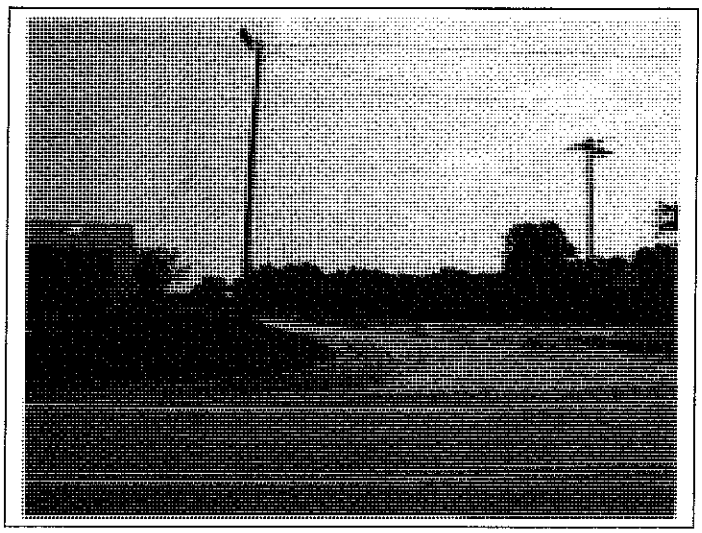
Possible Location Of US 301 Extension



Looking At the Interchange From I-95 SB



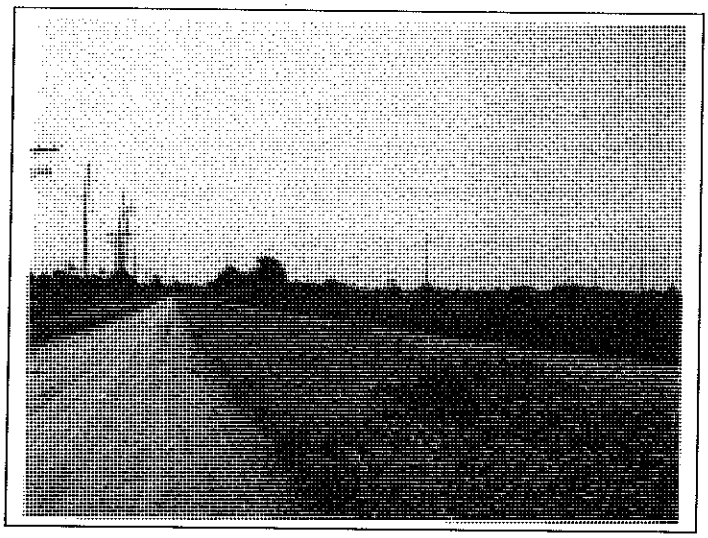
Possible Impacts Due to the Proposed Improvements



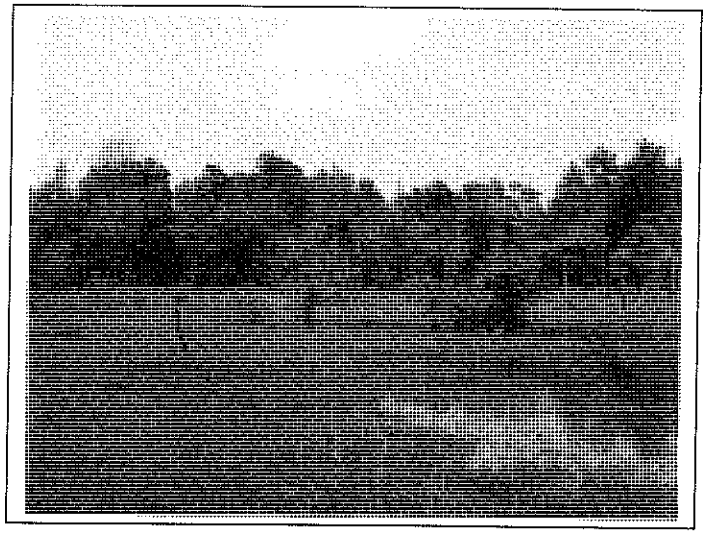
Naval Station Road at SC 6

Pond Along SC 6

Pond Along SC 6

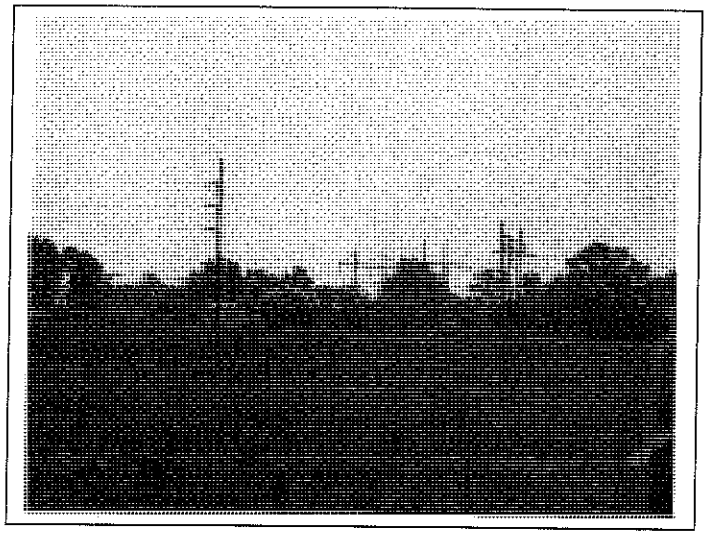


Existing Railroad Tracks Near The Interchange



Pond Along SC 6

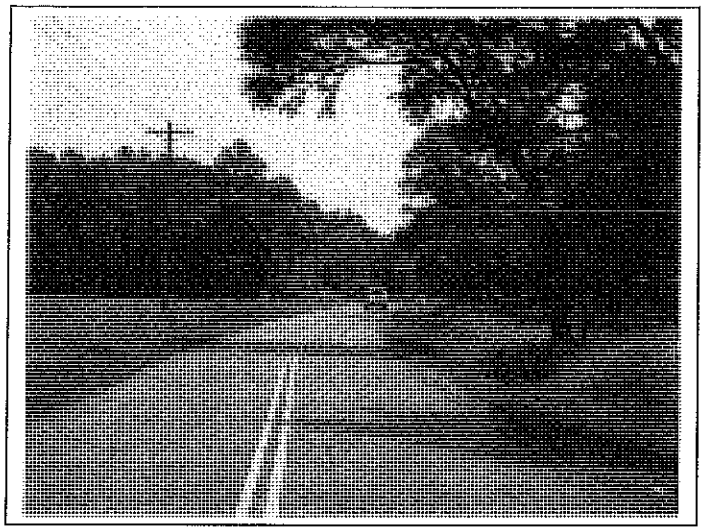
Existing Creek Near Railroad Tracks



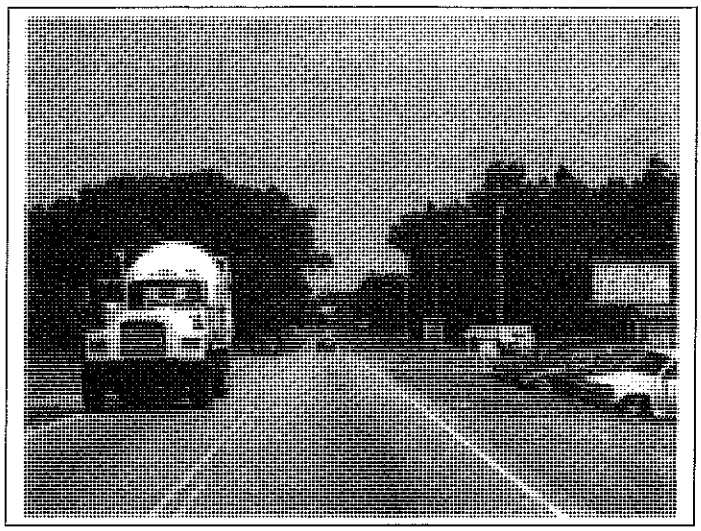
Existing Power Station Near The Interchange

Looking West Toward Interchange of US 301 with I-95

Existing Intracostal Lane Near the Interchange & SC 6



Existing Intracostal Lane Near the Interchange & SC 6



Looking West On SC 6

APPENDIX C

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Possible Interior Design
Possible Interior Design

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APPENDIX D

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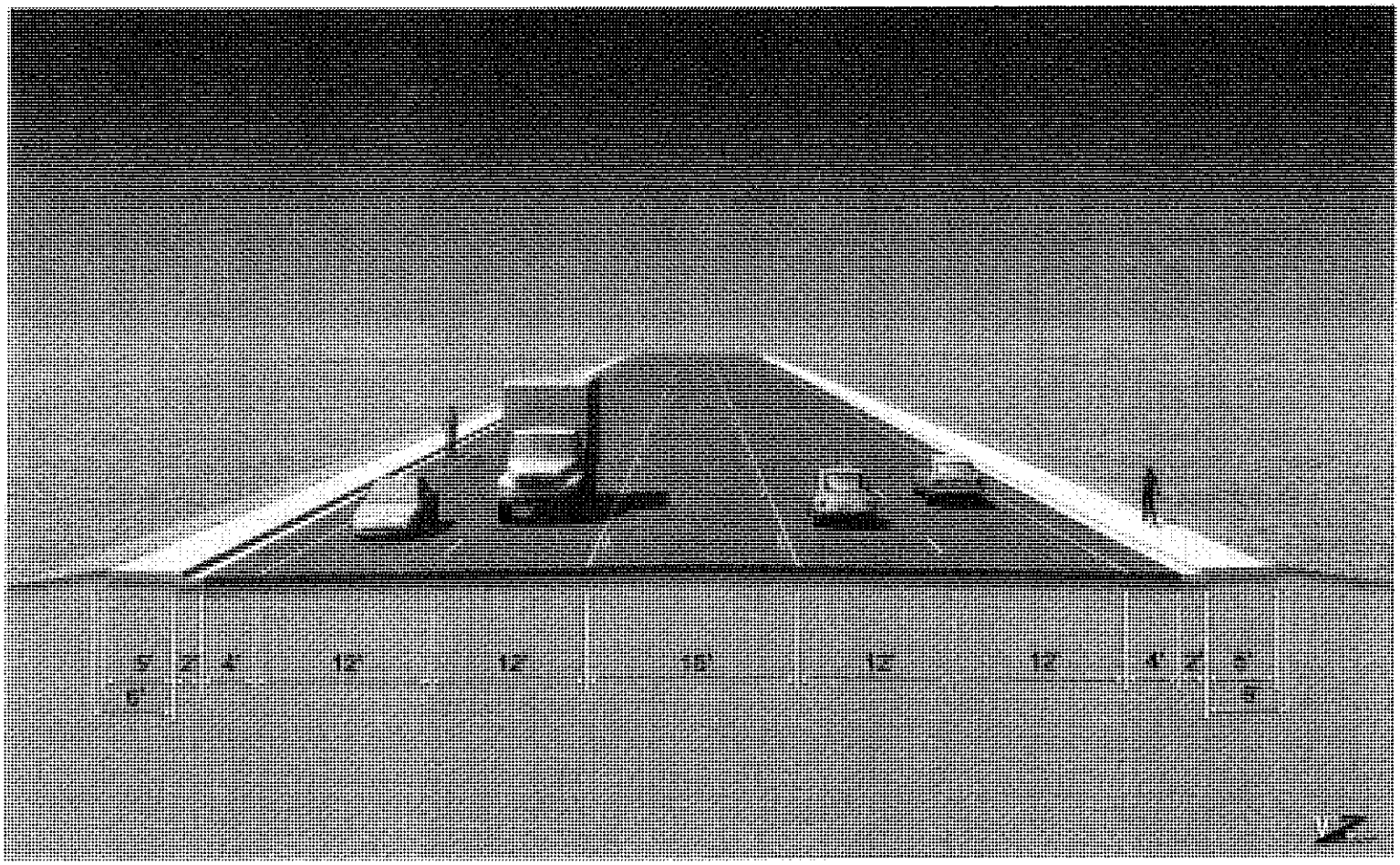

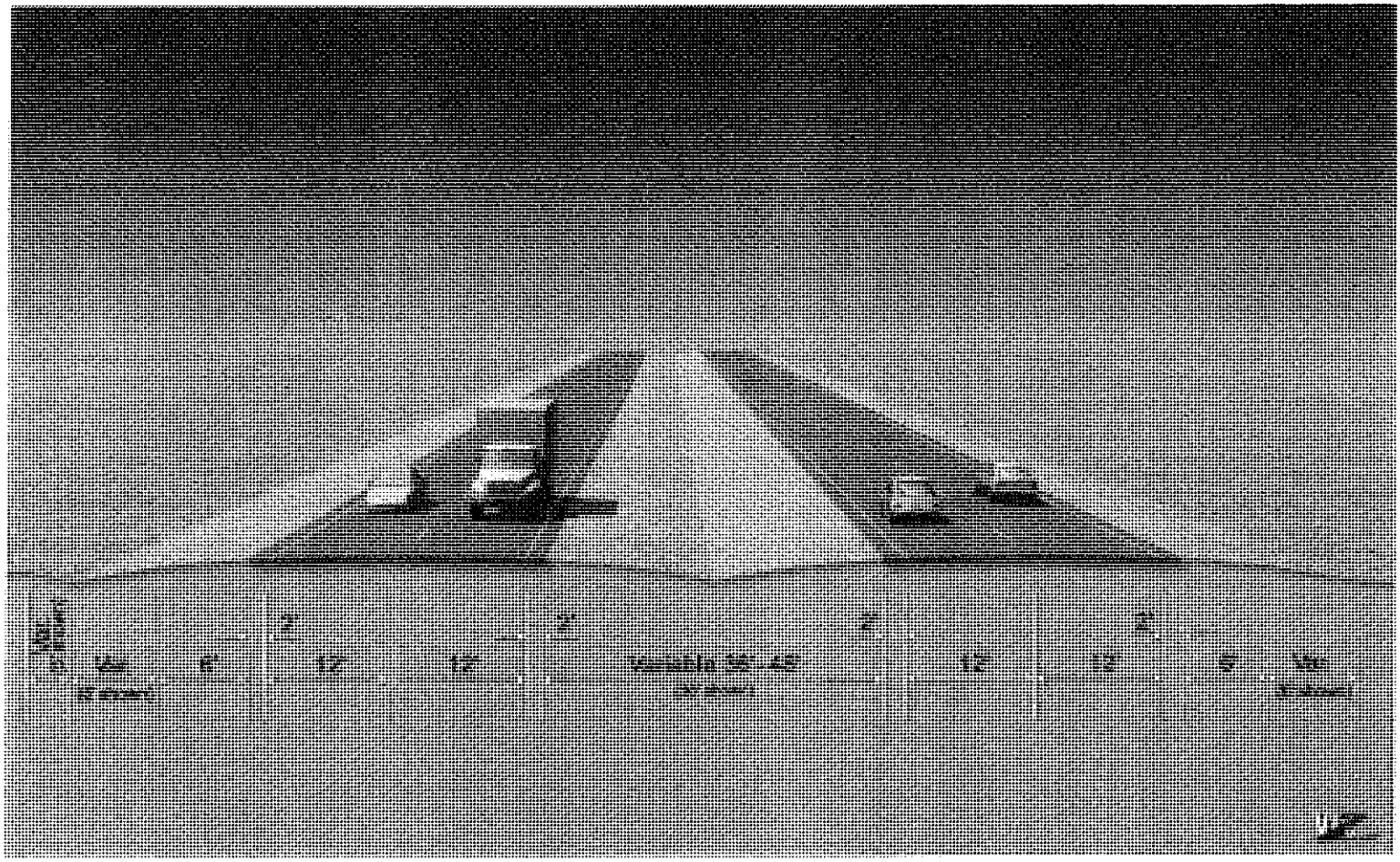

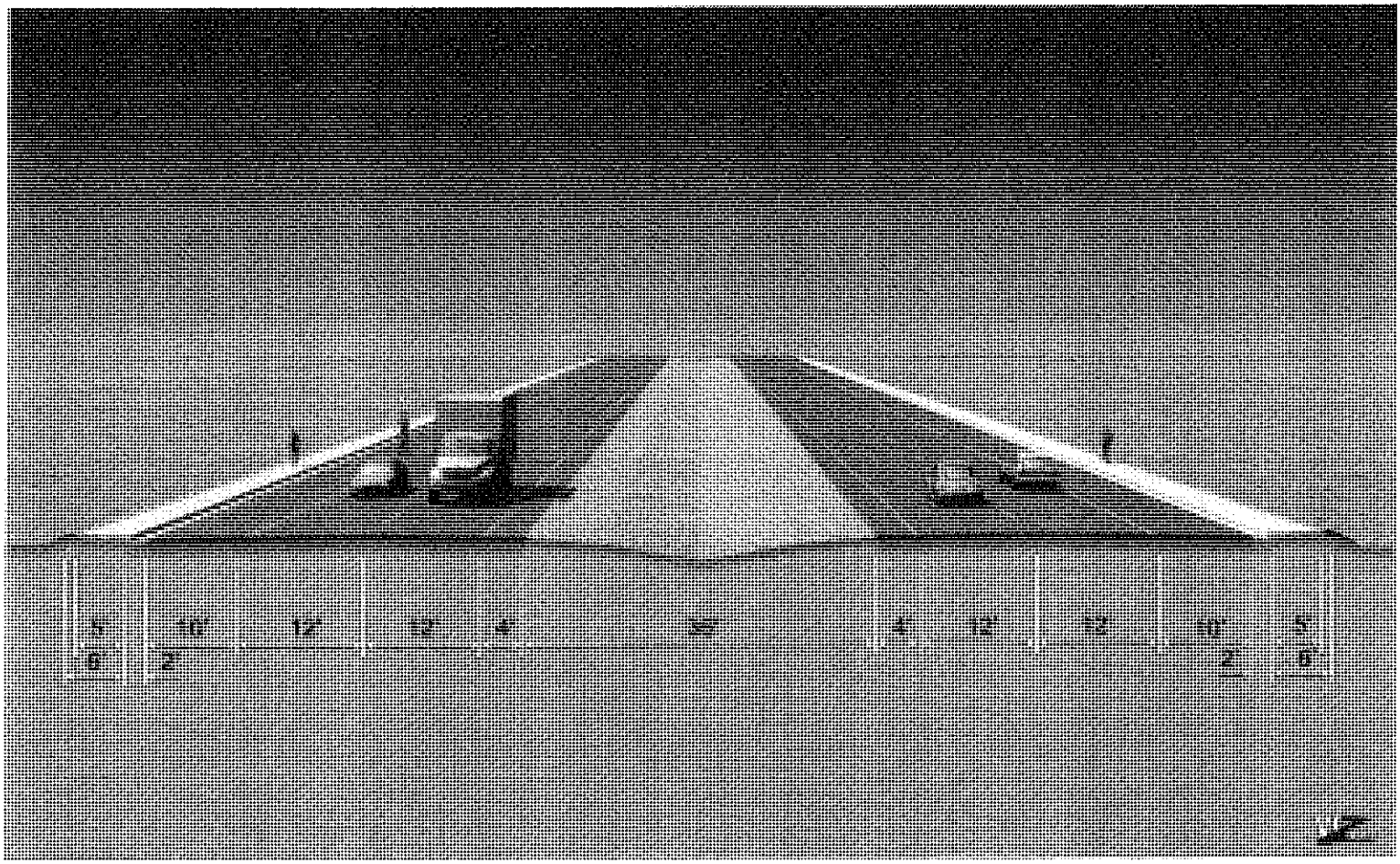

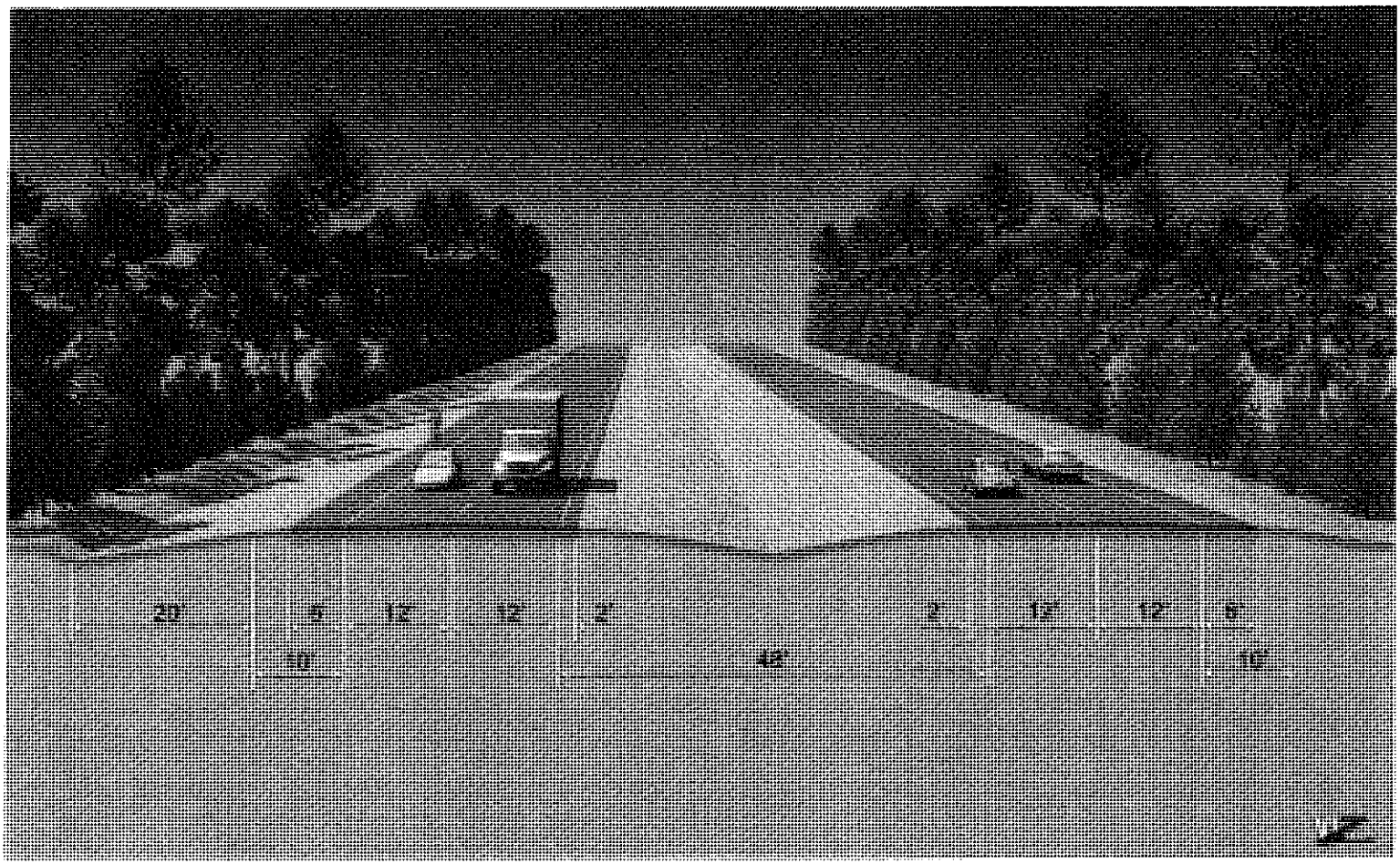
20'
5'
10'
12'
12'
2'
42'
2'
12'
12'
6'
10'

APPENDIX E

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TO: Nick Vakili-Rad, Office of Planning

FROM: Bonnie Frick, Project Coordinator

DATE: June 27, 2006

SUBJECT: Environmental Comments on the Proposed Improvements and New Location at US 301 and I-95 Interchange, Orangeburg County.

On June 15, 2006, we visited the proposed project at the US 301/I-95 interchange in Orangeburg County. The proposed project would include the construction of a full "cloverleaf" interchange and a new location roadway (approximately 1.75 miles) from I-95 to SC 6. These improvements are proposed to serve a planned inland port intermodal facility, which will alleviate rapidly increasing port congestion.

Noise – Due to the close proximity of several residences to the proposed new location roadway, a noise study will be required

Water/Wetlands – There are wetlands in the project vicinity. Secure comments from liaisons.

Archaeological/Historical- Reconnaissance level-work has been completed in much of the area of the proposed new location roadway. Three sites (38OR256, 38OR257, 38OR258) were identified by Tom Covington and Nicole Southerland in 2003 during investigations for the Town of Santee Industrial Development Project. Site 38OR258 was recommended not eligible for the NRHP by the archaeologists. Intensive testing of sites 38OR256 and 38OR257 was recommended. In 2005, TRC investigated an 87 acre tract in the proposed project vicinity. Shovel tests were excavated around 38OR256, and based on results of shovel-testing, TRC recommended this site not eligible for the NRHP. When a preferred alignment for the project has been established, an intensive cultural resources survey should be done. If 38OR257 is to be impacted by the project, further work needs to be done so that a final determination of eligibility can be made.

Endangered Species –According to maps provided by your office, there are no known threatened or endangered populations in the project vicinity. A field survey needs to be conducted to determine if any threatened or endangered species will be affected by the current project.

Relocations – There appear to be three potential relocations (2 along Hutch Rd. and 1 near the proposed cloverleaf) with the proposed alignment.

Farmlands – The project will be assessed under the provisions of the Farmland Protection Policy Act of 1981.

USTs/Hazardous Waste – There may be environmental liabilities (pollution liabilities and/or hazardous wastes/materials) associated with the proposed right of way for the referenced project. A

request will be made to Right-of-Way office for sufficient assessment of potential environmental liabilities associated with the proposed right of way for the referenced project to include up to All Appropriate Inquiry (AAI) pursuant to 40 CFR Part 312. This information is needed for inclusion in the environmental document and should be carefully evaluated, together with the results of any necessary Phase II Environmental Site Assessment (subsurface sampling & analysis) prior to right-of-way acquisition.

Cumulative and Secondary Impacts- These impacts are defined as those that are reasonably foreseeable later in time as a result of the project. The inland port project and the proposed roadway project may spur additional growth in the area. Cumulative and secondary impacts will need to be discussed in the Environmental Assessment for this project.

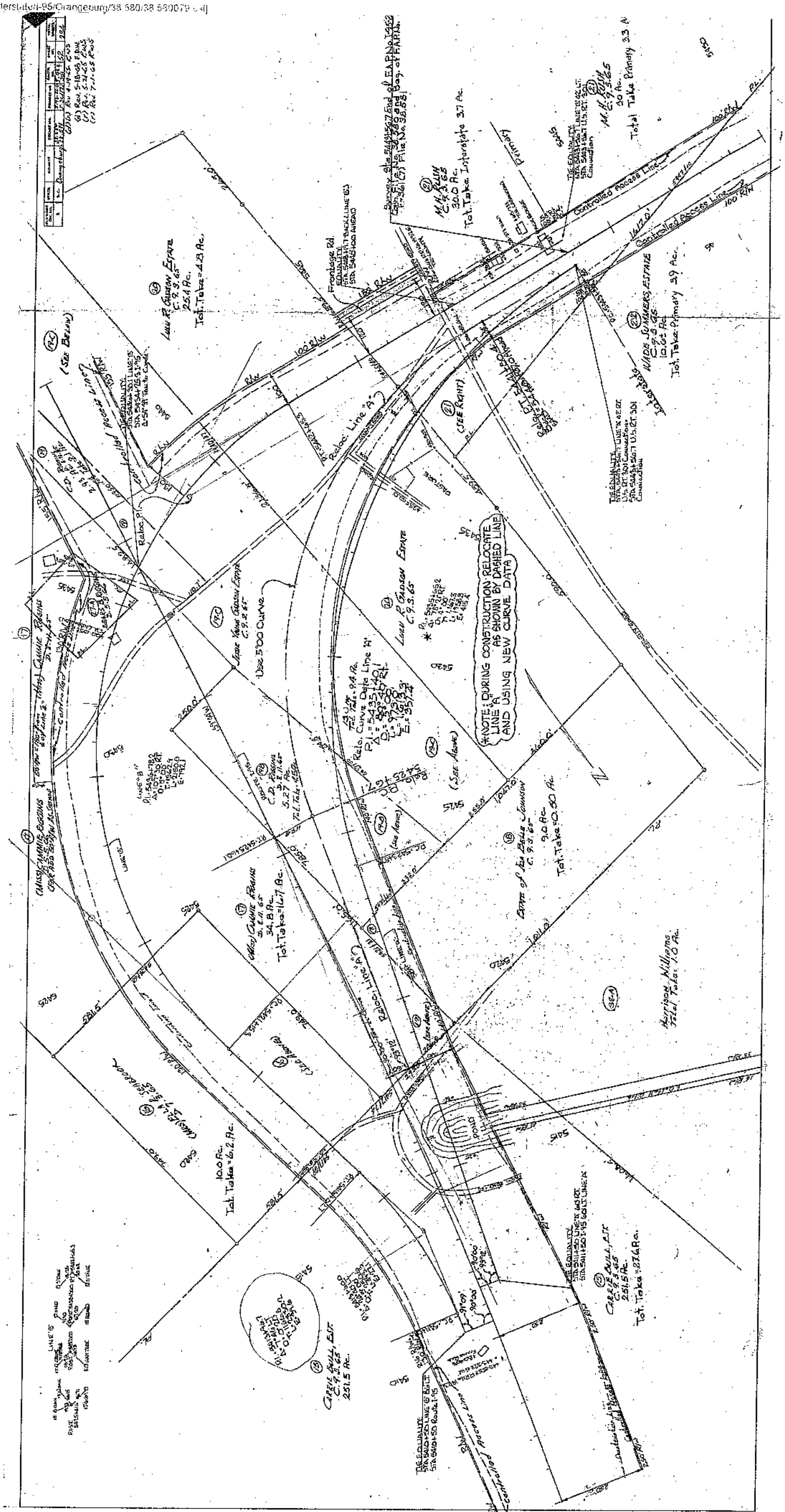
Additional Comments: There needs to be an alternatives analysis for the project. There may be an alternative that would avoid the beaver pond and wetland impacts. In addition, paving of existing dirt roads could minimize the number of relocations. It is also possible that relocation of utilities could be avoided by paving existing roads. Any alternatives that are considered but eliminated need to be discussed as well. A public involvement plan, in coordination with the city, should be developed as soon as possible.

Intersection of US-301 @ I-95 (within 2/10 mile)
2003-2006
Orangeburg County

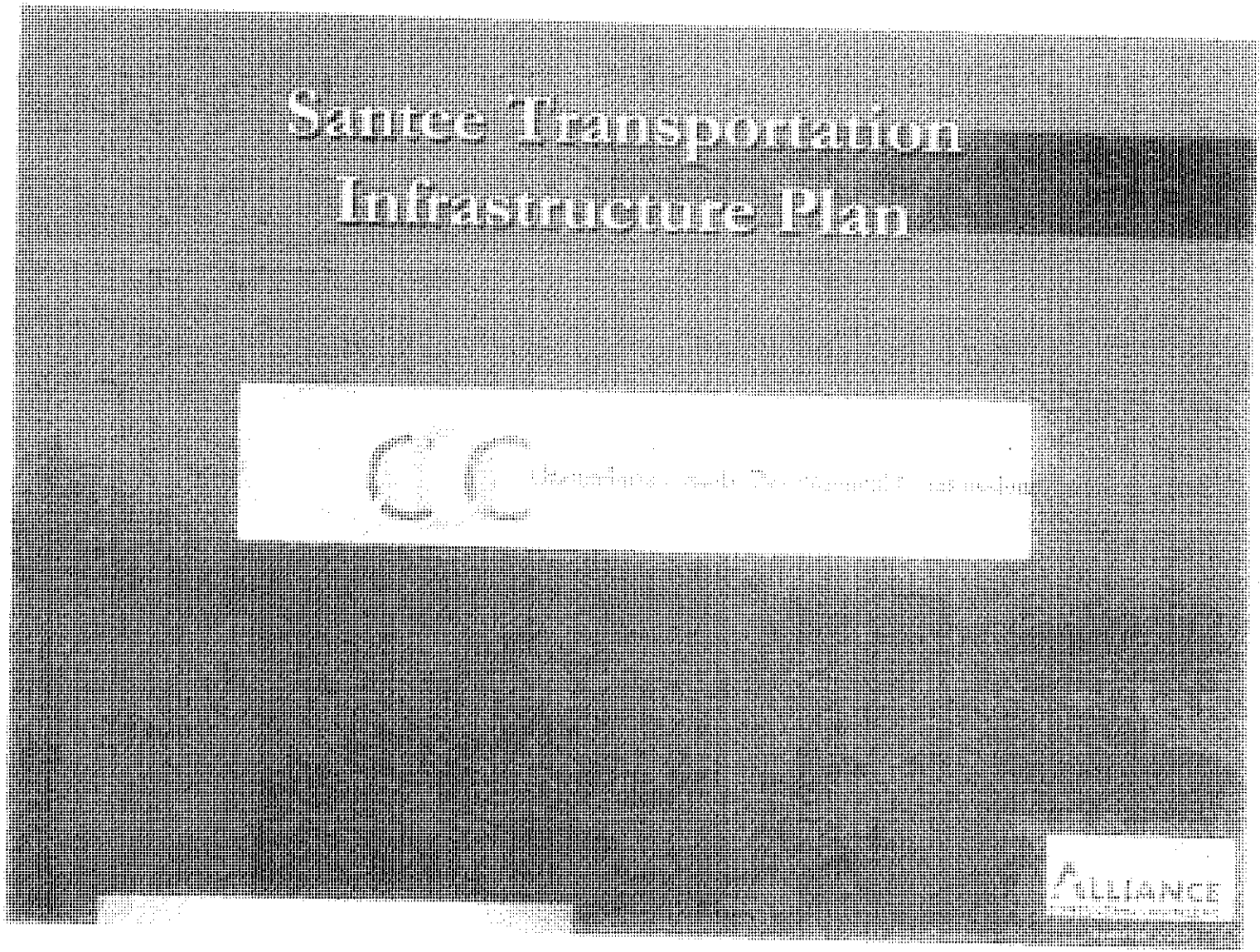
Year	type				
	INJURY	PROPERTY DAMAGE ONLY	TOTAL	PERSONS KILLED	PERSONS INJURED
2003	1	1	2	0	3
2004	1	3	4	0	1
2005	0	6	6	0	0
2006	0	1	1	0	0
TOTAL	2	11	13	0	4

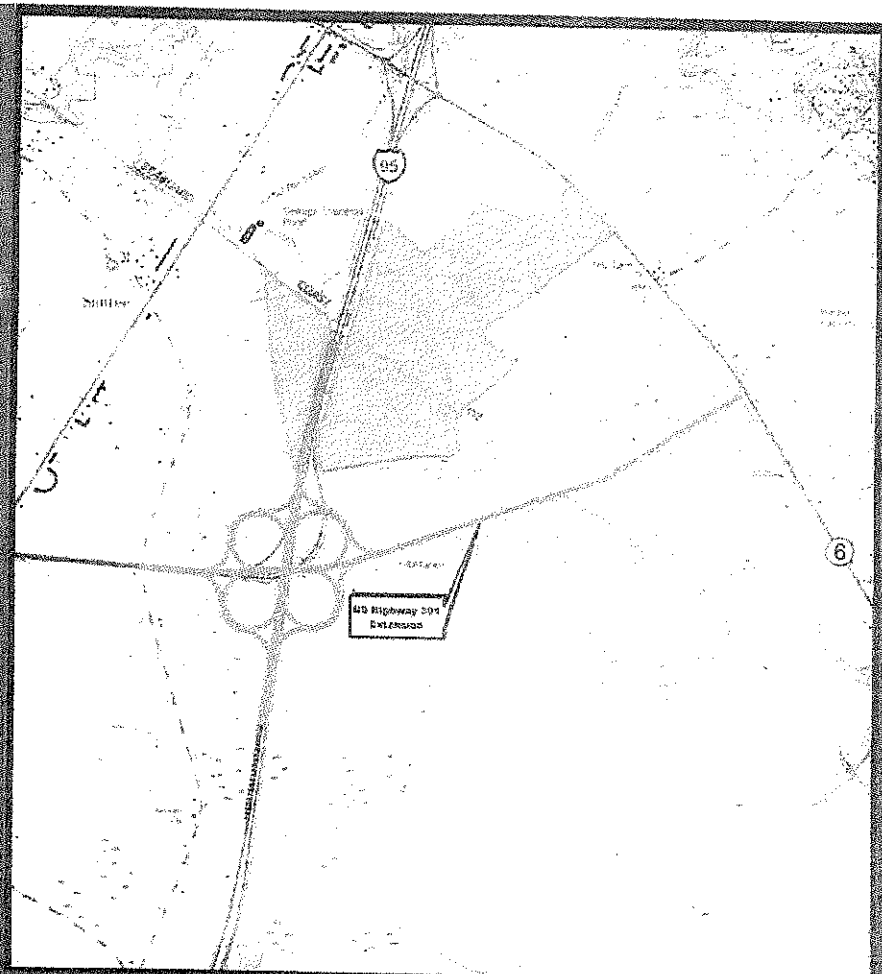
Intersection of US-301 @ I-95 (within 2/10 mile)
2003-2006
Orangeburg County

Manner of Collision	TYPE		TOTAL	PERSONS KILLED	PERSONS INJURED
	INJURY	PROPERTY DAMAGE ONLY			
NOT COLLISION W/MVT	1	7	8	0	3
REAR END	1	1	2	0	1
ANGLE	0	1	1	0	0
SIDESWIPE-SAME DIRECTION	0	2	2	0	0
TOTAL	2	11	13	0	4


NOTE: DURING CONSTRUCTION RELOCATE LINE "A" AS SHOWN BY DASHED LINE AND USING NEW CURVE DATA
Controlled Access Line
Use 500' Curve
Reloc. Line "A"
Frontage Rd.
Lulu P. Gadson Estate
Carrie Bull, Est.
Harrison Williams
Wade Summers Estate

Sance Transportation Infrastructure Plan





ALLIANCE
CONSULTING ENGINEERS

November 2006

Proposed US 301 Improvements Resource Impact Matrix	
Resource / Area of Concern	**Impact Potential**
Wetlands	**Possible**
Water Bodies (streams, ponds, etc)	**Possible**
Threatened & Endangered Species	**Possible**
Potential Historic Sites	**Possible**
Other Potential Cultural Resources	**Possible**
Environmental Justice	**Possible**
Residential Displacements	**Certain**
Business Displacements	**Possible**
Hazardous Material Sites	**Possible**
Railroad Tracks	**Certain**

Key:

Possible (yellow): This resource is or may exist near the proposed option and impacts may occur, be minimized, or avoided dependent upon the preferred alignment selected.

Likely (orange): This resource has been identified near or within the area of the proposed option and impacts are more likely to occur even with avoidance and minimization considerations incorporated within the preferred alignment selected.

Certain (red): This resource has been identified within the area of the proposed option and impacts will occur to the resource if this is the preferred alignment selected.

APPENDIX C

I-95/US 301 Interchange Project and US 301 Extension Project

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South Carolina
Department of Transportation

MEMORANDUM

To: Heather Robbins, NEPA Division Manager

From: Kevin Gantt, Midlands Program Manager

Date: July 25, 2012

RE: Cost Estimate for Alternate 3a
I-95 Interchange Improvements and US 301 and Extension
Orangeburg County

The South Carolina Department of Transportation has developed a total of five alternates for the extension of US 301 connecting to SC 6. With respect to Alternate 3a, which was considered to reduce the stream impacts of Alternate 3, no increase in the estimated construction cost should be considered due to the minimal shifts in alignment and the negligible change in length. For comparison of the alternatives, Alternate 3a will also include construction of a new bridge over the CSX Railroad.

KLG:pcm
File: PC/KLG

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2311
TTY: (803) 737-3870

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I-95/US 301 Interchange Project and US 301 Extension Project
Orangeburg County

12-12-07

Report Documentation-

This report has been summarized and exerted from various sources including, but not limited to, SCDOT 2003 Highway Design Manual, the Advanced Project Planning Report for the Improvements to Interchange of US 301 at I-95 and US 301 Extension to SC 6, and traffic data from SCDOT and Wilbur Smith and Associates. The information presented in this text is intended to be used as a planning tool and will need more definitive evaluation and research time to adequately provide substantial qualitative and quantitative information to be used in the ultimate design determination.

Project Purpose and Need-

In Orangeburg County, the need for a full interchange at I-95 and US Highway 301, near the Town of Santee, has been identified in the interest of a proposed $250M investment for an inland port intermodal facility. According to the Lower Savannah COG, the rapid growth and development in Orangeburg County and aggressive economic development strategies have brought significant industrial development and related infrastructure to the county. The development of an inland port to alleviate rapidly increasing port congestion would complement existing manufacturing facilities in Orangeburg County as well as improve the efficiency of intermodal freight movement in South Carolina. Lower Savannah COG's Technical Advisory Committee (TAC) unanimously supports the inland port concept and endorsed inclusion of the interchange proposal at I-95 and US 301 in the LRTP.

History/Background-

- Lower Savannah COG had identified the extension of US 301 from I-95 to SC 6 as a priority in its TIP. $3 Million has been identified in fiscal years of '07, '08 and '09 ($1 M each year).
- May, 2006- A letter from Executive Director Mabry to Comm. Truluck committed an additional $3 Million ($1 Million per year for the next three years) provided:
    - Full funding for the completion of the project is identified
    - Any earmarks obtained required no SCDOT matching funds
    - Orangeburg County honors a $2 M commitment
- July, 2006- An APPR was produced for the I-95/US 301 Interchange Upgrade Project (full cloverleaf interchange) and the US 301 Extension Project. An estimated $60 Million was projected for the combined projects.
    - PE- $2 M
    - R/W- $1 M
    - Const- $ 57 M
    - Total- $ 60 M
- A placeholder entry on Lower Savannah COG's STIP page under "Non-Guideshare Projects" was inserted based on a request to identify the project as a priority in the region. No funding was identified.

Status-

- Lower Savannah COG is amending its TIP to reduce '07 obligation from $1M to $500K to fund safety project in Aiken County. $1 M set to obligate in '09 will increase to $1.5 M to offset '07 change.
- Lower Savannah COG has "verbally" put extension project on hold to determine the extent of the developer's commitments in association with the project.

Assumptions comparable with all alternatives

Baseline-

- US 301 terminates at I-95 approximately 1.5 miles south of SC 6 at I-95. Currently only a northbound on-ramp and a southbound off ramp exist.
- US 301 is a four-lane divided roadway with earthen shoulders and ditches along the majority of the proposed improvements. The posted speed limit is 55mph.
- Interstate 95 within the interchange is a four-lane divided roadway with paved shoulders and ditches along the majority of the proposed improvements. The posted speed limit is 70mph.

Environmental Documentation-

- Environmental Assessment (EA) is estimated for any of the designs
- Environmental justice concerns based on historical data but early studies reveals "no families below the poverty level threshold" within the study area.
- One structure possibly eligible for historic registry
- Small pockets of wetlands exists

Mainline Capacity-

I-95 – Four-lane Divided–	**2006**	**31,000 ADT- LOS B**
	2030	**75,000 ADT- LOS E**
301 – Five-lane ditch section-	**2006**	**4500 ADT - LOS A**
	2030	**11,400 ADT – LOS A**

Extension of US 301 to SC 6

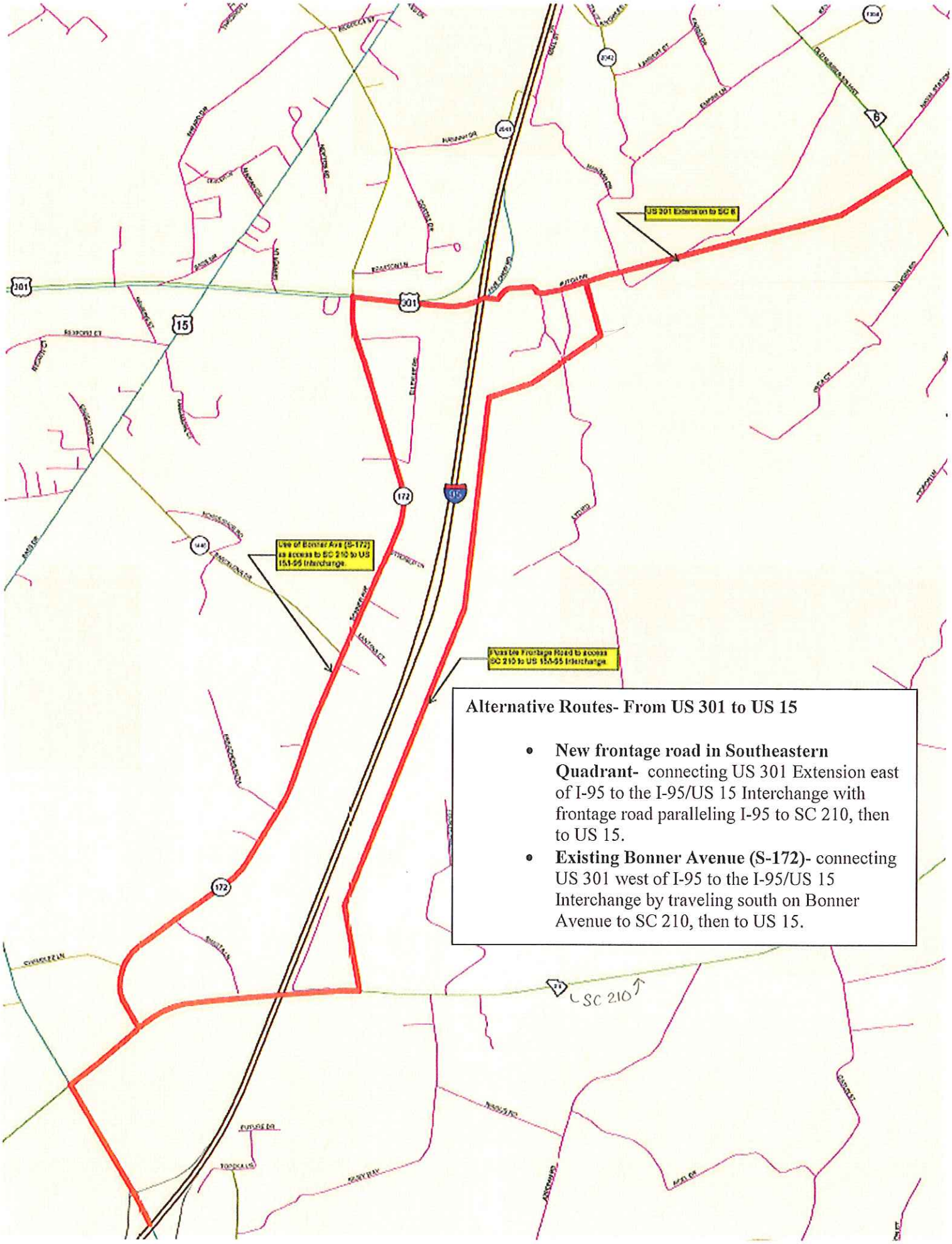
- **Extension of US 301 to SC 6**
  - At lease five-lane wide bridge over I-95
  - Five-lane Ditch Section from I-95 to SC 6
  - Bridge over CSX Railroad
  - Limited access with predetermined driveways and roadways
  - Pavement width to accommodated bike/ped accommodations

Access/Frontage Roads

- **Frontage Roads-** possible frontage roads identified in eastern quadrants of interchange.
  - Northeastern frontage road designed to accommodate dislocated properties due to county road relocation.
  - Southeastern frontage designed to accommodate dislocated properties and provide alternative route to I-95/US 15 Interchange via SC 210. (See Alternative Route Figure)

Phasing

- **Early consultation with FHWA reveals possible phasing of construction contingent on interchange modification report (IMR) and environmental documentation completed for ultimate design.**
  - **Phase I-** Construct bridge over I-95 and extension project to SC 6. Disconnect US 301 northbound on-ramp to I-95.
  - **Phase II-** Interim Diamond Interchange based on accommodation of expected traffic and availability of funding. All movements would be provided.
  - **Phase III-** Construction of Ultimate interchange based on approved IMR and environmental documentation.



Alternative Routes- From US 301 to US 15

- **New frontage road in Southeastern Quadrant-** connecting US 301 Extension east of I-95 to the I-95/US 15 Interchange with frontage road paralleling I-95 to SC 210, then to US 15.
- **Existing Bonner Avenue (S-172)-** connecting US 301 west of I-95 to the I-95/US 15 Interchange by traveling south on Bonner Avenue to SC 210, then to US 15.

- **CSX Transportation (CSXT)**- Norfolk Southern (NS) owns a mainline track in Dorchester County, South Carolina situated immediately adjacent to the south of, and running parallel to US 78. It enters the county west of St. George and continues eastward past Ridgeville. South of the unincorporated area of Pragnall, also in Dorchester County, another track owned by NS begins by perpendicularly intersecting the aforementioned track and extending northward towards Orangeburg County. This section of track services several industries including the Giant Cement Plant. Research indicates that the NS track is presently leased to CSX Transportation (CSXT) it is identified as the "AKE Line from Pregnall to Creston."

- **Norfolk Southern**- to service proposed area would require construction of a new section of track extending from west in Orangeburg County or from the south in Dorchester County. The precise location of any new track constructed would be solely determined by NS. Such construction would; however, consist of installing many miles of new track, intersecting numerous primary roads, traversing Interstates I-26 and I-95, and crossing many secondary routes and an undetermined number of county roads. Standard Right-of-Way practices of Norfolk Southern are to obtain 200 ft of Right-of-Way extending 100 ft left of and 100 ft right of the centerline of the track. In some instances, such as bridge construction over water, additional Right-of-Way may be required. In industrial areas, NS may accept a minimum of 25 ft of Right-of-Way.

- **R/R Coordination-**
  - CSX and Norfolk Southern using one line- "While this condition may exist on a few lines, sharing a common track would be at the discretion of the two railroads."
  - Critical design issues involved with creating new Norfolk Southern line across I-95.
  - I-95 Bridges over CSX line and S-2041 may be wide enough to allow multiple lines. Right of way for railroad is 50 ft. S- 2041 (old haul road) road bed maybe wide enough at 50 ft to accommodated additional line.
  - Four-span twin bridges were built in 1970 with sufficiency rating of 83.6

Interchange Design/Alternatives

Capacity (Traffic Volume) Considerations

SCDOT 2003 Highway Design Manual, Section 16.2.10.3

"Interchange type selections, in part, is based upon providing the capacity and level of service that is consistent with the type of highway (major vs. minor) and the anticipated traffic movement between the two facilities. In the hierarchy of interchanges, diamonds provide the lowest in traffic capacity followed in ascending order by partial cloverleafs, cloverleafs, semi-directionals and directionals. C-D roads can be utilized with all of these interchanges types as may be necessary to enhance traffic flow and safety and reduce weaving problems. They are particularly effective in urban freeway design where spacing between interchanges is less than desired minimum."

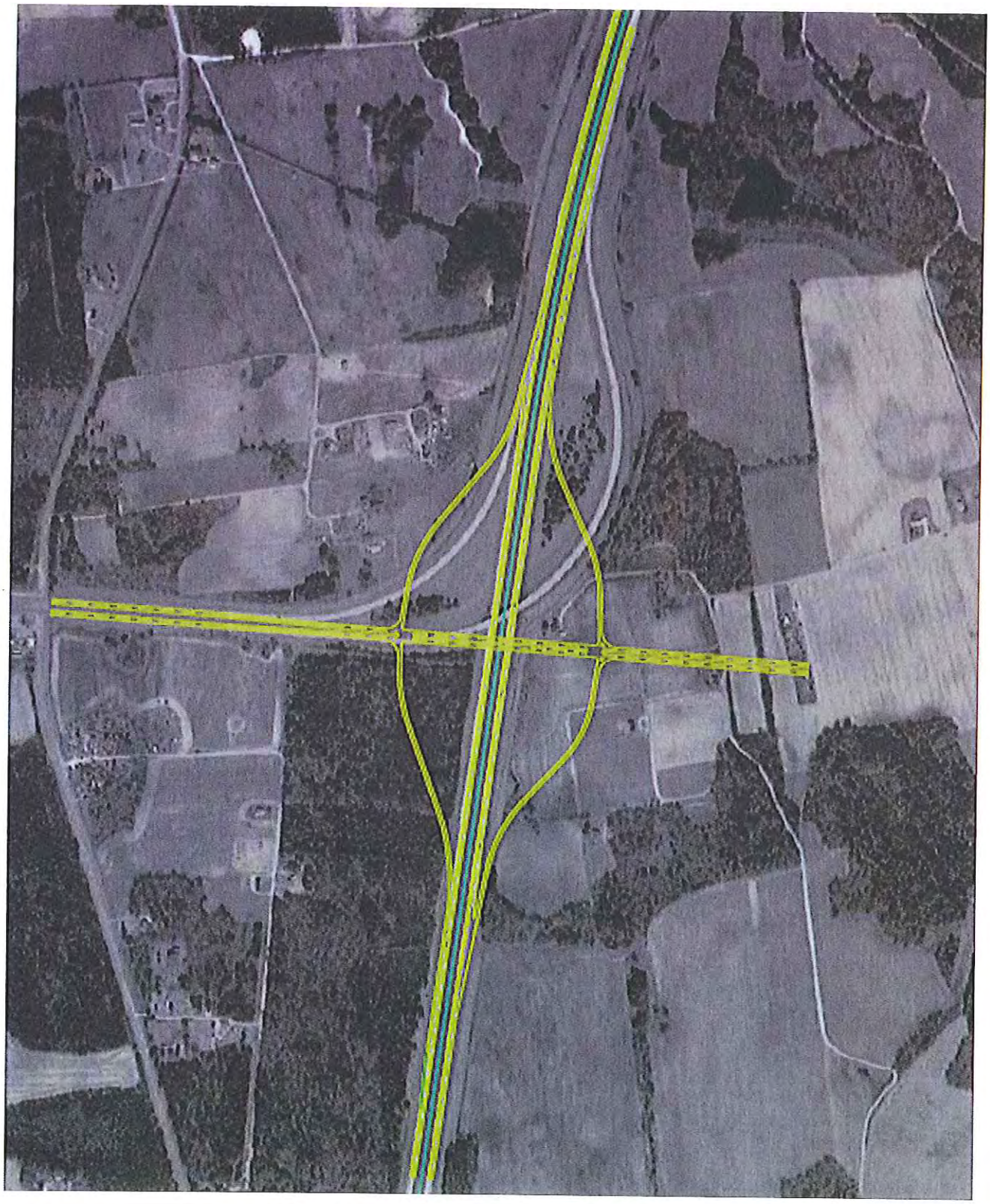
Interchange Location	Type of Intersecting Facility	Total Interchange Volume	Recommended Interchange Type (Preliminary)
Rural	Freeway	Light (≤ 15,000 ADT)	Cloverleaf
		Moderate (15,000 to 25,000 ADT)	Cloverleaf with C-D roads to semi-directional
		Heavy (> 25,000 ADT)	Semi-directional to full directional
	Major Highway	Light (≤ 15,000 ADT)	Diamond
		Moderate (15,000 to 25,000 ADT)	Partial Cloverleaf, Cloverleaf
		Heavy (> 25,000 ADT)	Cloverleaf with C-D roads to semi-directional
	Local Road	Light (≤ 15,000 ADT)	Diamond
		Moderate (10,000 to 20,000 ADT)	Cloverleaf
		Heavy (N/A)	N/A

As this chart may be used in making preliminary determinations on interchanges, it should only be a starting point, and a detailed individual analysis must be used to make final determinations.

T Rd - $5 mill.
301 Evt. $7.1 mill. ($1.2 mill for bridge over R.R.)

Alternative 1- Diamond Interchange

- **Scope- Diamond Interchange at I-95 and US 301**
- **Traffic- LOS C @ ADT < 15,000**
- **Estimate Total- $42.4 Million** (includes access road & extension)



Alternative 2- ParClo A Interchange

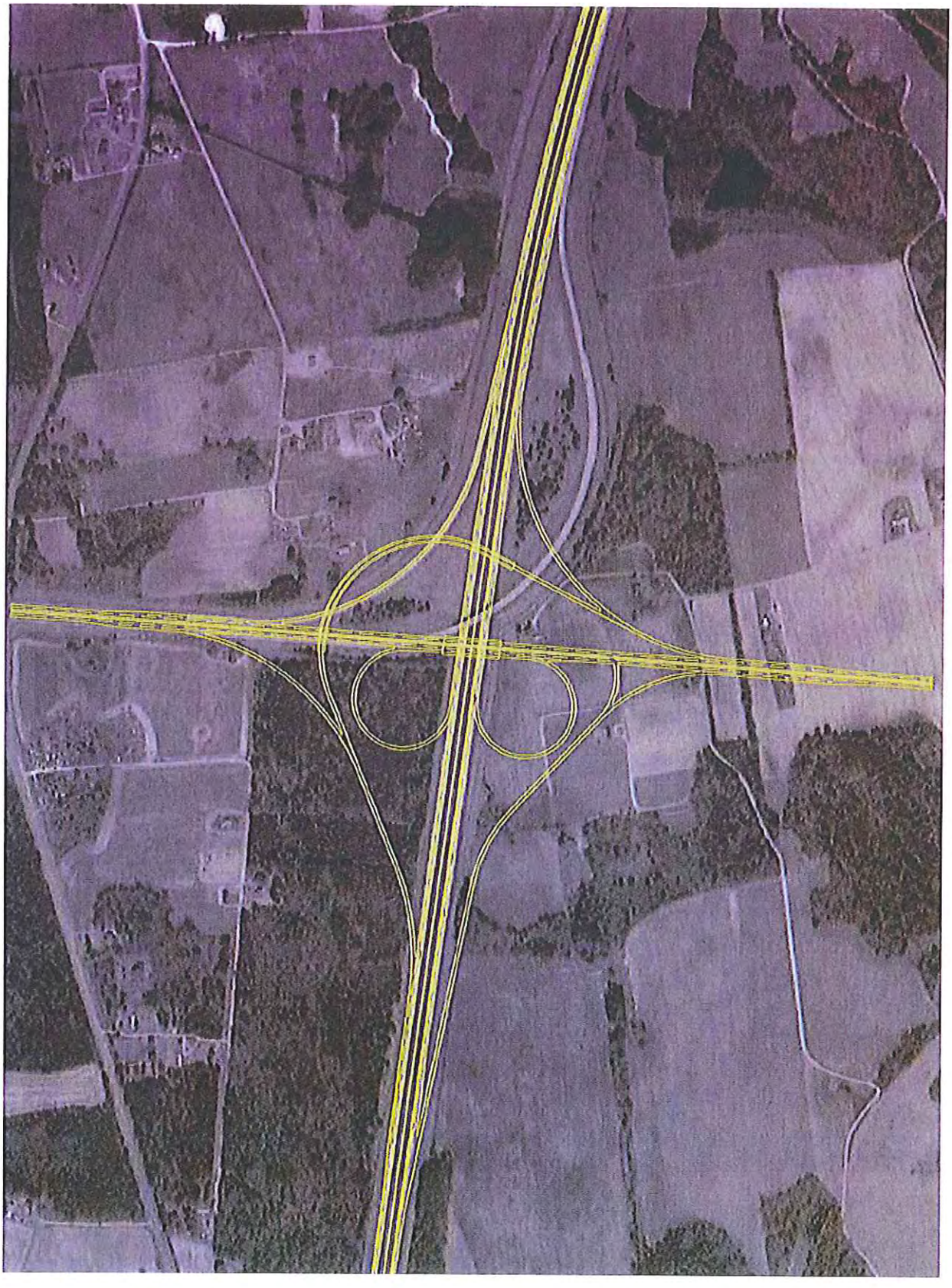
- **Scope- Partial Cloverleaf Advance (ParClo A) at I-95 and US 301**
- **Traffic - LOS C @ 15,000 < ADT < 25,000**
- **Estimate Total- $48.2 Million**

Alternative 3- ParClo A with a Directional On-ramp

- **Scope- Partial Cloverleaf Advance (ParClo A) with Directional Flyover at I-95 and US 301**
- **Traffic – LOS C @ ADT > 25,000**
- **Estimate Total- $56.2 Million**

Alternative 4- ParClo AB with a Direction On-ramp

- **Scope- Partial Cloverleaf Advance/Beyond (ParClo A/B) with Directional Flyover at I-95 and US 301**
- **Traffic - LOS C @ ADT > 25,000**
- **Estimate Total- $62 Million**



I-95/US 301 Interchange and US 301 Extension Project

Diamond Interchange Example

Design Bid Build Method

		Year 1 F	Year 1 M	Year 1 A	Year 1 N	Year 2 F	Year 2 M	Year 2 A	Year 2 N	Year 3 F	Year 3 M	Year 3 A	Year 3 N	Year 4 F	Year 4 M	Year 4 A	Year 4 N	Year 5 F	Year 5 M
	Preliminary Engineering	0.5	0.5	0.5	0.5	1	1												
	Right of Way Acquisition							1	1	3.8	3.8								
	Construction Phase											3.8	3.8	1.7	3.4	3.4	1.7	1.7	1.7
Total in Millons	Cash Flow																		
$42.38		0	0	0	0	1	1	1	1	4	4	4	4	4	4	4	4	4	4
		0.45	0.9	1.35	1.8	2.75	3.7	4.65	5.6	9.35	13.1	16.76	20.42	24.08	27.74	31.4	35.06	38.72	42.38
Yearly Totals			$1.80					$3.80				$14.82				$14.64			$7.32

Design-Build Method

		Year 1 F	Year 1 M	Year 1 A	Year 1 N	Year 2 F	Year 2 M	Year 2 A	Year 2 N	Year 3 F	Year 3 M	Year 3 A	Year 3 N	Year 4 F	Year 4 M	Year 4 A	Year 4 N	Year 5 F
	Preliminary Engineering	0.5	0.5	0.5	0.5	0.5	1.3											
	Right of Way Acquisition																	
	Construction Phase						4.2	4.2	4.2	4.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Total in Millons	Cash Flow																	
$46.35		0.53	0.53	0.53	0.53	0.53	5.5	4.2	4.2	4.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
		0.53	1.06	1.59	2.12	2.65	8.15	12.35	16.55	20.75	23.95	27.15	30.35	33.55	36.75	39.95	43.15	46.35
Yearly Totals			$2.12					$14.43				$13.80				$12.80		

$4 Million more include for Design-Build Method.

I-95/US 301 Interchange Alternative Matrix

12/12/2007

Interchange Design	Escalating Factor	LOS @ ADT	I-95 Northbound Movement		I-95 Southbound Movement		US 301 Easterly towards Jafza Property		US 301 Westerly towards Orangeburg		I-95 Conflict Points	Continuous or Free Flow Movements	$ Costs	Environmental Document	R/W Impacts
			US 301 Westerly	US 301 Easterly	US 301 Westerly	US 301 Easterly	I-95 Northbound	I-95 Southbound	I-95 Northbound	I-95 Southbound					
Alternative 1 Diamond Interchange	Upgrade Partial Interchange to Full Interchange	C @ < 15,000	Left Turn	Free Flow Right	Free Flow Right	Left Turn	Left Turn	Free Flow Right	Free Flow Right	Left Turn	4	4 of 8	$42.4 M	EA	8 Possilbe Relocations
Alternative 2 Partial Cloverleaf A	Provide Continuous Flow from Jafza Property to I-95	double lefts and signal installations on US 301 at ramps may enhance capacity C @ 15,000 to 25,000	Left Turn	Free Flow Right	Free Flow Right	Left Turn	Loop Ramp-Free Flow	Free Flow Right	Free Flow Right	Loop Ramp-Free Flow	6	6 of 8	FR $5.2M, Ext. $7.6 M $48.2 M	EA	8 Possilbe Relocations
Alternative 3 Partial Cloverleaf A with Directional Ramp	Accommodate heavy movement from to I-95 Southbound	Continuous movement on US 301 C @ > 25,000	Left Turn	Free Flow Right	Free Flow Right	Left Turn	Loop Ramp-Free Flow	Free Flow Right	Free Flow Right	Free Flow Right to directional flyover merging with I-95 Southbound On-ramp	5	6 of 8	FR $5.2M, Ext. $7.6 M $56.2 M	EA	8 Possilbe Relocations
Alternative 4 Partial Cloverleaf AB with Directional Ramp	Provide Continuous Flow to and from Jafza Property on US 301 and I-95	reduced conflict points accommodate heavier truck movement C @ > 25,000	Left Turn	Free Flow Right	Free Flow Right	Loop Ramp-Free Flow	Loop Ramp-Free Flow	Free Flow Right	Free Flow Right	Free Flow Right to directional flyover merging with I-95 Southbound On-ramp	6	7 of 8	FR $5.2M, Ext. $7.6 M $62 M	EA	10 Possible Relocations
		Increases free flow movements											FR $5.2M, Ext. $7.6 M		

APPENDIX D

SCDOT Interchange Modification Report for I-95 at US 301 in Orangeburg County

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South Carolina
Department of Transportation

MEMORANDUM

To: Heather Robbins, NEPA Division Manager

From: Douglas Giovanetti, Traffic Engineering DG

Date: July 25, 2012

RE: Interchange Modification Report Analysis
I-95 Interchange Improvements and US 301 and Extension
Orangeburg County

In reference to Alternative 3A in the Environmental Assessment (EA), the change in alignment of the extension road does not affect the IMR Analysis. Since the interchange alternatives and intersection with SC 6 remain the same, the IMR report is unchanged.

KLG:pcm
File: PC/KLG

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2311
TTY: (803) 737-3870

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March 2012

South Carolina Department of Transportation

TRAFFIC ENGINEERING

PREPARED BY TRAFFIC DESIGN GROUP

INTERCHANGE MODIFICATION REPORT FOR I-95 @ US 301 IN ORANGEBURG COUNTY

INTRODUCTION AND DESCRIPTION

The purpose of the Interchange Modification Report (IMR) is to evaluate the current geometric and operating conditions and to justify the modifications to the current I-95 and US 301 interchange in Orangeburg County. The approach to this task is to evaluate the existing operating conditions and the future operating conditions with improvements.

US 301 is a north/south, four-lane divided minor arterial that converges with I-95, a four-lane facility, just south of the town of Santee and Lake Marion. The route diverges back from the interstate after crossing the lake. A project location map can be found in the Appendix. The point where US 301 and I-95 converge is in the form of a Partial Interchange with travel lanes on US 301 transitioning into directional entrance and exit ramps for I-95. The current interchange layout provides only partial access to and from the north. Access from northbound US 301 to southbound I-95 and from northbound I-95 to southbound US 301 are not possible with the current interchange (see attached Drawing #1). Currently, the only signalized intersection along US 301 at the vicinity of this interchange is at US 15, approximately 1 mile west of I-95.

The interchange has experienced some moderate growth due to Orangeburg County's aggressive economic development strategies and industrial recruitments and with its use as a connector between I-26 and I-95. A new interchange design is needed to provide full access to I-95 and to adequately handle the increased traffic volumes from these industrial recruitments, particularly the proposed Global Logistics Triangle (GLT) Jafza South Carolina Logistics and Distribution Park (simply called Jafza Development in this report).

Approximately 1.5 miles north of US 301, the SC 6 interchange currently provides full access to I-95 and is the main entrance into the town of Santee and the south side of Lake Marion. This interchange handles the bulk of local and tourist traffic and contains numerous commercial developments on both sides of I-95. The proposed Jafza Development is expected to generate a considerable amount of traffic that will greatly impact the SC 6 interchange under existing conditions. Modifications to the US 301 interchange will provide full access for all traffic and a main access point for Jafza.

Two Build Alternatives were considered as modifications to the US 301 interchange with both alternatives providing full-access to I-95 and an extension of US 301 to Route SC 6. Alternative 1 consists of a Diamond interchange layout with a 5-lane section on US 301 throughout the interchange area. Both northbound and southbound exit ramps are stop controlled with free-flow right turns onto US 301 (see attached Drawing #2). Alternative 2 consists of a Partial Cloverleaf A interchange layout with a 5-lane section on US 301 throughout the interchange area and deceleration lanes for the loop entrance ramps. The loop ramps eliminate the need for left turn lanes on the bridge to access the northbound and southbound entrance ramps. The exit ramps are stop controlled with free-flow right turns onto US 301 (see attached Drawing #3). In both alternatives, driveways for the Jafza Development are located east of I-95 on the new US 301 Extension.

DATA COLLECTION

Traffic counts were conducted at the following locations.

- US 301 at US 15
- US 301 at Bonner Ave (S-172)
- SC 6 at US 15
- SC 6 at I-95 South Ramps
- SC 6 at I-95 North Ramps
- SC 6 at Laredo Rd (S-1394)
- US 15 at I-95 South Ramps
- US 15 at I-95 North Ramps

The traffic counts were conducted in October 2010 in order to obtain the AM and PM peak hour turning movement volumes. The freeway traffic data for I-95 was obtained from Traffic Engineering's Traffic Count Section for the year 2009 and 2010. This traffic data was collected from an existing count station located on I-95 just north of US 301 and south of Lake Marion.

Projected trips generated from the Jafza Development were obtained from the "Design Traffic Technical Report of the Global Logistics Triangle (GLT) Jafza South Carolina Logistics and Distribution Park" prepared by HDR in December of 2008. Peak hour trips were gathered from three tables in the Technical Report and combined with the background traffic.

ANALYSIS

The analysis was conducted for two Build Alternatives as well as the No-Build Alternative for the US 301 interchange. Due to its close proximity, the SC 6 interchange is included in the analysis to observe impacts from the US 301 interchange modification and the Jafza Development. The US 15 interchange, four miles south of US 301, is not included because it has little to no impact on study area.

The following analyses were performed:

- Freeway analysis using Highway Capacity Software version 5.2 (HCS+)
- Ramp analysis using Highway Capacity Software version 5.2 (HCS+)
- Intersection level of service analysis using the HCM Procedure on SYNCHRO version 7
- Visual observation of the existing layout and future designs using animation software (SimTraffic version 7)

For the freeway and ramp analysis, the 100th highest hourly volume on I-95 was used as the design hour traffic volume on the freeway. While the 30th-highest hour is often assumed as the design hour for rural highways, it was observed that this value occurred during a holiday period (Saturday after New Year's Day). Using this holiday period for the design hour volume is deemed unreasonable and will likely result in excessive design, therefore, further analysis of the count data was performed. The existing methodology specifies a range of the 30th to 100th highest hour for an appropriate design hour for rural highways (HCM 2000, p. 8-8). Further study of the count data revealed that the 100th highest hour results in a K-factor of 0.106, a suitable value to determine design hour traffic volumes and slightly higher than the 0.10 default for rural highways. The I-95 volume data can be found in the Appendix. The 100th highest hour methodology has been justified and used in other rural segments of I-95, including the I-73 interchange project.

The highest intersection turning movements occurred during the PM peak hour, and those volumes are used as background volumes in the analysis. For Build Alternatives 1 and 2, background volumes were re-routed from the existing interchange layout to the modified US 301 interchange using engineering judgment.

Peak hour trips from the Jafza Development were obtained from tables in the Technical Report mentioned above and combined with the background volumes. For the No-Build Alternative (existing interchange layout), peak hour trips were pulled from *Table 3 – 2030 No-Build Alternative Roadway Segment Operating Conditions*. For Build Alternatives 1 and 2, peak hour trips were pulled from *Table 5 – 2030 Build Alternative Roadway Segment Operating Conditions*. Table 7 provided Jafza trip volumes in phases which were added to background volumes in the concurrent or subsequent year of analysis. These tables can be found in the Appendix.

The combined volumes were used to analyze each alternative for years 2015, 2020, 2025, 2030, and 2035. The SC 6 interchange was included in the analysis due to its close proximity

and to observe the impacts it will incur from the Jafza Development and US 301 modifications. The US 15 interchange approximately 4 miles south of US 301 will see little to no impact from this project and is therefore not included in the analysis. Volume diagrams with 2035 total peak hour volumes (including Jafza trips) for each alternative can be found in the Appendix.

The following analyses were conducted for each alternative:

No-Build Alternative (Existing Interchange Layout)

- Freeway analysis for two lanes south and two lanes north of the US 301 interchange and two lanes north of the SC 6 interchange in each direction on I-95.
- Ramp analysis for the exit and entrance ramps of the SC 6 interchange and the exit and entrance ramps of the partial US 301 interchange with I-95.
- Intersection analysis on SC 6 for the I-95 exit/entrance ramp intersections and the intersections at the vicinity of the SC 6 and US 301 interchanges.

Build Alternative 1 (Diamond Interchange Layout)

- Freeway analysis for two lanes south and two lanes north of the US 301 interchange and two lanes north of the SC 6 interchange in each direction on I-95.
- Ramp analysis for northbound and southbound exit and entrance ramps at the US 301 and SC 6 interchanges in each direction on I-95.
- Intersection analysis on US 301 and SC 6 for the I-95 exit/entrance ramp intersections and the intersections at the vicinity of the interchanges.

Build Alternative 2 (Parclo A Interchange Layout)

- Freeway analysis for two lanes south and two lanes north of the US 301 interchange in each direction on I-95.
- Ramp analysis for north and southbound exit and entrance ramps at US 301 in each direction on I-95.
- Intersection levels of service on US 301 for the I-95 exit/entrance ramp intersections and the intersections at the vicinity of the interchange.

ASSUMPTIONS

In performing the analysis of the existing and proposed interchanges, several assumptions were made as follows:

- For I-95, the 100th highest hourly volume was used as the peak hour volume for the analysis.
- The background traffic volumes are comprised of 25% heavy vehicles on I-95 and 10% on US 301 and SC 6.
- A 3% annualized growth rate was applied to traffic volumes along US 301 and a 2% annualized growth rate was applied to traffic volumes along all other routes in the

study area including I-95. The growth rates are based on projections obtained from the SCDOT Planning Office for years 2035 and 2040.

- The SYNCHRO default of 0.9 was used for the peak hour factor.

STUDY FINDINGS

Freeway Analysis

The results of the Highway Capacity Software Freeway Analysis for the No-Build and Build Alternatives are listed in Table 1 below. The table provides the level of service for two lanes on the freeway in each direction at both the US 301 and SC 6 interchanges. The Build Alternatives result in similar levels of service for most freeway segments except SB I-95 north of US 301 (highlighted in the table). This segment of freeway will experience slight improvements from a LOS D in the No-Build to a LOS C in the Build Alternatives in the design year. The analysis confirms that improvements to the US 301 interchange will not negatively affect the interstate.

Table 1: HCS Freeway Analysis (No-Build / Build Alternatives 1 and 2)

Location	Two Lanes on the Interstate				
	2015	2020	2025	2030	2035
I-95 Northbound – South of US 301	B / B	C / C	C / C	C / C	C / C
I-95 Northbound – North of US 301	C / C	C / C	C / C	D / D	D / D
I-95 Northbound – North of SC 6	C / C	C / C	C / C	D / D	D / D
I-95 Southbound – South of US 301	B / B	C / C	C / C	C / C	C / D
I-95 Southbound – North of US 301	B / B	C / C	C / C	D / C	D / C
I-95 Southbound – North of SC 6	B / B	C / C	C / C	C / C	C / C

Ramp Analysis

The results of the Highway Capacity Software Ramp Analysis for the No-Build and Build Alternatives are listed in Tables 2, 3 and 4 below. The No-Build Alternative provides only northbound entrance and southbound exit ramps for US 301. With only partial access available at US 301, the SC 6 interchange handles most of the traffic entering southbound and exiting northbound I-95.

Build Alternative 1, a Diamond interchange layout, provides a northbound exit ramp with 440’ parallel deceleration length, a northbound taper entrance ramp, a southbound exit ramp with 440’ deceleration length, and a southbound entrance ramp with 780’ parallel acceleration length.

Alternative 2, a Partial Cloverleaf A interchange layout, provides the same ramp design as Alternative 1 with the inclusion of a northbound and southbound loop entrance ramp. Both loop ramps contain 1650’ of parallel acceleration length.

Ramps in both Alternatives 1 and 2 operate at acceptable levels of service in the design year. The loop ramps in Alternative 2 will have slightly better levels of service as illustrated in Table 4. The southbound loop ramp will accommodate heavy volumes entering southbound I-95 from the Jafza Development, while the northbound loop ramp will provide an uninterrupted flow for vehicles traveling from northbound US 301 to northbound I-95, as it existing today. The analysis confirms that improvements to the US 301 interchange will not negatively affect the interstate exit and entrance ramps.

Table 2: HCS Ramp Analysis (No-Build Alternative)

Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB EXIT RAMP	n/a	n/a	n/a	n/a	n/a
	I-95 NB ENT. RAMP	B	C	C	D	D
	I-95 SB EXIT RAMP	B	C	C	C	D
	I-95 SB ENT. RAMP	n/a	n/a	n/a	n/a	n/a
SC 6	I-95 NB EXIT RAMP	C	C	C	D	D
	I-95 NB ENT. RAMP	B	C	C	C	D
	I-95 SB EXIT RAMP	B	C	C	C	C
	I-95 SB ENT. RAMP	C	C	C	D	D

Table 3: HCS Ramp Analysis (Build Alternative 1)

Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB EXIT RAMP	B	C	C	C	D
	I-95 NB ENT. RAMP	B	C	C	C	D
	I-95 SB EXIT RAMP	B	C	C	C	C
	I-95 SB ENT. RAMP	B	B	C	C	C
SC 6	I-95 NB EXIT RAMP	C	C	C	D	D
	I-95 NB ENT. RAMP	B	C	C	C	D
	I-95 SB EXIT RAMP	B	C	C	C	C
	I-95 SB ENT. RAMP	C	C	C	C	D

Table 3: HCS Ramp Analysis (Build Alternative 2)

Location		Two Lanes on the Interstate				
		2015	2020	2025	2030	2035
US 301	I-95 NB EXIT RAMP	B	C	C	C	D
	I-95 NB ENT. RAMP A/B	B / B	B / C	B / C	C / C	C / D
	I-95 SB EXIT RAMP	B	C	C	C	C
	I-95 SB ENT. RAMP A/B	B / B	B / B	B / C	B / C	B / C

RAMP A= First ramp at the direction of travel (loop ramp) ; RAMP B= Second ramp at the direction of travel
SC 6 results are the same as Alternative 1

Intersection Analysis

The results of the Intersection Analysis for the No-Build and Build Alternatives 1 and 2 are illustrated in Tables 6, 7, and 8 below. With the No-Build Alternative, the SC 6 interchange area will experience major delays with the phasing in of the Jafza Development, as illustrated in Table 6. The ramp intersections with SC 6 will experience unacceptable LOS E in Design Year 2035. Build Alternatives 1 and 2 provide considerable relief to the SC 6 interchange by providing a new access point for the Jafza Development as well as redirecting some background volumes. Table 7 shows the ramp intersections with SC 6 operating at LOS B in Design Year 2035 under the Build Alternatives.

Alternative 1 requires left turn lanes on US 301 at the interchange entrance ramps, from northbound US 301 to northbound I-95 and southbound US 301 to southbound I-95. This alternative provides acceptable levels of service until year 2030. Increasing volumes from the Jafza Development will cause levels of service to deteriorate, particularly for the southbound ramp intersection. The I-95 southbound exit ramp intersection is expected to operate at a LOS F in Design Year 2035, as illustrated in Table 7. Signalization of this intersection will be necessary in the future, resulting in a LOS B.

Alternative 2 provides loop entrance ramps, eliminating the need for left turns on US 301. The Partial Cloverleaf A design better accommodates the high volumes from the Jafza facility entering southbound I-95, particularly heavy trucks from the site. The loop ramp provides an uninterrupted entrance onto the interstate and removes the left turn conflict. Without the loop ramp, heavy trucks will see increased delays and fuel usage when attempting to turn left onto the entrance ramp, whether waiting on a gap or signal when one is eventually installed under Alternative 1. Similarly, the northbound loop ramp provides an uninterrupted movement from northbound US 301 onto northbound I-95 while eliminating the left turn conflict. Signing Plans for this interchange alternative can be found as an attachment at the end of the report. The improved levels of service for the ramp intersections under Alternative 2 are illustrated in Table 8. Along US 301, the unsignalized intersection of Bonner Ave and the signalized intersection of US 15 in the vicinity of the interchange will experience acceptable levels of service in the design year.

Table 6: Synchro Intersection Levels of Service – No-Build Alternative – PM Peak

	Location	2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	B	C	C
	US 301 @ I-95 Southbound Ramp	N/A	N/A	N/A	N/A	N/A
	US 301 @ I-95 Northbound Ramp	N/A	N/A	N/A	N/A	N/A
	US 301 @ SC 6	N/A	N/A	N/A	N/A	N/A
SC 6	SC 6 @ US 15 (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Southbound Ramps (Signalized)	B	C	C	E	E
	SC 6 @ I-95 Northbound Ramps (Signalized)	B	B	C	D	E
	SC 6 @ Laredo Road	B	B	C	C	C

Intersections are unsignalized unless noted otherwise.

Table 7: Synchro Intersection Levels of Service – Alternative 1 Interchange Layout – PM Peak

	Location	2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	C	C	D
	US 301 @ I-95 Southbound Ramp	B	B	C	F	F
	US 301 @ I-95 Northbound Ramp	B	B	B	C	C
	US 301 @ SC 6	B	B	C	C	C
SC 6	SC 6 @ US 15 (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Southbound Ramps (Signalized)	B	B	B	B	B
	SC 6 @ I-95 Northbound Ramps (Signalized)	B	B	B	B	B
	SC 6 @ Laredo Road	B	B	B	B	B

Intersections are unsignalized unless noted otherwise.

Table 8: Synchro Intersection Levels of Service – Alternative 2 Interchange Layout - PM Peak

	Intersection	2015	2020	2025	2030	2035
US 301	US 301 @ US 15 (Signalized)	B	B	B	B	B
	US 301 @ Bonner Avenue	B	B	C	C	D
	US 301 @ I-95 Southbound Ramp	B	B	B	B	B
	US 301 @ I-95 Northbound Ramp	A	A	A	A	B
	US 301 @ SC 6	B	B	C	C	C

Intersections are unsignalized unless noted otherwise.
SC 6 results are the same as Alternative 1.

ENVIRONMENTAL DOCUMENT

The environmental document is being prepared by HDR in conjunction with the Interchange Modification Report.

CONCLUSION

In conclusion, Alternative 2 is the preferred design. The Partial Cloverleaf A interchange layout will more effectively handle traffic accessing northbound and southbound I-95 via the loop entrance ramps. The loop ramps eliminate the need for left turn lanes on US 301 and provide uninterrupted access to I-95 for the heavier movements. The proposed Alternative 2 design will provide full access to and from I-95 and improve the traffic operations within the US 301 and SC 6 interchanges without negatively impacting the freeway. The improvements will serve the needs of the motoring public and the surrounding businesses along US 301 and I-95, particularly the proposed Jafza Development, through year 2035. The proposed improvements, including 1) realignment of the existing SB I-95 exit ramp; 2) construction of new SB I-95 entrance ramp; 3) construction of a new SB I-95 entrance loop ramp that eliminates a left turn movement; 4) construction of a new NB I-95 exit ramp; 5) construction of a new NB I-95 entrance loop ramp that eliminates a left turn movement; 6) realignment of NB I-95 entrance ramp; and 7) extension of US 301 to SC 6 will allow for an increased capacity and improvements to overall traffic operations throughout the project area.

Federal Highway Administration (FHWA) Policy

The Federal Law Section 111 of Title 23, United State Code requires that proposed new or revised interstate access must be approved by the FHWA before such access modifications can be made. All requests must include sufficient supporting information to allow FHWA to evaluate the request and ensure that all factors and alternative have been considered. The following eight policy requirements listed must be addressed.

1. ***The existing interchanges and/or local roads and streets in the corridor can neither provide the necessary access nor be improved to satisfactorily accommodate the design year traffic demands while at the same time providing the access intended by the proposal.***

   Interstate 95 is the main interstate corridor on the East Coast, paralleling the Atlantic Ocean for approximately 1,927 miles from Miami, Florida to Houlton, Maine at the Canadian border. Within the proposed project area, I-95 is a four-lane divided roadway with paved shoulders and ditches. The posted speed limit along I-95 within the proposed project area is 70 miles per hour. US 301 is a north-south route that runs from Sarasota, Florida to Glasgow, Delaware. The existing I-95 and US 301 Interchange (I-95 Exit 97) is a three-leg interchange that provides only partial access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently, there are no ramps to access I-95 southbound from northbound US 301 or to access US 301 southbound from I-95 northbound.

   The existing SC 6 interchange and roadway segment provides full access to I-95 for local traffic and the planned Jafza facility. Under the No-Build Alternative, the SC 6 roadway segment and interchange will be deficient by year 2030. The Jafza facility 2030 traffic demands cannot be met with access only to SC 6 and without a direct connection to I-95 through the proposed US 301 Connector.

2. ***All reasonable alternative for design options, location, and transportation system management type improvements (such as ramp metering, mass transit, and HOV facilities) have been assessed and provided for if currently justified, or provisions are included for accommodating such facilities if a future need is identified.***

   Two alternative designs included a Diamond configuration and a Partial Cloverleaf A configuration. All of the preliminary interchange alternatives provide full northbound and southbound access from US 301 to I-95 and vice versa. The preliminary analysis results in the partial cloverleaf design as the preferred interchange alternative. Reasoning for selection of this interchange configuration include the rural nature of the area and best option to continue relationship of I-95 with US 301, a minor roadway; more efficient use of space; avoidance of the interweaving traffic flows; and future traffic projections for the area support this type of facility. Neither ramp metering, mass transit, nor HOV facilities are warranted for the existing or design year volumes. These techniques do not improve the operations of the interchange.

3. ***The proposed access point does not have a significant adverse impact on the safety and operation of the interstate facility based on an analysis of current and future traffic. The operational analysis for existing conditions shall, particularly in urbanized areas, include an analysis of the section of interstate to the including at least the first adjacent existing or proposed interchange on each side. Crossroads and other roads and streets shall be included in the analysis to the extent necessary to assure their ability to collect and distribute traffic to and from the interchange with the new or revised access point.***

   The analysis of I-95 includes the interstate facility around the US 301 and SC 6 interchanges, from US 15 south of the interchange to just north of the SC 6 interchange, as well as other roads. The analysis was performed using methodologies and procedures in the Transportation Research Board "Highway Capacity Manual". The analysis projects there will be no deficiencies in the proposed design. The freeway analysis shows segments north and south of the interchange operating at the same LOS or better with the modifications. The ramp analysis shows that all the ramps are projected to operate at LOS D or better. All intersections are expected to operate at LOS C or better, except for the unsignalized intersection of US 301 and Bonner Avenue, a rural local road operating at LOS D.

4. ***The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" for special purpose access for transit vehicles, for HOV's or into park and ride lots may be considered on a case-by-case basis. The proposed access will be designed to meet or exceed current standards for Federal-aid projects on the interstate system.***

   The proposed design connects to US 301, which is a public road, and the interchange provides all traffic movements.

5. ***The proposal considers and is consistent with local and regional land use and transportation plans. Prior to final approval, all requests for new or revised access must be consistent with the metropolitan and/or statewide transportation plan, as appropriate, the applicable provisions of 23 CFR part 450 and transportation conformity requirements of 40 CFR parts 51 and 93.***

   As identified in the LSCOG Long Range Transportation Plan (LRTP) (LSCOG, 2006), and Transportation Improvement Program (TIP) (LSCOG 2009), rapid growth and development in Orangeburg County and aggressive economic development strategies implemented have brought significant industrial development and related infrastructure to the county. The proposed project will contribute to meeting the larger goals of (1) alleviating the rapidly increasing Port of Charleston congestion (2) improving the efficiency of intermodal freight movement in South Carolina and (3) complementing existing manufacturing facilities in Orangeburg County. As indicated in the LRTP, the LSCOG's Technical Advisory Committee (TAC) unanimously

supports the inland port concept and endorsed inclusion of the interchange proposal at I-95 and US 301 in the LRTP.

Additionally, the proposed project will provide a safe, efficient vehicular connection to the proposed $250 million, 1,300-acre inland port intermodal facility (Jafza) located just east of the existing I-95 and US 301 interchange. The Jafza facility will consist of an intermodal rail yard, warehouse related development and office/manufacturing space to facilitate the storage and logistics of the operations. Additionally, a portion of the site will be reserved for future market driven developments. These developments may range from more warehouse related development to commercial development.

Orangeburg County meets the national ambient Air Act Amendments of 1990 (40 CFR §51 and 93) and is considered to be in attainment with the applicable ambient air quality standards. Therefore, no project level air quality analysis was conducted for this project. It has been determined that this project will have no meaningful potential impacts on air quality.

6. ***In areas where the potential exists for future multiple interchange additions, all requests for new or revised access are supported by a comprehensive Interstate network study with recommendations that address all proposed and desired access within the context of a long-term plan.***

   This interchange is located in a rural part of Orangeburg County. The potential for future nearby interchanges are low and none are planned at this time.

7. ***The request for a new or revised access generated by new or expanded development demonstrates appropriate coordination between the development and related or otherwise required transportation system improvements.***

   A public meeting associated with this project was held at Lake Marion High School in Santee, South Carolina on December 3, 2009. The meeting was attended by SCDOT staff, LSCOG staff, Orangeburg County staff, Town of Santee staff, FHWA staff, residents, SCDOT consultant staff, and local media. Sign-in sheets indicate that 97 residents or interested parties attended the meeting. The majority of comments received as a result of the meeting expressed concerns regarding the potential for an increase in traffic (particularly truck traffic) on SC 6 and associated impacts on quality of life for the existing residents along and within hearing of SC 6. “Design Alternatives and Concerns” accounted for 25 responses; “Vegetation” and “Property Concerns (Takings)” accounted for 9 responses each; “Operation Alternatives and Concerns” and “Safety” accounted for 8 responses each; and “Noise” accounted for 7 responses. Eleven respondents indicated that they were happy with the proposed project. Eight respondents requested additional information or a specific action to be taken and 3 respondents identified information that needs to be corrected.

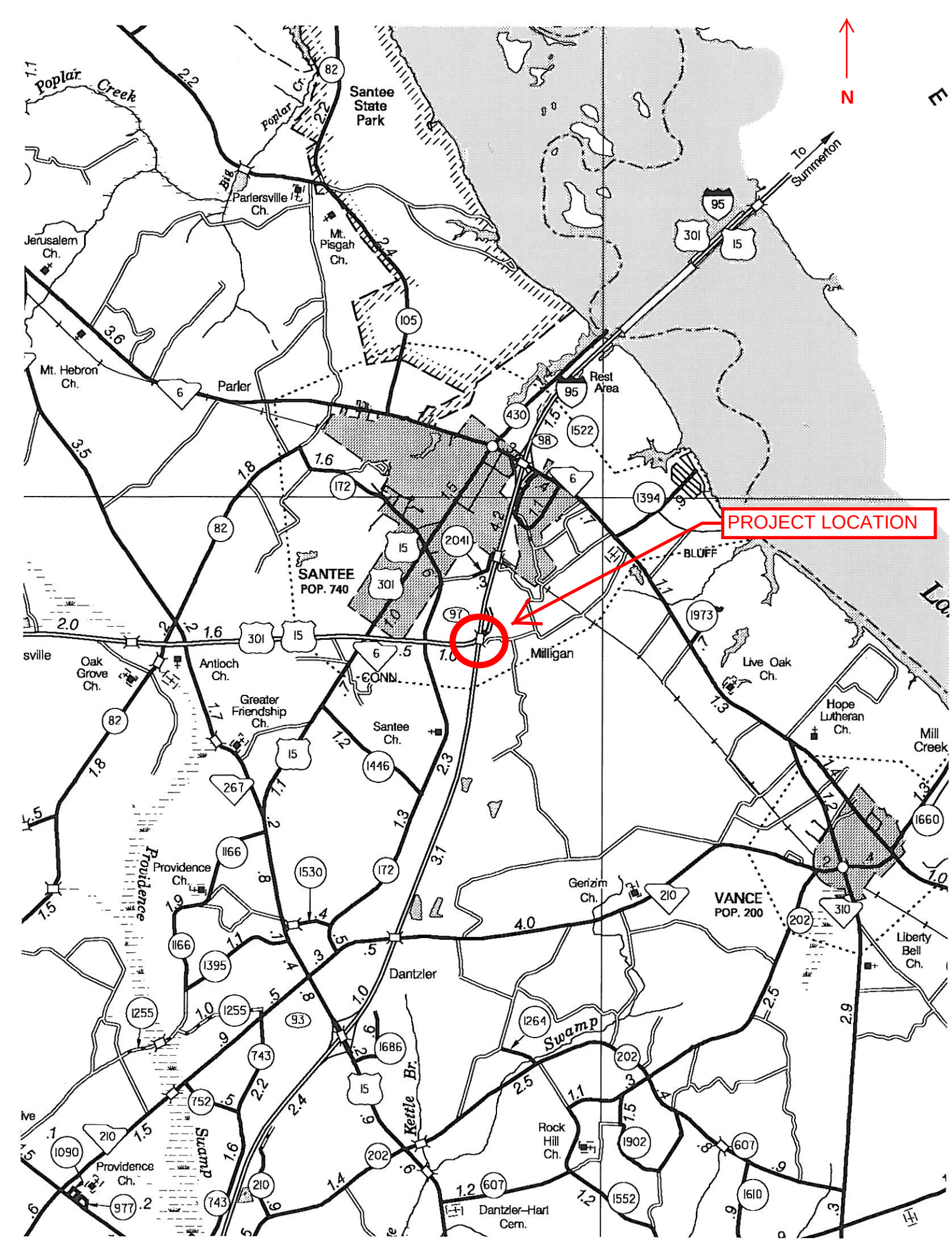
In addition, a planned development underway by GLT Jafza Americas (Jafza) has been considered and evaluated as part of the planning process for the SCDOT project. During the planning phase of the Jafza project, a number of studies were conducted including: traffic studies, a Biological Assessment (endangered species), stream and wetland delineation, Phase 1 Environmental Site Assessment, and a cultural resource survey. In addition, Jafza submitted an application for a Section 404 permit. SCDOT coordinated its studies and agency coordination with those conducted for the Jafza development to ensure continuity and efficiency with the NEPA process.

8. The request for new or revised access contains information relative to the planning requirements and the status of the environmental processing of the proposal.

A draft Environmental Assessment (EA) has been reviewed by SCDOT and is being prepared for submittal to FHWA. The project was assessed for possible effects on the human and natural environment, with a determination that no significant environmental impact would occur. In January 2010 a number of state and federal agencies were contacted and asked for their comments on the proposed action. Their responses are included in the EA document.

A Jurisdictional Determination for streams and wetlands within portions of the project associated with the Jafza site was issued by the USACE on February 24, 2009. An approved verification of the additional jurisdictional features associated with the SCDOT project was issued by USACE on June 23, 2010. SCDOT will obtain the necessary Section 404 permit from the U.S. Army Corps of Engineers, and will adhere to any conditions set forth therein during construction.

A public meeting associated with this project was held at Lake Marion High School in Santee, South Carolina on December 3, 2009. Sign-in sheets indicate that 97 residents or interested parties attended the meeting. It is anticipated that a public hearing would be held after the EA is approved by FHWA. Area residents and stakeholders will be afforded the opportunity to review the EA and submit comments at that time.


N
PROJECT LOCATION
Santee State Park
Poplar Creek
Poplar Cr.
Big
Parlersville Ch.
Jerusalem Ch.
Mt. Pisgah Ch.
To Summerton
95
301
15
105
Mt. Hebron Ch.
Parler
6
Rest Area
430
98
1522
1394
172
82
2041
SANTEE
POP. 740
BLUFF
97
1973
Milligan
Oak Grove Ch.
Antioch Ch.
CONN
Greater Friendship Ch.
Santee Ch.
Live Oak Ch.
Hope Lutheran Ch.
Mill Creek
1446
267
1660
1166
Providence Ch.
Providence
1530
Gerizim Ch.
210
VANCE
POP. 200
202
310
Liberty Bell Ch.
Dantzler
1395
1255
93
1264
Swamp
1686
Kettle Br.
743
752
Rock Hill Ch.
1902
607
1090
977
Providence Ch.
Swamp
1552
1610
Dantzler-Hart Cem.

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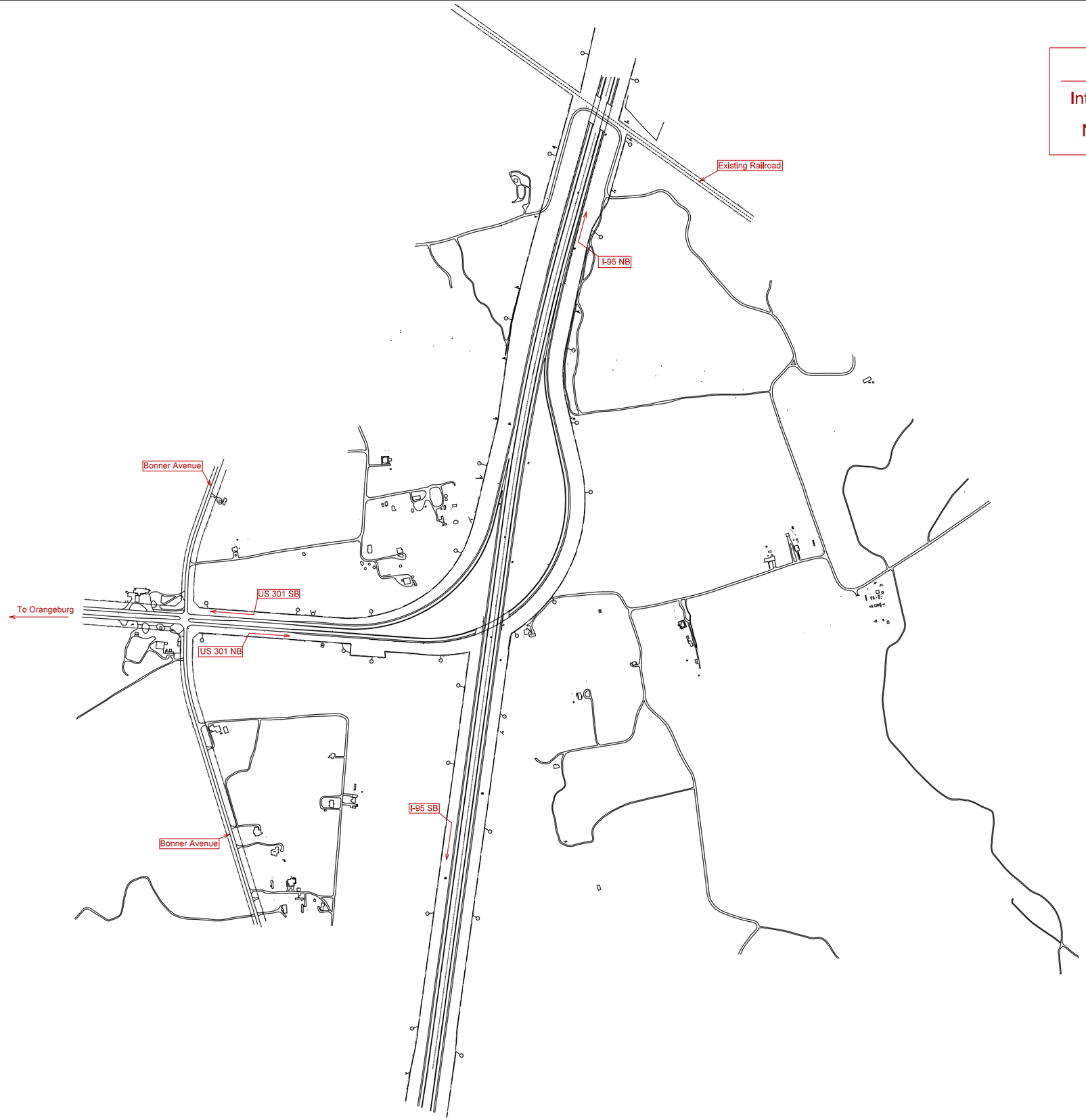
DRAWING #1

Interstate 95 at US 301

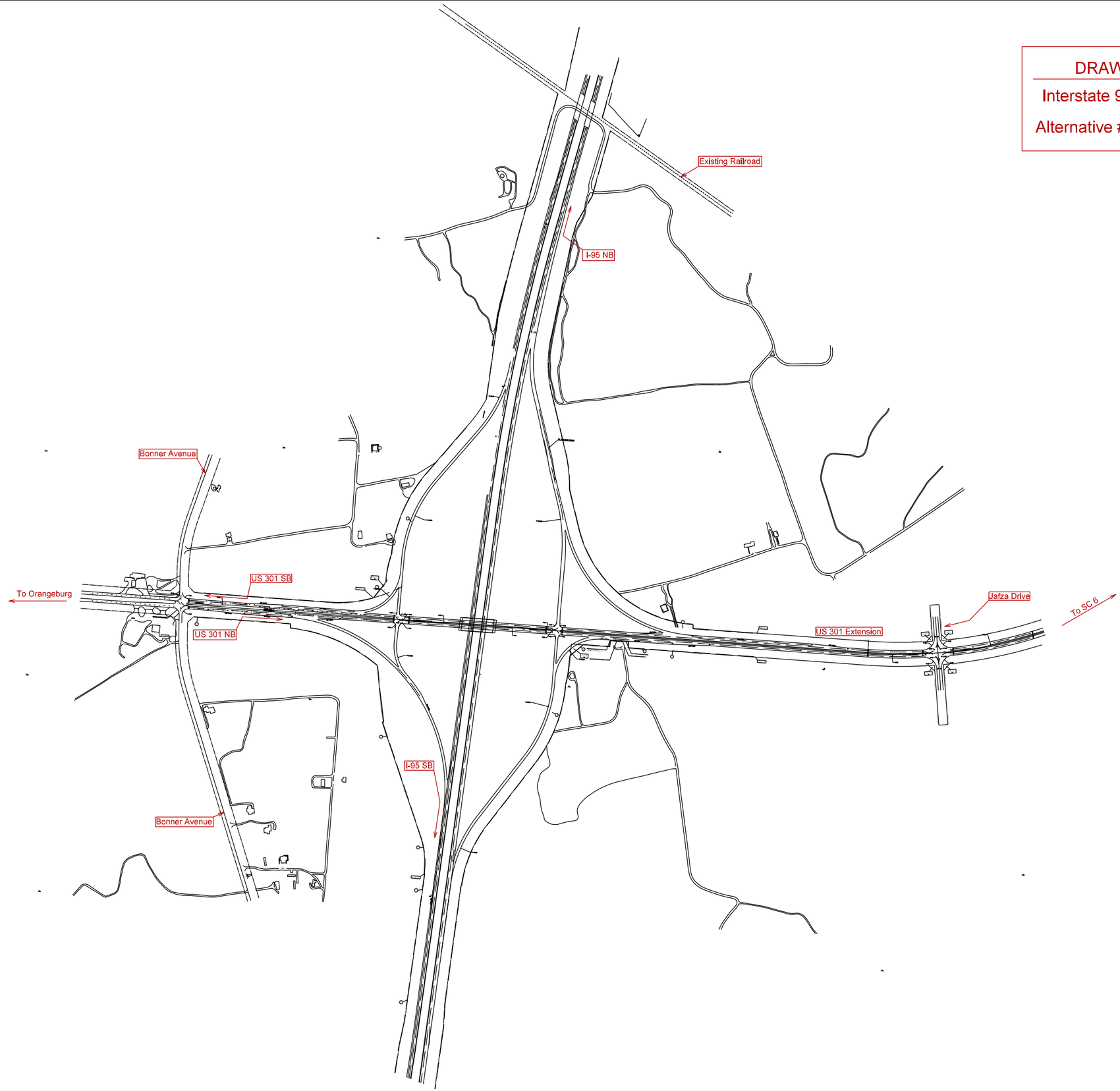
No-Build Alternative



DRAWING #2

Interstate 95 at US 301

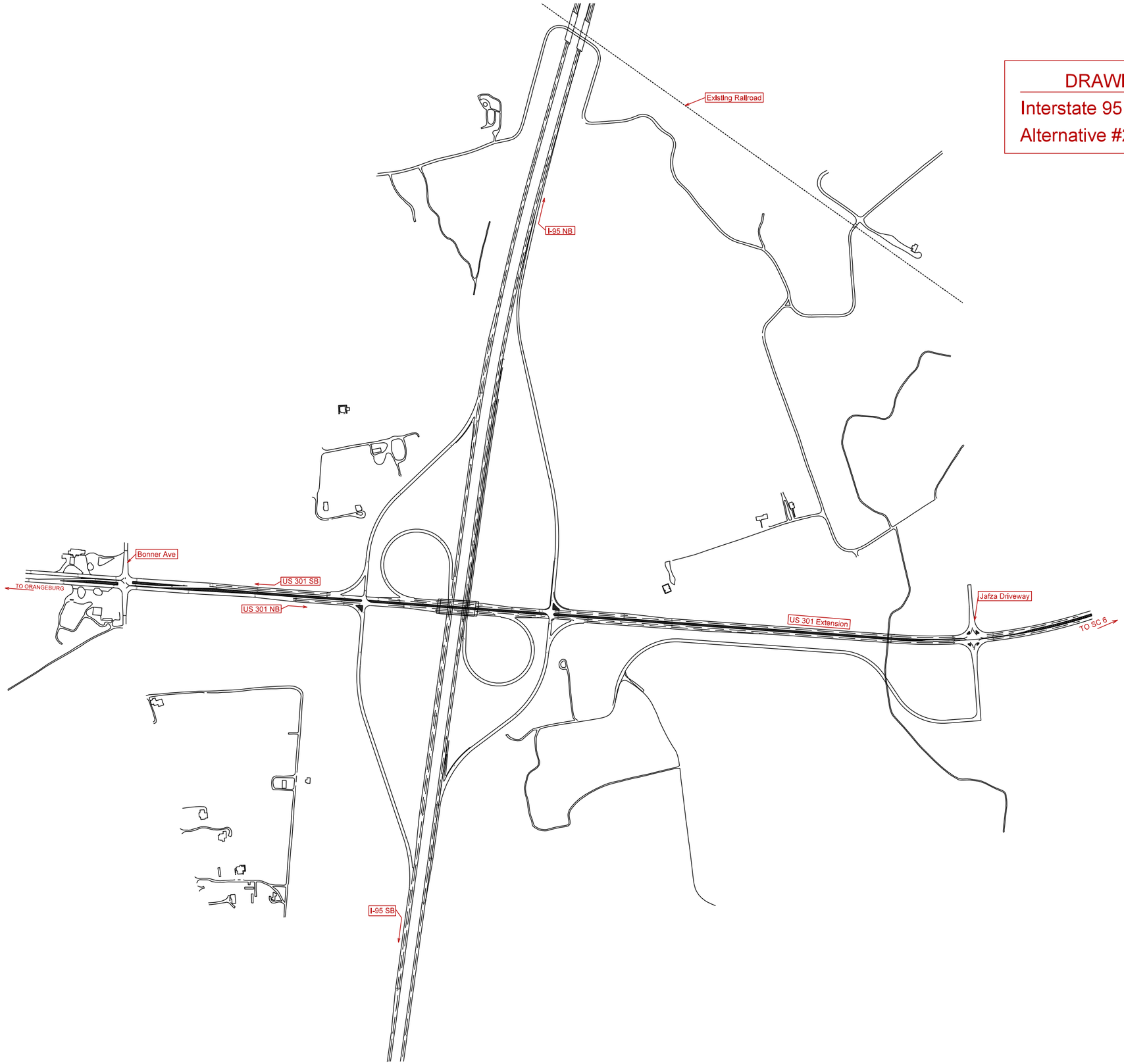
Alternative #1 (Diamond)



DRAWING #3

Interstate 95 and US 301

Alternative #2 (Partclo-A)



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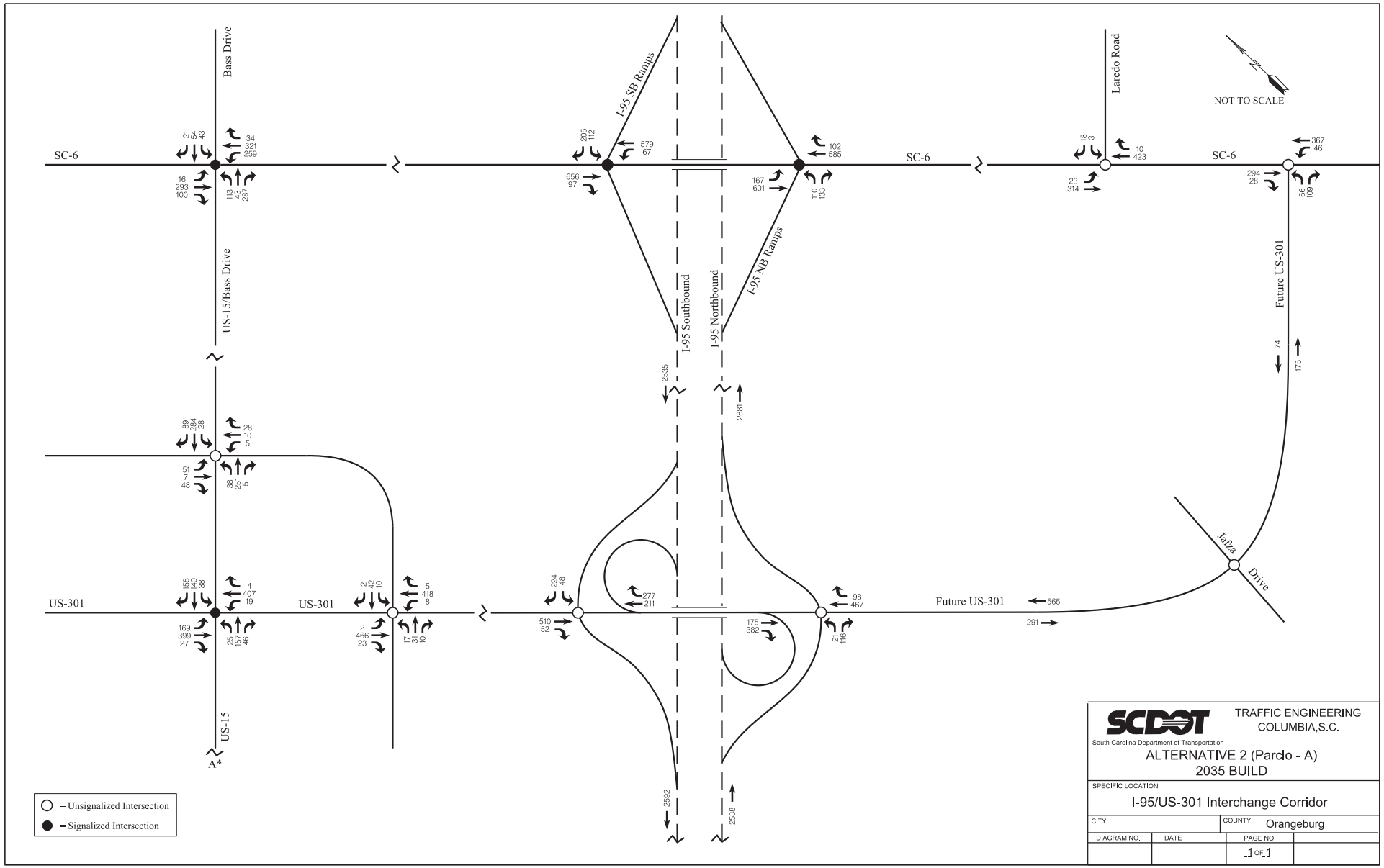
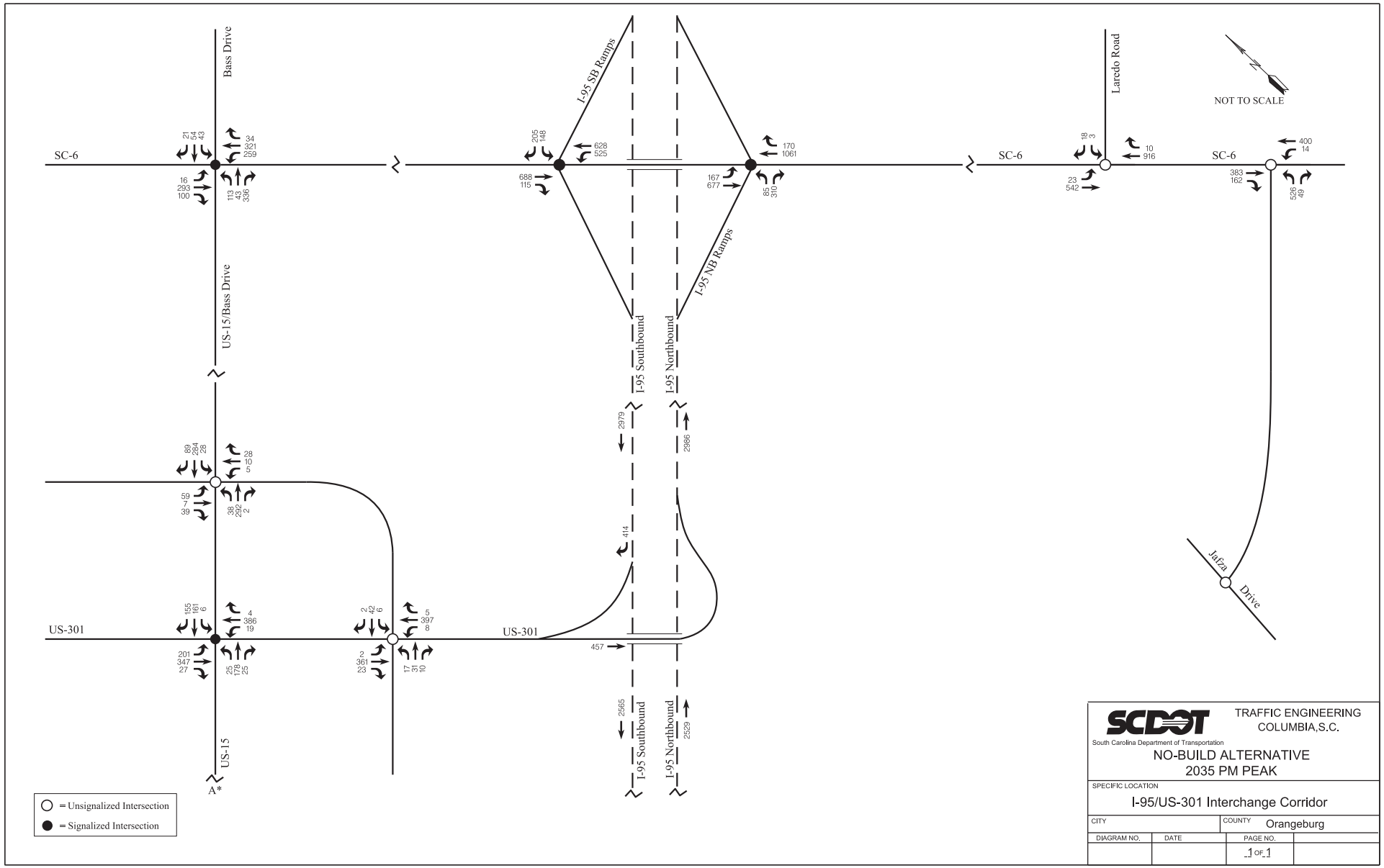

Bass Drive
SC-6
US-15/Bass Drive
I-95 SB Ramps
I-95 Southbound
I-95 Northbound
I-95 NB Ramps
Laredo Road
NOT TO SCALE
Future US-301
US-301
US-15
Jafza Drive
= Unsignalized Intersection
= Signalized Intersection
SCDOT
South Carolina Department of Transportation
TRAFFIC ENGINEERING
COLUMBIA,S.C.
ALTERNATIVE 2 (Parclo - A)
2035 BUILD
SPECIFIC LOCATION
I-95/US-301 Interchange Corridor
CITY
COUNTY Orangeburg
DIAGRAM NO.
DATE
PAGE NO.
1 OF 1



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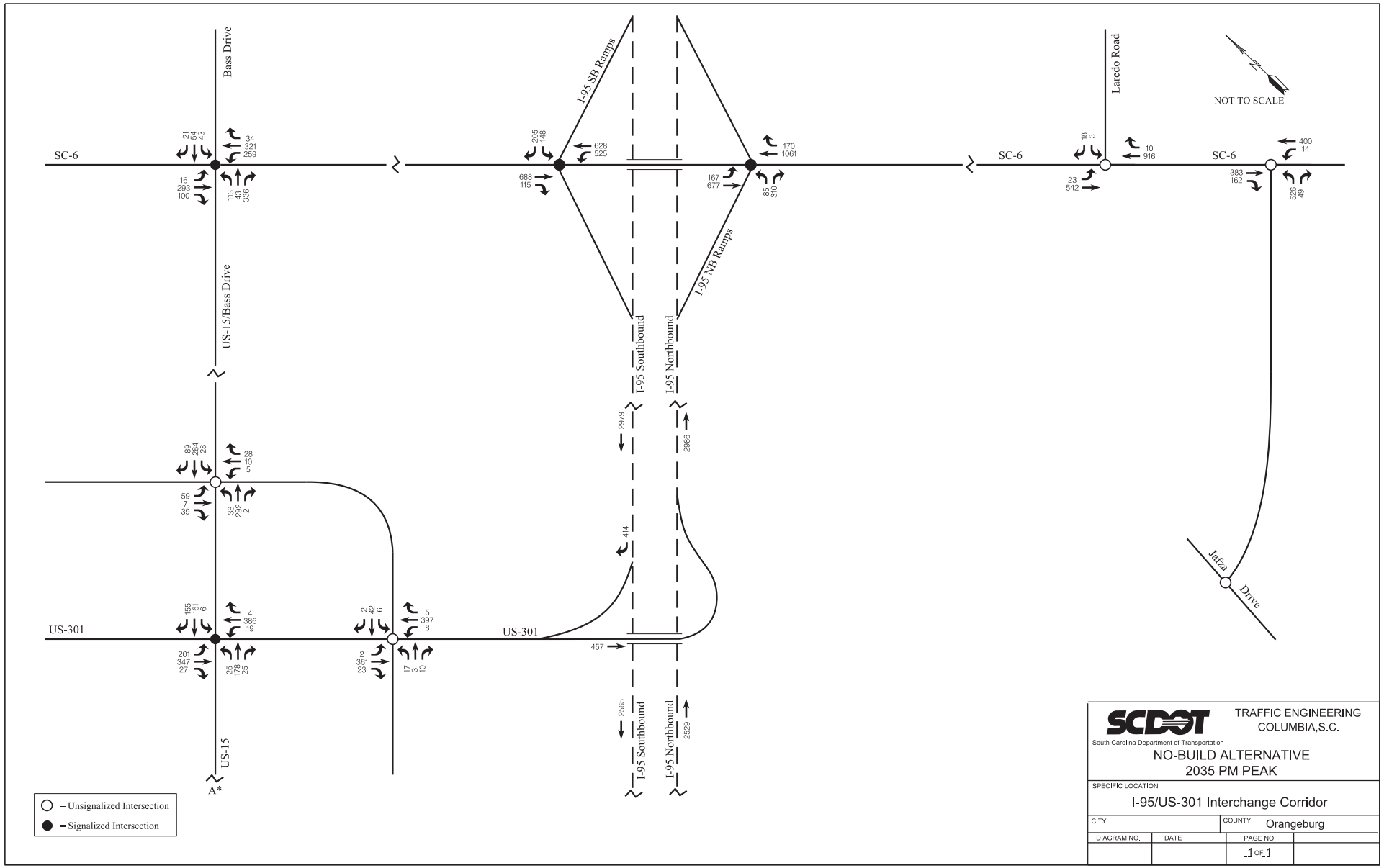
SCDOT
South Carolina Department of Transportation

TRAFFIC ENGINEERING
COLUMBIA,S.C.

NO-BUILD ALTERNATIVE
2035 PM PEAK

SPECIFIC LOCATION
I-95/US-301 Interchange Corridor

CITY	COUNTY	
	Orangeburg	
DIAGRAM NO.	DATE	PAGE NO.
		1 OF 1



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SCDOT
South Carolina Department of Transportation

TRAFFIC ENGINEERING
COLUMBIA,S.C.

NO-BUILD ALTERNATIVE
2035 PM PEAK

SPECIFIC LOCATION
I-95/US-301 Interchange Corridor

CITY	COUNTY	
	Orangeburg	
DIAGRAM NO.	DATE	PAGE NO.
		1 OF 1

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I-95 VOLUMES

ADT **31050**

Rank	Volume	AM/PM	Day of Week	Day	Date	K
1	4741	PM	Sunday	1	12/27/2009	15.3%
2	4547	PM	Sunday	1	12/27/2009	14.6%
3	4485	PM	Sunday	1	12/27/2009	14.4%
4	4399	PM	Sunday	1	11/1/2009	14.2%
5	4328	AM	Sunday	1	12/27/2009	13.9%
6	4296	PM	Sunday	1	12/27/2009	13.8%
7	4207	PM	Saturday	7	12/26/2009	13.5%
8	4191	PM	Saturday	7	1/2/2010	13.5%
9	4180	AM	Saturday	7	1/2/2010	13.5%
10	4169	PM	Saturday	7	12/26/2009	13.4%
11	4053	PM	Friday	6	4/2/2010	13.1%
12	4051	PM	Saturday	7	12/26/2009	13.0%
13	4040	PM	Friday	6	4/2/2010	13.0%
14	4001	PM	Saturday	7	1/2/2010	12.9%
15	3995	PM	Wednesday	4	11/25/2009	12.9%
16	3981	AM	Saturday	7	4/3/2010	12.8%
17	3980	PM	Saturday	7	12/26/2009	12.8%
18	3974	PM	Saturday	7	1/2/2010	12.8%
19	3942	PM	Monday	2	12/28/2009	12.7%
20	3886	AM	Friday	6	4/2/2010	12.5%
21	3864	PM	Saturday	7	12/26/2009	12.4%
22	3859	PM	Saturday	7	6/12/2010	12.4%
23	3851	PM	Tuesday	3	12/22/2009	12.4%
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25	3846	PM	Friday	6	4/2/2010	12.4%
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27	3840	PM	Saturday	7	8/14/2010	12.4%
28	3831	PM	Saturday	7	4/3/2010	12.3%
29	3787	PM	Saturday	7	8/14/2010	12.2%
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52	3601	AM	Monday	2	12/28/2009	11.6%

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57	3563	PM	Wednesday	4	12/23/2009	11.5%
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60	3545	PM	Wednesday	4	12/23/2009	11.4%
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73	3473	PM	Saturday	7	4/3/2010	11.2%
74	3473	AM	Saturday	7	7/24/2010	11.2%
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149	3107	PM	Saturday	7	6/19/2010	10.0%
150	3106	PM	Saturday	7	4/10/2010	10.0%

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Table 3 - 2030 No-Build Alternative Roadway Segment Operating Conditions

Roadway/Segment	Number of Lanes	Desirable LOS	Adopted Capacity Daily	Adopted Capacity PM Pk Hr	2030 No-Build AADT	2030 Daily Jafza Project Trips Trucks	2030 Daily Jafza Project Trips Non-Trucks	2030 Projected AADT	2030 PM Peak Hour Conditions Background Trips NB/EB	Background Trips SB/WB	Jafza Truck % In	Jafza Truck % Out	Jafza Truck Trips NB/EB	Jafza Truck Trips SB/WB	Jafza Non-Truck %	Jafza Non-Truck Trips NB/EB	Jafza Non-Truck Trips SB/WB	2030 Total Trips NB/EB	Total Trips SB/WB	Total Trips Pk Hr/Dir	Total Trips Non Pk/Dir	Pk. Dir. LOS	Non Pk. Dir. LOS
I-95																							
SC 6 to US 301	4	C	48,300	2,740	58,700	1,897	5,751	66,348	2,552	1,909	83%	95%	30	83	70%	98	342	2,680	2,334	2,680	2,334	C	C
US 301 to I-26	4	C	48,300	2,740	43,600	757	3,697	48,054	1,895	1,418	30%	41%	11	36	45%	63	220	1,969	1,674	1,969	1,674	B	B
US 301																							
S.C. 267 to US 15	4	C	36,000	1,940	15,100	1,141	2,054	18,295	666	814	53%	54%	19	47	25%	35	122	720	983	983	720	B	B
US 15 to I-95	4	C	33,200	1,770	~~15,100~~ 11,905	1,141	2,054	~~18,295~~ 15,100	~~859~~ 520	~~806~~ 635	53%	54%	19	47	25%	35	122	713	975	975	713	B	B
SC 6																							
West of US 15/301/SC 6 Con	2	C	14,700	810	7,000	0	822	7,822	306	373	0%	0%	0	0	10%	14	49	320	422	422	320	B	B
US 15/301/SC 6 Con to I-95	2	C	15,700	940	17,800	0	822	18,622	777	950	0%	0%	0	0	10%	14	49	791	999	999	791	D	C
I-95 to S-1394/Jafza Project	2	C	14,700	810	12,200	2,132	7,394	21,726	651	533	100%	100%	36	87	90%	126	439	813	1,059	1,059	813	D	D
S-1394//Jafza Project to SC 210	2	C	14,700	810	6,900	0	822	7,722	368	301	0%	0%	0	0	10%	49	14	417	315	417	315	B	B
East of SC 210	2	C	14,700	810	6,900	0	411	7,311	368	301	0%	0%	0	0	5%	24	7	392	308	392	308	B	B

Table 5 - 2030 Build Alternative Roadway Segment Operating Conditions

Roadway/Segment	Number of Lanes	Desirable LOS	Adopted Capacity		2030 Background AADT	2030 Daily Jafza Project Trips		2030 Projected AADT	2030 PM Peak Hour Conditions													
			Daily	PM Pk Hr		Trucks	Non-Trucks		Background Trips		Jafza Truck %		Jafza Truck Trips		Jafza Non-Truck %	Jafza Non-Truck Trips		Total Trips				Pk. Dir. LOS	Non Pk. Dir. LOS
									NB/EB	SB/WB	In	Out	NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	Pk Hr/Dir	Non Pk/Dir		
I-95																							
SC 6 to US 301	4	C	48,300	2,740	58,700	235	1,232	60,167	2,552	1,909	17%	5%	4	6	15%	73	21	2,629	1,936	2,629	1,936	C	B
US 301 to I-26	4	C	48,300	2,740	43,600	757	3,697	48,054	1,895	1,418	30%	41%	11	36	45%	63	220	1,969	1,674	1,969	1,674	B	B
US 301/ US 301 Extension																							
S.C. 267 to US 15	4	C	36,000	1,940	16,500	1,141	2,054	19,695	728	889	53%	54%	19	47	25%	35	122	782	1,058	1,058	782	B	B
US 15 to I-95	4	C	33,200	1,770	19,400	1,141	2,054	22,595	847	1,035	53%	54%	19	47	25%	35	122	901	1,204	1,204	901	C	B
I-95 to Project Driveway	4	C	33,200	1,770	5,600	2,132	6,983	14,715	244	299	100%	100%	36	87	85%	119	415	399	801	801	399	B	B
Project Driveway to SC 6	4	C	33,200	1,770	5,600	0	657	6,257	244	299	0%	0%	0	0	8%	39	11	283	310	310	283	B	B
SC 6																							
West of US 15/301/SC 6 Con	2	C	14,700	810	7,000	0	822	7,822	306	373	0%	0%	0	0	10%	14	49	320	422	422	320	B	B
US 15/301/SC 6 Con to I-95	2	C	15,700	940	16,100	0	822	16,922	703	859	0%	0%	0	0	10%	14	49	717	908	908	717	C	C
I-95 to US 301 Extension	2	C	14,700	810	7,900	0	411	8,311	421	345	0%	0%	0	0	5%	7	24	428	369	428	369	B	B
US 301 Extension to SC 210	2	C	14,700	810	6,900	0	246	7,146	368	301	0%	0%	0	0	3%	15	4	383	305	383	305	B	B
East of SC 210	2	C	14,700	810	6,900	0	411	7,311	368	301	0%	0%	0	0	5%	24	7	392	308	392	308	B	B

Table 7
Summary Table

Roadway/Segment	2008 AADT	Annual Growth Rate Used	K Factor (1)	D Factor (2)	Phase 1A (2014) Volumes						Phase 1B (2016) Cumulative Volumes						Phase 1C (2020) Cumulative Volumes						Phase 3 (2030) Cumulative Volumes					
					Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction			Daily			Peak Hour Peak Direction		
					Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project	Bcgd.	Project Trips	Total w/ project
I-95																												
North of SC 6	30,000	1.5%	0.076	0.555	32,734	38	32,772	1,381	9	1,390	33,647	115	33,762	1,419	15	1,434	35,474	371	35,845	1,496	26	1,522	40,042	1,057	41,099	1,689	53	1,742
SC 6 to US 301	29,600	1.5%	0.076	0.572	32,297	270	32,567	1,404	15	1,419	33,199	830	34,029	1,443	35	1,478	35,001	2,682	37,683	1,522	64	1,586	39,508	1,467	40,975	1,717	77	1,794
US 301 to I-26	25,700	1.5%	0.076	0.572	28,042	167	28,209	1,219	9	1,228	28,825	494	29,319	1,253	20	1,273	30,390	1,576	31,966	1,321	38	1,359	34,303	4,454	38,757	1,491	74	1,565
South of I-26	38,500	1.5%	0.075	0.576	42,009	20	42,029	1,815	1	1,816	43,181	64	43,245	1,865	2	1,867	45,526	210	45,736	1,967	5	1,972	51,388	603	51,991	2,220	9	2,229
US 301/ US 301 Extension																												
West of I-26	13,900	1.5%	0.098	0.550	15,167	42	15,209	818	2	820	15,590	136	15,726	840	5	845	16,437	450	16,887	886	9	895	18,553	1,302	19,855	1,000	18	1,018
I-26 to US 15	11,000	1.5%	0.098	0.550	12,002	103	12,105	647	25	672	12,337	336	12,673	665	44	709	13,007	1,107	14,114	701	81	782	14,682	3,195	17,877	791	169	960
US 15 to I-95	7,100	1.5%	0.097	0.550	7,748	103	7,851	413	25	438	7,964	336	8,300	425	44	469	8,396	1,107	9,503	448	81	529	11,959	3,195	15,154	638	169	807
I-95 to Project Driveway	N/A	N/A	0.097	0.550	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,654	9,115	10,769	88	502	590
Project Driveway to SC 6	N/A	N/A	0.097	0.550	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,654	657	2,311	72	39	111
I-26																												
West of US 301	42,000	2.5%	0.075	0.537	48,431	61	48,492	1,951	15	1,966	50,584	199	50,783	2,037	24	2,061	54,889	656	55,545	2,211	45	2,256	65,651	1,893	67,544	2,644	91	2,735
East of I-95	30,600	2.5%	0.075	0.518	35,286	147	35,433	1,371	8	1,379	36,854	430	37,284	1,432	18	1,450	39,990	1,366	41,356	1,554	34	1,588	47,832	3,851	51,683	1,858	65	1,923
SC 6																												
West of US 15/301/SC 6 Con	4,000	1.5%	0.097	0.550	4,365	35	4,400	233	9	242	4,486	95	4,581	239	14	253	4,730	296	5,026	252	24	276	5,339	822	6,161	285	49	334
US 15/301/SC 6 Con to I-95	13,300	1.5%	0.097	0.550	14,513	35	14,548	774	9	783	14,918	95	15,013	796	14	810	15,728	296	16,024	839	24	863	16,099	822	16,921	859	49	908
I-95 to US 301 Extension	7,400	1.5%	0.097	0.550	8,074	342	8,416	431	19	450	8,300	1,041	9,341	443	44	487	8,750	3,350	12,100	467	82	549	8,223	411	8,634	439	7	446
US 301 Extension to SC 210	5,700	1.5%	0.097	0.550	6,220	35	6,255	332	9	341	6,394	95	6,489	341	14	355	6,741	296	7,037	360	24	384	7,609	246	7,855	406	15	421
East of SC 210	5,700	1.5%	0.097	0.550	6,220	17	6,237	332	5	337	6,394	48	6,442	341	7	348	6,741	148	6,889	360	12	372	7,609	411	8,020	406	24	430
SC 210																												
West of Project Driveway	1,250	1.5%	0.097	0.550	1,364	17	1,381	73	5	78	1,402	48	1,450	75	7	82	1,478	148	1,626	79	12	91	1,669	411	2,080	89	24	113
Project Driveway to SC 6	850	1.5%	0.097	0.550	928	17	945	50	5	55	954	48	1,002	51	7	58	1,005	148	1,153	54	12	66	1,135	164	1,299	61	3	64

Notes:

(1) Planning analysis hour factors (K) was based on default values typically used for roadway segments based on the area type (rural/suburban/urban) and facility type (freeway/uninterrupted flow/signalized).
For segments on I-26 and I-95, where actual count information was available from SCDOT, the weekday daily count information was obtained and average weekday peak to daily ratios were calculated for use in the analysis.

(2) Directional distribution factor (D) was also based on default values typically used for roadway segments based on their area type (rural/suburban/urban) and facility type (freeway/uninterrupted flow/signalized).
For segments on I-26 and I-95, where actual count information was available from SCDOT, the weekday daily count information was obtained and average weekday directional factors were calculated for use in the analysis.

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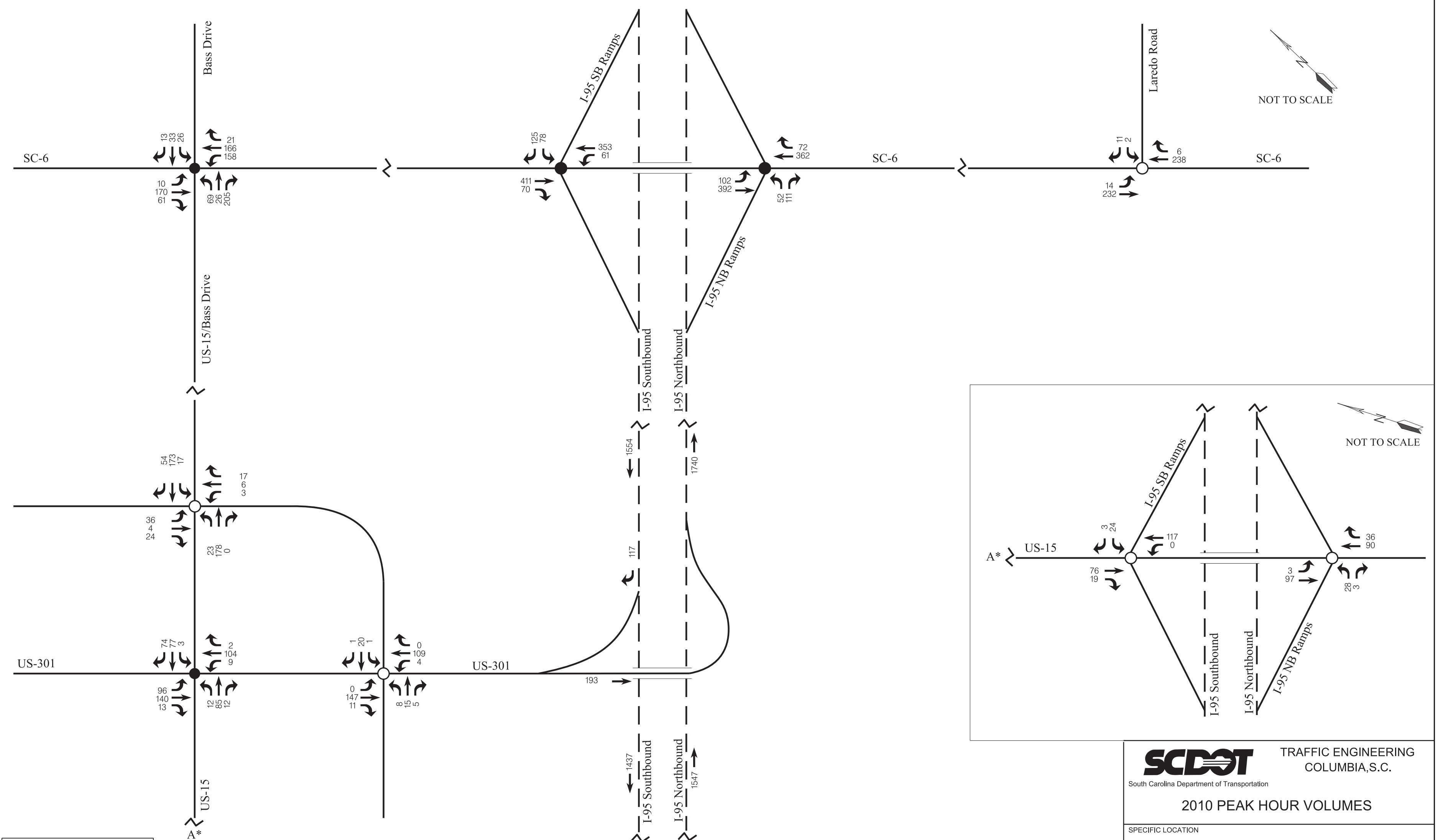

○ = Unsignalized Intersection

● = Signalized Intersection

SC-6 @ US-15/BASS DRIVE, SC-6 @ I-95 NB/SB RAMPS, AND SC-6 @ LAREDO COUNTED ON 10/26/2010.
US-301 @ US-15/BASS, US-301 @ BONNER, US-15 @ BONNER, AND US-15 @ I-95 NB/SB RAMPS COUNTED ON 10/27/2010.
I-95 NB AND SB VOLUMES BASED ON 100th HIGHEST HOURLY VOLUMES FROM COUNT STATION.

SCDOT
South Carolina Department of Transportation

TRAFFIC ENGINEERING
COLUMBIA,S.C.

2010 PEAK HOUR VOLUMES

SPECIFIC LOCATION			
I-95/US-301 Interchange Corridor			
CITY		COUNTY Orangeburg	
DIAGRAM NO.	DATE	PAGE NO. 1 OF 1	

$$user$$
$$$$path$$$$$$$filename$$$$$$$$
$$$date$$$

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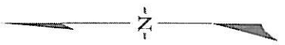

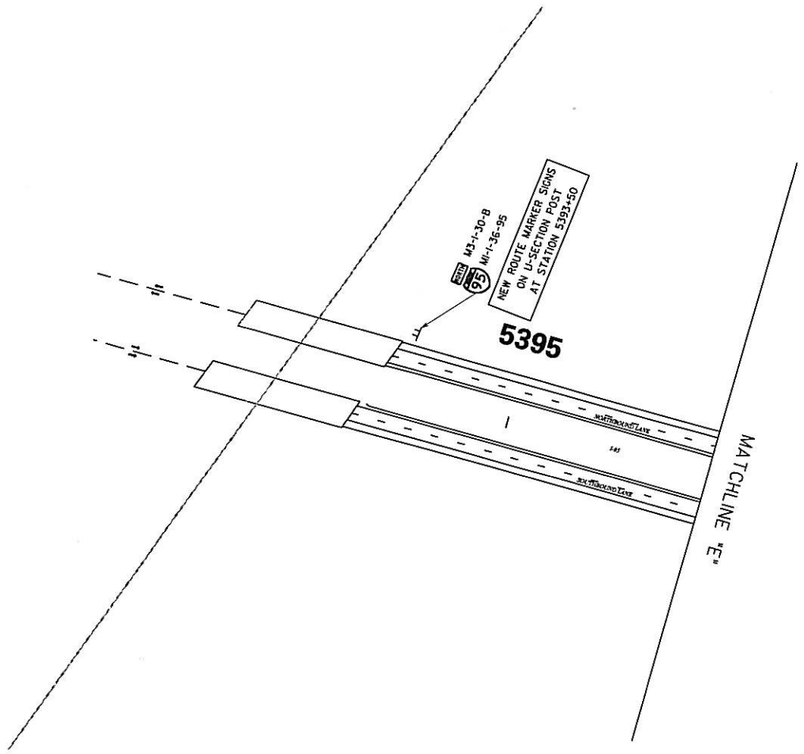

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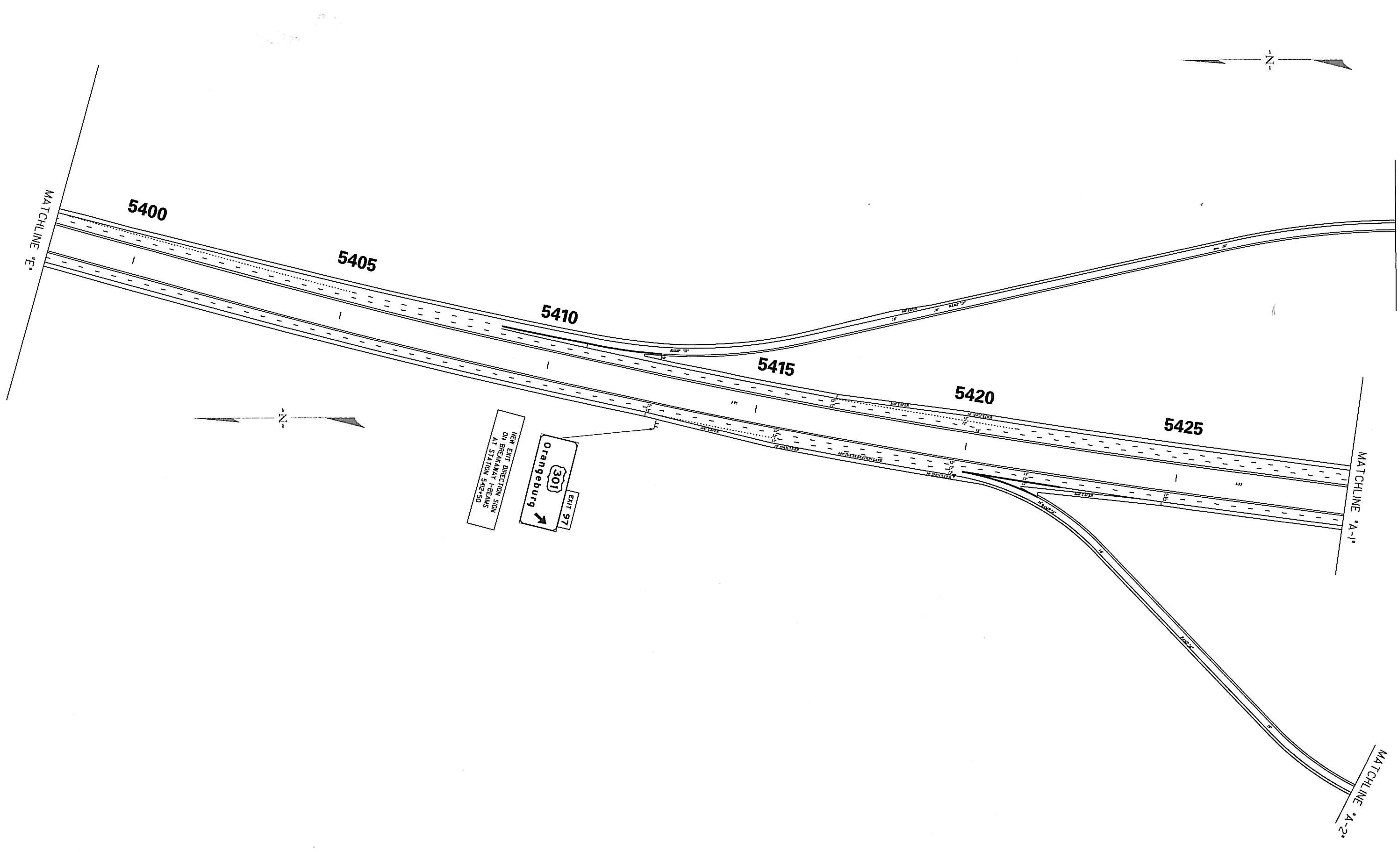

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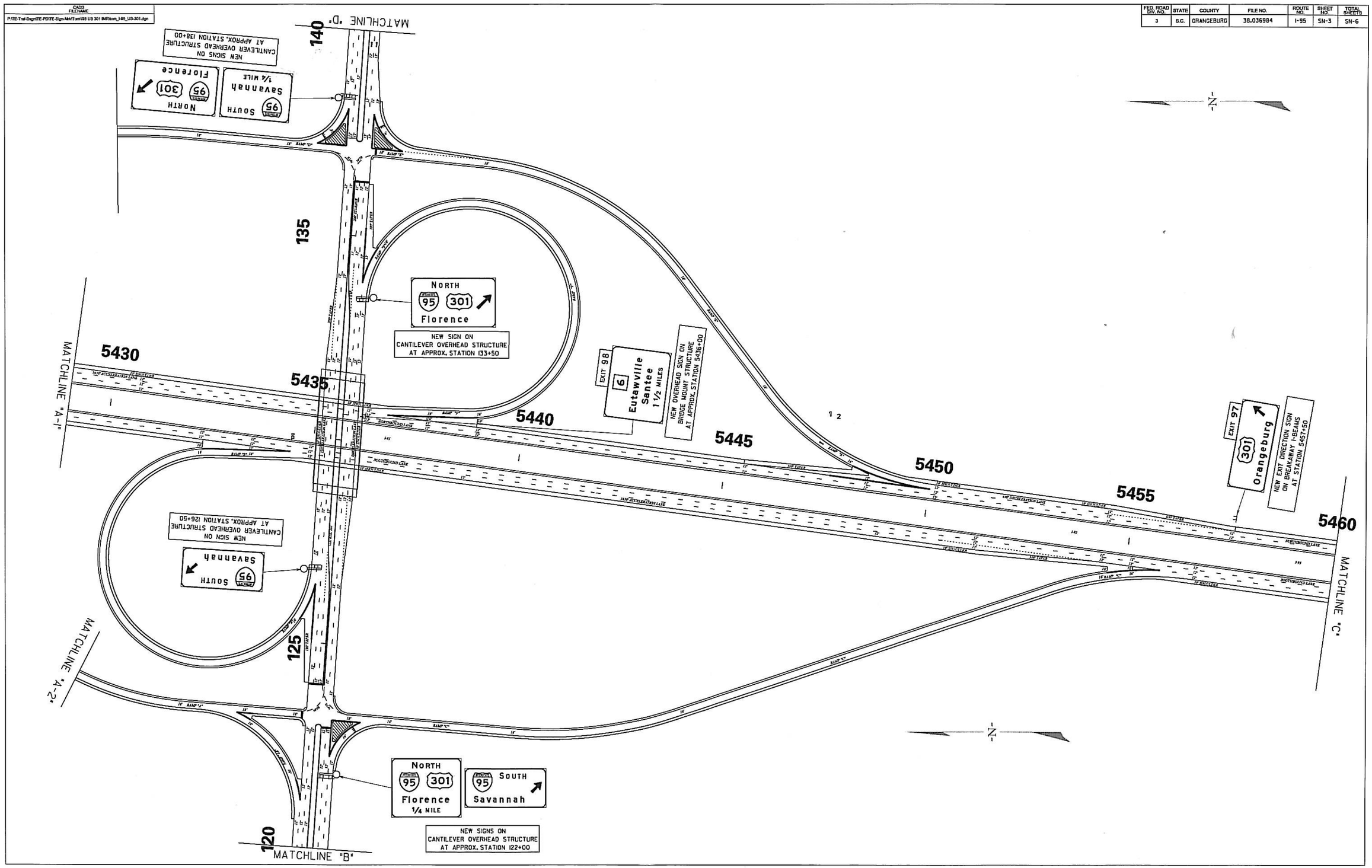

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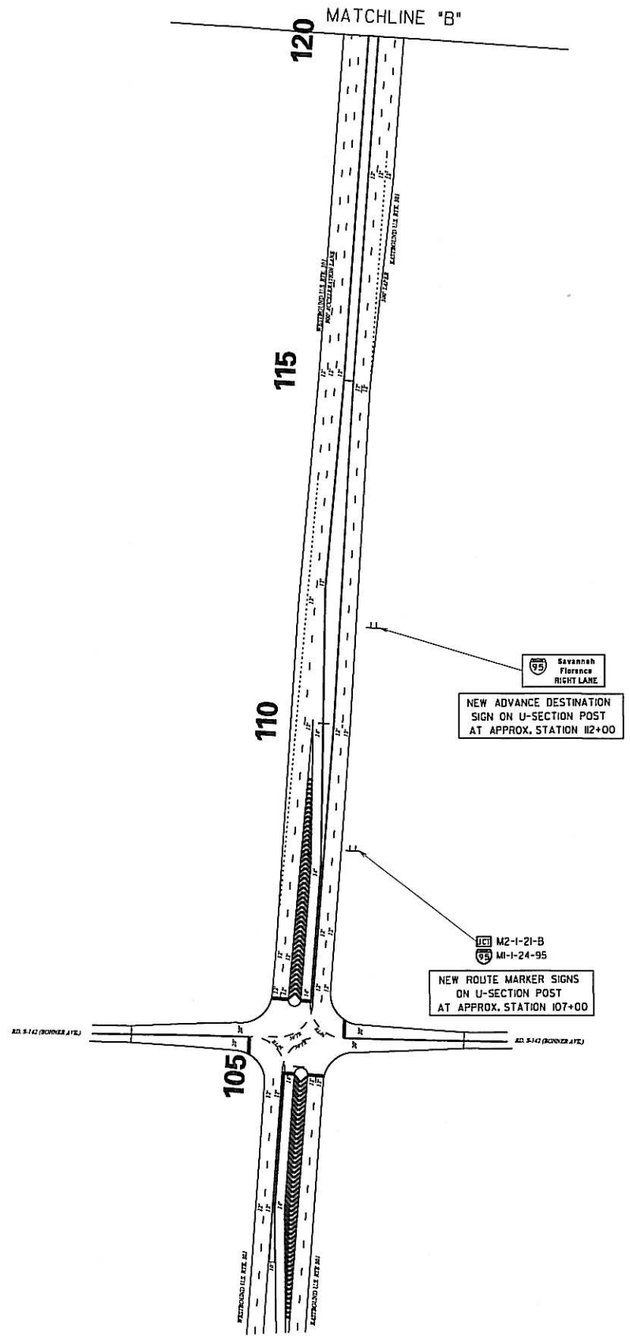

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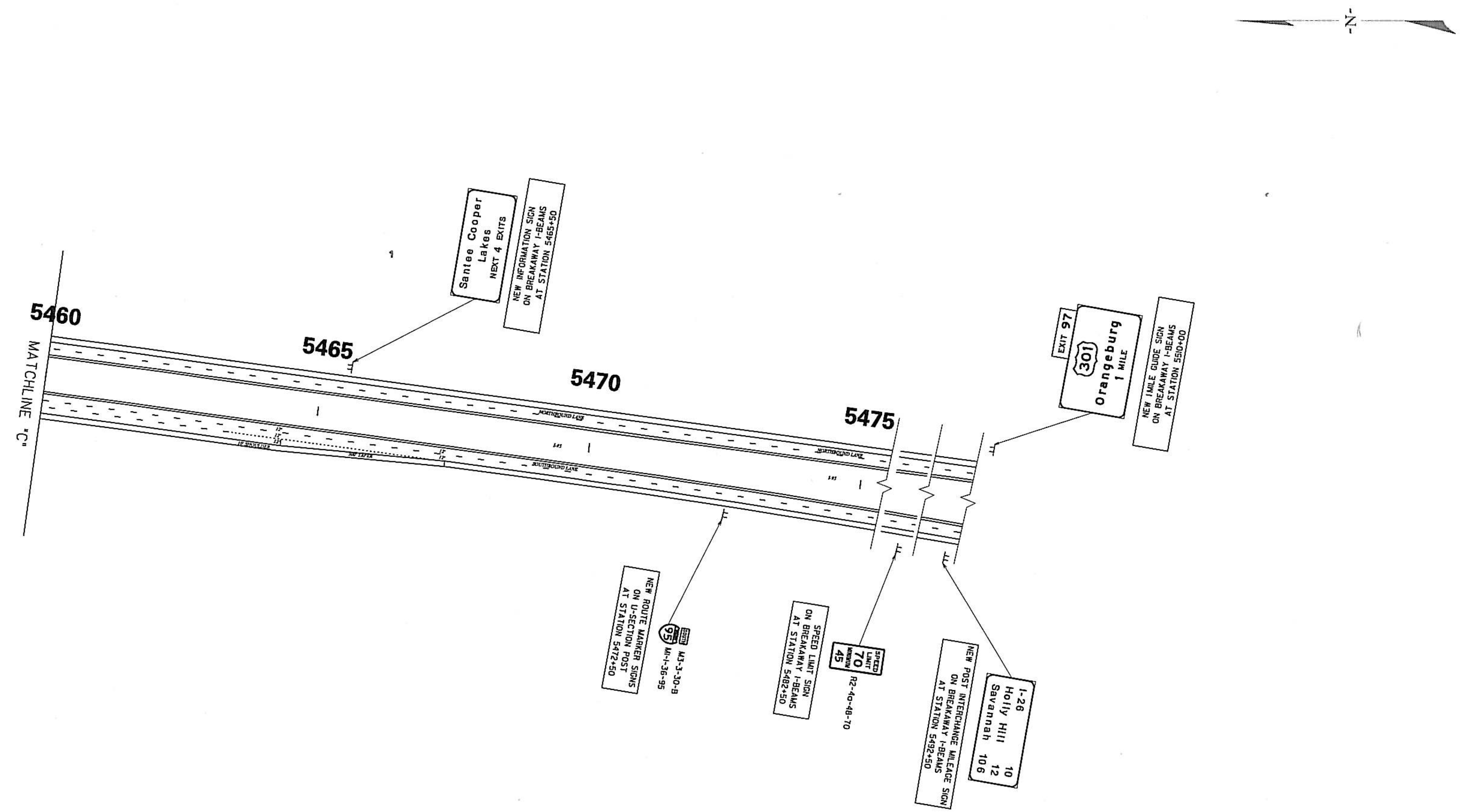

APPENDIX E

Noise Technical Memo - I-95/US 301 Interchange Improvement & US 301 Connector to SC 6 in Orangeburg County

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I-95 / US 301 Interchange Improvement &US 301 Connector to SC 6
in Orangeburg County

Noise Technical Memo

South Carolina Department of Transportation

February 2012

I I-95 / US 301 Interchange Improvement &US 301 Connector to SC 6
In Orangeburg County

Noise Technical Memo

This project provides improvements to the interchange of US 301 with Interstate 95 and the extension of US 301 from I-95 to SC 6, south of the Town of Santee, in Orangeburg County

Prepared for

South Carolina Department of Transportation

Prepared by

HDR Engineering, Inc.
of the Carolinas
3955 Faber Place, Suite 300
North Charleston, SC 29405

February 2012

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1.0 Introduction

A noise analysis was conducted to evaluate the potential noise impacts associated with the proposed improvements to the interchange of US Route 301 (US 301) with Interstate 95 (I-95) and the extension of US 301 from I-95 to South Carolina Route 6 (SC 6), south of the Town of Santee, in Orangeburg County, South Carolina. The project location is shown in Figure 1. The existing interchange of US 301 at I-95 is a three leg interchange that provides access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently there are no ramps to access northbound I-95 from southbound US 301 or to access southbound I-95 from northbound US 301. The need for interchange improvements in this area has been identified in the interest of a proposed $250M investment for an inland global logistics facility combined with the rapid growth and aggressive economic development occurring and forecasted in the County. Of the approximately nine noise-sensitive properties found to exist within the corridor, no noise-sensitive property was found to approach, exceed, or substantially exceed the Federal Highway Administration's (FHWA's) Noise Abatement Criteria (NAC) for the design year of 2035.

The South Carolina Department of Transportation's (SCDOT's) Noise Abatement Policy (NAP) was used for this noise study.

The change in relative noise levels for the design year of 2035—the noise level increase or decrease directly attributable to the Build Alternative—is projected to range from 3 decibel (dBA) to 13 dBA greater than the noise levels for the existing conditions in 2009.

2.0 Project Overview

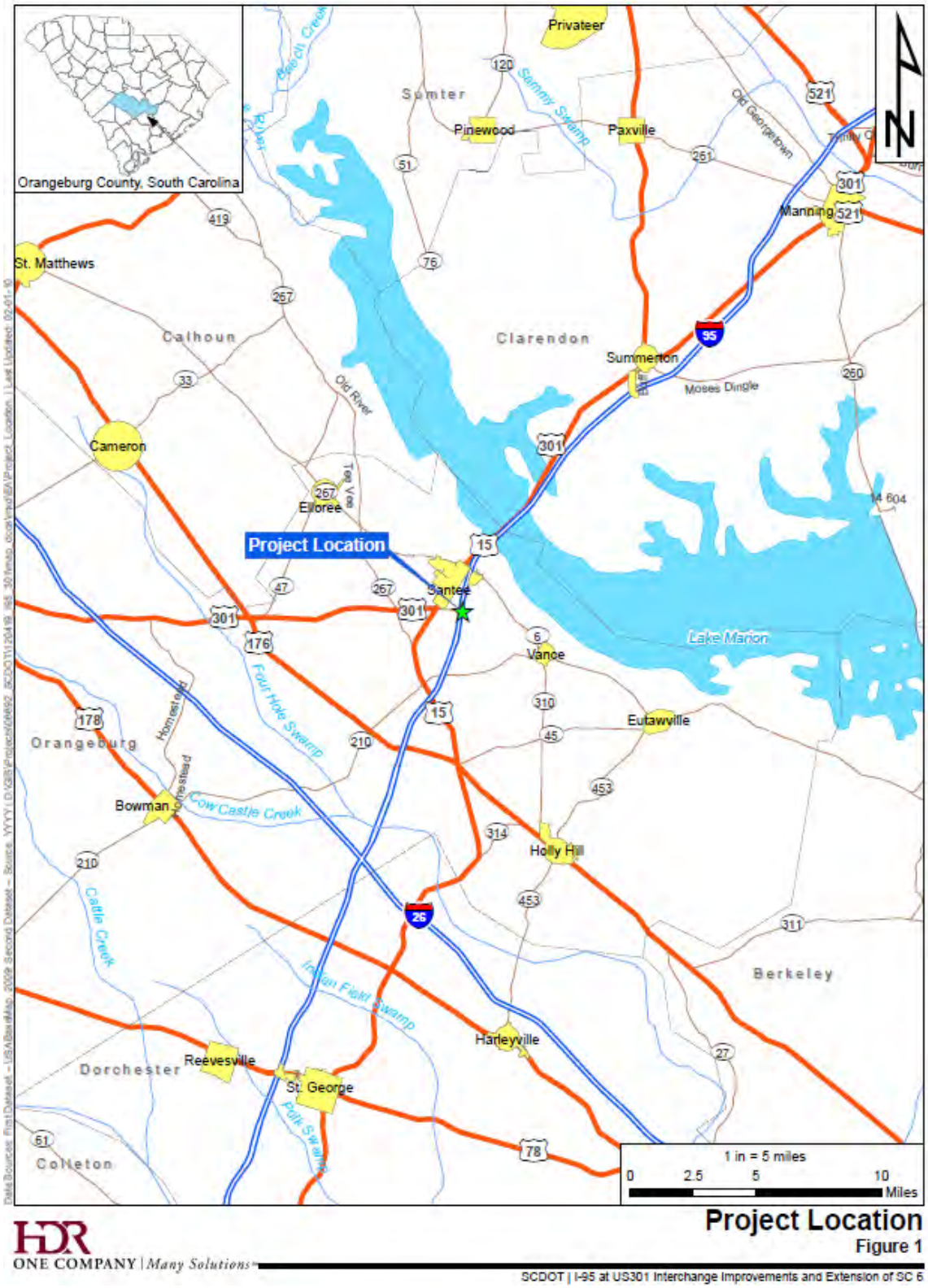
This section includes a description of the project location and scope, existing conditions, and the proposed improvements to the interchange of US 301 with I-95 and the extension of US 301.

2.1 Project Location and Scope

The proposed interchange improvements come as part of a larger investment in Orangeburg County to provide improved infrastructure to accommodate future traffic stemming from a proposed logistics and distribution facility in the County. Completion of this project will alleviate rapidly increasing coastal port congestion while improving the efficiency of intermodal freight movement within South Carolina. In addition, the project will help to improve economic expansion in Orangeburg County, which will benefit from the significant industrial development and subsequent economic development generated by the inland port construction, and South Carolina.

US 301 is currently a four-lane divided roadway with earthen shoulders, ditches, and a posted speed limit of 55 miles per hour (mph) within the study area. Interstate 95 is a four-lane divided roadway with paved shoulders, ditches, and a posted speed limit of 70 mph within the study area. The existing interchange of US 301 and I-95 is a three-leg interchange that provides access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently there are no ramps to access northbound I-95 from southbound US 301 or to access southbound I-95 from northbound US 301. The proposed project will provide opportunity to make all the movements at this interchange location and will also extend US 301 from I-95 to SC 6, south of the Town of Santee, in Orangeburg County, for a total of approximately 1.8 miles.

Figure 1. Project location



Engineering design drawings and recent aerial photographs were used for this noise analysis. Existing (2009) and future (2035) traffic volumes were determined by HDR.

This noise analysis is based on design and traffic information available at the time of the analysis. Several assumptions were made to conduct the noise analysis. If the roadway design, traffic data, or other assumptions change, the results of this analysis and the mitigation considerations contained within this report would need to be reevaluated.

2.2 Existing Conditions and Land Use

US 301 is currently a four-lane divided roadway with earthen shoulders, ditches, and a posted speed limit of 55 mph within the project area. US 301 is classified as a Minor Arterial, which indicates that it carries a mix of local and through traffic linking Collectors, and sometimes Local Streets, with Principal Arterials. I-95 is a four-land divided roadway with paved shoulders, ditches, and a posted speed limit of 70 mph within the project area. It is classified as a Principal Arterial.

Existing land uses within the project area are mostly undeveloped, with scattered residential and agricultural uses. No unusual features or land uses were observed during field visits in February 2010 by HDR staff that would significantly influence the traffic noise propagation environment.

2.3 Proposed Improvements

The proposed improvements consist of modifying the I-95 / US 301 interchange from a partial access interchange to a full access interchange and extending US 301 from I-95 to SC 6, south of the Town of Santee, in Orangeburg County, for a total of approximately 1.8 miles. A grade-separated bridge over the CSX railroad is also proposed. SC 6 will be improved by the inclusion of turn lanes.

Two design year (2035) alternatives were considered in this study:

- No-Build Alternative
- Build Alternative

The No-Build Alternative assumes the proposed alignment would not be constructed. It provides a baseline from which to measure the performance, costs, and impacts of the Build Alternative.

3.0 Traffic Noise Analysis

The noise study for this project was conducted in accordance with Title 23 Code of Federal Regulations (C.F.R.) Part 772, entitled Procedures for Abatement of Highway Traffic Noise and Construction Noise. The SCDOT NAP requires the use of 23 C.F.R. Part 772 in the noise impact assessment process. Traffic Noise Model (TNM) version 2.5 was used to predict noise levels, conduct noise barrier evaluations, and develop noise isopleths.

Prior to using the model to predict noise levels, TNM's noise level results were compared with field readings to examine the accuracy of TNM in performing noise level calculations for this project (Section 3.2 – Model Validation). Representative sites within the project area were chosen and field readings of existing noise levels were recorded at the sites. The noise levels measured at these sites are called the ambient noise levels. Roadway geometry and topography, traffic volumes, land features, and the representative sites were entered into TNM 2.5 to replicate the conditions under which the noise level measurements were taken. Noise levels were calculated and compared with the ambient noise levels. Discrepancies in the model's calculations must be addressed prior to using the model for predicting future noise levels, and this was completed for the noise study.

Three conditions were modeled using TNM 2.5. The models estimated the peak-hour traffic noise levels for:

- existing condition (2009)
- projected condition for No-Build Alternative (2035)
- projected condition for Build Alternative (2035)

The 2035 projected conditions were evaluated using the SCDOT NAP criteria to determine whether noise mitigation would be warranted along the project.

3.1 Noise Sensitive Areas

Noise-sensitive sites were identified along the project corridor. These sites are defined as any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. The FHWA NAC delineates noise-sensitive areas by land use categories and their associated acceptable exterior noise levels (in dBA[1]) (see Table 1).

[1] dBA refers to the sound levels measured in decibels on the A-scale of a sound meter. A-weighting of decibels is related to how the human ear responds to different frequencies.

Table 1. Noise Abatement Criteria

Activity Category	dBA L_{Aeq1h}*	Activity Description
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B**	67 (exterior)	Residential
C**	72 (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio structures, recording studios, schools, and television studios
E**	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	Undeveloped lands that are not permitted

* the 1-hour equivalent loudness in A-weighted decibels, which is the logarithmic average of noise over a 1-hour period

Sources: FHWA, 2011; 23 C.F.R. § 772

**Includes undeveloped lands permitted for this activity category

The land use category known to occur within the project area is category B (residences). FHWA noise abatement guidelines state that abatement strategies should be considered when the L_{eq} noise levels "approach" (within 1 dBA) or exceed 67 dBA for a category B land use or 72 dBA for a category E land use. For example, noise levels approaching or exceeding 67 dBA (66 dBA or louder) for the category B land use will be considered for abatement.

The SCDOT policy employs FHWA's noise abatement level per land use category. However, the SCDOT policy does not consider it reasonable to provide abatement for affected businesses (category E) because businesses typically prefer visibility from the roadway. Because of the cost of providing noise abatement for isolated residences (one or two residences separated from others in the project area), SCDOT also considers providing noise abatement to isolated residences unreasonable. Therefore, businesses and isolated residences would not be considered for noise abatement. According to the SCDOT NAP, indoor noise levels are not normally considered unless special circumstances exist (SCDOT 2011).

First row noise-sensitive properties adjacent to the proposed alignment were considered for noise abatement. Receivers representing each noise-sensitive property were identified as single points along the project corridor. Nine receivers were placed along the corridor. The receiver locations were within 70 to 990 feet of the existing or proposed roadway centerline. The location of each noise-sensitive receiver is shown in Appendix B. Each noise-sensitive receiver is represented by an identification number. Identification numbers begin at the western end of the project corridor and progress numerically toward the eastern end.

3.2 Model Validation

Traffic noise measurements were taken at seven field monitoring sites. These sites were selected to be representative of areas of differing land uses and traffic characteristics within the project area. Roadway geometry and topography, traffic volumes, land features, and the field monitoring sites were entered into TNM 2.5 to replicate the conditions under which the traffic noise measurements were taken. Existing traffic noise levels from the field measurements were then compared against TNM's predictions to verify the accuracy of the computer model. If the predicted and measured levels were within 3 dBA (above or below) of one another, this was an indication that the model was within the accepted level of accuracy.

Field Testing Procedure

On February 24, 2010, HDR staff measured traffic noise levels at the field monitoring sites in the project area. Traffic noise measurements were conducted in accordance with the FHWA-PD-96-046, Measurement of Highway Related Noise (1996). The average meteorological conditions during the monitoring are shown in Table 2.

Table 2. Meteorological conditions

Temperature	≅ 46 to 74 ° Fahrenheit
Humidity	≅ 33 to 68 percent
Wind	≅ 0 to 4 miles per hour
Conditions	Clear to scattered clouds
Barometric pressure	≅ 29.76 to 29.85 inches

Instrumentation

Noise monitoring was conducted using a Larson Davis 820 (SLM) Type I integrating sound level meter. Table 3 summarizes the instruments that were used to collect the monitoring data for this noise analysis report.

Table 3. Noise analysis instrument summary

Instrument	Make	Model	Serial Number
Sound Analyzer 1	Larson Davis	820 Type 1	0964
Calibrator	Larson Davis	CAL200	2556

Field Measurement Methods

The sound level meter was programmed to compute the hourly equivalent sound level (L_{Aeq1h}). L_{Aeq1h} is the steady-state, A-weighted sound level that contains the same amount of acoustic energy as the actual time varying, A-weighted sound level over a 1-hour period. L_{Aeq1h} is measured in A-weighted decibels (dBA), which closely approximate the range of frequencies a human ear detects.

The following procedures were used for conducting the field readings:

- Two or three 10-minute-long noise level recordings were taken at each field monitoring site with the sound level meter.
- The sound level meter was calibrated before and after monitoring. No significant calibration drifts were detected during the conduct of the study.
- The microphone was mounted on a tripod 5 feet above the ground to simulate the average height of human hearing.
- The microphone was covered with a windscreen.
- Traffic traveling on I-95/SC 301 in both directions was counted manually and classified by vehicle type.
- Vehicle speeds were determined by driving with the traffic before and after measurement periods.

Model Validation Results

Ambient noise levels, as shown in Table 4, are the average of the noise level readings from each monitoring site. These levels were compared with sound levels predicted by TNM representing the field conditions. This comparison was used to make any necessary adjustments to the model input to most accurately reflect site conditions.

Table 4. Ambient noise levels compared with modeled noise levels

Monitoring site	**Ambient noise level (average dBA L_{Aeq1h})**	**Modeled noise level (dBA L_{Aeq1h})**	**Difference (dBA L_{Aeq1h})**
A. Business located NW of US 301 and Bonner Ave – approximately 47 feet west of centerline	68.1	66.4	-1.7
B. In the SE quadrant of the I-95/US 301 intersection – approximately 70 feet east of I95 centerline	72.9	74.6	+1.7
C. Near residences and SB I-95 to US 301 Off-ramp – approximately 195 feet west of I95 centerline	63.3	65.5	+2.2
D. Located NE of I-95/US 301 intersection – approximately 65 feet east of I95 centerline	71.5	73.3	+1.8
[1]E. Near residences SE of the I-95/US 301 intersection – approximately 415 feet south of the proposed US 301 centerline	56.2	N/A	N/A

Note: Receivers E, F, and G were monitored to represent the existing noise environment at residences not located near the existing roadways, but near the future proposed US 301 extension.

(*continued on next page*)

Table 4. Ambient noise levels compared with modeled noise levels (*continued*)

Monitoring site	Ambient noise level (average dBA L_{Aeq1h})	Modeled noise level (dBA L_{Aeq1h})	Difference (dBA L_{Aeq1h})
[1]F. Near residences in the NE quadrant of the I-95/US 301 intersection – approximately 415 feet north of the proposed US 301 centerline	55.3	N/A	N/A
[1]G. Off of Inca Ct sand road – approximately 110 feet north of the proposed US 301 centerline	44.6	N/A	N/A

Note: Receivers E, F, and G were monitored to represent the existing noise environment at residences not located near the existing roadways, but near the future proposed US 301 extension.

The measured and predicted noise levels were found to be within the acceptable 3 dBA tolerance.

3.3 Analysis Limitations

This noise analysis is based on design and traffic information available at the time of the analysis. The following assumptions were made to reach conclusions during the analysis phase:

- The project engineering designs as evaluated in this report will not change.
- Future traffic volumes, vehicle mix, and speed will remain consistent with those predicted in the traffic study for this project.
- The nature of land use in the project area will remain consistent with current uses and planned development.
- The area where people are most likely to spend time outside of their homes is in their yards, near their homes.

While the TNM 2.5 model has been calibrated and tested against actual noise measurements for several years, it should be noted that it is still a noise prediction model. The results of this analysis assume the predicting capabilities of TNM are sufficient.

Assumptions have been made to simplify the calculations for TNM

- The receiver (representing human hearing) is 5 feet above ground.
- The angle of view from the receiver to the road is 180 degrees.
- The ground type is consistent throughout the project area.

The noise levels used in the predictions are measured in L_{Aeq1h}, also designated as L_{eq}. This is the A-weighted average that represents the steady level over 1 hour that would produce the same energy as the actual signal. The actual instantaneous noise levels fluctuate above and below the measured L_{eq} during the measurement period (e.g., a police siren, a particularly noisy truck, or unusually high traffic volumes). Therefore, the use of L_{Aeq1h} for predicting noise levels and conducting the noise evaluation does not consider the noise levels as they may occur in their full range. The fluctuation of instantaneous noise levels will result in sounds that temporarily exceed the noise levels as they have been presented in the noise evaluation. However, these instantaneous noise levels cannot be predicted. Therefore, they cannot be used in the noise analysis.

4.0 Predicted Noise

The existing (2009) and design year (2035) traffic noise levels for the Build and No-Build Alternatives were predicted at nine noise-sensitive receiver locations using TNM 2.5. The average annual daily traffic (AADT), design hour factor (K), directional factor (D), truck factors (T), and vehicle speeds were based on information determined by HDR. Existing (2009) and future (2035) traffic volumes were also determined by HDR. Peak hour traffic data were used for the noise analysis (see Appendix A for traffic data).

Conceptual design plans overlaid on aerial photographs of the project corridor were used, along with project design drawings, to develop the horizontal and vertical coordinate input data required by TNM 2.5. Roadway coordinates were placed along the corridor along the centerline of each travel lane and along the centerline of the shoulders. The traffic volume was divided equally between each travel lane for existing conditions, the No-Build Alternative, and for the Build Alternative. No traffic was assigned to the shoulders. Receiver locations were identified from land use information and project corridor aerial photographs obtained from SCDOT.

The results of the TNM 2.5 noise predictions are presented in Appendix C, *Noise Summary: Properties Adjacent to Project*. The predicted noise levels in Appendix C reflect existing noise conditions and future noise conditions associated with the proposed roadway alignment for the Build Alternative.

5.0 Noise Impact Analysis

The nine noise-sensitive receiver locations were evaluated for traffic noise impacts resulting from 2035 peak-hour traffic conditions. The following criteria designate a noise impact according to the SCDOT NAP:

- The predicted design year noise level is 66 dBA or higher (approaches, within 1 dBA of, or exceeds 67 dBA) (category B).
- The difference between the existing condition and the predicted design year noise level is 15 dBA or greater, resulting in a “substantial increase” in noise levels.

Abatement measures must be considered for noise-sensitive properties meeting these criteria.

The predicted existing noise levels do not approach or exceed the approach noise level of 66 dBA at any of the noise-sensitive receiver locations.

The predicted 2035 noise levels for the No-Build Alternative approach or exceed the NAP noise-level criteria at two noise-sensitive receiver locations. Predicted noise levels resulting from the design year (2035) No-Build Alternative increase over existing levels from 4 dBA to 5 dBA. The magnitude of this increase is attributable to the traffic increases anticipated along the corridor.

Under the Build Alternative, no noise-sensitive receiver locations exceed the NAP noise-level criteria. As part of the project, four of the receivers will be acquired to accommodate the new interchange. Predicted noise levels resulting from the design year (2035) Build Alternative will increase over existing levels ranging from 2 dBA to 13 dBA. None of the predicted noise level increases resulted in a substantial increase, according to the SCDOT NAP.

Appendix C, *Noise Summary: Properties Adjacent to Project*, lists the predicted noise levels at each sensitive receiver location for existing conditions, the No-Build Alternative, and the Build Alternative. The difference between the existing noise level and future level is listed for each sensitive receiver location.

6.0 Noise Abatement Analysis

The noise level at all of the noise-sensitive receiver locations was predicted to be below the SCDOT NAP noise level criteria for the 2035 Build Alternative. No noise abatement is warranted under the SCDOT NAP. The NAP determines whether or not mitigation is warranted based on reasonability and feasibility.

Feasibility considers whether it is structurally and acoustically possible to provide the noise abatement; i.e., whether topography allows a barrier to be built and whether a substantial noise reduction will be achieved. An analysis of feasibility also takes into account drainage issues, safety considerations, maintenance requirements, and whether or not other noise sources are present in the area. Cross streets and driveway access to properties limit the dimensions of the barrier and affect its ability to achieve noise reduction for the entire property.

Feasibility deals with engineering and acoustic considerations and is based on consideration of the following conditions, among others:

- For a noise barrier to be acoustically feasible, it should provide at least at 5-dBA noise reduction for at least 75% of the impacted receivers.
- For a noise barrier to meet constructability constraints, the exposed height cannot exceed 25 feet in height.

Reasonability means SCDOT believes mitigation measures are prudent, based on consideration of the following conditions, among others:

- A majority of the owners and residents of the benefited properties must approve the barrier in order for it to be constructed. Fifty percent plus one of the affected property owners indicating a desire for the barrier is considered a majority.
- A noise reduction design goal of at least 8-dBA must be achieved for 80% of those receivers determined to be benefited,

- The cost of the noise abatement shall not exceed $30,000 per benefited property, using a unit cost of $35 per square foot.

Noise abatement evaluations for non-residential uses consider the number of occupants or usage of the property in determining the equivalent number of benefited residents.

7.0 Construction Noise and Vibration

Construction of the proposed project would result in temporary noise and vibration increases within the project area. Project-related noise and vibration would be generated primarily from heavy equipment used in hauling materials and building the roadway improvements. Sensitive areas located close to the construction area may temporarily experience increased noise and vibration levels. Construction noise would be minimized to the greatest extent practicable.

8.0 Conclusions and Recommendations

Existing and future noise levels were evaluated for properties in the vicinity of the I-95 at US 301 Interchange Improvements and Extension to SC 6 in Orangeburg County, South Carolina. No noise abatement measures were warranted based on future noise levels and the SCDOT NAP criteria.

Existing and future noise levels were predicted using TNM 2.5. TNM 2.5 predicts an increase in noise levels for the design year (2035) Build Alternative ranging from 3 dBA to 13 dBA above existing noise levels. The increase in noise levels did not meet the substantial increase criterion in the SCDOT NAP.

Construction-related noise would be minimized to the maximum extent possible practicable.

9.0 Noise Contours

In accordance with 23 C.F.R. Part 772, the state highway agency (SCDOT) is delegated the responsibility of taking measures that are prudent and feasible to ensure the location and design of highways are compatible with existing and planned land uses.

The threshold noise level (66-dBA) contour was calculated using the noise contour function in TNM 2.5 and was mapped to illustrate the areas adjacent to the project at or exceeding 66-dBA noise level for the 2035 Build Alternative.

The contour is depicted along the roadway corridor in Appendix D, *Threshold Noise Level Contour.*

Local planning agencies can use this information as a guide to ensure that noise impacts are minimized in the event of future land use changes.

10.0 References

South Carolina Department of Transportation (SCDOT). 2011. *South Carolina Department of Transportation, Traffic Noise Abatement Policy*. Issued March 2011, effective July 13, 2011.

U.S. Department of Transportation, Federal Highway Administration (FHWA). 1996. *Measurement of Highway-Related Noise*. FHWA Report Number FHWA-PD-96-046.

——— 1998. *FHWA Traffic Noise Model: User's Guide*. FHWA Report Number FHWA-PD-96-009.

——— 2004. *FHWA Traffic Noise Model: User's Guide (Version 2.5 Addendum)*.

Appendix A

Traffic Data

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Traffic Data

Existing (2009) and projected (2035) traffic volumes were determined by HDR in March 2010 and revised in December 2011.

The existing peak-hour traffic volumes are presented in Table A-1.

Table A-1. 2009 Existing peak-hour traffic volumes

Location	Vehicles	Truck Factor (%)
Northbound I-95 to on-ramp	1,134	9
Northbound I-95 north of on-ramp	1,306	9
Southbound I-95 to off-ramp	977	9
Southbound I-95 south of off-ramp	849	9
Eastbound US 301	217	5
Westbound US 301	265	5

The future traffic conditions were calculated based on traffic projections determined by HDR. They are presented in Tables A-2 and A-3.

Table A-2. 2035 No-Build peak-hour traffic volumes

Location	Vehicles	Truck Factor (%)
Northbound I-95 to on-ramp	2,529	9.2
Northbound I-95 north of on-ramp	2,986	9.7
Southbound I-95 to off-ramp	2,979	10.9
Southbound I-95 south of off-ramp	2,565	9.8
Eastbound US 301	457	7.3
Westbound US 301	414	8.9

Table A-3. 2035 Build peak-hour traffic volumes

Location	Vehicles	Truck Factor (%)
Northbound I-95(to Off Ramp)	2,538	9.2
Northbound I-95 (north of On Ramp)	2,881	9.7
Southbound I-95 (to Off Ramp)	2,535	10.9
Southbound I-95 (south of On Ramp)	2,592	9.8
I-95 NB Off Ramp	137	7.6
I-95 NB On Ramp	98	5.0
Loop On Ramp from EB US 301 to NB I-95	382	5.0
I-95 SB Off Ramp	272	5.5
I-95 SB On Ramp	52	5.0
Loop On Ramp from WB US 301 to SB I-95	277	5.0
Eastbound US 301 (to I-95 SB Ramps)	562	6.8
Eastbound US 301 (btn I-95 SB and NB Ramps)	558	7.0
Eastbound US 301 (btn I-95 NB Ramps and Jafza Drive)	291	12.3
Eastbound US 301 (btn Jafza Drive and SC 6)	175	4.9
Westbound US 301 (btn SC 6 and Jafza Drive)	74	4.8
Westbound US 301 (btn Jafza Drive and I-95 NB Ramps)	565	12.6
Westbound US 301 (btn I-95 NB and SB Ramps)	488	15.0
Westbound US 301 (I-95 SB Ramps to the west)	435	8.2

The existing and future operating speeds for I-95 and US 301 within the Study Area are 70 mph and 55 mph respectively.

Appendix B

Monitoring Sites, Receiver Locations

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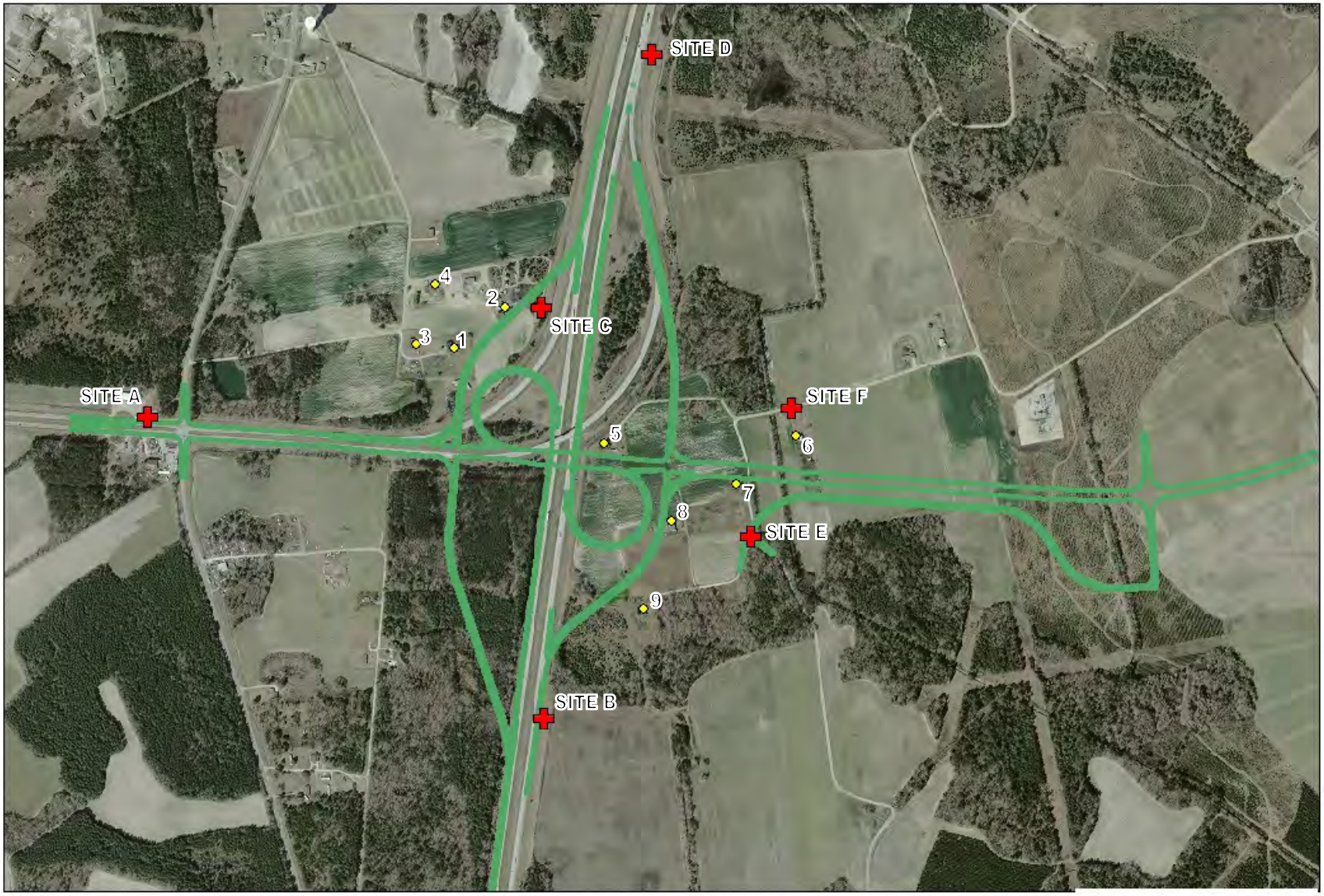

Appendix B - Project Area
I-95 at US 301 Interchange Improvement
Orangeburg County, SC

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Appendix C

Noise Summary: Properties Adjacent to Project

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Noise Summary: Properties Adjacent to Project

Receiver ID	Property represented	Distance from existing I-95 centerline (feet)	Existing condition (2009) (dBA L_{Aeq1h})	No-Build Alternative (2035) (dBA L_{Aeq1h})	Build Alternative (2035) (dBA L_{Aeq1h})	Difference between existing and proposed Build (dBA L_{Aeq1h})	Mitigation consideration under Build Alternative with symmetrical widening
1	Residential	750	57	61	60	+3	None warranted, below SCDOT NAP
2	Residential	450	61	66	*Take*	*N/A*	This receiver falls within the proposed ROW and will be acquired as part of the project
3	Residential	990	54	58	57	+3	None warranted, below SCDOT NAP
4	Residential	925	52	57	57	+5	None warranted, below SCDOT NAP
5	Residential	100[1]	64	68	*Take*	*N/A*	This receiver falls within the proposed ROW and will be acquired as part of the project
6	Residential	235[1]	47[2]/55[3]	52	60	+13/+5	None warranted, below SCDOT NAP
7	Residential	70[1]	50[2]/56[4]	54	*Take*	*N/A*	This receiver falls within the proposed ROW and will be acquired as part of the project
8	Residential	340[1]	54[2]/56[4]	58	*Take*	*N/A*	This receiver falls within the proposed ROW and will be acquired as part of the project
9	Residential	610	56[2]/56[4]	60	61	+5/+5	None warranted, below SCDOT NAP

Notes: Shading indicates the noise level exceeds the South Carolina Department of Transportation Noise Abatement Procedure criterion for noise abatement.

[1] Distance from proposed US 301 centerline

[2] From TNM modeling results

[3] From Site F monitoring data

[4] From Site E monitoring data

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Appendix D

Threshold Noise Level Contour

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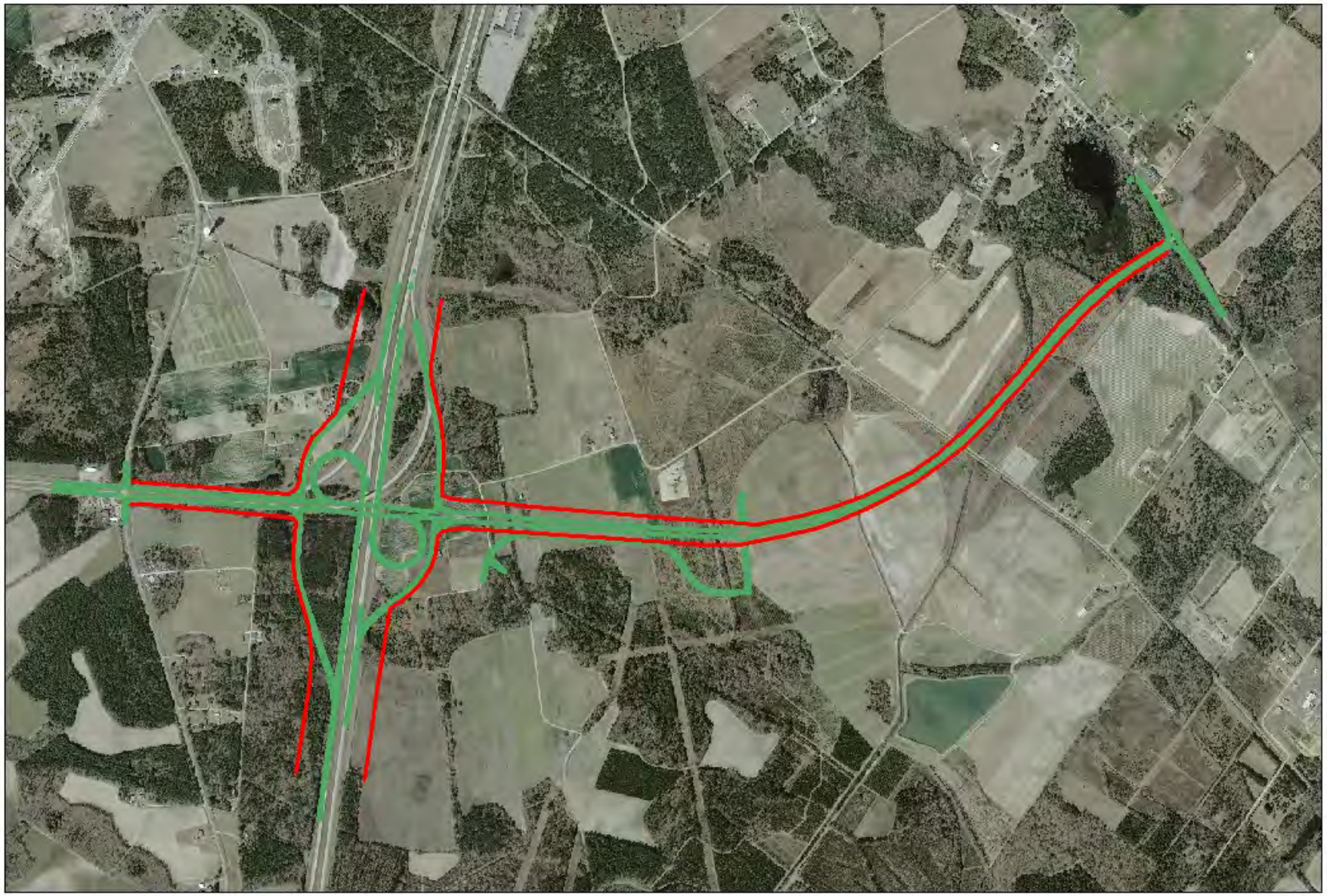

Appendix D - Approximate Contour Line
I-95 at US 301 Interchange Improvement
Orangeburg County, SC

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APPENDIX F

I-95 at US 301 Jurisdictional Determination Approval

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DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

June 23, 2010

Regulatory Division

Mr. Randall Williamson
SC Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202-0191

Re: SAC 2010-00306-DJE
Orangeburg County

Dear Mr. Williamson:

This is in response to a letter dated March 10, 2010 from Mr. Eric Mularski with HDR Engineering, requesting a wetland determination on your behalf, for a tract, located near the intersection of Highway 301 and I-95 in Orangeburg County, South Carolina. The project area(s) are depicted as the "Environmental Study Area" on the enclosed sketch entitled "I-95 at US 301 Interchange SAC 2010-00306-DJE" and dated May 6, 2010. The waters of the US are depicted on sheets 1 and 2 of 2 entitled "WETLAND SURVEY SHOWING JURISDICTIONAL AND NON-JURISDICTIONAL WETLANDS, DITCHES AND RPW'S WITHIN THE SURVEY LIMITS OF THE I-95 AT US 301 INTERCHANGE ENVIRONMENTAL STUDY AREA" DATED FEBRUARY 22, 2010.

Based on an on-site inspection, a review of aerial photography, topographic maps, National Wetland Inventory maps and soil survey information , it has been concluded that the boundaries shown on the referenced sheets are a reasonable approximation of the location and boundaries of the wetlands found on this site. The property in question contains approximately 1.04 acres and 409.75 linear feet of federally defined freshwater wetlands or other waters of the United States subject to the jurisdiction of this office. However, you are cautioned that this delineation is approximate, subject to change, and should be used for planning purposes only. This office should be contacted prior to performing any work in or around these approximated wetlands or other waters of the United States. In order for a more accurate delineation to be provided, these areas should be located and marked on-site, and surveyed and platted on a map (in order for the wetland line to be reproduced in the future based solely on the platted map). Upon receipt of such a plat, this office can then issue a letter verifying the accuracy of the actual jurisdictional boundaries. You should also be aware that the areas identified as wetlands or other waters of the United States may be subject to restrictions or requirements of other state or local government entities.

In addition, the property in question contains approximately 2.16 acres of federally defined freshwater wetlands as defined by the 1987 US Army Corps of Engineers Wetland Delineation Manual; however, they are not considered to be subject to the jurisdiction of this office due to decisions by the U.S. Supreme Court and, as such, Department of the Army authorization will not be required for mechanized land clearing, excavation, or the placement of dredged or fill material on this site. The location and configuration of these areas are reflected on the sketch referenced above. It should be clearly noted that decisions of the U.S. Supreme Court to exclude certain waters and wetlands from federal jurisdiction under the Clean Water Act has no

effect on any state or local government restrictions or requirements concerning aquatic resources, including wetlands. You are strongly cautioned to ascertain whether such restrictions or requirements exist for the area in question before undertaking any activity which might destroy or otherwise impact these wetland resources.

Please note that the actual boundary of wetlands is approximate and, therefore, is subject to change and not appealable; however, the determination of jurisdiction over these wetlands is final and this approved jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use. If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified sketch should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional determination and delineation must be conducted.

In future correspondence concerning this matter, please refer to SAC 2010-00306-DJE. You may still need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management. A copy of this letter is being forwarded to them for their information.

If you have any questions concerning this matter, please contact Elizabeth Williams at 843-329-8044 or toll free at 1-866-329-8187.

Sincerely,

Travis Hughes
Chief, Special Projects Branch

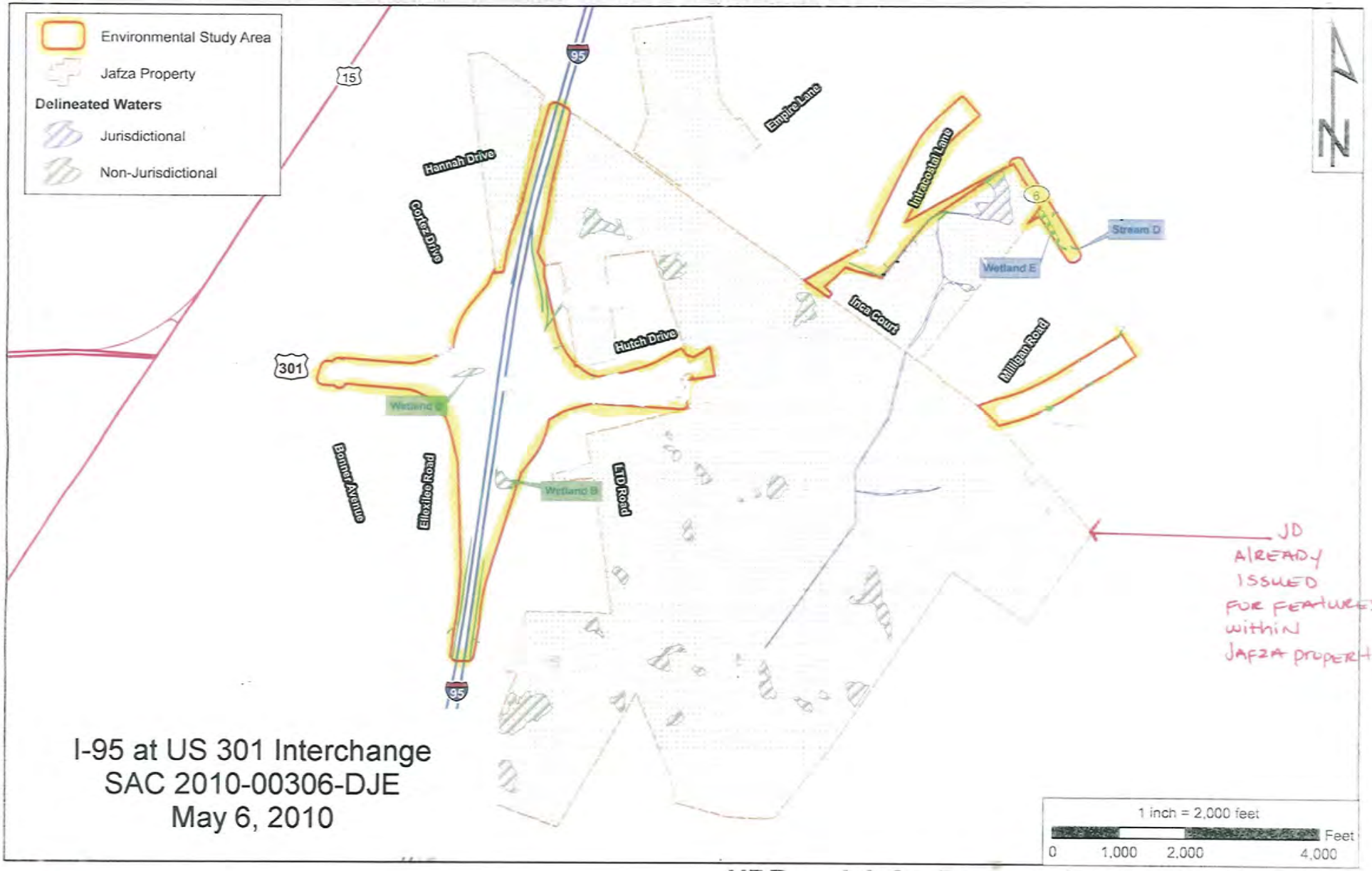
Enclosures:
Approved Jurisdictional Determination Form
Notification of Appeal Options

Copy Furnished:

South Carolina Department of Health
and Environmental Control Office of
Ocean and Costal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

Mr. Eric Mularski
HDR Engineering
3955 Faber Place Drive, Suite 300
North Charleston SC 29405

Mr. Danny Johnson
SC Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202-0191



HDR and Jafza Property Wetland Delineation.

Figure X-X

APPENDIX G

JAFZA Jurisdictional Determination Approval

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DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

February 24, 2009

Regulatory Division

Mr. Eric McClanahan
S&ME, Inc.
620 Wando Park Boulevard
Mt. Pleasant, South Carolina 29464

Re: SAC 2008-1180-2JY

Dear Mr. McClanahan:

This is in response to your letter received June 5, 2008, requesting a wetland determination, on behalf of Jafza South Carolina, LLC, for a 1,324.356 acre tract located on the east side of U.S. I-95 at the intersection with U.S. Highway 301 in the Santee community, Orangeburg County, South Carolina. The project area is depicted on the survey plat you submitted which was prepared by B. P. Barber and Associates, Inc., dated October 13, 2008, and entitled "Wetland Survey Jafza South Carolina, LLC Near Santee in Orangeburg County, S.C. (Sheets 1-4 of 4)".

This plat depicts surveyed boundaries of wetlands or other waters of the United States as established by your office. You have requested that this office verify the accuracy of this mapping as a true representation of wetlands or other waters of the United States within the regulatory authority of this office. The property in question contains 8.442 acres of jurisdictional freshwater wetlands or other waters of the United States subject to the jurisdiction of this office. In addition, the property contains 43.429 acres of federally defined freshwater wetlands or other waters that are not considered to be subject to the jurisdiction of this office due to a decision by the U.S. Supreme Court. The location and configuration of these areas, as well as their status relative to jurisdiction, are reflected on the plat referenced above.

It should be clearly noted that the decision of the U.S. Supreme Court to exclude certain waters and wetlands from federal jurisdiction under the Clean Water Act has no effect on any state or local government restrictions or requirements concerning aquatic resources, including wetlands. You are strongly cautioned to ascertain whether such restrictions or requirements exist for the area in question before undertaking any activity which might destroy or otherwise impact these wetland resources.

Based on an on-site inspection and a review of aerial photography and soil survey information, it has been determined that the surveyed jurisdictional boundaries shown on the referenced plat are an accurate representation of jurisdictional areas within our regulatory authority. This office should be contacted prior to performing any work in these areas.

If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified survey plat, should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted. This **approved** jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use.

In future correspondence concerning this matter, please refer to SAC 2008-1180-2JY. You may still need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Bureau of Water.

If you have any questions concerning this matter, please contact David Chamberlain at 843-329-8044 or toll free at 1-866-329-8187.

Respectfully,

for Charles R. Crosby
Chief, South Branch

Enclosures:
Basis for Jurisdiction
Notification of Appeal Options
Customer Service Survey

APPENDIX H

Biological Survey for Improvements to Interchange of US 301 at I-95 and US 301 Extension to SC 6

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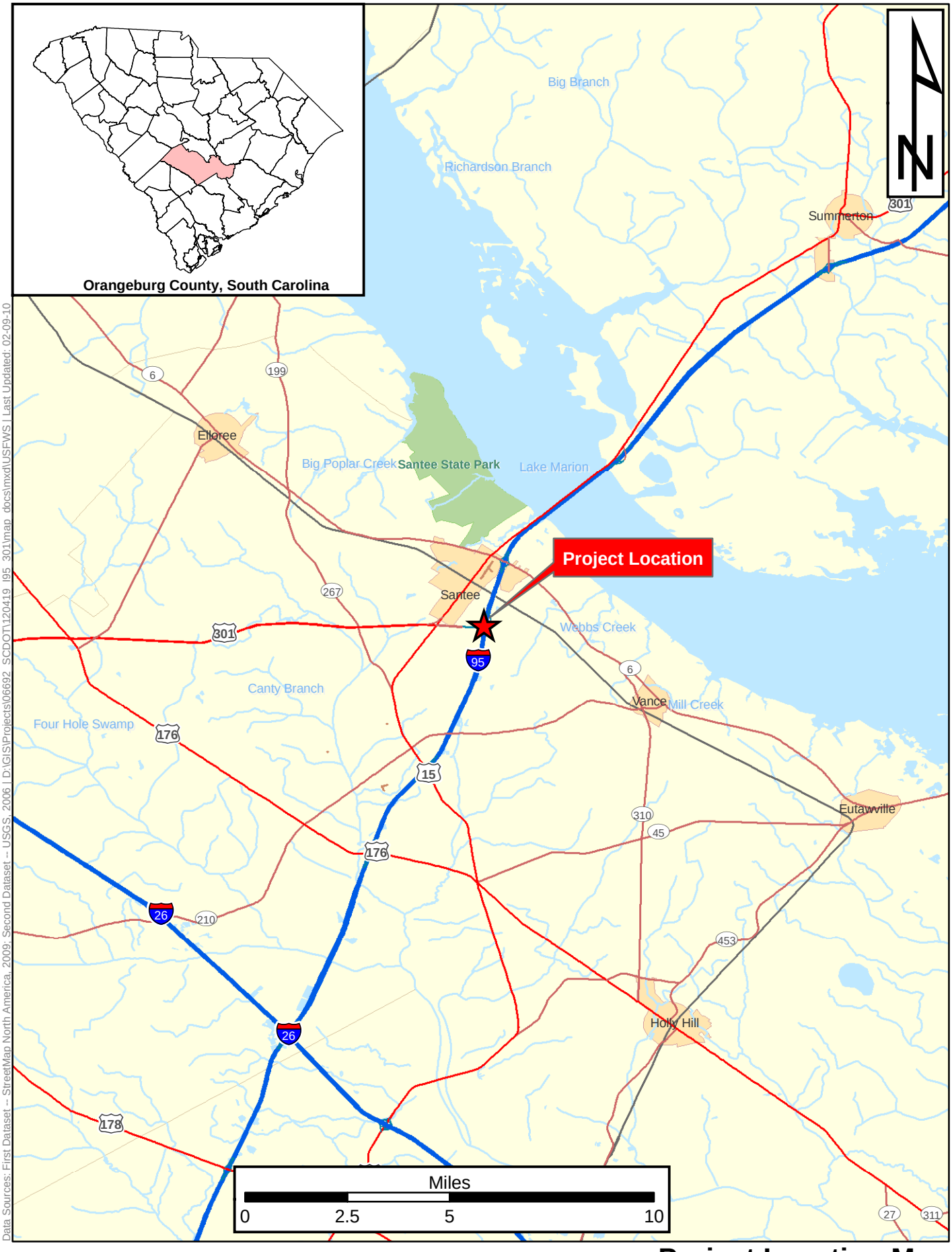
Biological Survey for Improvements to Interchange of US 301 at I-95 And US 301 Extension to S.C. 6

Project Description

The South Carolina Department of Transportation (SCDOT) is proposing to improve the existing interchange of US 301 at I-95, and to extend US 301 from I-95 to S.C. 6, southeast of the Town of Santee in Orangeburg County, for a total of approximately 2 miles (Figure 1). Currently, the existing interchange facility of US 301 at I-95 is a three-leg interchange that provides access to northbound I-95 from northbound US 301 and to southbound US 301 from southbound I-95. Currently there are no existing ramps to access I-95 southbound from northbound US 301, nor access from northbound US 301 from northbound I-95. The existing US 301 is a four-lane divided roadway consisting of 12 foot lanes with a 36 foot earthen median and earthen shoulders on either side. Along I-95, the current roadway composition is four 12 foot lane highway with 64 foot earthen median and 14 foot paved shoulders. The proposed right-of-way for the project area is approximately 200 linear feet from the centerline of roadway for US 301 and approximately 200 linear feet from the centerline of roadway for I-95, as it approaches the US 301 interchange.

The proposed interchange improvements come as part of a larger investment in Orangeburg County to provide improved infrastructure to accommodate future traffic stemming from a proposed logistics and distribution facility in the County. Completion of this project will alleviate rapidly increasing coastal port congestion while improving the efficiency of intermodal freight movement within South Carolina. In addition the project will help to improve economic expansion in Orangeburg County, which will benefit from the significant industrial development and subsequent economic development generated by the inland port construction, and South Carolina.

The proposed US 301 at I-95 interchange and US 301 extension to S.C. 6 is currently in the project development stage and a preferred alternative has not yet been selected. The SCDOT is evaluating several alternatives for the US 301 at I-95 interchange which include a full clover leaf ramp system, a diamond interchange, and an onion interchange ramp system. In conjunction with this evaluation, the SCDOT is also evaluating several alternatives for the extension of US 301 to S.C. 6. Currently, there are four separate alignment options which span from the existing US 301 at I-95 interchange east by northeast terminating at S.C. 6 between State Road SC-38-1394 and Naval Station Road, south of the Town of Santee. The project study area evaluated the needed right-of-way determined by the proposed alignment option (Figure 2). The project study area evaluated areas not previously evaluated by Jafza Americas (Jafza). None of the proposed alignment options have known endangered or threatened species impacts and all but one have minimal impacts to wetlands and streams.



Data Sources: First Dataset -- StreetMap North America, 2009; Second Dataset -- USGS, 2006 | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\USFWS | Last Updated: 02-09-10

Project Location Map

Figure 1

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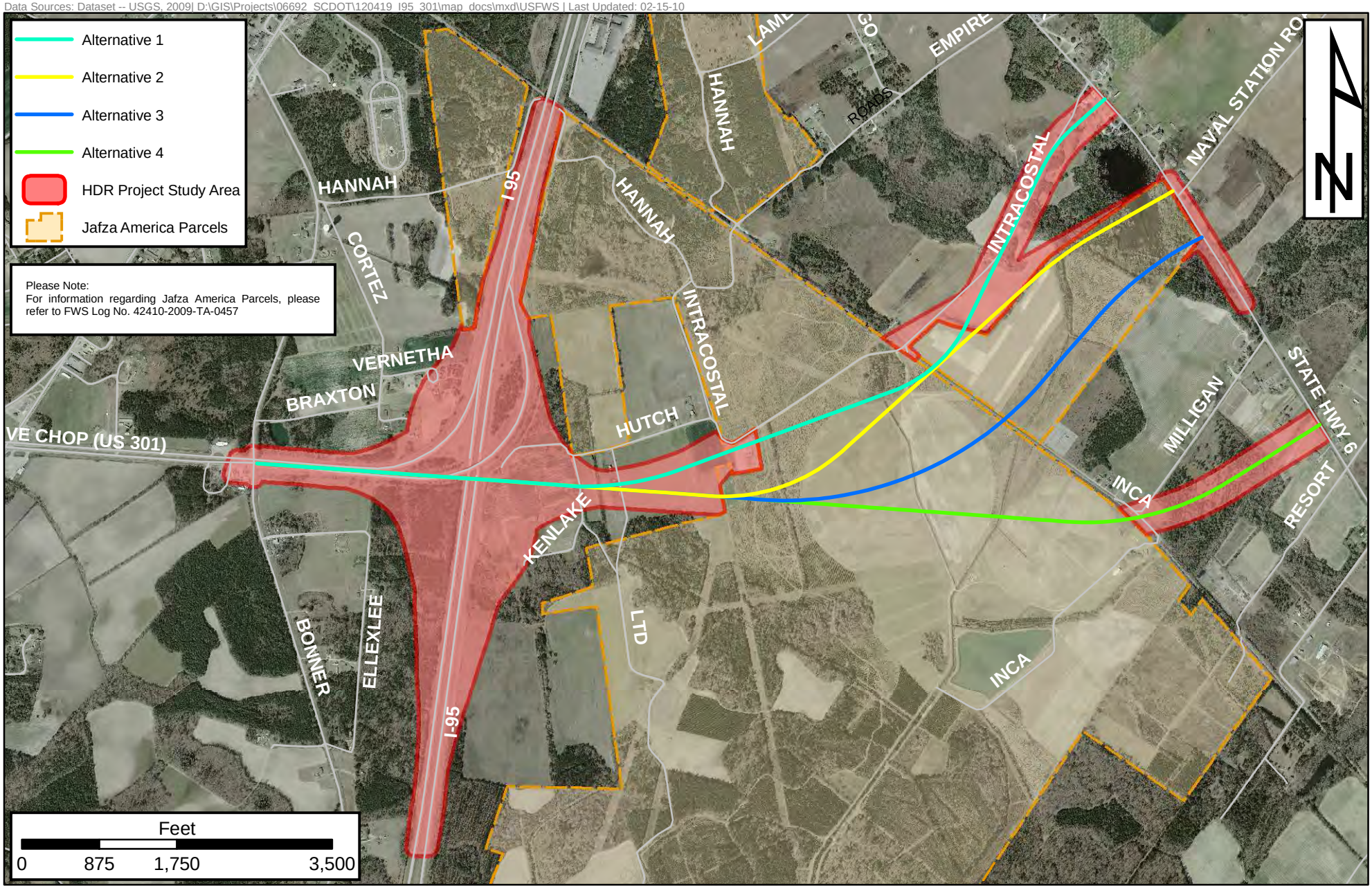
Data Sources: Dataset -- USGS, 2009| D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\USFWS | Last Updated: 02-15-10



Project Area Map

Figure 2

Independent of the SCDOT project as defined herein, Jafza has completed their own project development for the proposed Logistics and Distribution facility which included completion of an Environmental Evaluation (EE) and coordination with USFWS (FWS Log #42410-2009-TA-0457). Information documented in the Jafza EE applicable to SCDOT's project site is referenced in this document.

Threatened and Endangered Species

Pursuant to Section 7 of the Endangered Species Act of 1973, information on threatened and endangered species was obtained from published habitat management guidelines developed by the U.S. Fish and Wildlife Service (USFWS), sighting records from the SC Department of Natural Resources (SCDNR), literature sources and field surveys of the proposed project limits.

The following list of endangered (E) and threatened (T) species for Orangeburg County was obtained from the USFWS:

Fauna

Shortnose sturgeon – *Acipenser brevirostrum* – (E)
Red-cockaded woodpecker – *Picoides borealis* – (E)
Bald eagle – *Haliaeetus luecocephalus* – (T)
Frosted Flatwoods Salamander – *Ambystoma cingulatum* – (T)

Flora

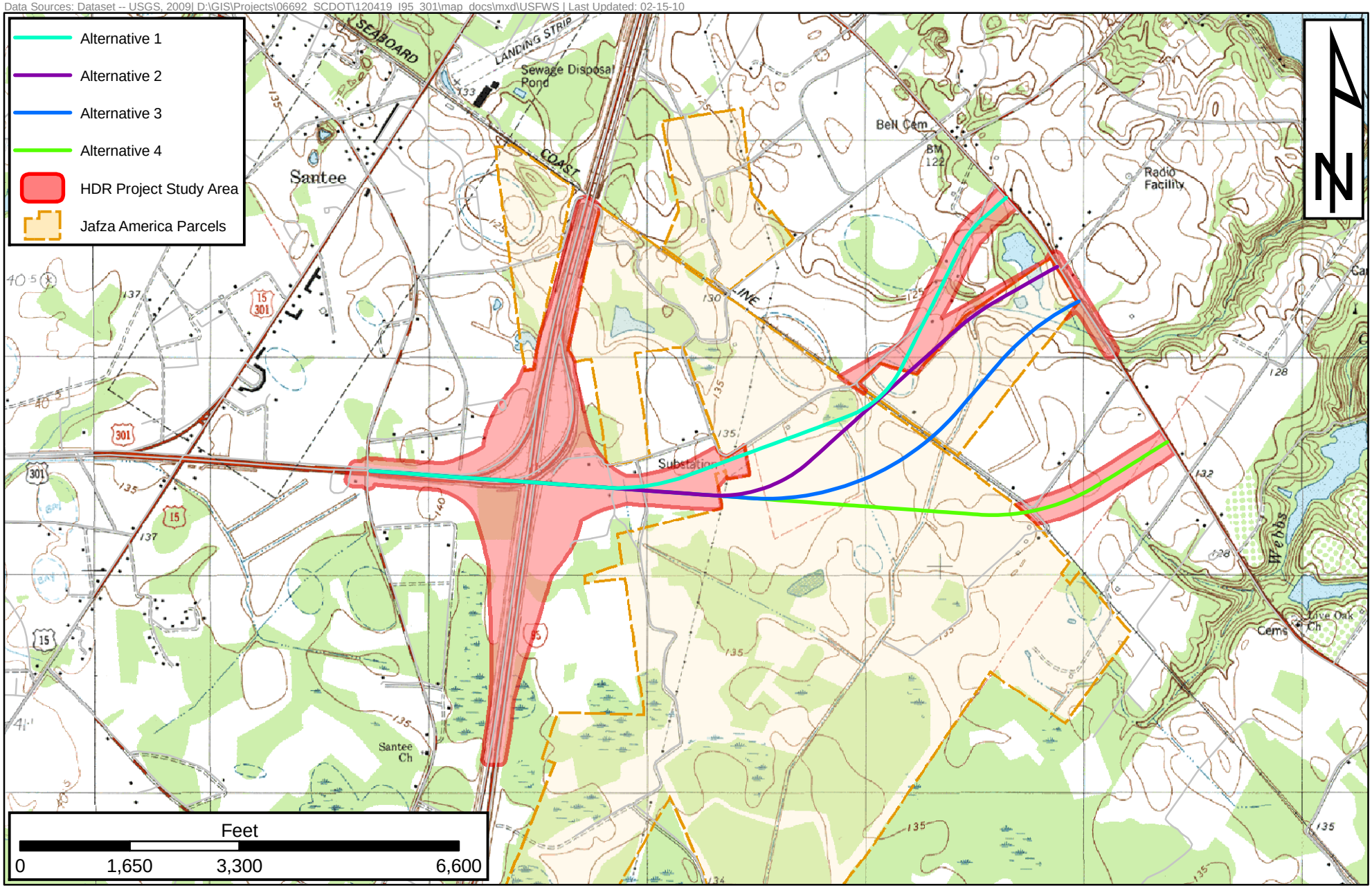
Canby's dropwort – *Oxypolis canbyi* – (E)

The proposed interchange improvements and extension of US 301 will require several small forested and wetland areas to be cleared; however, most of the required activity will occur within open field areas which have been used for agricultural production. A literature review was conducted in January 2010 and the project area was examined by field reconnaissance methods in January 2010. In addition, as noted above, Jafza completed a field survey for threatened and endangered species in June 2009. Findings and conclusions of the reviews are summarized in the paragraphs below.

Methods

Literature Review: According to the USFWS endangered species listing, there are five (5) federally protected species found in Orangeburg County. Species that are under Federal protection for the County are listed below in Table 1. Supplemental data specific to the project study area included an online review of the South Carolina Natural Heritage Trust (SCNHT) database. The SCNHT database provided detailed information on the known or potential locations of Federal and State threatened endangered, sensitive, and rare species. After reviewing the database, no threatened or endangered species are known to occur within the project study area.

Data Sources: Dataset -- USGS, 2009| D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\USFWS | Last Updated: 02-15-10



USGS Vance Topographic Quadrangle

Figure 3

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Field Review and Existing Conditions: The project study area was examined by field reconnaissance methods in January 2010. Habitats surveyed were determined by each species' ecological requirements. Suitable habitat was found to be present for 2 of the 5 listed species within the project study area limits however, none of the listed species were observed within the evaluated limits.

Table 1.
Federally Protected Species in Orangeburg County (Updated January 17th, 2006)

Scientific Name	Common Name	Federal Status	State Status	Habitat Present/ Biological Conclusion
Acipenser brevirostrum	Shortnose Sturgeon	E	E	No/No Effect
Haliaeetus leucocephalus	Bald Eagle	BGEPA	T	No/No Effect
Oxypolis canbyi	Canby's Dropwort	E	E	Yes/ No Effect
Ambystoma cingulatum	Frosted Flatwoods Salamander	T	E	No/No Effect
Picoides borealis	Red-Cockaded Woodpecker	E	E	Yes/No Effect

Notes:
E A taxon "in danger of extinction throughout all or significant portion of its range"
T A taxon "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
BGEPA Bald and Golden Eagle Protection Act

Results and Conclusion

Land use composition within the project study area was found to be mostly open agricultural fields, with areas of pine plantation and mixed pine hardwood forested tracts. Within the project area inundated roadside wetland ditches exist and extend along the length of right-of-way along both southbound and northbound I-95. Isolated depressional wetland areas are present in the gore areas within the existing US 301 at I-95 interchange complex. For more information please reference both the site photo log (Appendix A and Figure 3).

Although the area consists mainly of an agricultural regime, the forested communities that are present resemble bottomland hardwoods, mixed pine hardwood forests, and loblolly pine plantations of various stand ages, as described by Nelson (1986) and Smith et al (1997). These areas were characterized by sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), mockernut hickory (*Carya tomentosa*) and southern red oak (*Quercus falcata*). The agricultural regime consisted mainly of winter wheat with a rotation of cash crops (i.e. corn and soybean).

A few stream crossings and their adjacent floodplain wetlands are present within the project study area with most occurring within forested areas. There is also a network of drainage ditches that run throughout the site which serve to drain water away from the adjacent agricultural fields. Existing wetlands mainly consist of seasonally inundated freshwater forested shrub wetlands, with several instances of bottomland hardwood wetlands. Canopy and sub-canopy vegetation within the wetland areas consisted mainly of sweetgum, laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), bald cypress (*Taxodium distichum*) and flowering dogwood (*Cornus florida*). Herbaceous and vine species included Japanese honeysuckle (*Lonicera japonica*), rushes (*Juncus sp.*), sedges (*Carex sp.*), sawtooth blackberry (*Rubus argutus*), river cane (*Arundinaria gigantean*), green briar (*Smilax laurifolia*) and bushy bluestem (*Andropogon glomeratus*). There are several areas of deep roadside and agricultural drainage ditches within the project study area that are fully inundated and may be classified as jurisdictional wetlands under the U.S. Army Corps of Engineers Rapanos determination.

Reviews of the SCNHT indicated that there are no known occurrences of threatened and endangered species within the study area. Based on conducted field reconnaissance we were able to determine that there is no habitat present for 2 of the 5 federally protected species. Therefore, a "no effect" determination was made for these species.

Shortnose Sturgeon – This anadromous fish species exhibits limited distribution in southern waters and habitats include rivers, estuaries, and the sea. Preferred habitats are deep pools with soft substrates and vegetated bottoms (NatureServe), however, spawning habitat includes flooded bottomland hardwood swamps that are connected with riverine systems. No suitable habitat described above was found present within the project study area and resulted in a "no effect" for this species.

Red-cockaded woodpecker – Habitat for this species consists of old pine savannas with limited understory, and low basal area. These areas are typically maintained in a regular fire regime, which requires the nesting birds to inhabit live trees. Nesting habitat is typically large diameter pine stands of 60 years of age or older, which provide large diameter heartwood for nesting. Nesting trees are recognizable by either a reddish hue from the removal of bark around the nest cavity or candling caused from dried sap. Foraging habitat for this species is consistent with pine stands of moderate to low basal area and 30 years and older. There was a finding of marginal red-cockaded woodpecker foraging habitat (pine stands greater than 30 years of age) in one area of the project study area which abutted I-95 (Figure 4). However, the field reconnaissance showed no suitable nesting or breeding habitat (pine stands greater than 60 years of age) or evidence of candling or red-cockaded nesting cavities located within the project study area. A one-half mile survey was not completed at this time because the half mile survey area falls within that previously evaluated by Jafza in June 2009. Based upon those findings, there was no suitable nesting habitat and the findings concurred with those found during the field reconnaissance for this project. Therefore, the project is anticipated to have "no effect" on this species.

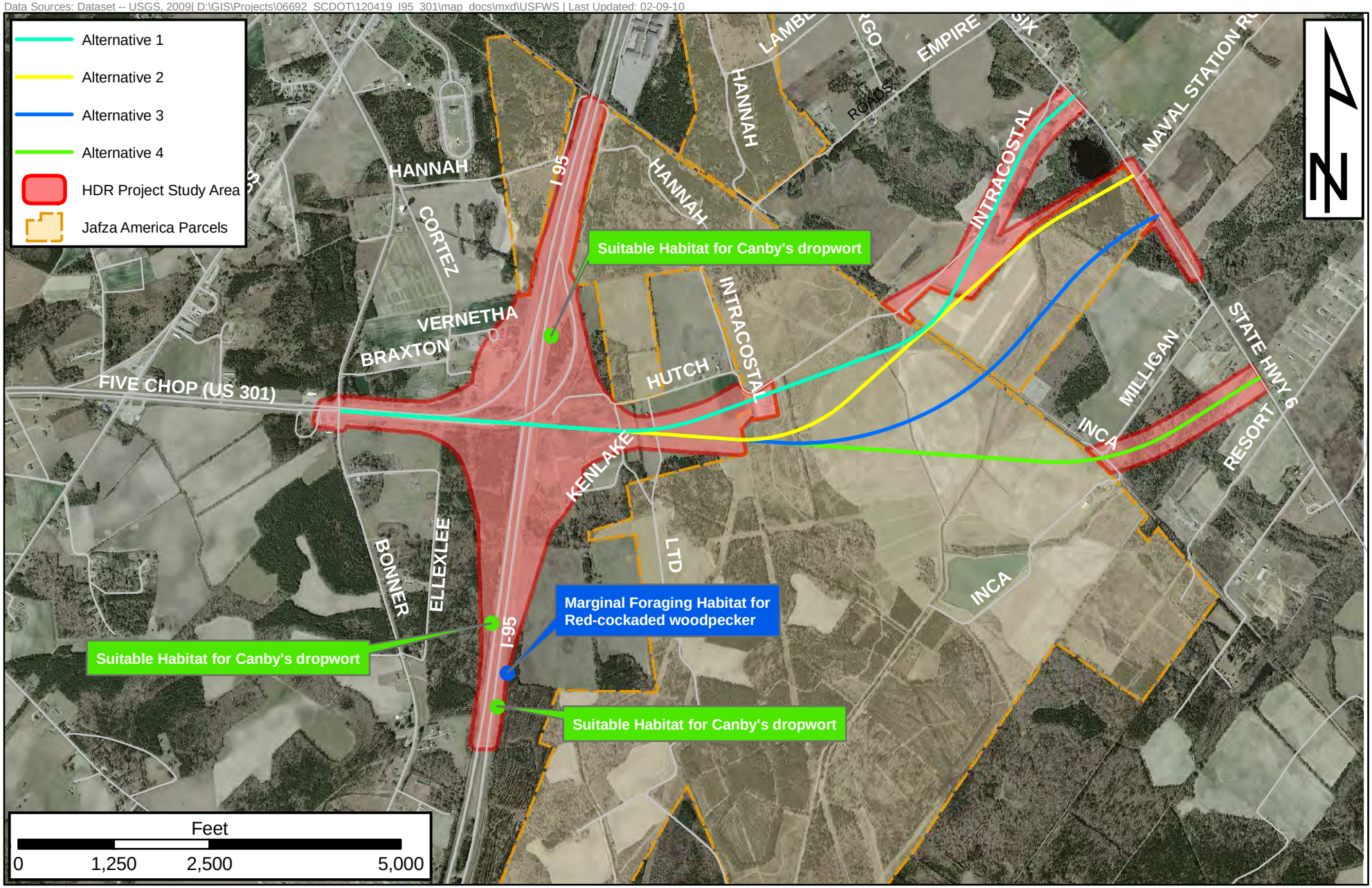
Frosted Flatwoods Salamander – This fossorial species typically inhabits longleaf pine (*Pinus palustris*) flatwoods (also called slash pine (*Pinus elliottii*) flatwoods) which are typically flat and exhibit a wire grass (*Aristida stricta*) ecosystem devoid of midstory vegetation. Breeding

habitat requires the need for ephemeral and inundated depressional graminoid complexes. These habitats are dominated by inundated pond cypress (*Taxodium ascendens*) ponds with a large number of crayfish burrows found across the extent of the inundated area. Upon review of the field reconnaissance, no suitable habitat was found to exist within the project study area and the determination resulted in a "no effect" for this species.

Bald eagle – Habitat for this species is found in areas close to coastal areas, bays, large river systems, and lakes which provide adequate foraging opportunities for fish, waterfowl, and water birds. Preferred nesting habitat is usually found in large conifer trees, with deciduous trees also being noted in many instances which are in close proximity to open water foraging areas. No suitable habitat was found within the project study area, nor were any individuals of this species observed during the field reconnaissance. This determination resulted in a "no effect" for this species.

Canby's dropwort – This species inhabits a variety of wetland complexes including cypress ponds, wet pine savannas, cypress-pine swamps, sloughs, ditches, and grass-sedge dominated Carolina bays. The most abundant populations also show trends of growing in abundant sunlight within these habitat complexes. Notably, this species prefers sandy loam or loam soils that are well drained with a high water table. Of the known soil types which support Canby's dropwort populations one is found within the project study area, Coxville fine sandy loam (NRCS) comprises up to 23.7% of the study area. Suitable habitat was determined for the project study area upon performing the field reconnaissance within areas of inundated roadside ditches which provided the appropriate grass-sedge complexes and abundant sunlight. The Jafza study indicated suitable habitat may exist within a wetland area located in the southern portion of the Jafza property. Reconnaissance within the SCDOT project area indicated a finding of suitable habitat within three wetland areas abutting I-95 (Figure 4). However, no occurrences of the actual plant were observed which remains consistent with the initial field study performed in June 2009 by Jafza. Likewise, there was no record of this species being observed on the project study area, nor in close proximity on the SCNHT database. The determination resulted in a "no effect" for this species, and these findings from the January 2010 field reconnaissance are in concurrence with the findings from the field survey that was performed by Jafza in June 2009 and was included in their EE document in coordination with USFWS (FWS Log #42410-2009-TA-0457).

Data Sources: Dataset -- USGS, 2009| D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\USFWS | Last Updated: 02-09-10



Suitable Habitat Location for Noted Species

Figure 4

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Appendix A

Site Photo Log

Site Photographs-US 301 at I-95 Interchange

South view of Ditch A

South view of Ditch B

South view of Ditch C

South view of Ditch D

North view of Ditch E

North view of Stream A

West view of Stream B

East view of Stream C

East view of Stream D

East view of Stream E

Southeast view of Stream F

East view of Stream G

South view of Wetland A

East view of Wetland B

West view of Wetland B

North view of Wetland C

North view of Wetland D

Southeast view of Wetland E

Site Photographs-US 301 at I-95 Interchange

North view of Wetland G

**Please note that no pictures were taken of Wetland F. Wetland F has similarity to Wetland A.*

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APPENDIX I

Cultural Resources Survey of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6

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TO: Heather Robbins, NEPA Division Manager

FROM: Jeff A. Craver, Staff Archaeologist

DATE: July 19, 2012

SUBJECT: No need for additional Cultural resources surveys for the I-95/US 301 Interchange Improvements and US 301 Connector to SC 6 Project in Orangeburg County, PIN 36984.

The department has evaluated several different alternatives for the I-95/US 301 Interchange Improvements and US 301 Connector to SC 6 Project (see figure 1). The proposed project is covered by two cultural resource surveys. The first by Brockington and Associates (2010) is available in Appendix I of the Environmental Assessment. The second by S&ME (2009) for the Jafza facility which is located within the project limits (see figure 2).

Alternative 3a has been chosen to be the preferred alternative and was not originally evaluated for cultural resources. However, this alternative is entirely within the project limits of the two previous surveys (see figures 1 and 2). No additional investigations are recommended.

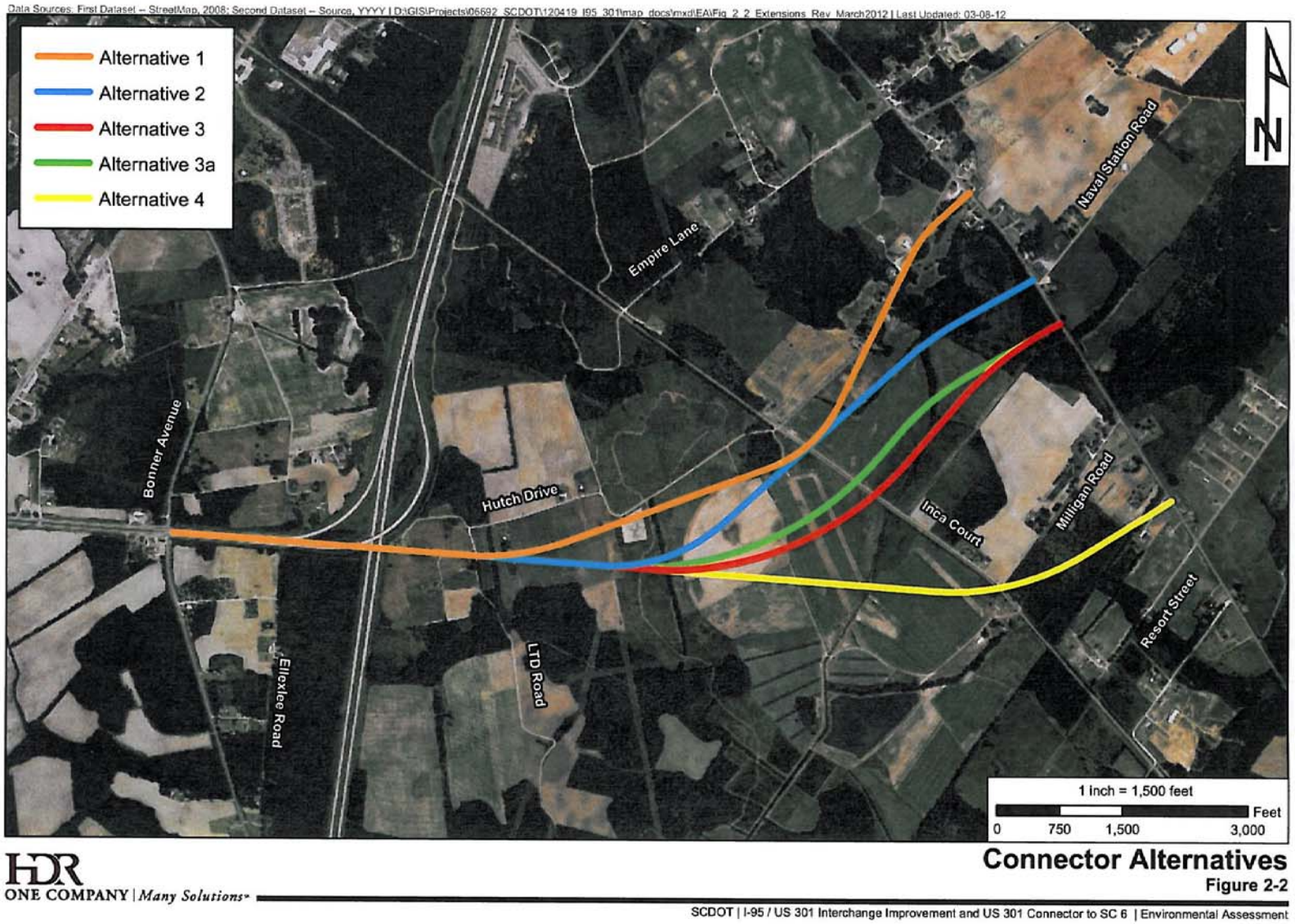

Figure 1. Project alternatives with alternative 3a in green

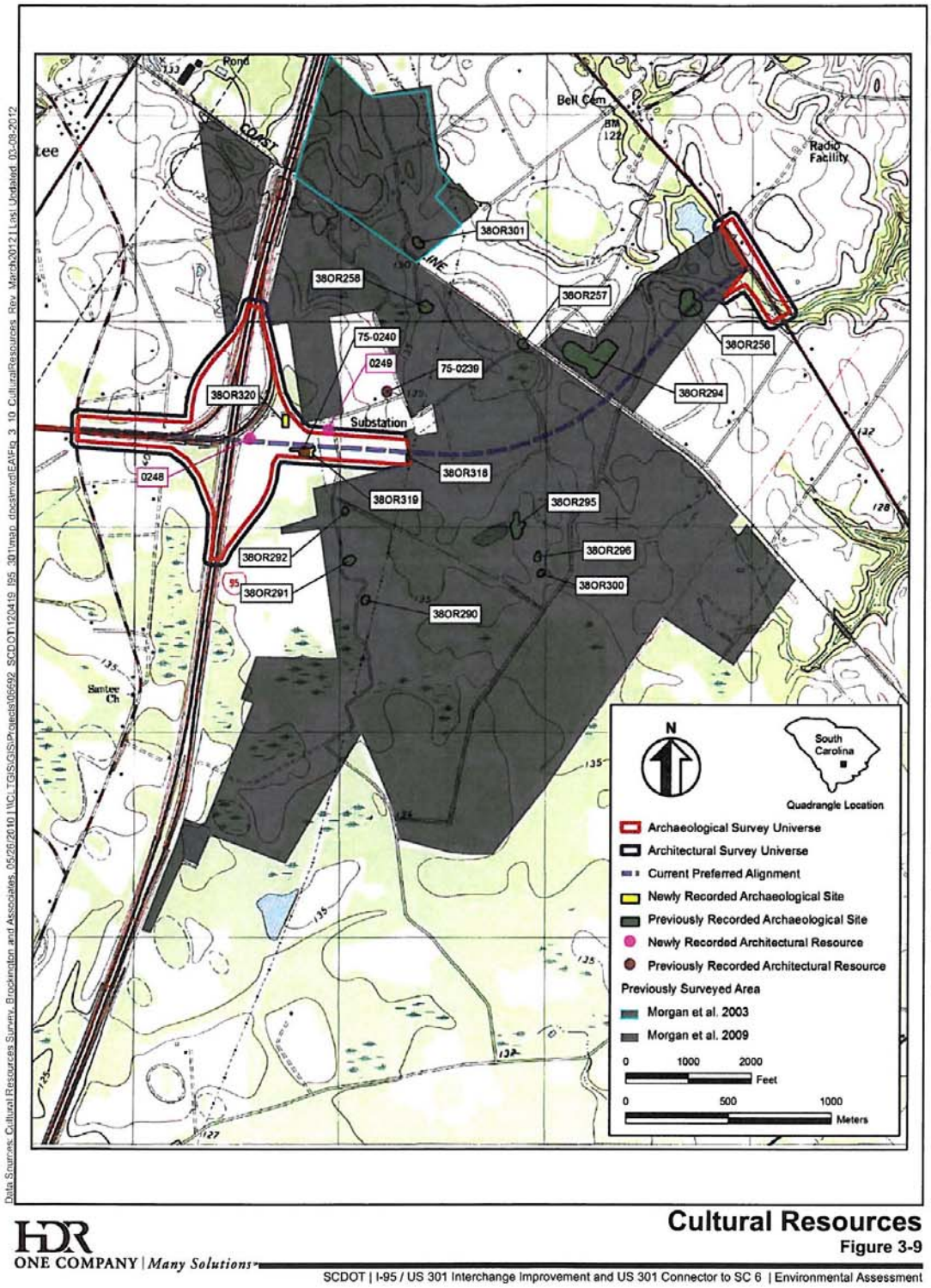

Figure 2. Areas covered by previous surveys

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ARCHAEOLOGICAL FIELD REPORT
SCDOT ENVIRONMENTAL SECTION

TITLE: Cultural Resources Survey of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project, Orangeburg County, South Carolina
CONSULTANT: Brockington and Associates, Inc.
DATE OF RESEARCH: 2010
ARCHAEOLOGIST: David Baluha
ARCHITECTURAL HISTORIAN: Paige Wagoner
COUNTY: Orangeburg
PROJECT: US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project

DESCRIPTION: The South Carolina Department of Transportation (SCDOT) is proposing to improve the existing interchange of US-301 at I-95, and to extend US-301 from I-95 to SC-6, southeast of the Town of Santee in Orangeburg County, for a total of approximately two miles. The proposed right-of-way (ROW) for the project area is approximately 200 linear feet from the centerline of roadway for US-301 and approximately 200 linear feet from the centerline of roadway for I-95, as it approaches the US-301 interchange.

The proposed US-301 at I-95 interchange and US-301 extension to SC-6 is currently in the project development stage and a preferred alternative has not yet been selected. The SCDOT is evaluating several alternatives for the US-301 at I-95 interchange, which includes a full cloverleaf ramp system, a diamond interchange, and an onion interchange ramp system. In conjunction with this evaluation, the SCDOT is also evaluating several alternatives for the extension of US-301 to SC-6. Currently, there are four separate alignment options which span from the existing US-301 at I-95 interchange east by northeast terminating at SC-6 between State Road SC-38-1394 and Naval Station Road, south of the Town of Santee. Of the four alignment options, one alignment is currently being evaluated in more detail as the preferred alignment for the extension of US-301 to SC-6. For purposes of this report, the project study area evaluated the needed ROW determined by the current preferred alignment option. The project study area evaluated areas not previously evaluated by Jafza Americas (Jafza).

Independent of the SCDOT project as defined herein, Jafza has completed their own project development for the proposed Logistics and Distribution facility which included completion of a cultural resources survey (Morgan et al. 2009) and coordination with the South Carolina State Historic Preservation Office (SHPO).

Figure 1 presents the location of the project on the Orangeburg County highway map. Figure 2 presents the project location and nearby cultural resources on the USGS 1979 *Vance, SC* quadrangle.

The archaeological survey universe includes areas of proposed new ROW within the footprint of the US-301 at I-95 interchange, as well as approximately 2,300 linear feet of the extension of US-301 (along the current preferred alignment) that was not previously surveyed by Morgan et al. (2009) for the JAFZA development. Along the current preferred alignment of the US-301 extension, the survey area includes 200 feet to either side of the proposed centerline for a total of 400 feet. Archaeologist David Baluha directed the field investigations. The architectural survey universe extends 300 feet on either side of the proposed road centerlines and is 600 feet wide. Architectural historian Paige Wagoner examined the architectural survey universe.

LOCATION: The project is located adjacent to the US-301 at I-95 interchange and extends east from I-95 to SC-6 in the Town of Santee, South Carolina.

USGS QUADRANGLE: *Vance, SC*
DATES: 1979 **SCALE:** 7.5' **UTM: ZONE:** 17 **DATUM:** NAD27
WESTERN TERMINUS: EASTING: 547726 **NORTHING:** 3702481
EASTERN TERMINUS: EASTING: 550964 **NORTHING:** 3703255

ENVIRONMENTAL SETTING: The project extends east from the US-301 at I-95 interchange to SC-6, approximately two miles south of the Town of Santee, South Carolina. The project passes through slightly rolling

topography, dissected by slow-moving streams. Currently agricultural, industrial, and residential development occurs along the project route. Horse Kettle Branch and Webb Creek, tributaries of the Santee River (now Lake Marion), drain the project area. West of I-95, vegetation within the project consists of agricultural and residential areas and mixed pine/hardwood forest. East of I-95, agricultural lands predominate, interspersed with hardwood forest stands and occasional residences. Additionally, east of I-95 the project is bisected by transmission line corridors and the CSX Railroad.

NEAREST RIVER/STREAM AND DISTANCE: Horse Kettle Branch and Webb Creek, tributaries of the Santee River (now Lake Marion), drain the project area.

SOIL TYPES:
Coxville fine sandy loam
Dunbar sandy loam
Duplin fine sandy loam
Faceville loamy sand
Fuquay sand
Goldsboro sandy loam
Lynchburg fine sandy loam
Neeses loamy sand
Noboco loamy sand
Orangeburg loamy sand
Rains sandy loam

REFERENCE FOR SOILS INFORMATION: DeFrancesco, Denis/1988/*Soil Survey of Orangeburg County, South Carolina*. USDA, Soil Conservation Service, Washington, DC.

GROUND SURFACE VISIBILITY: **0% __ 1-25% __ 26-50% __ 51-75% _X_ 76-100% __**

CURRENT VEGETATION: The project area has considerable vegetative diversity, with stands of planted pines, stands of mixed pines and hardwoods, hardwood wetlands, clearcuts, fallow and plowed agricultural fields, fallow transmission line corridors, and manicured grass within residential yards.

INVESTIGATION: On February 17, 2009, archaeologists consulted the ArchSite program to identify previously identified archaeological sites in the project vicinity. Also on February 17, 2010, the National Register of Historic Places (NRHP) files of the South Carolina Department of Archives and History (SCDAH) were searched for previous investigations and previously identified resources using the ArchSite program. Eleven archaeological sites (38OR256–38OR258, 38OR290–38OR292, 38OR294–38OR296, 38OR300, and 38OR301) and two historic architectural resources (Resources 75-0239 and 75-0240) are located within 0.5 mile of the project area (see Tables 1 and 2). Trinkley and Southerland (2003) identified 38OR256–38OR258 during a cultural resources reconnaissance survey of the proposed Town of Santee Industrial Park. Green (2005) revisited 38OR256 during a cultural resources reconnaissance of the 87-acre Santee Tract. Morgan et al. (2009) identified sites 38OR290–38OR292, 38OR294–38OR296, 38OR300, and 38OR301 and Resources 75-0239 and 75-0240 during an intensive cultural resources survey of the JAFZA South Carolina LLC Tract. Of these 11 archaeological sites and two historical architectural resources, only site 38OR256 and Resource 75-0240 are located within the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project. Site 38OR256 is a late-nineteenth- to early-twentieth-century house site located within a previously surveyed portion of the project. Trinkley and Southerland (2003) and Green (2005) recommended 38OR256 not eligible for the NRHP. Resource 75-0240 is an early-twentieth-century tenant house and is discussed in greater detail below.

Table 1. Previously Identified Archaeological Sites Located Within 0.5 Mile of the Project Area.

SITE	SOURCE	PRE-CONTACT	POST-CONTACT	TIME PERIOD	ELIGIBILITY
38OR256	Trinkley and Southerland (2003); Green (2005)		House site	Late 19th to early 20th century	Not eligible
38OR257	Trinkley and Southerland (2003)	Ceramic scatter	Mt. Holly School	Unknown Pre-Contact; early 20th century	Potentially eligible

SITE	SOURCE	PRE-CONTACT	POST-CONTACT	TIME PERIOD	ELIGIBILITY
38OR258	Trinkley and Southerland (2003)		House site	Late 19th to early 20th century	Potentially eligible
38OR290	Morgan et al. (2009)		House site	20th century	Not eligible
38OR291	Morgan et al. (2009)		House site	20th century	Not eligible
38OR292	Morgan et al. (2009)		House site	20th century	Not eligible
38OR294	Morgan et al. (2009)	Ceramic scatter	House site	Early 19th to early 20th century	Not eligible
38OR295	Morgan et al. (2009)	Ceramic and lithic scatter	Multicomponent encampment	Ceramic Late Archaic; Early-Middle Woodland	Potentially eligible
38OR296	Morgan et al. (2009)		Dump site	20th century	Not eligible
38OR300	Morgan et al. (2009)	Ceramic and lithic scatter	Multicomponent encampment	Middle Archaic; unknown Pre-Contact	Not eligible
38OR301	Morgan et al. (2009)		Campsite	20th century	Not eligible

Table 2. Previously Identified Historic Architectural Resource Located Within 0.5 Mile of the Project Area.

NUMBER	DESCRIPTION	DATE	NRHP STATUS	SOURCE	EFFECT
75-0239	Unnamed house	ca. 1900	Not eligible	Morgan et al. (2009)	None
75-0240	Unnamed house	ca. 1900	*Not eligible*	Morgan et al. (2009)	Direct

Resource 75-0240 was resurveyed during the current project and is discussed below.

ARCHAEOLOGICAL SURVEY: Brockington and Associates, Inc., conducted an intensive archaeological survey of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project on February 24–26, 2010. The archaeological survey consisted of surface inspection of the project area and shovel testing in upland and undisturbed areas that were not wetlands and in undeveloped/relatively intact areas. Visual inspection was conducted in areas with good ground surface visibility. Morgan et al. (2009) surveyed the eastern portion of the project, from the transmission line corridor to SC-6, which is located within the JAFZA Tract (see Figure 2). The vast majority of the project extends through agricultural fields. However, the project also includes wooded areas, as well as industrially and residentially developed areas. Figures 3 and 4 present typical views of the project area.

Figure 5 presents the location of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project on a recent aerial photograph. Survey areas included approximately 2,300 feet of proposed new alignment along the US-301 extension, 1,700 feet along SC-6, 1,000 feet along US-301 (west of I-95), and approximately 47 acres at the US-301 and I-95 interchange. In these areas, investigators traversed shovel test transects spaced 100 feet apart. Shovel tests were excavated at 100-foot intervals along each transect. Investigators excavated a total of 312 shovel tests during the survey. The shovel tests were excavated to an average depth of 1.3 feet below surface (bs) and ranged from 1.0 to 2.5 feet bs in depth. The fill from these tests was sifted through ¼-inch mesh hardware cloth. We identified three archaeological sites (38OR318–38OR320) during the archaeological survey. Sites 38OR318–38OR320 are discussed below.

Site 38OR318. The UTM coordinates for site 38OR318 are Easting 549324.61, Northing 3702329.92. Site 38OR318 is located 1,100 feet south of the intersection of Intracoastal Lane and Hutch Drive at the intersection of two powerline corridors (see Figure 2). Vegetation at the site consists of newly planted winter wheat, and surface visibility was excellent (76–100 percent). We recovered the majority of the artifacts from the ground surface. The site measures approximately 150 by 50 feet, oriented to grid north. Figure 6 presents a plan and view of 38OR318.

Investigators excavated 19 shovel tests at 50-foot intervals in and around 38OR318; one of these shovel tests produced artifacts. Soils across the site include dark grayish-brown (10YR4/2) sand 0–0.6 feet bs, light yellowish-brown (10YR6/4) sand 0.6–1.5 feet bs, and yellowish-brown (10YR5/8) sandy clam loam subsoil 1.5–2.0+ feet bs. These soils are similar to those described by DeFrancesco (1988) as Noboco loamy sand. We recovered artifacts from the ground surface and 0–0.6 feet bs. None of the shovel tests exposed subsurface cultural features.

Investigators recovered 11 artifacts from 38OR318. These include one unidentifiable plain Pre-Contact sherd, two undecorated ironstone sherds, two molded ironstone sherds, and six amethyst bottle glass fragments. For a complete artifact inventory, see Appendix A. The ceramic artifacts display no temporally diagnostic surface decoration or distinctive tempering. However, these kinds of ceramic artifacts suggest a Woodland occupation (1500 BC–AD 1000); these kinds of artifacts are indicative of sites characterized as seasonally occupied resource extraction encampments. Ironstone and amethyst glass indicated a late-nineteenth- to early-twentieth-century occupation at 38OR318. The USGS 1921 *Eutawville, SC* quadrangle shows a building in the vicinity of 38OR318. However, the USGS 1944 *Eutawville, SC* quadrangle shows no building in the site area. Thus, the building (house) represented by site 38OR318 was apparently abandoned or destroyed in the mid-twentieth century.

We assessed the NRHP eligibility of site 38OR318 with respect to Criterion D, its ability to add significantly to our understanding of the history of the region. Site 38OR318 is located on the edge of an agricultural field adjacent to a powerline corridor. We recovered 10 of the 11 artifacts from the ground surface. The site area has been previously disturbed by agricultural and construction activities. Additional investigation of 38OR318 is unlikely to generate information beyond the period of use (unknown Pre-Contact and late nineteenth to early twentieth century) and the presumed function (short-term resource extraction encampment and house site). The site cannot generate additional important information concerning past settlement patterns or land-use practices in Orangeburg County. Furthermore,

38OR318 does not meet the criteria outlined in Baluha and Bailey (2008:90-94) and Wilson (1990:30) for consideration as an eligible farmstead. Therefore, we recommend 38OR318 not eligible for the NRHP. Site 38OR318 warrants no further management consideration.

Site 38OR319/Resource 0240. The UTM coordinates for site 38OR319 are Easting 548865.18, Northing 3702386.77. Site 38OR319 is located approximately 300 feet south of the intersection of Ltd. Road and Hutch Drive (see Figure 2). The site consists of an extant tenant house (previously identified as historical architectural resource 75-0240) and a historic artifact scatter. Site 38OR319 is associated with 38OR320, which is another tenant house site located to the north (see Figure 2). Figure 7 presents a plan of 38OR319 and 38OR320. Figure 8 provides views of 38OR319 (top) and 38OR320 (bottom). Vegetation at the site consists of an agricultural field planted in winter wheat and a fallow field, a mixed pine and hardwood forest, and a residential yard. Surface visibility was excellent (76–100 percent) in the agricultural fields but poor across the remainder of the site. We recovered the majority of the artifacts from shovel tests but observed artifacts on the ground surface in the eastern portion of the site. The site measures approximately 250 by 395 feet, oriented to grid north.

Investigators excavated 39 shovel tests at 50-foot intervals in and around 38OR319; seven of these shovel tests produced artifacts. Soils across the site consist of a dark grayish-brown (10YR4/2) sand 0–0.6 feet bs, light yellowish-brown (10YR6/4) sand 0.6–1.5 feet bs, and yellowish-brown (10YR5/8) sandy clam loam subsoil 1.5–2.0+ feet bs. These soils are similar to those described by DeFrancesco (1988) as Noboco loamy sand. We recovered artifacts from the ground surface and 0–1.0 feet bs. None of the shovel tests exposed subsurface cultural features.

We recovered 32 artifacts from 38OR319. These include three amber bottle glass fragments, two aqua bottle glass fragments, two amethyst bottle glass fragments, 14 clear bottle glass fragments, one unidentifiable burned refined earthenware sherd, one undecorated whiteware sherd, two unidentifiable nail fragments, five unidentifiable iron fragments, and one brick fragment. For a complete artifact inventory, see Appendix A. Whiteware and amethyst glass are temporally diagnostic of a late-nineteenth- to early-twentieth-century occupation at 38OR319. The remaining artifacts are likely indicative of mid- to late-twentieth-century activities. The USGS 1921 and 1944 *Eutawville, SC* quadrangles show buildings in the vicinity of 38OR319 and 38OR320. These two buildings were likely associated tenant houses.

We assessed the NRHP eligibility of site 38OR319 with respect to Criterion D, its ability to add significantly to our understanding of the history of the region. Site 38OR319 is bisected by Ltd. Rd; we recovered most of the artifacts across the road from Resource 75-0240 in a plowed agricultural field. The site contains a paucity of artifacts (n=3) related to a late-nineteenth- to early-twentieth-century occupation. The site area has been previously disturbed by agricultural and construction activities. Additional investigation of 38OR319 is unlikely to generate information beyond the period of use (late nineteenth century to present) and the presumed function (tenant house). The site cannot generate additional important information concerning past settlement patterns or land-use practices in Orangeburg County. Furthermore, 38OR319 does not meet the criteria outlined in Baluha and Bailey (2008:90-94) and Wilson (1990:30) for consideration as an eligible farmstead. Therefore, we recommend 38OR319 not eligible for the NRHP. Site 38OR319 warrants no further management consideration. Resource 0240 is assessed separately below.

Site 38OR320. The UTM coordinates for site 38OR320 are Easting 548723.14, Northing 3702484.79. Site 38OR320 is located approximately 300 feet west of the intersection of Ltd. Road and Hutch Drive (see Figures 2 and 7). The site consists of the remnants of an early- to mid-twentieth-century tenant house, including the foundation of the house, a metal shed, a cinderblock shed, and an associated artifact scatter. Vegetation at the site consists of an agricultural field planted in winter wheat and an area wooded in hardwoods. Surface visibility was excellent (76–100 percent) in the agricultural field but poor (1–25 percent) in the wooded area. We recovered most of the artifacts from the ground surface. The site measures approximately 200 by 100 feet, oriented to grid north. Figure 8 (bottom) provides a view of 38OR320.

Investigators excavated 13 shovel tests at 50-foot intervals in and around 38OR320; one of these shovel tests produced artifacts. Soils across the site include dark grayish-brown (10YR4/2) sand 0–0.6 feet bs, light yellowish-brown (10YR6/4) sand 0.6–1.5 feet bs, and yellowish-brown (10YR5/8) sandy clam loam subsoil 1.5–2.0+ feet bs. These soils are similar to those described by DeFrancesco (1988) as Noboco loamy sand. We recovered artifacts

from 0–1.0 feet bs. Although none of the shovel tests exposed subsurface cultural features, we observed the remnants of a foundation in the wooded, central portion of 38OR320.

We recovered one red bottle glass fragment from 38OR320. For a complete artifact inventory, see Appendix A. Archaeological features of 38OR320 included the remnants of a house foundation and rubble surrounding the foundation and two extant outbuildings. The USGS 1921 and 1944 *Eutawville, SC* quadrangles show buildings in the vicinity of 38OR319 and 38OR320. These two buildings were likely associated tenant houses.

We assessed the NRHP eligibility of site 38OR320 with respect to Criterion D, its ability to add significantly to our understanding of the history of the region. Site 38OR320 is truncated to the north by Hutch Road; the site contains no artifacts temporally diagnostic of a late-nineteenth- to early-twentieth-century occupation. The site area has been previously disturbed by agricultural activities. Additional investigation of 38OR320 is unlikely to generate information beyond the period of use (early to mid-twentieth century) and the presumed function (tenant house). The site cannot generate additional important information concerning past settlement patterns or land-use practices in Orangeburg County. Furthermore, 38OR320 does not meet the criteria outlined in Baluha and Bailey (2008:90-94) and Wilson (1990:30) for consideration as an eligible farmstead. Therefore, we recommend 38OR320 not eligible for the NRHP. Site 38OR320 warrants no further management consideration.

ARCHITECTURAL SURVEY: Brockington and Associates, Inc., conducted an intensive architectural survey of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project on February 25, 2010. The architectural investigations consisted of a windshield survey of the project area to identify any potential historic architectural resources. The project architectural historian recorded any buildings, structures, objects, or landscapes within 300 feet of the project that are over 50 years of age and that retain sufficient integrity using the Statewide Survey of Historic Properties Intensive Documentation Form and digital black-and-white photography. The architectural survey universe contains three newly recorded residential resources (Resources 0248, 0248.01, and 0249) and one previously recorded residential resource (recorded as Resource 75-0240). The resources identified in the architectural survey are discussed below, and the Intensive Survey Forms are attached as Appendix B.

Resources 0248 and 0248.01 (1051 Ltd. Road). Resource 0248 is located at 1051 Ltd. Road in Orangeburg County. Constructed circa 1960, the one-story concrete-block house is covered by a side-gable roof. The rectangular core of the structure sits on a concrete-block foundation. The front façade includes a gabled entry porch with wrought-iron supports, a central door, and paired double-hung windows. A brick chimney rises from the central ridge of the roof, while a one-story projection extends from the southeastern elevation. A one-story outbuilding (Resource 0248.01), dating to the 1960s, stands adjacent to the house and is covered with a metal roof. Figure 9 provides a view of Resource 0248. The project architectural historian assessed Resources 0248 and 0248.01 using the NRHP criteria. The historian determined these resources were not associated with any important historic themes, events, or persons. Also, the house does not convey a strong feeling of mid-twentieth-century history and does not provide potential for future research; therefore, Brockington and Associates, Inc., recommends Resources 0248 and 0248.01 not eligible for the NRHP.

Resource 0249 (161 Hutch Road). Resource 0249 is located at 161 Hutch Road in Orangeburg County. Constructed circa 1950, the two-story concrete-block house is covered by a side-gable roof. The T-shaped core of the structure sits on a concrete-block foundation. The front façade includes a central gabled entry porch covered by a metal roof, a central front door, one-over-one double-hung windows on the first floor, and paired double-hung windows on the second floor. A brick chimney stands on the north side of the house. Figure 10 provides a view of Resource 0249. The project architectural historian assessed this resource using the NRHP criteria. The USGS 1944 *Eutawville, SC* quadrangle shows no buildings in the vicinity of Resource 0249. The historian determined the resource was not associated with any important historic themes, events, or persons. Also, the house does not convey a strong feeling of mid-twentieth-century history and does not provide potential for future research; therefore, Brockington and Associates, Inc., recommends Resource 0249 not eligible for the NRHP.

Resource 0240 (Ltd. Road, approximately 600 feet south of its junction with Hutch Road)
In October 2009, S&ME, Inc. (Morgan et al. 2009) recorded a historic structure (recorded as Resource 75-0240) that stands within the current project architectural survey universe. According to Morgan et al. (2009:ii), Resource 0240 "does not appear to have been significantly altered and is in good condition." According to Morgan et al. (2009:86),

the "…resource may be eligible for listing on the NRHP depending on its history, socio-cultural associations, and interior condition."

We reassessed Resource 0240, a late-nineteenth-century tenant house, and recommend the structure not eligible for listing on the NRHP due to the loss of historical setting. The nearby construction of I-95 during the late 1960s to early 1970s disrupted the rural character of the resource and its setting. Additionally, the USGS 1921 *Eutawville, SC* quadrangle shows two structures in the vicinity of site 38OR319/Resource 0240 and site 38OR320. Tenant houses that are currently listed on the NRHP are usually part of larger agricultural complexes that include not only tenant houses but also storage barns, packhouses, curing barns, and sheds. Resource 0240 lacks these supporting agricultural structures. Figure 11 provides a view of Resource 0240.

REMARKS AND RECOMMENDATIONS: Investigators identified three archaeological sites (38OR318–38OR320) and four historic architectural resources (Resources 0240, 0248, 0248.01, and 0249) during the cultural resources survey of the US-301 at I-95 Interchange Improvements and US-301 Extension to SC-6 Project. We recommend sites 38OR318–38OR320 and Resources 0240, 0248, 0248.01, and 0249 not eligible for the NRHP. Further management consideration of sites 38OR318–38OR320 and Resources 0240, 0248, 0248.01, and 0249 is not warranted. If current proposed road plans change, additional survey may be necessary.

SIGNATURE: _____ **DATE:** _____

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Figure 2. Location of the Project and all identified cultural resources (USGS 1979 *Vance, SC* quadrangle).

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Figure 4. Typical views of the project area: wooded area southwest of the US-301 at I-95 interchange, looking east (top); fallow field northwest of the US-301 at I-95 interchange, looking northeast (bottom).

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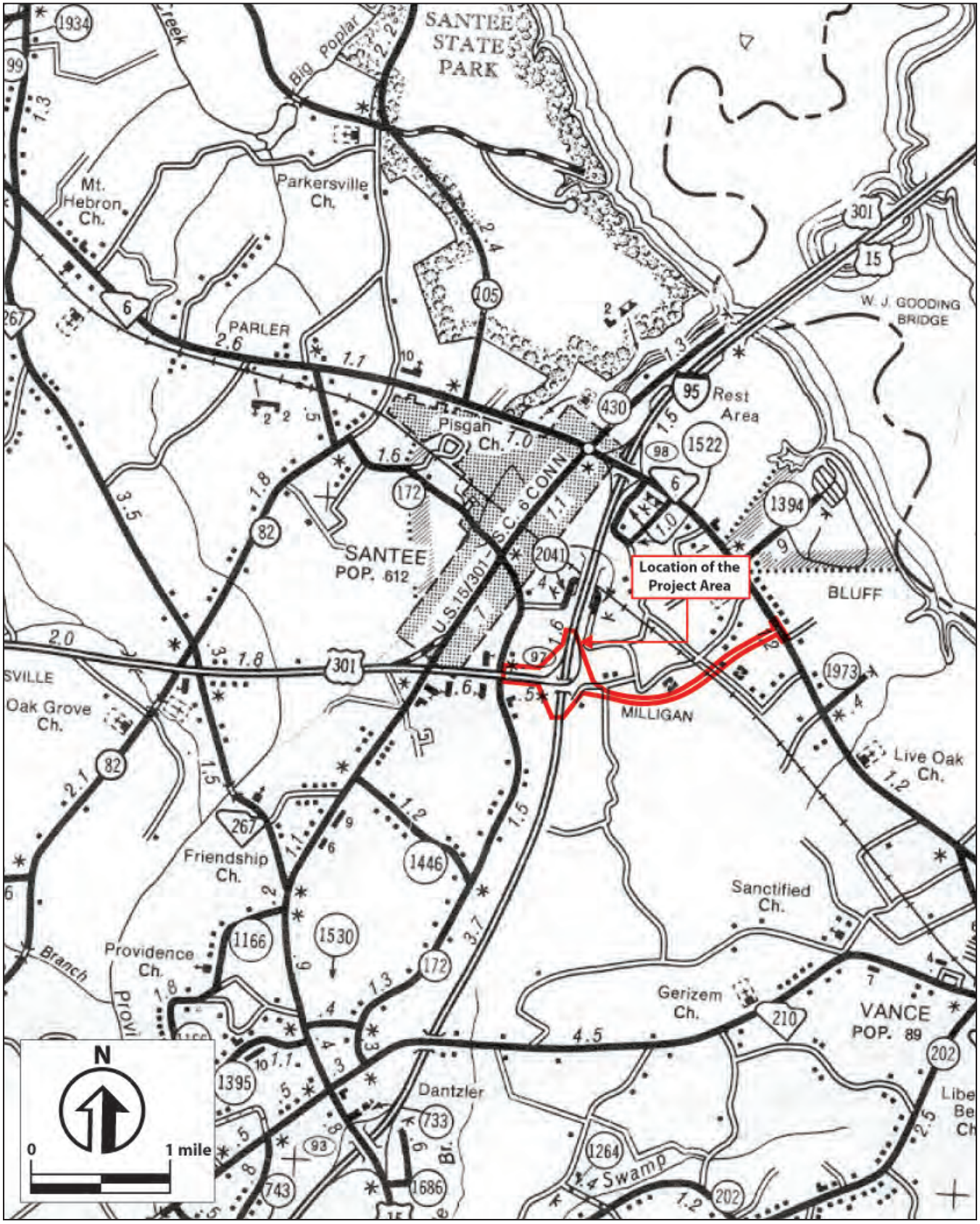
Table 1. Previously Identified Archaeological Sites Located Within 0.5 Mile of the Project Area.

Table 2. Previously Identified Architectural Resources Located Within 0.5 Mile of the Project Area.



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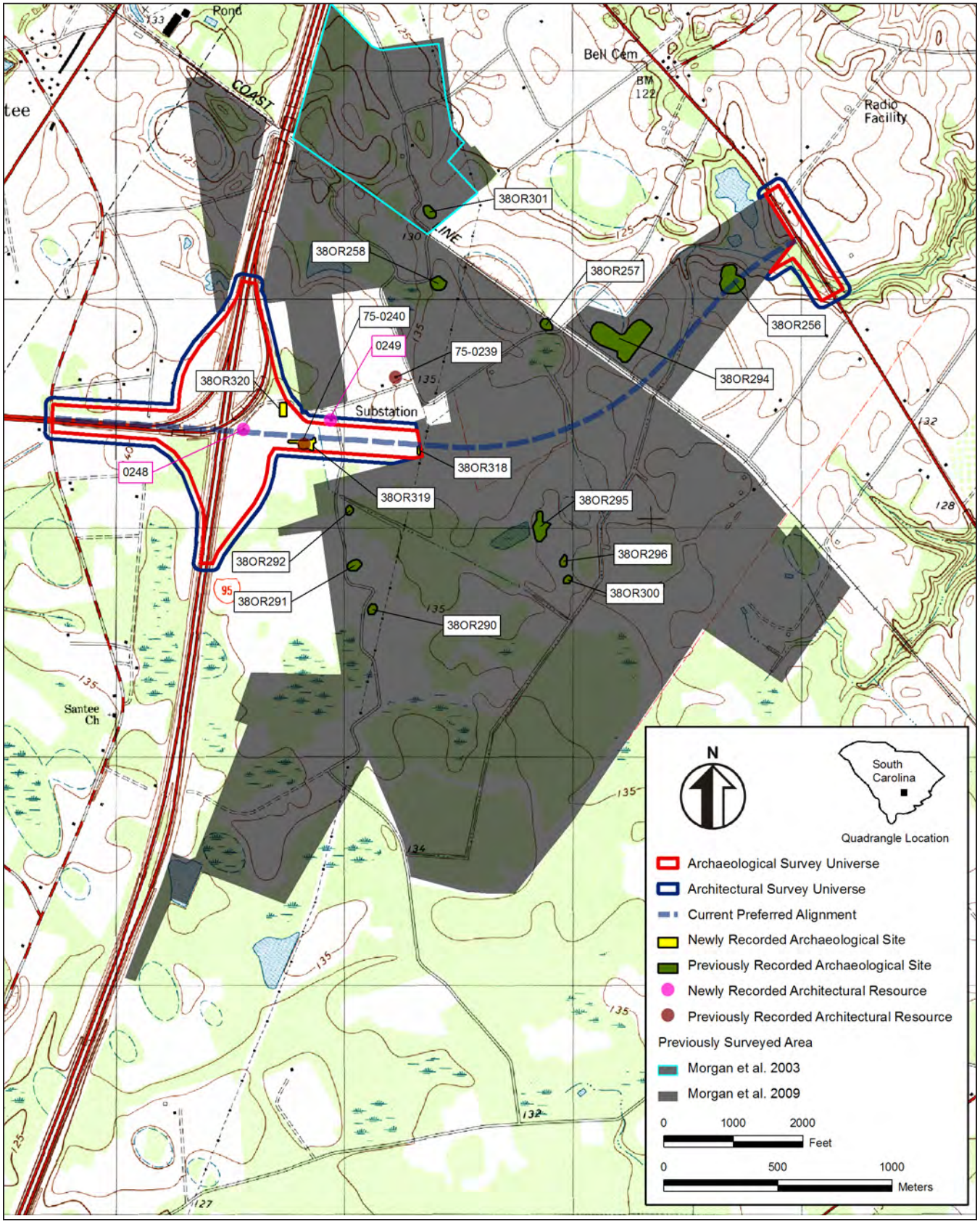

Figure 2. Location of the Project and all identified cultural resources (USGS 1979 Vance, SC *quadrangle).*

Figure 3. Typical views of the project area: view of US 301, looking east toward the I-95 overpass (top); view of project corridor along SC-6, looking north (bottom).

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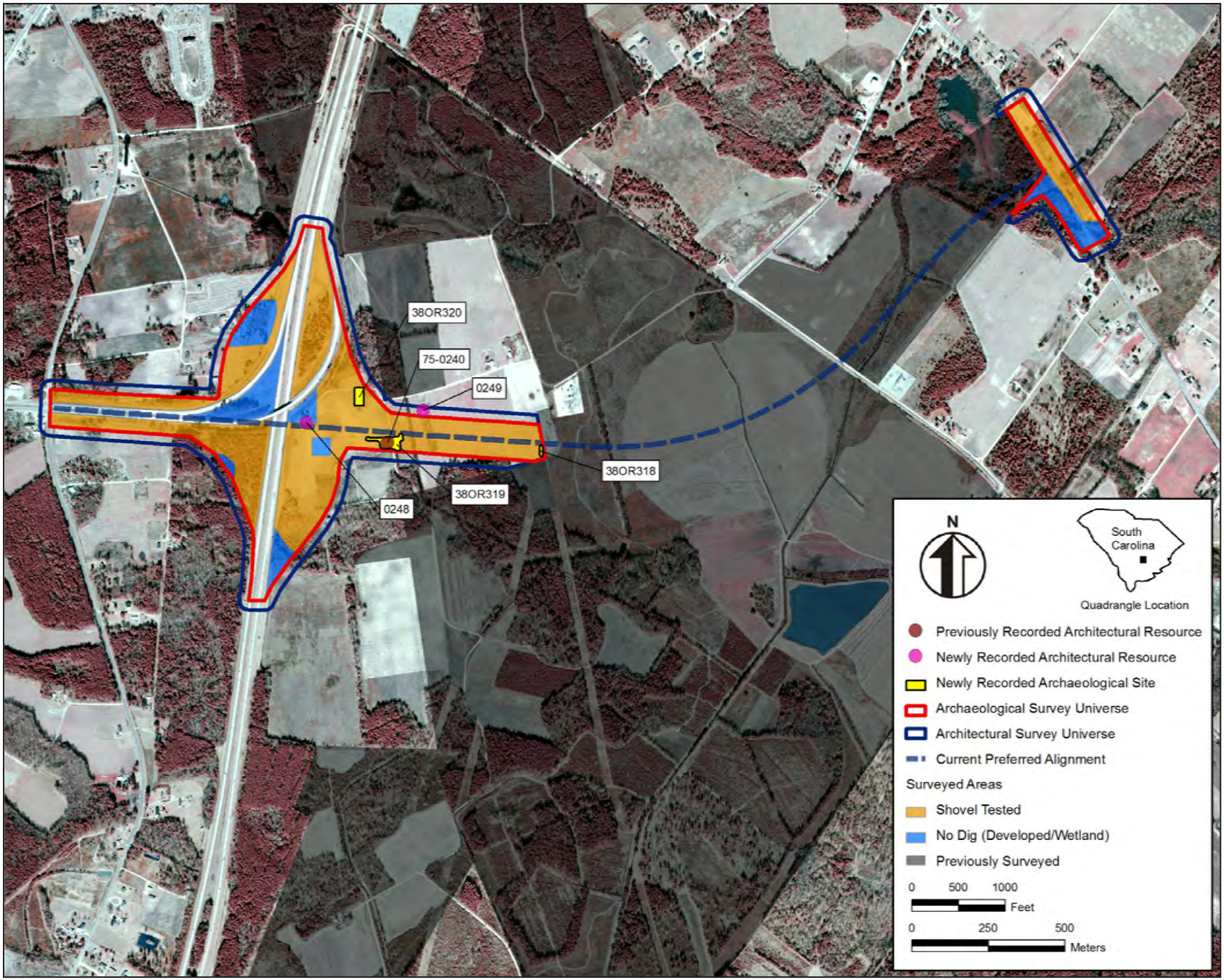

Figure 5. The location of the US-301 and I-95 Interchange Improvements and US-301 Extension to SC-6 Project, shovel-tested areas, and all identified cultural resources on an aerial photograph.

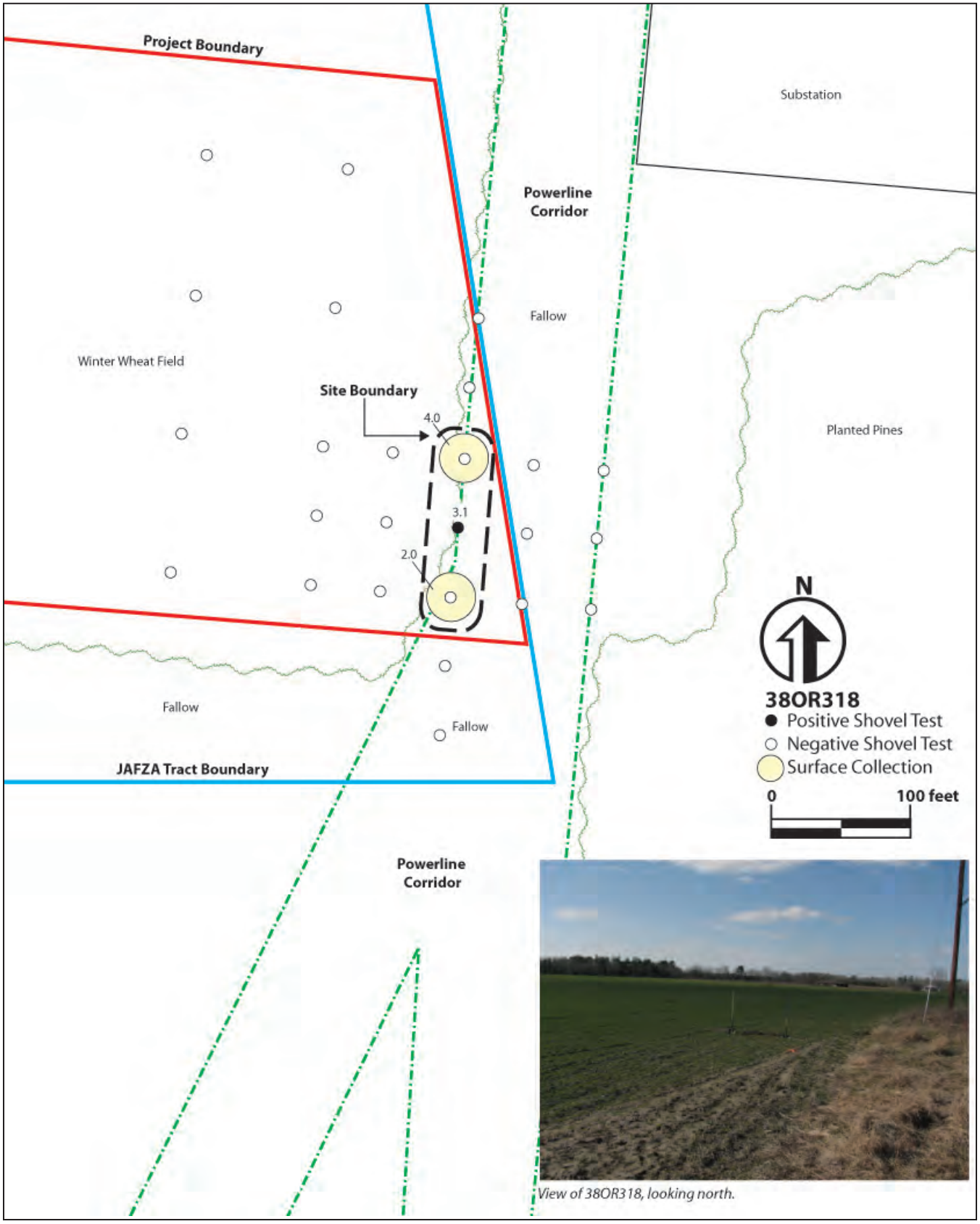

Figure 6. Plan and view of site 38OR318.

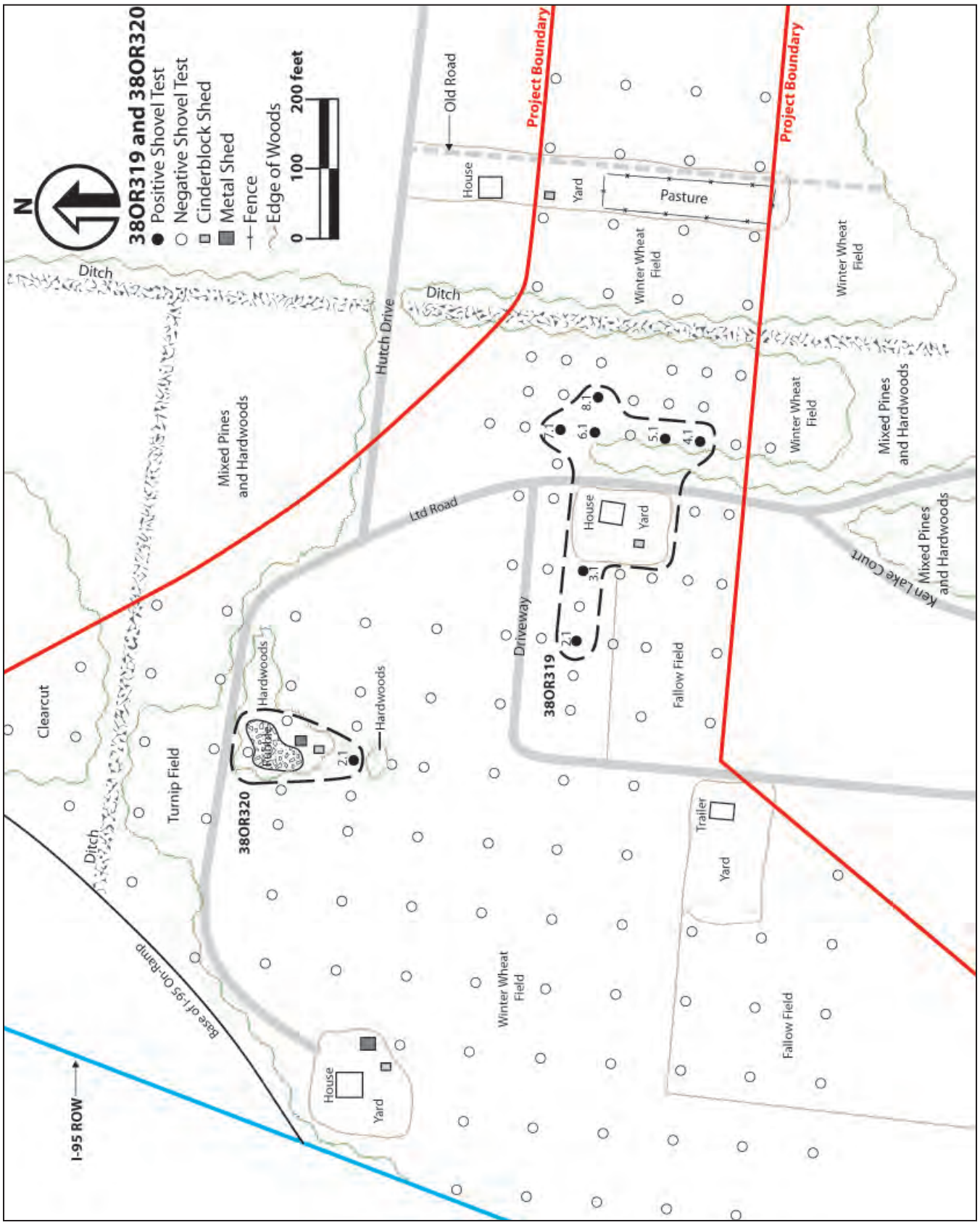

Figure 7. Plan of sites 38OR319 and 38OR320.

Figure 8. View of 38OR319, facing east (top) and 38OR320, facing northwest (bottom).

Figure 9. View of Resource 248, facing southwest.

Figure 10. View of Resource 249, facing southwest.

Figure 11. View of Resource 240, facing northwest.

Appendix A.

Artifact Inventory

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Artifact Catalog

Brockington and Associates, Inc. uses the following proveniencing system. Proveniences 2 to 200 designate shovel tests. Controlled surface collections are also designated by this provenience range. Numbers after the decimal point designate levels. Provenience X.0 is a surface collection at a shovel test. X .1 designates level one. For example, 2.1 is Shovel Test 2, level 1.

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Site Number	Page Number
38OR318	**A - 1**
38OR319	**A - 1**
38OR320	**A - 2**

Site Number: 38OR318

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Lithic Type*	*Ceramic Type*	*Temporal Range*	*Comments*
SITE NUMBER:	38OR318						
Provenience Number:		**2 . 0**	**Surface Collection**				
1	2	2.6	Ironstone, Molded Rim				
2	2	34.7	Ironstone, Undecorated Base				
3	1	12	Solarized - Amethyst Glass Bottle Lip and Neck Fragment				
4	2	15.4	Solarized - Amethyst Glass Bottle Fragment				
5	1	5.8	Plain Body Sherd, Fine/Medium Sand Tempered				
Provenience Number:		**3 . 1**	**Shovel Test, N925, E1450, 0-10 cmbs**				
1	1	3.2	Solarized - Amethyst Glass Bottle Fragment				
Provenience Number:		**4 . 0**	**Surface Collection**				
1	1	5.7	Solarized - Amethyst Glass Bottle Fragment				
2	1	29.5	Solarized - Amethyst Glass Bottle Lip and Neck				
SITE NUMBER:	38OR319						
Provenience Number:		**2 . 1**	**Transect 5, Shovel Test 5, N1000, E910, 0-5 cmbs**				
1	1	1	Unidentifiable Burned Refined Earthenware, Molded Rim				
Provenience Number:		**3 . 1**	**Transect 5, Shovel Test 4, N1000, E940, 0-30 cmbs**				
1	1	3.7	Colorless Glass Bottle Fragment				

Site Number: 38OR319

Catalog #	Count	Weight (in g)	Artifact Description	Lithic Type	Ceramic Type	Temporal Range	Comments
Provenience Number:		**4 . 1**	**Shovel Test, N955, E1000, 0-30 cmbs**				
1	1	0.4	Solarized - Amethyst Glass Bottle Fragment				
2	1	22	Iron Unidentifiable Fragment				
Provenience Number:		**5 . 1**	**Transect 6, Shovel Test 2, N970, E1000, 0-30 cmbs**				
1	3	4.4	Colorless Glass Bottle Fragment				
2	1	2	Solarized - Amethyst Glass Bottle Fragment				
Provenience Number:		**6 . 1**	**Transect 5, Shovel Test 2, N1000, E1000, 0-15 cmbs**				
1	1	1.9	Whiteware, Undecorated Rim				
2	1	0.7	Amber Glass Bottle Fragment				
3	1	0.5	Aqua Glass Bottle Fragment				
4	6	3.8	Colorless Glass Bottle Fragment				
5	1	0.3	Colorless Mold-Made Glass Fragment				unidentifiable form
6	1	75.5	Colorless Glass Panel Bottle Base				"10"
7	1	2.7	Unidentifiable Nail				
8	4	7.1	Iron Unidentifiable Fragment				
9		83.3	Brick Fragment				
Provenience Number:		**7 . 1**	**Shovel Test, N1015, E1000, 0-30 cmbs**				
1	1	0.3	Porcelain, White Undecorated				
2	1	3.2	Colorless Glass Bottle Fragment				
3	1	0.1	Amber Glass Bottle Fragment				
4	1	1.5	Amber Machine-Made Glass Bottle Fragment				
Provenience Number:		**8 . 1**	**Shovel Test, N1000, E1015, 0-20 cmbs**				
1	2	1.8	Colorless Window Glass Fragment				
2	1	0.6	Colorless Machine-Made Glass Bottle Fragment				
3	1	4.2	Aqua Glass Panel Bottle Fragment				"BLAC…"

SITE NUMBER: 38OR320

Catalog #	Count	Weight (in g)	Artifact Description	Lithic Type	Ceramic Type	Temporal Range	Comments
Provenience Number:		**2 . 1**	**Transect 10, Shovel Test 4, N1090, E850, 0-20 cmbs**				
1	1	14.7	Red Machine-Made Glass Bottle Base				

Appendix B.

Statewide Survey Forms

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Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 75 / 0240
Status County No Site No

Quad Name: Santee

Tax Map No.: 03230006023.000

Intensive Documentation Form

Identification

Historic Name:

Common Name: Unidentified Tenant House

Address/Location: Ltd. Road, approximately 600 ft. south of its jct. w/ Hutch Road

City:

County: Orangeburg

Vicinity of: Santee

Ownership: Private

Category: building

Historical Use: Domestic

Current Use: Domestic

National Register of Hietoric Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: circa 1890

Commercial Form:

Stories: 1 story

Alteration Date:

Historic Core Shape: rectangular

Roof Features

Shape: gable, lateral

Materials: metal

Porch Features

Porch Width: full façade

Shape: shed

Construction Method: frame

Exterior Walls: weatherboard

Foundation: concrete block

Significant Architectural Features: three-bay façade featuring a center doorway flanked by six-over-six double-hung windows, simple shed porch with wooden columns, external brick chimney attached to the south elevation

Alterations: some enclosed windows

Architect(s)/Builder(s): unknown

Historical Information

Historical Information:

Source of Information:

Photographs

Use Grid for Sketching

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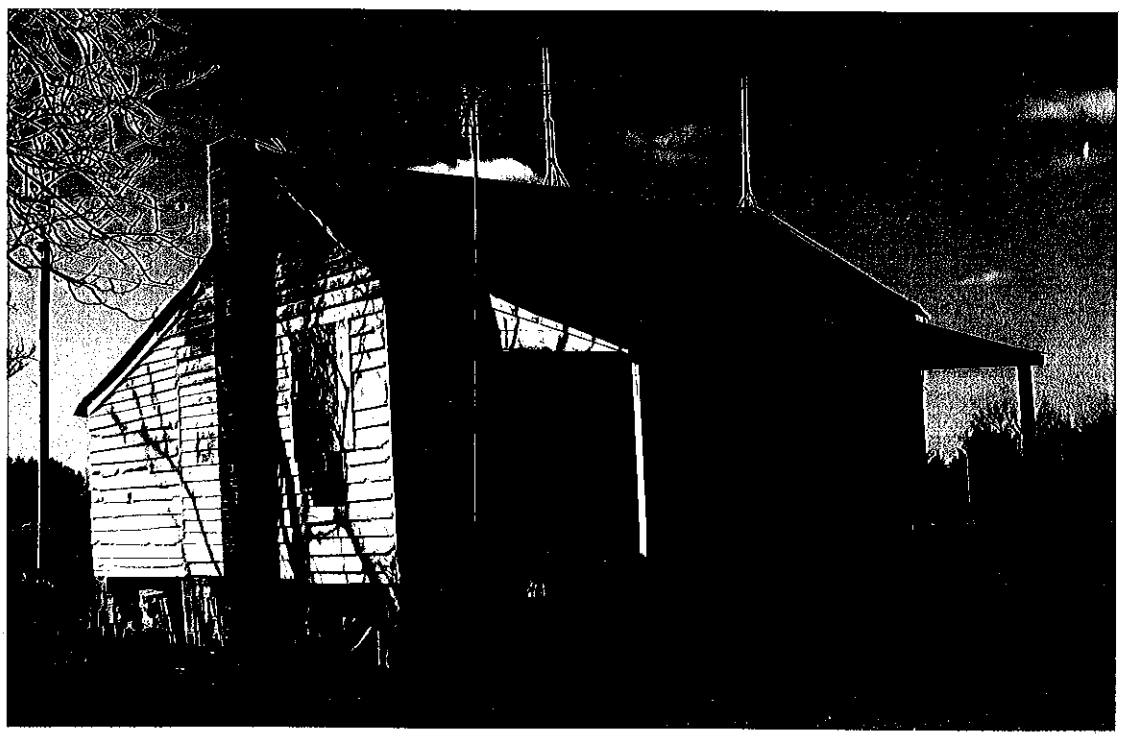
1	6	View facing N



Program Management

Recorded by: Paige Wagoner; Brockington and Associates, Inc.

Date Recorded: 02/25/2010

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 75 / 0248
Status County No Site No

Quad Name: Santee

Tax Map No.: 03080003003.000

Intensive Documentation Form

Identification

Historic Name:

Common Name: Riggins House (Owner)

Address/Location: 1051 Ltd. Road

City: County: Orangeburg

Vicinity of: Santee

Ownership: Private Category: building

Historical Use: Domestic

Current Use: Domestic

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: circa 1960 Commercial Form: Stories: 1 story

Alteration Date: Historic Core Shape: rectangular

Roof Features
Shape: gable, lateral
Materials: composition shingle

Porch Features
Porch Width: entrance bay only
Shape: gable

Construction Method: masonry

Exterior Walls: concrete block

Foundation: concrete block

Significant Architectural Features: gabled entry porch with wrought-iron porch supports, paired double-hung windows, gabled side projection with entry

Alterations:

Architect(s)/Builder(s): unknown

Historical Information

Historical Information:

Source of Information:

Photographs

Use Grid for Sketching

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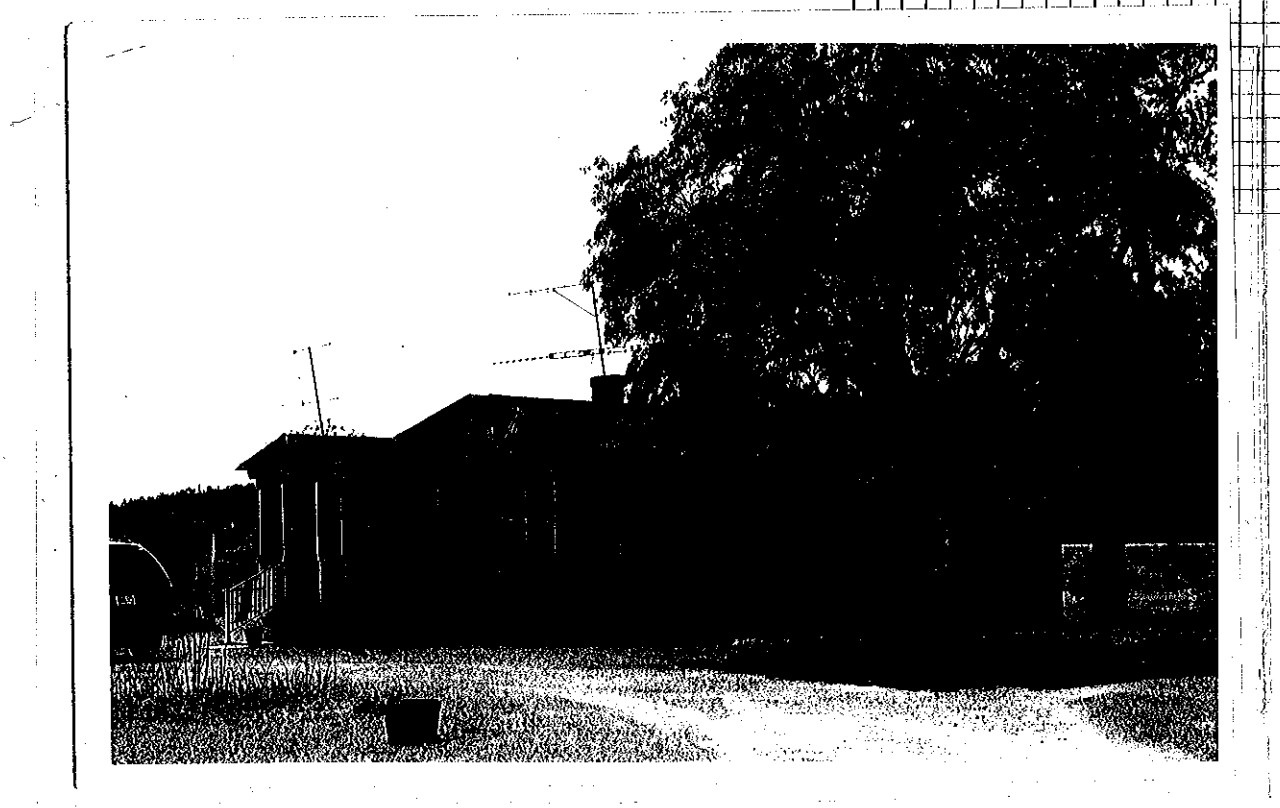
1	2	View facing SW



Program Management

Recorded by: Paige Wagoner; Brockington and Associates, Inc.

Date Recorded: 02/25/2010

Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 75 / 0248.01
Status County No Site No

Quad Name: Santee

Tax Map No.: 03080003003.000

Intensive Documentation Form

Identification

Historic Name:

Common Name: Riggins Outbuilding (Owner)

Address/Location: 1051 Ltd. Road

City: County: Orangeburg

Vicinity of: Santee

Ownership: Private Category: building

Historical Use: Domestic

Current Use: Domestic

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: circa 1960 Commercial Form: Stories: 1 story

Alteration Date: Historic Core Shape: rectangular

Roof Features

Shape: gable, end to front

Materials: metal

Porch Features

Porch Width:

Shape:

Construction Method: frame

Exterior Walls: other

Foundation: concrete block

Significant Architectural Features: flush doors, metal roof

Alterations: shed additions

Architect(s)/Builder(s): unknown

Historical Information

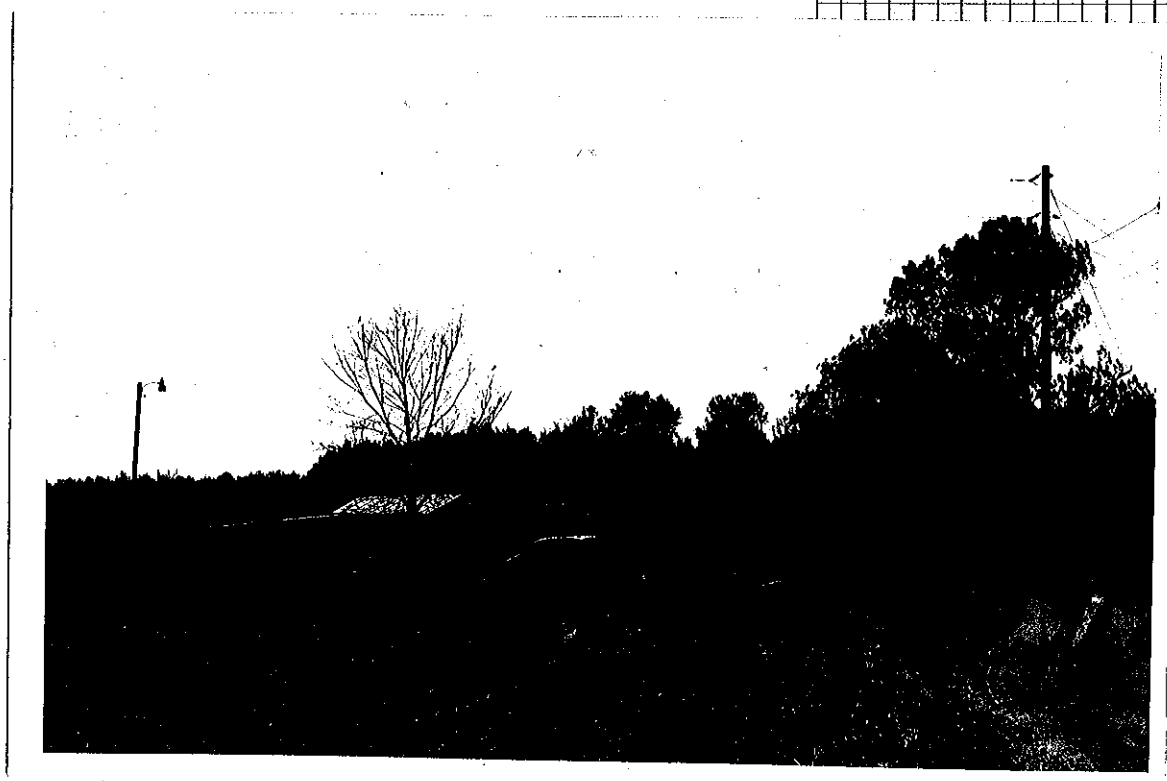
Historical Information:

Source of Information:

Photographs

Use Grid for Sketching

Roll No.	Neg. No.	View of
1	2	View facing SW



Program Management

Recorded by: Paige Wagoner; Brockington and Associates, Inc.

Date Recorded: 02/25/2010

Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 75 / 0249
Status County No Site No

Quad Name: Santee

Tax Map No.: 03230006004.000

Intensive Documentation Form

Identification

Historic Name:

Common Name: Ravenell House (Owner)

Address/Location: 161 Hutch Drive

City: County: Orangeburg

Vicinity of: Santee

Ownership: Private Category: building

Historical Use: Domestic

Current Use: Vacant/Not In Use

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: circa 1950 Commercial Form: Stories: 2 stories

Alteration Date: Historic Core Shape: T

Roof Features

Shape: gable, lateral

Materials: metal

Porch Features

Porch Width: entrance bay only

Shape: gable

Construction Method: masonry

Exterior Walls: concrete block

Foundation: concrete block

Significant Architectural Features: central gabled entry porch with exposed rafter ends and metal roof, front façade has one-over-one double-hung windows on first floor and paired double-hung windows on second floor, exterior brick chimney on north side of house

Alterations: some windows are currently boarded with plywood

Architect(s)/Builder(s): unknown

Historical Information

Historical Information:

Source of Information:

Photographs

Use Grid for Sketching

Roll No.	Neg. No.	View of
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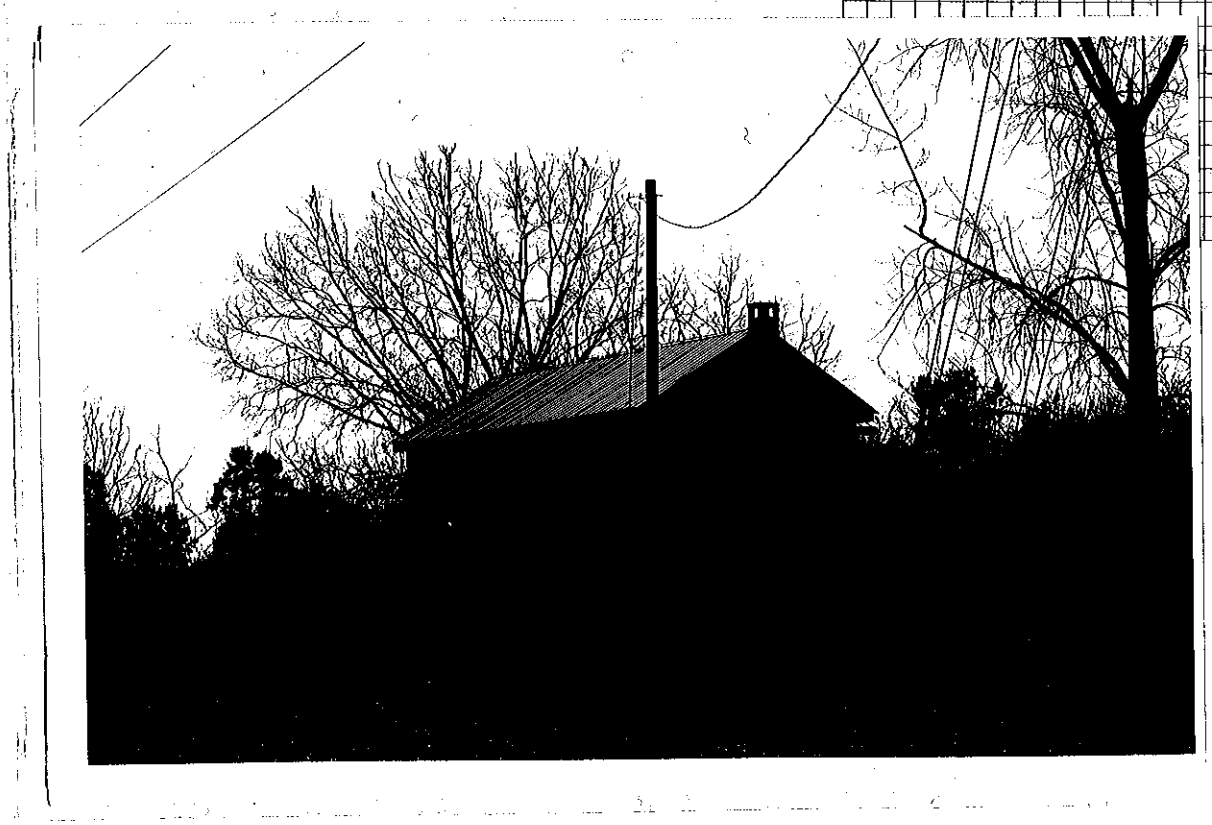
1	4	View facing SE



Program Management

Recorded by: Paige Wagoner; Brockington and Associates, Inc.

Date Recorded: 02/25/2010

APPENDIX J

Agency Coordination

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SCDOT
South Carolina
Department of Transportation

SAMPLE

January 13, 2010

Mr. Heinz Mueller
Chief
US Environmental Protection Agency, Region 4
Office of the Environmental Assessment
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Subject: Environmental Assessment of the Proposed Improvements to the I-95 / US 301 Interchange and US 301 Connector, Orangeburg County

Dear Mr. Mueller,

The South Carolina Department of Transportation (SCDOT) proposes to improve the I-95 / US 301 Interchange and construct the 301 Connector to SC 6 near the Town of Santee in Orangeburg County. Please refer to the attached project location map. Currently, there are no ramps to access I-95 southbound from northbound US 301 or to access US 301 southbound from I-95. The project's purpose is to support economic development in Orangeburg County including an inland port intermodal facility that is proposed for development immediately adjacent to the proposed improvements.

Study alternatives for the I-95 / US 301 interchange include the No Build alternative and four Build alternatives for a full access interchange. Study alternatives for the US 301 Connector include the No Build alternative and four Build alternatives to extend US 301 as a five-lane highway from I-95 to SC 6. The proposed right of way width along the US 301 Connector will be approximately 200 feet.

Funding for the project will be partially provided by SCDOT funding allocated to the Lower Savannah Council of Governments (LSCOG) region, by Congressional earmarks and by Orangeburg County. It is anticipated that right of way acquisition will begin by early 2011.

The purpose of this letter is to solicit comments and to initiate interagency coordination to help identify and evaluate the environmental impacts related to the construction of the project. Environmental documentation will be developed in accordance with regulations of the Federal Highway Administration. This project will be processed in an Environmental Assessment according to National Environmental Policy Act requirements.

In order to fully evaluate the impacts of the proposed project, it is requested that you respond in writing by February 20, 2010 concerning any beneficial or adverse impacts of the project relating to the interest of your agency.

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2314
TTY: (803) 737-3870

Comments should be addressed to the following:

Mr. Edward W. Frierson
Environmental Project Manager
South Carolina Department of Transportation
P.O. Box 191
Columbia, S.C. 29202-0191

Should you have any immediate questions, please contact me at (803) 737-1861.

Sincerely,

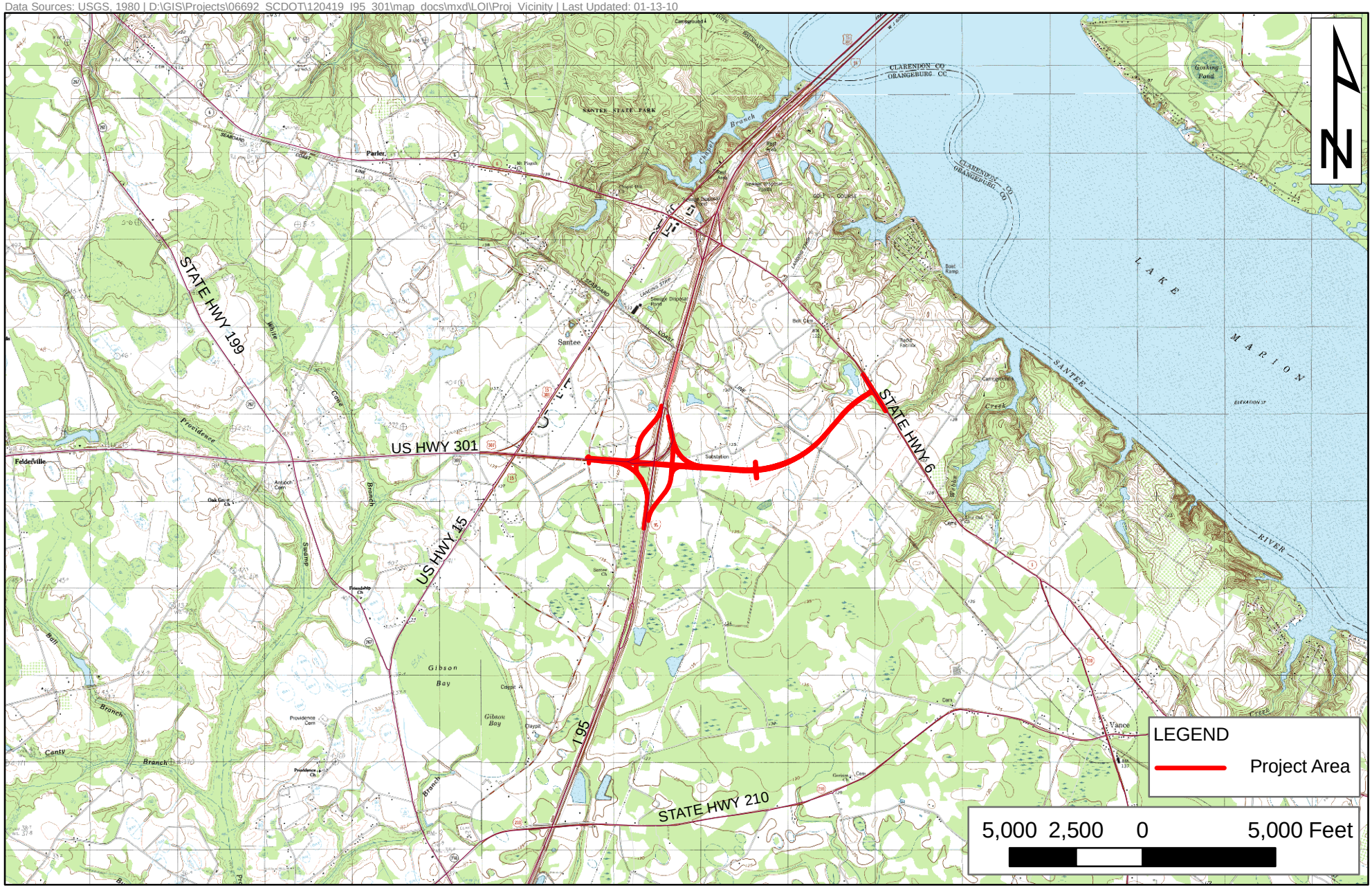
Edward W. Frierson
Environmental Project Manager

Attachment

Cc: SCDOT Program Manager, R. Young

Note: This letter was sent to the attached list of resource agencies.

Data Sources: USGS, 1980 | D:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\LOI\Proj_Vicinity | Last Updated: 01-13-10



Project Vicinity

Vance USGS Quadrangle

EPA
Mr. Heinz Mueller
Chief
US Environmental Protection Agency, Region 4
Office of the Environmental Assessment
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Mr. Bob Lord
US Environmental Protection Agency, Region 4
Wetlands Regulatory Section
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

USACE
Lt. Colonel Jason A. Kirk
US Army Corps of Engineers, Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

Ms. Elizabeth G. Williams
US Army Corps of Engineers, Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

USHUD
Mr. Jim Chaplin
Columbia Field Office Director
US Housing and Urban Development
1835 Assembly Street
Columbia, SC 29201

SCSHPO
Mr. David Kelly
S.C. Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
S.C. Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Dr. Jonathan M. Leader
South Carolina State Archaeologist
S.C. Department of Archaeology and Anthropology
1321 Pendleton Street
University of South Carolina
Columbia, SC 29208

SCDNR
Mr. John Frampton
Director
South Carolina Dept. of Natural Resources
Rembert C Dennis Building
PO Box 167
Columbia, SC 29202

Ms. Susan Davis
South Carolina Dept. of Natural Resources
P.O. Box 12559
Charleston, SC 29412

Mr. Greg Mixon
South Carolina Dept. of Natural Resources
5 Geology Road
Columbia, SC 29212-3549

Ms. Vivianne Vejdani
South Carolina Dept. of Natural Resources
1000 Assembly Street, Room 202
Columbia, SC 29202

Mr. Bob Perry
Director of Environmental Programs
South Carolina Dept. of Natural Resources
PO Box 167
Columbia, SC 29202

USFWS
Mr. Timothy N. Hall
U.S. Fish and Wildlife Service
176 Croghan Spur Rd., Suite 200
Charleston, SC 29407

SCDHEC
Ms. Jennifer Haynes
S.C. Dept. of Health and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

Mr. Mark Giffen
S.C. Dept. of Health and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

Mr. Travis Fuss
S.C. Dept. of Health and Environmental Control
Bureau of Air Quality, Aiken Field Office
206 Beaufort Street, NE
Aiken, SC 29801-4476

Mr. Lewis Rourk
S.C. Dept. of Health and Environmental Control
Bureau of Air Quality, Aiken Field Office
206 Beaufort Street, NE
Aiken, SC 29801-4476

Ms. Daphne Neel
Chief
S.C. Dept. of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

S.C. Dept. of Parks, Recreation & Tourism
Mr. Chad Prosser
Director
S.C. Department of Parks, Recreation and Tourism
1205 Pendleton St.
Edgar A. Brown Building
Columbia, SC 29201

S.C. Human Affairs Commission
Mr. Jesse Washington Jr.
Commissioner of Human Affairs
P.O. Box 4490
Columbia, SC 29204

S.C. Department of Commerce
Mr. Joe E. Taylor, Jr.
S.C. Secretary of Commerce
1201 Main St. 16th Floor
Columbia, SC 29201-3200

S.C. Department of Agriculture
Mr. Hugh Weathers
Commissioner
S.C. Department of Agriculture
P.O. Box 11280
Columbia, SC 29211

S.C. Wildlife Federation
Mr. Ben Gregg
Executive Director
S.C. Wildlife Federation
215 Pickens St.
Columbia, SC 29205

Forestry Commission
Mr. Walt Woodrum
Unit Forester, Santee Unit
353 Fire Tower Rd.
Orangeburg, SC 29118

FHWA
Mr. Robert Lee
Division Administrator
FHWA
1835 Assembly Street, Suite 1270
Columbia, SC 29201-2483

S.C. Legislature
Rep. Gilda Cobb-Hunter
309C Blatt Bldg
Columbia, SC 29201

Rep. Jerry N. Govan Jr.
530C Blatt Bldg
Columbia, SC 29201

Senator John W. Matthews, Jr.
613 Grissette Bldg
Columbia, SC 29201

Senator C. Bradley Hutto
510 Grissette Bldg
Columbia, SC 29201

Indian Tribes

Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

Mr. Russell G. Townsend
Tribal Historic Preservation Office
Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Mr. George Wickliffe
Tribal Historic Preservation Office
United Keetoowah Band of Cherokee
18623 West Keetoowah Circle
Tahlequa, OK 74464

D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

July 15, 2008

S. C. Department of Transportation
Attn; Randy Young
Room 418
P. O. Box 191
Columbia, SC 29202-0191

Re: I-95 Interchange and US 301 Extension to SC 6, Orangeburg County

Dear Mr. Young:

The South Carolina Department of Health and Environmental Control (SCDHEC) is providing comments regarding the above project following the site visit on July 10, 2008, as requested. As you are aware, SCDHEC's Bureau of Water administers applicable regulations pertaining to water quality standards and classifications, including wetland protection, in accordance with the South Carolina Pollution Control Act, the Federal Clean Water Act, the State Stormwater Management and Sediment Reduction Act, Construction in Navigable Waters Permitting, and associated regulations for all of these statutes.

The proposed project would consist of constructing a new interchange at I-95 and US 301 and extending US 301 to SC 6 on new location in the vicinity of Santee in Orangeburg County. Alternatives were discussed during the site visit.

In order to ensure protection and maintenance of water quality standards, including wetlands functions, SCDHEC recommends efforts be made to minimize impacts to wetlands and open water areas (e.g., stream crossings) when planning and constructing this project. Based on the site visit and maps of the proposed alternatives, it appears that the blue corridor and the green corridor with a shift to the south would minimize aquatic impacts. Therefore, SCDHEC recommends that these alternatives be investigated further. Once a preferred alternative is selected, aquatic impacts could be minimized by using bridges or bottomless culverts to accommodate bank-full rain events, improve hydrologic flows and aquatic life passage. In addition, reducing road widths by utilizing 2:1 slopes in sensitive areas can minimize aquatic impacts.

SCDHEC will review any additional information including a preferred alternative, and a thorough description (and quantification) of the stream and wetland resources that will potentially be impacted by the proposed project. An alternatives analysis, which addresses stream and wetland impact avoidance and minimization, in addition to other factors will be required.

The above information will be useful in making a decision regarding 401 Water Quality Certification administered by SCDHEC. If required, the Water Quality Certification may be conditioned to address specific modifications and measures that may be required to further reduce wetland and water quality impacts after a review of detailed project drawings. Also, a final mitigation plan addressing unavoidable wetland/stream impacts must be reviewed and approved by SCDHEC during the certification process.

Please call me at 898-4179 if you have any questions.

Sincerely yours,

Mark Giffin, Project Manager
Water Quality Certification and Wetlands Programs Section

cc: Chuck Hightower
EQC Region 5
Ed Frierson, SCDOT
Sean Connolly, SCDOT

ORAN
#13284
10-DK0007
RI

January 19, 2010

Edward W. Frierson
Environmental Program Manager
SC Department of Transportation
P.O. Box 191
Columbia, SC 29202-0191

Re: **Environmental Assessment of the Proposed Improvements to the I-95/US 301 Interchange and US 301 Connector, Orangeburg County**

Dear Mr. Frierson:

Thank you for your 1/13/10 letter (with attached map) concerning the project referenced above. The State Historic Preservation Office (SHPO) received this letter on 1/15/10. I have researched our existing cultural resource information for a preliminary assessment of any potential adverse effects this project may have. A review of available GIS information revealed no previously surveyed cultural resources within the immediate area of the existing I-95/US 301 interchange. This GIS review did reveal two archaeological sites in the area of the proposed US 301 connector. These two archaeological sites, 38OR0256 and 38OR0294, were both evaluated as "Probably Not Eligible" when initially documented. If these sites remain in the proposed project area as the project is carried forward it will be necessary to make a final/definitive eligibility determination for them.

These comments are intended to assist the South Carolina Department of Transportation in identifying and evaluating cultural resource concerns for project planning. The SHPO will await official Section 106 investigations before making final effect comments for the project. If you have any questions, please call me at (803) 896-6184.

Sincerely,

David P. Kelly
DOT Project Coordinator

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D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

January 15, 2010

S. C. Department of Transportation
Attn: Mr. Edward Frierson
C/O Ron Patton, Director
Planning and Environmental
955 Park Street
Room 515
P. O. Box 191
Columbia, SC 29202-0191

Re: Environmental Assessment of the Proposed Improvements to the I-95/US 301 Interchange and US 301 Connector, Orangeburg County

Dear Mr. Frierson: Ed

The South Carolina Department of Health and Environmental Control (SCDHEC) is providing comments regarding the above project, as requested in your letter dated January 13, 2010. As you are aware, SCDHEC's Bureau of Water administers applicable regulations pertaining to water quality standards and classifications, including wetland protection, in accordance with the South Carolina Pollution Control Act, the Federal Clean Water Act, the State Stormwater Management and Sediment Reduction Act, Construction in Navigable Waters Permitting, and associated regulations for all of these statutes.

The proposed project would consist of improving the existing I-95/US 301 Interchange and constructing a 301 Connector to SC 6 on new location near the Town of Santee in Orangeburg County.

A jurisdictional determination will need to be conducted in order to delineate any wetlands or other waters that the project may impact. In order to ensure protection and maintenance of water quality standards, including wetlands functions, SCDHEC recommends efforts be made to minimize impacts to wetlands and open water areas (e.g., stream crossings) when planning and constructing this project. Such efforts could include enlarging or adding to existing culverts to accommodate bank-full rain events, improve hydrologic flows and aquatic life passage. In addition, reducing road widths by utilizing 2:1 slopes and/or reducing median widths or shifting alignments in sensitive areas may minimize aquatic impacts. The use of best management practices to minimize sediment migration during construction, as well as other post construction stormwater management practices will minimize water quality impacts.

SCDHEC will review any additional information including a thorough description (and quantification) of the stream and wetland resources that will potentially be impacted by the proposed project. An alternatives analysis, which addresses stream and wetland impact avoidance and minimization, in addition to other factors, such as traffic volume and service. The above information will be useful in making a decision regarding 401 Water Quality Certification administered by SCDHEC. If required, the Water Quality Certification may be conditioned to address specific modifications and measures that may be required to further reduce wetland and water quality impacts after a review of detailed project drawings. Also, a final mitigation plan addressing unavoidable wetland/stream impacts must be reviewed and approved by SCDHEC during the certification process.

In addition to the aforementioned certification, the proposed work must be in compliance with State Sediment and Erosion Control and NPDES MS4 stormwater permitting requirements administered by the Bureau of Water.

Finally, please ensure that all other necessary environmental permits for this project are obtained in accordance with applicable State and Federal regulations. If you have not done so already, please contact the Bureau of Air Quality and the Bureau of Land and Waste Management for input regarding those program areas' assessments of this proposed project.

Please call me at 898-4179 if you have any questions.

Sincerely yours,

Mark Giffin, Project Manager
Water Quality Certification and Wetlands Section

cc: Heather Preston
Chuck Hightower
EQC Region 5

353 Fire Tower Road
Orangeburg, SC 29118
(p) (803) 534-3543
(f) (803) 534-3545
www.trees.sc.gov

Henry E. (Gene) Kodama, State Forester

February 1, 2010

Mr. Edward W. Frierson
Environmental Project Manager
SC DOT
P. O. Box 191
Columbia, SC 29202-0191

Subject: Environmental Assessment of the Proposed Improvements to the I-95/US 301 Interchange and US 301 Connector, Orangeburg County

Dear Mr. Frierson:

I received your letter this subject dated January 13, 2010. After reviewing the information, looking at aerial views of the site, and taking a site visit to the proposed location, I see no adverse affects to the SC Forestry Commission for the proposed project in any of the alternative routes. I see that the proposed interchange and connector could be favorable to this agency in that it could possibly reduce our response time to wildfires by providing faster access to I-95 and US Hwy 6.

All the proposed routes pass through typical forest land that consists of pine plantations, hardwood bottoms, and pine-hardwood sites as well as agricultural fields. Potential impacts are the same for any forested tracts. The removal of overstory trees and the clearing of land could have potential erosion problems. With proper erosion control measures, this impact can be lessened. Any wetland issues should be evaluated by the proper agency.

If I can be of further assistance, feel free to call me at 803-534-3543.

Sincerely,

Walter G. Woodrum III.
Unit Forester
S.C. Registered Forester # 933

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South Carolina
Department of Parks, Recreation & Tourism

Chad Prosser, Director

February 2, 2010

Mr. Edward W. Frierson
Environmental Project Manager
SC Department of Transportation
P.O. Box 191
Columbia, SC 29202-0191

Re: Environmental Assessment of the Proposed Improvements to the I95/US301 Interchange and US 301 Connector, Orangeburg County

Dear Mr. Frierson:

The South Carolina Department of Parks, Recreation and Tourism has no concerns pertinent to your project at this time. We do, however, encourage incorporating bike and pedestrian facilities into the project to the extent possible. Thank you for the opportunity to review and comment on this and other projects that could possibly affect existing and/or planned recreational facilities.

Sincerely,

Tony L. Bebber, AICP
Planning Manager

1205 Pendleton Street • Columbia, South Carolina 29201 • Telephone (803) 734-0141 / Fax (803) 734-0670

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

February 3, 2010

Mr. Edward W. Frierson
Environmental Project Manager
S.C. Department of Transportation
P.O. Box 191
Columbia, SC 29202-0191

Re: I-95/US 301 Improvements, Orangeburg County, SC
FWS Log No. 42410-2010-CPA-0074

Dear Mr. Frierson:

The U.S. Fish and Wildlife Service (Service) has received your letter soliciting comments on the proposed I-95/US 301 interchange improvement project in Orangeburg County, SC. The proposed project entails extending US 301 in a westerly direction for 1.8 miles from its existing terminus at I-95 to a new terminus at SC 6. In addition to the extension of US 301 the project will include a new interchange between US 301 and I-95 to facilitate access between the two roadways. The South Carolina Department of Transportation (SCDOT) is soliciting these comments in preparation of an Environmental Assessment (EA) according to National Environmental Policy Act guidelines.

The Service previously provided comments to the SCDOT regarding this project on December 15, 2006, (copy attached). With this letter the Service reiterates the resource concerns and avoidance recommendations summarized in those comments.

Please find attached a list of threatened and endangered (T&E) species that are known to or may occur in Orangeburg County. This list includes species of state and federal concern. SCDOT's reconnaissance efforts for the EA must include a search for the federally listed T&E species. We also recommend SCDOT include the state listed species in its biological/ecological review. Please contact the S.C. Department of Natural Resources for further information on these species and their habitat requirements.

The Service appreciates the opportunity to provide input during this early stage of the project. If you have any questions regarding the Service's comments, please do not hesitate to contact Mr. Mark Caldwell at (843) 727-4707 ext 215.

Sincerely,

Diane L. Lynch
Acting Field Supervisor

Attachments (2)

DLL/MAC/km

South Carolina Distribution Records of
Endangered, Threatened, Candidate and Species of Concern
March 2009

E	Federally endangered
T	Federally threatened
P	Proposed in the Federal Register
CH	Critical Habitat
BGEPA	Federally protected under the Bald and Golden Eagle Protection Act
C	The U.S. Fish and Wildlife Service or the National Marine Fisheries Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species
S/A	Federally protected due to similarity of appearance to a listed species
SC	Federal Species of concern. These species are rare or limited in distribution but are not currently legally protected under the Endangered Species Act.
*	Contact the National Marine Fisheries Service for more information on this species

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated continually and may be different from the following.

Common Name	Scientific Name	Status	Occurrence
ORANGEBURG COUNTY			
Bald eagle	Haliaeetus leucocephalus	T	Known
Red-cockaded woodpecker	Picoides borealis	E	Known
Frosted flatwoods salamander	Ambystoma cingulatum	T	Known
Shortnose sturgeon	Acipenser brevirostrum*	E	Known
Canby's dropwort	Oxypolis canbyi	E	Known
Southern Dusky Salamander	Desmognathus auriculatus	SC	Possible
Gopher frog	Rana capito	SC	Known
Incised groovebur	Agrimonia incisa	SC	Known
Wagner's spleenwort	Asplenium heteroresiliens	SC	Known
Pondspice	Litsea aestivalis	SC	Known
Boykin's lobelia	Lobelia boykinii	SC	Known

Carolina bogmint	Macbridea caroliniana	SC	Known
Awned meadowbeauty	Rhexia aristosa	SC	Known
Bachman's sparrow	Aimophia aestivalis	SC	Known
Henslow's sparrow	Ammodramus henslowii	SC	Known
American kestrel	Falco sparverius	SC	Possible
Loggerhead shrike	Lanius ludovicianus	SC	Possible
Painted bunting	Passerina ciris ciris	SC	Possible
Buff-breasted sandpiper	Tryngites subruficollis	SC	Possible
Southeastern myotis	Myotis austroriparius	SC	Known
Florida pine snake	Pituophis melanoleucus mugitus	SC	Known
Rafinesque's big-eared bat	Corynorhinus rafinesquii	SC	Known

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

February 4, 2010

Edward W. Frierson
South Carolina Department of Transportation
Post Office Box 191
Columbia, SC 29202-0191

Re: I95/US301 Interchange and US301 Connector

Dear Mr. Frierson:

The map(s) enclosed with this correspondence are in response to your January 13, 2010 request for information regarding any potentially adverse environmental impacts in proximity to the project location(s) you provided. On the map(s) attached to this correspondence you will find "non-vulnerable"sites, within a half-mile radius of the selected project locations, that are either known, permitted or regulated by SCDHEC-BLWM and may adversely impact the project location(s). Excluded from the map output are sites that may adversely impact the project area but are designated by DHEC as "vulnerable" and therefore cannot be displayed on cartographic output provided to external parties. "Vulnerable" sites include Hazardous Waste Generators, Radiological Waste Generators and Nuclear Power Plants.

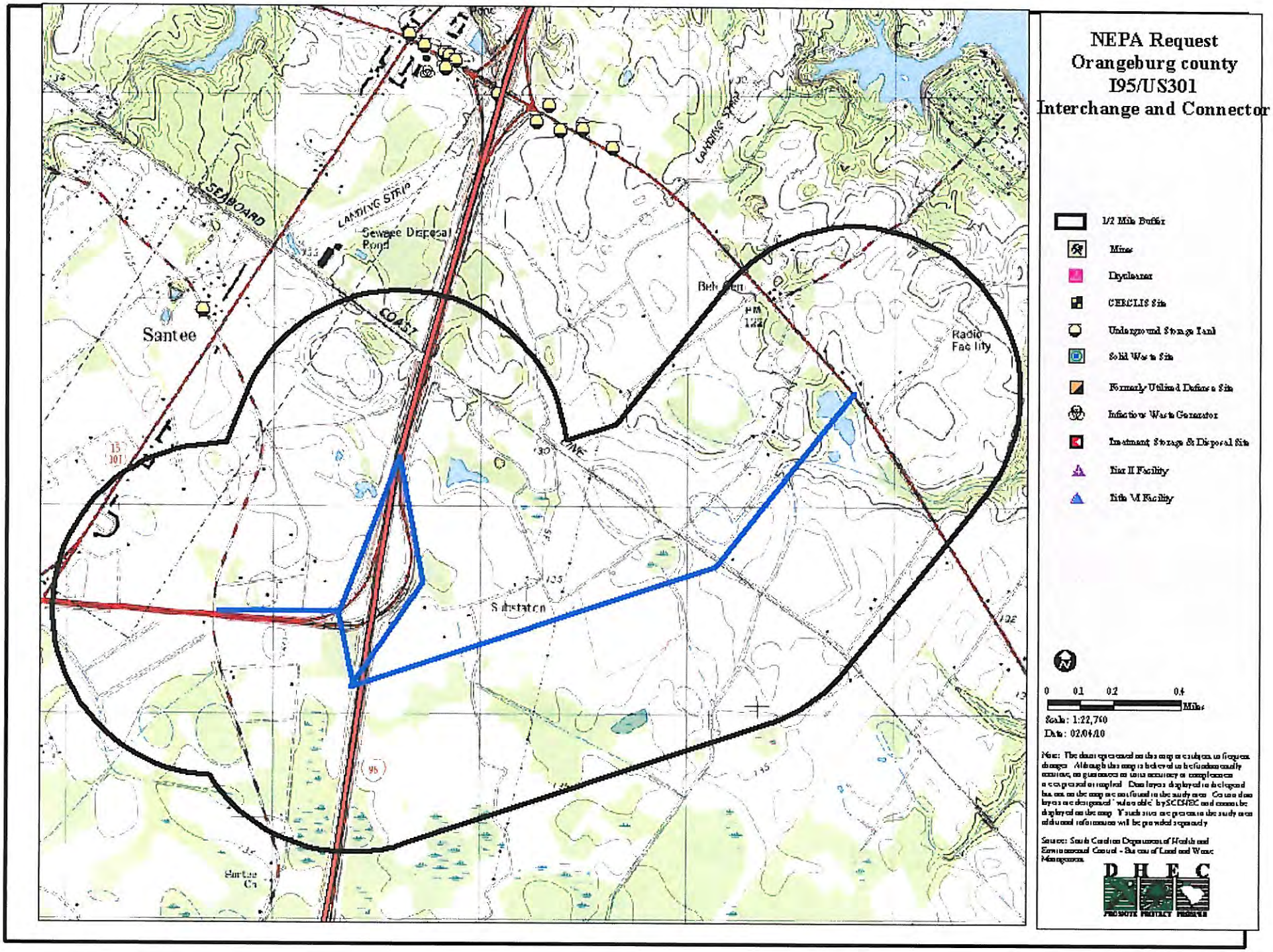
Please note that the data used to create the enclosed map(s) and any additional tables are subject to frequent changes. Although the data are believed to be fundamentally accurate, no guarantees as to the accuracy or completeness of the data are expressed or implied.

If you need further information regarding any site, you are encouraged to review the site file through a Freedom of Information (FOI) request. You may contact Mr. Jody Hamm with the SCDHEC FOI office at (803) 898-3817. If further information regarding this correspondence is required, please contact me at (803) 896-6942.

Sincerely,

Alison M. Hathcock

Alison M. Hathcock, Permitting Coordinator
SCDHEC – Bureau of Land and Waste Management
2600 Bull St., Columbia, SC 29201
(803) 896-6942


NEPA Request
Orangeburg county
I95/US301
Interchange and Connector
1/2 Mile Buffer
Mine
Drycleaner
CERCLIS Site
Underground Storage Tank
Solid Waste Site
Formerly Utilized Defense Site
Infectious Waste Generator
Treatment Storage & Disposal Site
Tier II Facility
Title VI Facility
Santee
Seaboard
Landing Strip
Sewage Disposal Pond
Coast
Line
Radio Facility
Substation
Santee Cr
0 01 02 04
Miles
Scale: 1:22,760
Date: 02/04/10
Note: The data represented on this map are subject to frequent changes. Although this map is believed to be functionally accurate, no guarantees as to the accuracy or completeness are expressed or implied. Data layers displayed in the legend but not on the map are not found in the study area. Certain data layers are designated "value added" by SCDHEC and cannot be displayed on the map. If such sites are present in the study area additional information will be provided separately.
Source: South Carolina Department of Health and Environmental Control - Bureau of Land and Waste Management.
DHEC
PROMOTE PROTECT PRESERVE

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

February 6, 2010

Attention: Edward W. Frierson
Environmental Project Manager
South Carolina Department of Transportation
P.O. Box 191
Columbia, South Carolina 29202-0191

Re. THPO #	TCNS #	Project Description
2010-66-11		EA of the Proposed Improvements to the I-95/US 301 Interchange and US 301 Connector, Orangeburg Co., SC

Dear Mr. Frierson,

We have received your request for comments regarding the presence of historic properties or traditional cultural, religious, and/or sacred sites of the Catawba Indian Nation that may be impacted by the above referenced undertakings. We will send you our determination as soon as our research process has been completed.

We need the following information for the above project:

- A copy of any archaeological surveys done within a half mile of the project area.
- A copy of the State Historic Preservation Office's letter of concurrence.

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Totherow for
Wenonah G. Haire
Tribal Historic Preservation Officer

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SCDOT
South Carolina
Department of Transportation

ORAN
#13921
10-DK0072

RECEIVED
JUN 07 2010
SC Department of
Archives & History

June 3, 2010

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

RE: Draft Report, *Cultural Resources Survey of the US-301 at ~~I-~~95 Interchange Improvements and US-301 Extension to SC-6 Project, Orangeburg County, South Carolina.*

Dear Ms. Johnson:

Enclosed are two copies of the above-referenced draft report that describes cultural resource investigations in Orangeburg County. Investigators identified three archaeological sites (38OR318-38OR320) and four historic architectural resources (Resources 0240, 0248, 0248.01, and 0249) during the survey. All resources are recommended **not eligible** for listing in the National Register of Historic Places.

Based on the results of background research and field survey, the Department has determined that **no historic properties will be affected** by the proposed undertaking.

In accordance with the memorandum of agreement approved by the Federal Highway Administration, March 16, 1993, the Department is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the Department's findings, thus completing the Section 106 consultation process. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

Chad C. Long
Archaeologist

I (~~do not~~) concur in the above determination.

Signed: _____ Date: 6/7/10

cc: Shane Belcher, FHWA
Dr. Wenonah Haire, Catawba THPO
Russell Townsend, EBCI
Keith Derting SCIAA

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Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

August 18, 2010

Attention: Josh Fletcher
Brockington & Associates, Inc.

Re. THPO # TCNS# Project Description
Cultural Resources Survey of the US-301 at I-95 Interchange Improvements and US-301 Extensions to SC-6 Project, Orangeburg Co., SC

Dear Mr. Fletcher,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,
Caitlin Totherow for
Wenonah G. Haire
Tribal Historic Preservation Officer

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APPENDIX K

Phase I ESA US 301 at I-95 Interchange Improvements and US 301 Extension to SC 6

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PHASE I
ENVIRONMENTAL SITE ASSESSMENT
US-301 AT INTERSTATE 95
INTERCHANGE IMPROVEMENTS
AND US 301 EXTENSION TO SC 6
ORANGEBURG COUNTY, SOUTH CAROLINA

S&ME Project No. 1134-09-496

Prepared for:
HDR Engineering, Inc.
3985 Faber Place, Suite 300
North Charleston, South Carolina 29405

Prepared by:

620 Wando Park Boulevard
Mount Pleasant, South Carolina 29464

January 5, 2010

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January 5, 2010

HDR Engineering, Inc.
3985 Faber Place, Suite 300
North Charleston, South Carolina 29405

Attention: Ms. Shannon Renz Meder, P.E.

Reference: **Report of Phase I Environmental Site Assessment**
US-301 at Interstate 95 Interchange Improvements
and US 301 Extension to SC 6
Orangeburg County, South Carolina
S&ME Project No. 1134-09-496

Dear Ms. Meder:

S&ME, Inc. has completed a Phase I Environmental Site Assessment for the referenced property. The attached report presents the findings of S&ME's Phase I Environmental Site Assessment which was performed in general accordance with ASTM E 1527-05 and S&ME Proposal No. 34-09-099, dated February 27, 2009.

The project area included the proposed interchange improvements at US Highway 301 and Interstate 95, and the proposed preferred connection (Alternate 3) from the interchange to SC Highway 6. The general locations of the remaining alternatives were within the properties reviewed as part of this scope of work.

We appreciate the opportunity to provide the Environmental Site Assessment for this project. Please contact us at your convenience if there are questions regarding the information contained in this report.

Sincerely,

S&ME, Inc.

Terri Lynn Sciarro, P.E.
Project Manager

James L. Killingsworth, CHMM
Environmental Services Manager, V.P.

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SUMMARY

This summary is intended as an overview of the Phase I Environmental Site Assessment (ESA), for the convenience of the reader. The complete report must be reviewed in its entirety prior to making decisions regarding this site.

The project area is defined as that area consisting of the extension of US-301 approximately 3.2 miles north east of the Interstate 95 Intersection (Exit 97) on an approximate 70 ft equidistant corridor (140 ft. total width) to a location approximately 0.1 miles southeast of the Naval Station Road and SC-6 intersection along SC-6. There are multiple alternatives by South Carolina Department of Transportation along this general area of the US 301 extension (See Figure 6). The project area also includes the existing interchange of US-301 and Interstate 95 which will also be expanded approximately 2000 feet equidistance from the current interchange with potentially varied width, and approximately 2000 feet west from the interchange to Bonner Road.

We contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search of the project area and the surrounding area. No sites were reported within the project area or within the specified search radius within the databases reviewed, and twenty six orphan sites were reported and determined to be outside the project area.

Based on this Phase I ESA, S&ME found evidence of *recognized environmental conditions* in connection with the project area, as listed below:

- The end of Vernetha Lane has two (2) above ground storage tanks and various debris on the property. This site will be impacted by the interchange and is considered a recognized environmental condition.

- The former Pure Gold appears to be a past gasoline station and is located three hundred feet from the northwest corner of US-301 and Bonner Road. Due to the apparent past use and the lack of a regulatory report this site is considered a recognized environmental condition.

1. INTRODUCTION

S&ME, Inc. (S&ME) conducted a Phase I ESA of accessible portions of a proposed 3.2 mile roadway easement to extend US-301 from its intersection with Interstate 95 to SC State Highway 6. The easement is anticipated to be an approximate 70 ft equidistant corridor (140 ft. total width) of property that is currently used for primarily agricultural purposes. The project area also includes the existing interchange of US-301 and Interstate 95 which will also be expanded approximately 2000 feet equidistant from the current interchange, and approximately 2000 feet from the interchange west to Bonner Road. This Phase I ESA was conducted in general accordance with the American Society for Testing and Materials (ASTM) E 1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and S&ME, Inc. proposal 34-09-099 dated February 27, 2009.

1.1 Purpose

The purpose of the ESA is to identify, pursuant to ASTM E 1527-05, recognized environmental conditions in connection with the project area.

ASTM defines the term *recognized environmental condition* (REC) as the presence or likely presence of hazardous substances or petroleum products on the property under conditions that indicate an existing release, past release, or a material threat of a release of hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the property. The term does not included *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies.

1.2 Detailed Scope of Services

1.2.1 ASTM E-1527-05

S&ME's approach to performing this Environmental Site Assessment consisted of four major tasks in accordance with ASTM Standard Practice E1527-05.

Task 1 - A review of reasonably ascertainable public records for the site and the immediate vicinity was conducted. This review was performed to characterize environmental features of the site and to identify past and present land use activities, on or in the vicinity of the site, which may indicate a potential for *recognized environmental conditions*. The review of the reasonable ascertainable public records included:

1. Examination of federal, state, tribal and reasonably ascertainable local public records for the site and immediate vicinity.

2. Examination of one or more of the following standard sources: aerial photographs, fire insurance maps, tax files, building department records, zoning/land use records, street directories and topographic maps of the site and vicinity for evidence suggesting past uses that might have involved hazardous substances or petroleum products.

Task 2 - A site reconnaissance was performed to identify visual signs of past or existing contamination on or adjacent to the site. This reconnaissance was also performed to evaluate evidence found in our public record review that might indicate activities resulting in hazardous substances or petroleum products being used or deposited on the site. The site reconnaissance included the following activities:

1. A reconnaissance of the site and adjacent properties on accessible lands was performed to look for evidence of current and past property uses, signs of spills, stressed vegetation, buried waste, underground or above ground storage tanks, subsidence, transformers, or unusual soil discoloration which may indicate the possible presence of contaminants on the properties. Photographs are provided to document these conditions.

2. The reconnaissance involved a viewing of the periphery of the site from publicly accessible areas and adjacent properties.

Task 3 – Interviews with appropriate local officials were conducted to consider any local knowledge of hazardous substances or petroleum products on the property or on adjacent properties. As instructed by the user, no interviews were conducted with past or present property owners. Select occupants were interviewed for those commercial operations which historically have environmental concerns during the site reconnaissance.

Task 4 - Report preparation and review.

1.2.2 Exclusions from and Additions to Scope of Services

Unless specifically authorized as an addition to the Phase I ESA work scope, the assessment did not include any assessment of environmental conditions not specifically included in the ASTM E1527-05 standard including, but not limited to sampling of materials (i.e., soil, surface water, groundwater or air), or the assessment of business risk issues such as wetlands, lead in drinking water, asbestos containing materials, mold, fungi or bacteria in on-site buildings, regulatory compliance, cultural/historic risks, industrial hygiene, health/safety, ecological resources, endangered species, indoor air quality (including an evaluation of vapor intrusion), radon or high voltage power lines.

At the request of the user, no past or present property owners were interviewed for this report. South Carolina Department of Transportation (SCDOT) was provided the user requested questionnaire for completion.

1.3 Significant Assumptions

The groundwater within the local geologic province is typically contained in an unconfined (water table) aquifer. The slope of the water table under static conditions (no pumping interference) often approximates the land surface topography. Thus, the interpreted groundwater flow direction is assumed to be approximately the same as the dip of the ground surface. Perennial surface waters (creeks, streams, rivers, etc.) are assumed to act as a discharge point for groundwater flow.

1.4 Limitations and Exceptions of Assessment

This Phase I ESA was conducted using ASTM E 1527-05. The findings of this report are applicable and representative of conditions encountered at the subject property on the date of this assessment, and may not represent conditions at a later date. The review of public records was limited to that information which was available to S&ME at the time this report was prepared. Interviews with local and state government authorities were limited to those people whom S&ME was able to contact during the preparation of this report. Information was derived from "reasonably ascertainable" and "practically reviewable" sources in compliance with our understanding of the standards set forth by ASTM E 1527-05.

Specific limitations to this assessment are; the operational history of the property could not be documented at approximately five-year intervals because standard historical sources with that information were not reasonably ascertainable, interviews with property owners were not conducted at the request of the user, and Chain-of-Title and Environmental Lien or Activity and Use Limitations information was not provided.

The user was responsible for reviewing land title and judicial records for environmental liens or activity and use limitations. Chain-of-Title information was not provided. In addition, the user did not return the User Questionnaire. Any information provided by the client is assumed to be correct.

1.5 Special Terms and Conditions

This Phase I ESA was conducted in general accordance with S&ME Proposal No. 34-09-099, dated February 27, 2009 and the HDR Engineering, Inc. Subconsultant Agreement executed October 5, 2009.

1.6 User Reliance

The resulting report is provided for the sole use of HDR Engineering, Inc., the South Carolina Department of Transportation (SCDOT), and their Assignees. Use of this report by any third parties will be at such party's sole risk except when granted under written permission by S&ME. Any such authorized use or reliance by third parties will be subject to the same Agreement, under which the work was conducted for HDR Engineering, Inc. and SCDOT.

The additional party's use and reliance on the report will be subject to the same rights, obligations, and limitations imposed on S&ME and HDR Engineering Inc. by the Agreement. However, the total liability of S&ME to all parties of the Phase I ESA shall be limited to the remedies provided in the Agreement as a single contract. The additional party's use and reliance on the report shall signify the additional party's agreement to be bound by the proposal and contract that make up the Agreement between S&ME and HDR Engineering Inc.

According to standards set forth by ASTM 1527-05, components of the Phase I ESA will expire 180 days from the date of completion of that component and may therefore require updating if the date of property acquisition exceeds this time period. The following table lists the dates of completion for pertinent components:

Component	Date of Completion
Environmental Database Search	October 27, 2009
Site Reconnaissance	December 4, 2009
Interviews	Not conducted per user
Environmental Lien Search	Not provided

2. SITE DESCRIPTION

2.1 Site Location

The project area consisting of the planned extension of US-301 approximately 3.2 miles north east of Interstate 95 and US-301 Intersection (Exit 97) on an approximate 70 ft equidistant corridor (140 ft. total width) to a location approximately 0.1 miles southeast of the Naval Station Road and SC-6 intersection along SC-6. The project area also includes the existing interchange of US-301 and Interstate 95 which will be expanded approximately 2000 feet equidistance from the current interchange, and approximately 2000 feet heading west from the I-95 interchange to Bonner Road. The property is located in Orangeburg County approximately 1.5 miles southeast of Santee, South Carolina.

The approximate location of the project area (Figure 1) is included in Appendix I.

2.2 Site and Vicinity Characteristics

The project area is located along a corridor primarily developed for agricultural purposes. The northern leg of the proposed roadway twice crosses an unnamed tributary leading to Lake Marion. The proposed roadway also crosses the Seaboard Coast Line railroad easement. The town of Santee, South Carolina is located approximately 1.5 miles northwest with commercial, agricultural and residential development. To the Southeast is primarily undeveloped and agricultural development. However, much of the surrounding property is planned for development as an intermodal transportation center.

2.3 Current Uses of the Property

The project area is used for agricultural purposes including sod, sunflower, soy, and pine production, with small pockets of wetlands and undeveloped tracts. There are also several residential structures in the area.

2.4 Site Improvements (Descriptions of Roads, Other Improvements on the Site)

The project area traverses several small unpaved roads including: LTR Road, Hutch Drive, Intracoastal Lane, Inca Court, and Varnetha Lane. Many of the properties crossed are used for agricultural purposes and are serviced by irrigation from well, surface and drainage sources. The northeastern end of the proposed roadway easement will twice cross an unnamed tributary of Lake Marion which appears to support much of the drainage of the surrounding properties. The proposed roadway also crosses the Seaboard Coast Line Railroad easement. Adjacent properties to the project area are primarily used for agricultural purposes.

West of the US-301 and Interstate 95 intersection in the location of interchange improvements the properties are primarily used for agricultural, undeveloped, and sparse residential purposes. The properties impacted by the proposed project also include one site that has above ground storage tanks and debris. Adjacent properties include a former fuel station (Pure Gold), a junk yard, and a welding shop.

2.5 Current Use of Adjoining Properties

Adjoining properties are currently used for agricultural purposes or are undeveloped wetlands or forested areas. There is limited commercial and industrial properties at the west of the I-95 interchange at US-301 and Bonner Road.

3. USER PROVIDED INFORMATION

This section is provided to summarize information provided by the user that may help in identifying recognized environmental conditions. As indicated in the ASTM standard, the environmental professional does not typically generate this information.

3.1 Title Records

Chain-of-Title information was not provided by the user.

3.2 Environmental Liens or Activity and Use Limitations

Environmental Liens or Activity and Use Limitations information on the project area was not provided by the user.

3.3 Specialized Knowledge

No specialized knowledge was provided by the user of this report.

3.4 Commonly Known or Reasonably Ascertainable Information

No additional information was provided by the user of this report.

3.5 Property Purchase Price versus Fair Market Value

The user did not indicate that there was a valuation reduction for environmental issues.

3.6 Owner, Property Manager and Occupant Information

Information on property owner, manager, and/or occupant information was not provided by the user.

3.7 Reason for Performing the Phase I ESA

The purpose of the ESA is to identify, pursuant to ASTM E 1527-05, *recognized environmental conditions* in connection with the property.

3.8 Other

The user did not provide other information with reference to environmental issues.

4. RECORDS REVIEW

4.1 Standard Environmental Record Sources

S&ME contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search and prepare a Site Assessment Report compiling federal and state environmental database information from the regulatory records of the United States Environmental Protection Agency (USEPA) and the State of South Carolina. The purpose of the EDR DataMap™ Study was to identify environmental sites and activities

within a radius of potential concern from the project area, as outlined by ASTM E 1527-05. The following table lists databases included in the search. The EDR report (DataMap™ Study), including detailed descriptions of the databases and an EDR DataMap, is included in Appendix II. A table (Table 1) summarizing sites mentioned below is included in Appendix II.

Federal Environmental Record Sources

Database	Release Date (optional)	Approximate Search Distance	Search Results (number of sites)
NPL	10/14/2009	1.125 mile	0
Proposed NPL	10/14/2009	1.125 mile	0
DELISTED NPL	10/14/2009	1.125 mile	0
NPL LIENS	8/17/2009	TP	0
CERCLIS	9/30/2009	0.625 mile	0
CERCLIS-NFRAP	9/09/2009	0.625 mile	0
CORRACTS	8/31/2009	1.125 mile	0
RCRIS-TSDF	10/07/2009	0.625 mile	0
RCRIS-LQG	10/07/2009	0.375 mile	0
RCRIS-SQG	10/07/2009	0.375 mile	0
RCRIS-CESQG	10/07/2009	0.375 mile	0
RCRIS-NonGen	10/07/2009	0.375 mile	0
ERNS	10/06/2009	TP	0
HMIRS	10/05/2009	TP	0
CONSENT	10/06/2009	1.125 mile	0
ROD	9/22/2009	1.125 mile	0
TRIS	9/14/2009	TP	0
TSCA	10/07/2009	TP	0
FTTS	9/10/2009	TP	0
PADS	10/21/2009	TP	0
MLTS	9/21/2009	TP	0
MINES	9/18/2009	0.375 mile	0
FINDS	9/18/2009	TP	0
RAATS	6/02/09	TP	0

TP = Target Property

State Environmental Record Sources

Database	Release Date	Approximate Search Distance	Search Results (number of sites)
State Hazardous Waste Site (SHWS)	9/24/2009	1.125 mile	0

Database	Release Date	Approximate Search Distance	Search Results (number of sites)
Landfills (SWF/LF)	9/24/2009	0.625 mile	0
GWCI	10/19/2009	0.625 mile	0
LUST	8/17/2009	0.625 mile	0
UST	8/17/2009	0.375 mile	0
Spills	9/15/2009	TP	0

TP = Target Property
Note: *ASTM Supplemental* databases searched are listed in the attached EDR report

The project area was not identified on the databases reviewed. In addition, no sites within the ASTM specified search radii were listed in the databases reviewed.

Due to the current regulatory status and the location, twenty six (26) of the sites listed in the EDR Report as unmapped (orphan) sites do not appear to be located within 1.125 miles of the project area

4.2 Additional Environmental Record Sources

A search of the Environmental Protection Agency (EPA) Envirofacts database (http://maps.epa.gov/enviromapper) was conducted. Review of the Envirofacts database resulted in the identification of no facilities of potential concern in the immediate vicinity of the project area.

4.2.1 EDR Supplementary Sources

No supplementary EDR sources were used in the preparation of this report.

4.2.2 Tribal Record Sources

A search of available tribal record databases by EDR, Inc. revealed no sites within the specified search distances. The databases searched are listed below:

Tribal Records

Database	Release Date	Approximate Search Distance	Search Results (number of sites)
Indian Reservations	10/23/2009	1.125 mile	0
Indian LUST	8/17/2009	0.625 mile	0
Indian UST	8/17/2009	0.375-mile	0

The site does not appear to be located on or near any tribal lands. According to the U.S. Census, the Catawba Indian Nation in York County is the only federally recognized tribe in South Carolina. South Carolina began to offer state recognition to tribes in early 2005. Currently, none of the state recognized tribes identified on the South Carolina Indian Affairs web site are listed in Orangeburg or Bamberg Counties. S&ME reviewed the

South Carolina Indian Affairs Commission website: (http://southcarolinaindianaffairs.com/members.html) as well as the websites of two state recognized tribes, the Pee Dee Indian Tribe (http://www.peedeeindiantribeofsc.com/) and the Waccamaw Indian Tribe (http://www.waccamaw.us/FRAME_HOME.htm), and one unrecognized tribe, the Marlboro, Chesterfield, Darlington County Pee Dee Indian Tribe (http://mcdcpeedeeindiantrib.tripod.com/), for any information regarding environmental concerns. These sources did not contain information regarding environmental issues. A copy of the Federal Lands and Indian Reservations Map (Figure 4) is included in Appendix I. It can be seen that the Santee National Wildlife Refuge is located north of Lake Marion.

4.3 Physical Setting Sources

Topographic, hydrogeologic and geologic information can be used, among other things, to help predict the possible migratory path of contaminants, if present, onto or off of the project area.

S&ME reviewed the United States Geological Survey (USGS) 7.5-minute series topographic maps (Vance, SC Quadrangle dated 1979) to examine the topography and drainage of the project area and vicinity. The surface elevation of the project area is approximately 120-135 feet above mean sea level (MSL). In general, the groundwater flow of a surficial aquifer will mimic the topography of a given site and will flow with the slope of the land. Based on our review of this map, it appears that groundwater in the direct vicinity of the project area would flow in a northeast direction. However, groundwater direction can be affected by rainfall, tidal and other subsurface and climatic conditions. A copy of the topographic map (Figure 2) is included in Appendix I.

The central to southeastern portion of Orangeburg County is located in the Outer Coastal Plain Subprovince of the South Carolina Coastal Plain. Sedimentary sequences, totaling approximately 1400 feet, exist between ground surface and the underlying hard crystalline and metasedimentary rocks of the Piedmont. These sediments, ranging from recent to upper Cretaceous age, have been termed the Coastal Plain Stratigraphic Wedge (Colquhoun, *et al* 1983).

The wedge of sediments includes a series of depositional units that have been transported by river, deltaic and marine systems and reworked in nearshore environments as a result of fluctuations in sea level. Each depositional unit has a definable lithology, definable sedimentary structures, an overall shape and a relationship to other depositional units. In the vicinity of central to southeastern Orangeburg County, the primary depositional units are (in descending order) Pleistocene delta plain and tidal channel deposits; low permeability, middle Eocene limestone of the Orangeburg Group; the Williamsburg Formation, Perkins Bluff Member, Browns Ferry Member and Rhems Formation of the Paleocene Black Mingo Group and the upper Cretaceous Peedee Formation, Black Creek Group and the Middendorf Formation.

Groundwater is present in the surficial Pleistocene deposits under water table conditions. Water table depths are shallow and close to surficial contaminant sources (on the order of 10 feet below ground surface), recharge rates vary and water quality is generally poor. For these reasons, the approximate 50 foot thick surficial aquifer system is typically not utilized as a potable water source throughout the Orangeburg County area. An approximate 40 foot thick depositional sequence of middle Eocene age sediments serves as a confining unit between the overlying shallow aquifer system and the underlying semi-confined to leaky aquifers of Paleocene to upper Cretaceous age (i.e. Williamsburg Formation and the Black Mingo, Peedee, Black Creek and Middendorf aquifer systems).

4.4 Historical Use Information on Property

Aerial photographs were reviewed to observe previous conditions and development of the project area, as well as adjacent properties. We reviewed aerial photographs from the United States Natural Resources Conservation Service (NRCS) Center and multiple websites dated 1949, 1958, 1963, 1973, 1981, 1999, and 2006.

The coverage area for the proposed corridor width of approximately 140 feet, or 70 feet symmetrically about the current center-line of US 301, could only be estimated during the aerial photograph review due to the various scales and clarities of the aerial photographs. Therefore, the conditions of the project area (140 foot corridor) identified in the following aerial photograph descriptions have been liberally approximated throughout the area of the corridors.

In the 1949 aerial photograph, the project area is developed for agricultural purposes. Structures resembling residential dwellings and agricultural developments are scattered in the local vicinity. However the majority of the area appears to be undeveloped wetlands or wooded areas. There do not appear to be any commercial businesses located on or near the project area. State Highway SC-6, United States Highway US-15, and the Seaboard Coast Line Railway are all visible.

In the 1958 and 1963 aerial photographs, conditions appear similar to those seen in the 1949 aerial photograph, with the exception that additional side roads and cleared farmland are visible. A small commercial area and scattered residences can be seen at the intersection of US Highway 15 and SC State Highway 6.

In the 1973, 1981, 1999, and 2006 aerial photographs, conditions appear to be similar to those seen in the 1949, 1958, and 1963 aerial photographs, with the exception that Interstate 95 bypasses the town of Santee along a North-South path. The intersection of Interstate 95 and US Highway 301 appears similar to current conditions in each of these aerial photographs. Also with each timeframe the town of Santee progressively grows, although the project area remains primarily agricultural.

Copies of the aerial photographs are included in Appendix III.

Historical Topographic Maps obtained from NRCS dated 1921, 1943, and 1979 were reviewed to observe development of the project area, as well as immediately adjacent and surrounding properties. Copies of the Historical Topographic Maps are included in Appendix III.

In the 1921 Historical Topographic Map, SC State Highway SC-6 is depicted with few residences or development along the project area. Sparse pockets of development can be seen to the southeast toward Vance, SC.

In the 1943 Historical Topographic Map, SC State Highway SC-6 is depicted with additional residences north of the project area. The largest change was the creation of Lake Marion which is depicted on the map.

The 1979 Historical Topographic Map, is much the same as the 1943 Historical Topographic Map with a exception of the construction of Interstate 95. Also the Town of Santee has developed commercial areas and residences around the US Highway 15 and SC Highway 6 intersection.

No other historical sources were used for this report. Additional historical sources such as building department records, and zoning/land use records were not used because it has been our experience that within Orangeburg County these records are unproductive to our purpose. In addition, an attempt was made to search city directories. However, city directories for the project area could not be found.

4.5 Historical Use Information on Adjoining Properties

Based upon available historical sources, the historical use of adjoining properties appears to be consistent with current uses with the exception of previous small-scale agricultural use of some of the properties.

5. SITE RECONNAISSANCE

A site reconnaissance was conducted on December 4, 2009 by Terri Sciarro and Frank Slaughter of S&ME to observe the current uses of the project area, adjoining properties and those properties in the surrounding area, as well as the topographic conditions of the property and the surrounding area. Photographs were taken of various portions of the project area to document existing conditions. Copies of these photographs, SCDOT Form 843, and a site reconnaissance checklist are included in Appendix IV of this report.

5.1 Methodology and Limiting Conditions

The project area was observed by walking and driving accessible areas of the site and visually observing adjacent properties. A Phase I ESA Site Reconnaissance Form and SCDOT Form 843 was completed during the site reconnaissance and is included in Appendix IV.

5.2 General Site Setting

The project area consists of a proposed 3.2 mile roadway easement to extend US-301 from its intersection with Interstate 95 to SC State Highway 6. The easement is

approximated to be a 70 ft equidistant corridor (140 ft. total width). The project area also includes approximately 2000 feet north and south on the I-95 interchange and approximately 2000 feet west on US-301 to Bonner Road. The area is predominantly used for agricultural purposes. Crops produced appear to be sod, sunflower, soybeans, and pine. The corridor twice traverses a tributary leading to Lake Marion and a Seaboard Coastal Railroad line.

5.2.1 Current Use(s) of the Property

The project area is currently used for agricultural purposes. Limited and isolated residential and farm structures such as silos, wells, and irrigation features.

5.2.2 Past Use(s) of the Property

According to available historical sources, the past use of the project area since approximately 1921 appears to be agricultural, rural residential and undeveloped land.

The property located on the end of Vernetha Lane is overgrown and the exact use or past use of the property is unknown, however there is an above ground storage tank and debris. (See photos 14-17 located in Appendix IV.)

5.2.3 Current Use(s) of Adjoining and Surrounding Properties

The adjoining properties are predominantly undeveloped. Surrounding properties are used primarily for agricultural and limited residential purposes.

The intersection of US-301 and Bonner Road is a property which appears to be a junk yard that has several older vehicles that appear to be permanently parked within the property (See photos 12 and 13). In the south west quadrant of the Bonner Avenue and US-301 intersection is a metal working facility (See photo 19). Approximately three hundred west of the same intersection is Pure Gold, a gentlemen's club that was established in a former gas station property (See photo 18).

5.2.4 Past Use(s) of Adjoining and Surrounding Properties

According to available historical sources, past uses of adjoining and surrounding properties appear to generally be consistent with current uses. An abandoned property located off of Hutch Drive showed signs of past uses raising livestock.

5.2.5 Geologic, Hydrogeologic, Hydrologic, and Topographic Conditions

The project area generally drains to the northeast through a system of drainage ditches and ultimately leading to a small tributary toward Lake Marion. The properties agricultural fields appear to be irrigated through central pivot irrigation systems attached to deep groundwater wells. Lake Marion is a man made reservoir created by the Santee Cooper Hydroelectric Navigation Project, supplying hydroelectric power as part of the 1930's rural electrification efforts of the New Deal. Lake Marion feeds the Santee Basin and Cooper River.

5.2.6 Description of Structures and Roads

The project area consists of various unpaved roadways, a railroad easement, and agricultural fields with a network of drainage. Adjacent properties are predominantly developed for agricultural purposes. Properties in the surrounding areas include sparse commercial, agricultural, and limited residential structures. Municipal water was observed from SC State Highway 6 to the Santee Substation on Inca Court.

5.2.7 Potable Water Supply and Sewage Disposal System

The project area reportedly has no municipal water and sewer systems to service the scattered residential properties.

5.3 Exterior Observations

The site reconnaissance began at SC State Highway 6 (SC-6) along the northeastern end of the corridor. Due to a lack of access, much of the property had to be observed from dirt roads intersecting the properties. Photo 1 (located in Appendix IV) depicts the undeveloped wetland and forested area located to the west of the northern most section of the property. Moving southwest along the corridor are fields used for production of loblolly pine tree crops, fallow fields, sunflowers and soybeans.

Closer to the Interstate 95 intersection there were several scattered residences. From photograph 10 and 11 you can see well water and propane tanks serving the residences. It was assumed that the properties have septic systems.

On the western side of the Interstate 95 and US Highway 301 (US-301/SC-15) intersection were several properties of note. The first was on the end of Vernetha Lane. It is an overgrown property which has debris such as tires, abandoned tanks, and silos. In particular are two above ground storage tanks (one horizontal and one vertical). Additionally there appears to be a junk yard on Bonner Avenue south of US-301. This property is presumed to be the junk yard that was mentioned in an interview with Teddy Wolfe of the Orangeburg County Fire Department. Also at the intersection of US-301 and Bonner Avenue there is a metal working facility (south west quadrant) and a former gas station (Pure Gold, 0.1 miles from north west quadrant).

There were no observed staining to the soils or distressed vegetation. A small amount of household dumping was found near the Intracoastal Lane substation. An abandoned residence located on the southern side of Hutch Drive was observed. It appeared to have had livestock due to the presence of feeding stations.

Photographs taken during the site visit are included in Appendix IV.

5.4 Interior Observations

Interior spaces are not applicable to the project area.

6. INTERVIEWS

6.1 Interview with Past and Present Owners

At the request of the user, interviews were not conducted.

6.2 Interview with Key Site Manager

See Interview with Owner.

6.3 Interview with Occupants

See Interview with Owner.

6.4 Interview with Local Government Officials

Orangeburg County Fire Department Operations Manager Teddy Wolfe stated that there have been no significant environmental responses by his department to the project area. Mr. Wolfe added that the only environmental related issues he would note is the junk yard located west of Interstate 95.

Mr. Wolfe referred me to the local Santee fire station where S&ME spoke to Firefighter Travis Snell who knew of no additional concerns in the project area.

6.5 Interviews with Others

See Interview with Owner.

7. FINDINGS

7.1 On-Site Findings

1. No on-site findings were recorded on the EDR report.

2. At the end of Varnetha Lane is a property that has at least two above ground storage tanks and various debris.

7.2 Off-Site Findings

1. No off-site findings were recorded by the EDR Report.

2. Twenty six (26) orphan sites were recorded by the EDR Report.

3. The site known as Pure Gold located 300 feet from the northwest corner of US-301 and Bonner Road appears to be a former gas station.

4. An apparent junk yard is located on Bonner Avenue south of US-301.

5. A metal working facility is located in the southwest quadrant of Bonner Avenue and US-301 intersection.

8. OPINION

8.1 On-Site Opinions

1. No on-site findings were recorded by the EDR Report, therefore no *recognized environmental conditions* were identified by the EDR Report.

2. The property at the end of Varnetha lane is considered a *recognized environmental condition* due to the presence of two above ground storage tanks and various debris.

8.2 Off-Site Opinions

1. No off-site findings were recorded; therefore no *recognized environmental conditions* were identified by the EDR Report.

2. The twenty six (26) unmapped (orphan) sites listed in the EDR Report, due to current regulatory status, location, and/or assumed direction of ground water flow, are considered findings, not *recognized environmental conditions.*

3. Pure Gold is established in what appears to be a former gas station. The address: (7719 Five Chop Road, Santee, SC) was not listed in the SC DHEC UST database. Based on the lack of regulatory record and the site's historical use it is considered a *recognized environmental condition.*

4. The apparent junk yard located south of the US-301 and Bonner Avenue intersection has various old cars permanently parked on the property. This site is considered a finding and is not a *recognized environmental condition.*

5. The metal working facility at the southwest quadrant of Bonner Avenue and US-301 intersection is considered a finding and not a *recognized environmental condition.*

8.3 Data Gaps

1. The operational history of the project area could not be documented at approximately five-year intervals back to its first developed use because standard historical sources with that information were not reasonably ascertainable. However, standard historical sources were sufficient to show a general trend in use of the project area. This data gap is not considered significant and is therefore considered a finding, not a *recognized environmental condition.*

2. Chain-of-Title and Environmental Lien and Activity or Use Limitations and Questionnaire information was not provided by the user. This data gap is not considered significant and is therefore a finding, not a *recognized environmental condition.*

3. Interviews with past and current property owners were not permitted by the user. This data gap is not considered significant and is therefore considered a finding, not a *recognized environmental condition.*

8.4 Additional Investigation

Possible impacts of *recognized environmental conditions* have been noted within the project area and therefore additional investigation is recommended in the location of Vernetha Lane and Pure Gold.

9. CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM E 1527-05 for the US-301 interstate 95 interchange improvements and US-301 extension to SC-6. A portion of TMS parcel numbers within the project area included: 0323-00-06-007, -005, -004, -003, and -002, and 0323-00-03-001, -002, and -003, and 0308-00-02-005, -006, -007, -008, -009, -011, -013, and -014 and 0308-00-04-001, -002, -003, -004, -005, -006, -007, -008, -009 through which the preferred alternative crosses. Also included in the assessment were portions of property owned by JAFZA, a planned intermodal transportation center.

Any exceptions to, or deletions from this practice are described in Section 1.4 of this report.

This assessment has revealed no evidence of *recognized environmental conditions* in connection with the project area with the exception of the following:

- Two above ground storage tanks, tires and debris located on the property at the end of Vernetha Lane.

- A former retail gasoline station, now identified as Pure Gold, located 300 feet northwest of US-301 and Bonner Road.

The location of the findings and the *recognized environmental conditions* are presented in Figure 5.

10. DEVIATIONS

S&ME has endeavored to perform this Phase I ESA in substantial conformance with the scope and limitations of ASTM Standard Practice E1527-05 without significant deviation. Because of the limited availability of data, the operational history of the project area was not documented at intervals of approximately 5 years. Chain-of-Title, Environmental Lien and Activity or Use Limitations, and questionnaire information was not provided by the user. In addition, interviews with past and current property owners were not allowed by the user. No other deviations to ASTM Practice E 1527-05 were made in the completion of this Environmental Site Assessment.

11. ADDITIONAL SERVICES

No additional services were conducted.

12. REFERENCES

ASTM, 2005. *ASTM Standards on Environmental Site Assessments for Commercial Real Estate. E 1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* American Society for Testing and Materials, Philadelphia, PA.

U.S.G.S. Topographical Map, Vance, South Carolina Quadrangle, 1979.

University of South Carolina, 1983. *Surface and Subsurface Stratigraphy, Structure and Aquifers of the South Carolina Coastal Plain*; Colquhoun, Woollen, Van Nieuwenhuise, Padgett, Oldham, Boylan, Bishop and Howell.

EPA Envirofacts Website - http://www.epa.gov/enviro/html/fii/fii_query_java.html

13. SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

I declare that, to the best of my professional knowledge and belief, that I meet the definition of *Environmental professional* as defined in paragraph 312.10 of 40 CFR 312, and that I have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the project area. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

James L. Killingsworth, CHMM
Environmental Professional, VP

14. QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)

The environmental professional for this project is Mr. James L. Killingsworth, assisted by Environmental Engineer Ms. Terri Lynn Sciarro.

Mr. Killingsworth is a Senior Reviewer with over 20 years of environmental consulting experience. Mr. Killingsworth has also completed ASTM training for performing Phase I ESAs.

Ms. Sciarro has considerable experience in environmental consulting. She has performed numerous commercial and public Phase I ESAs.

APPENDIX I

FIGURES AND PROPERTY RECORDS

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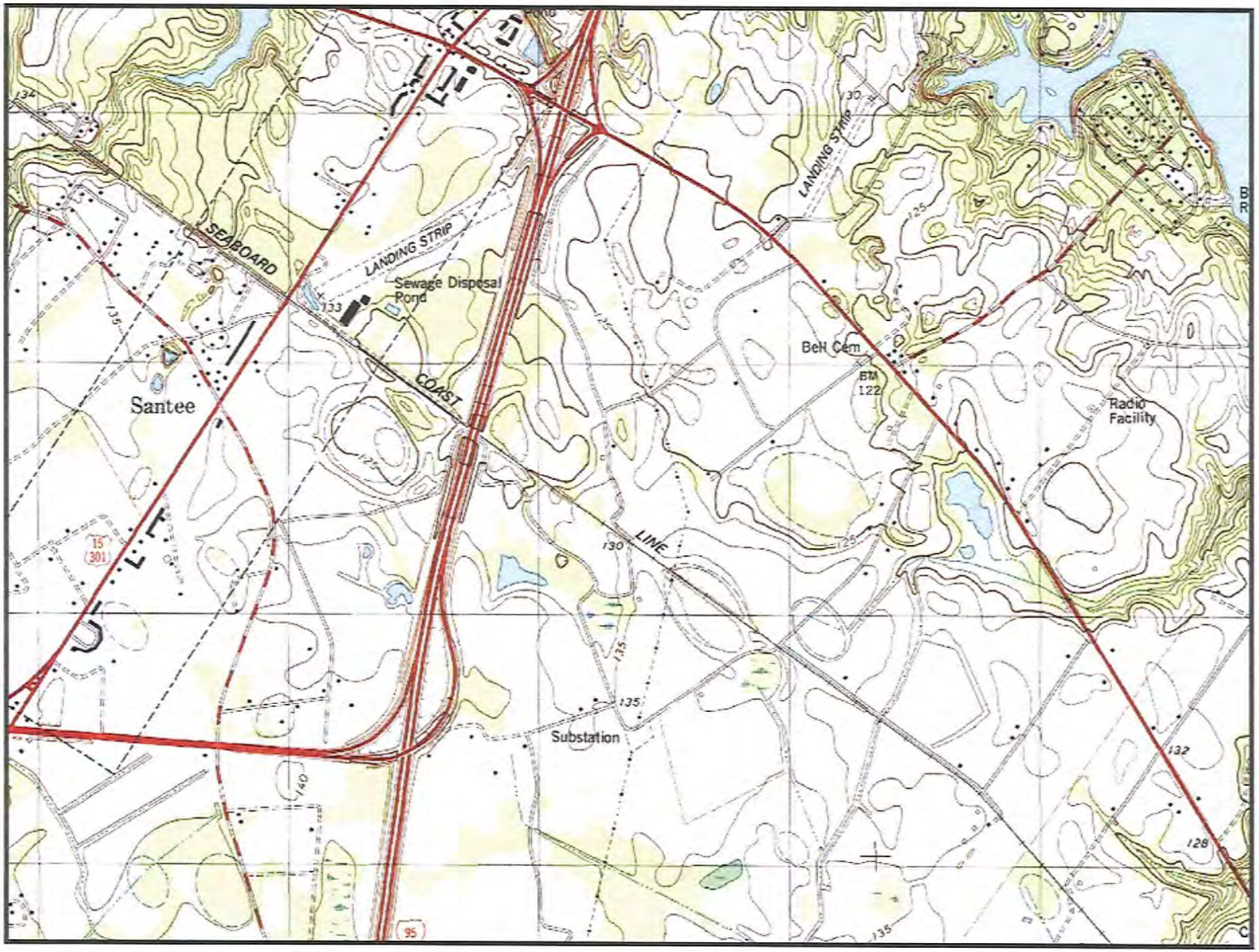
S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

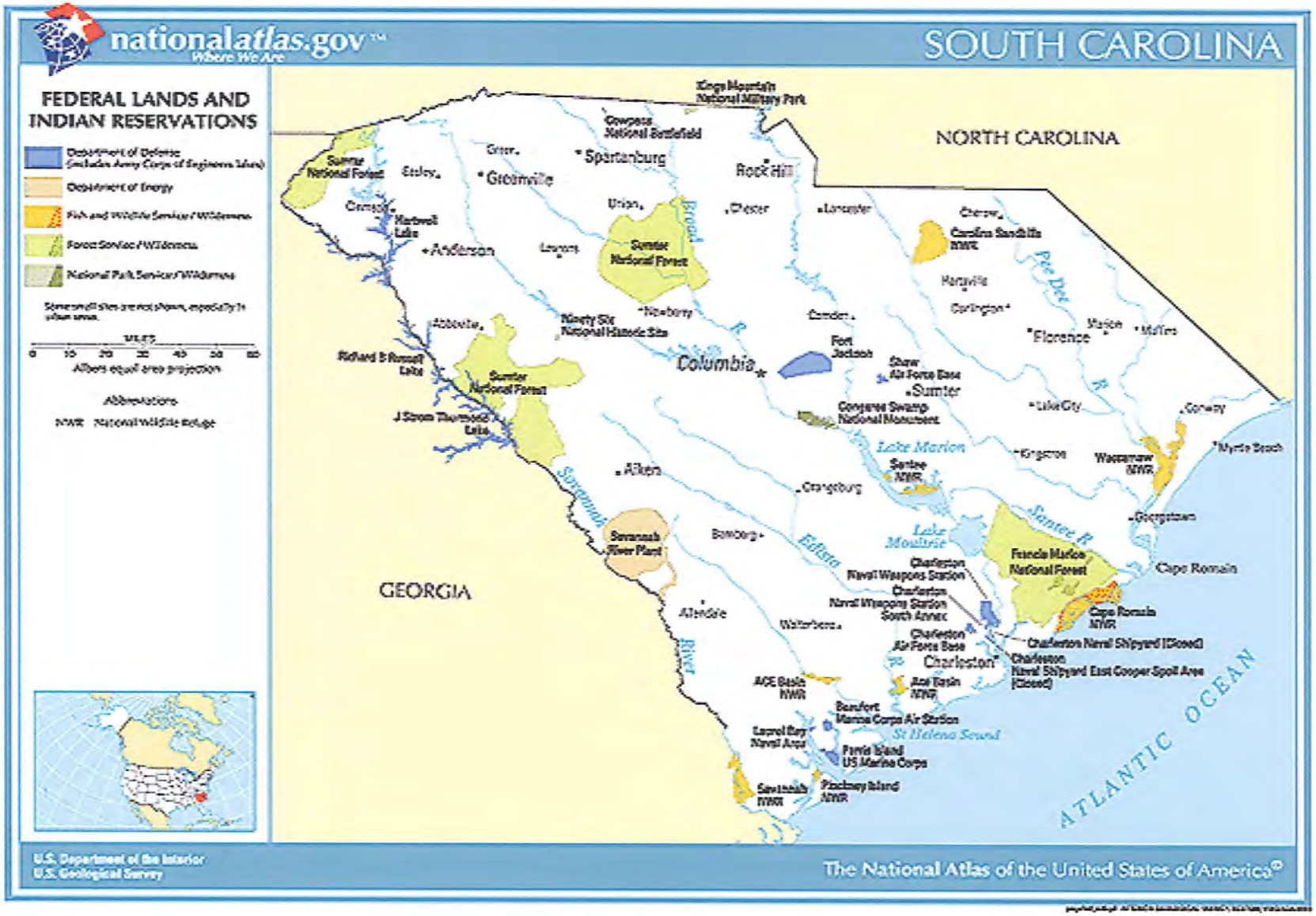
Figure 1
Site Location



S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

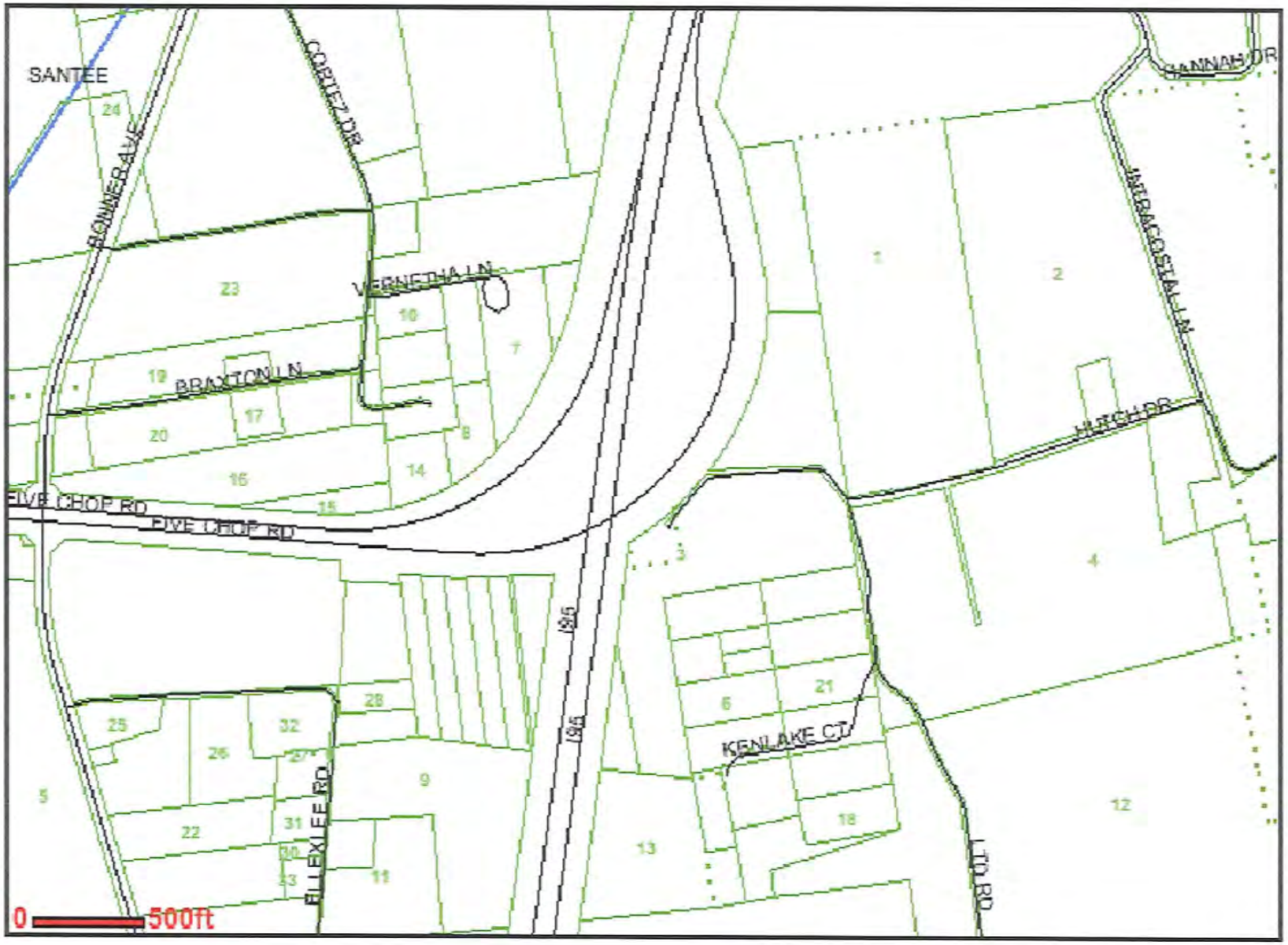
Figure 2
USGS Topographic Map
Vance 1979



S&ME

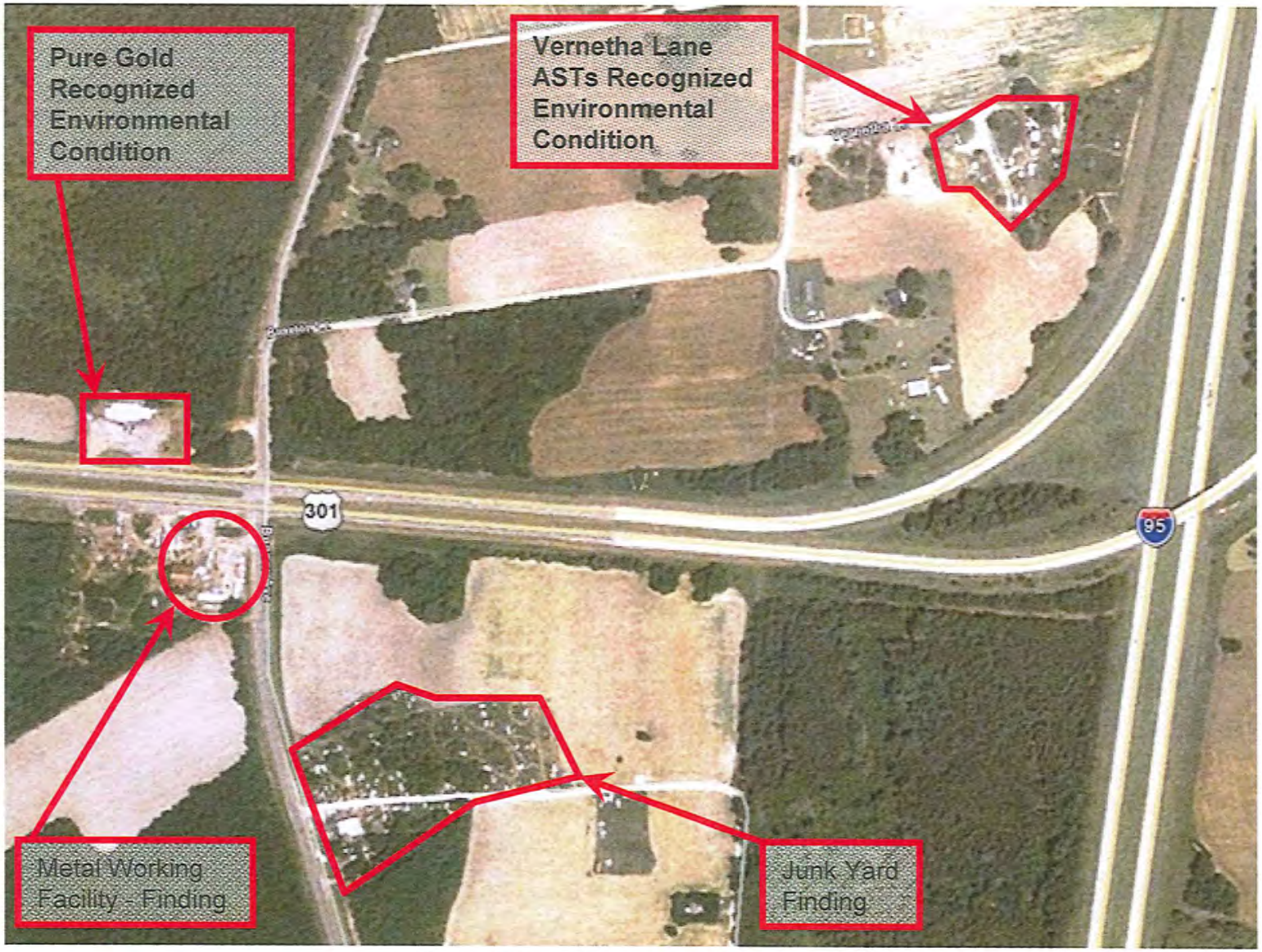
US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

Figure 3
Indian Reservations Map



US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

Figure 4
GIS Tax Map Western Portion

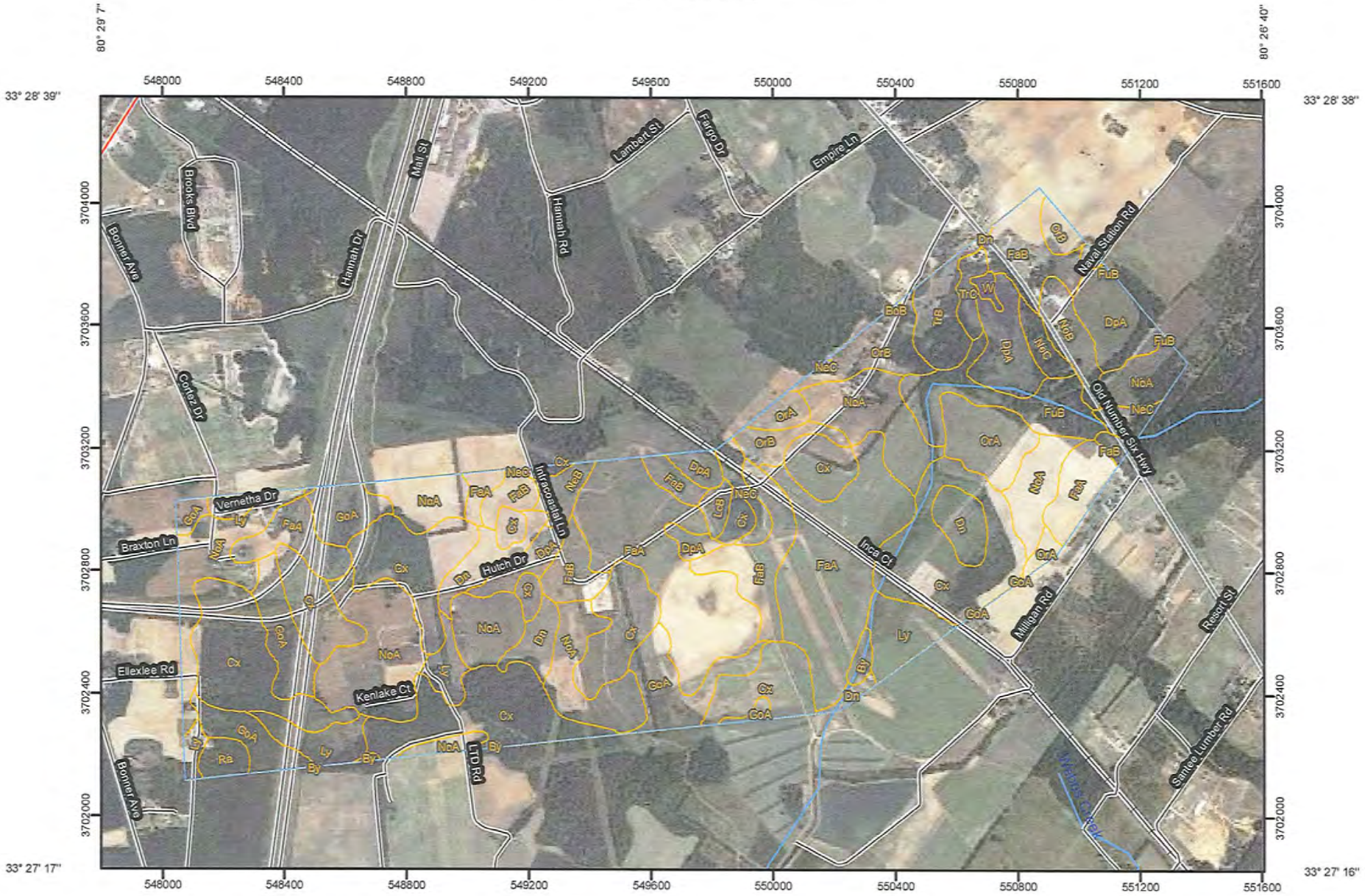


S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

Figure 5: Location of Recognized Environmental Conditions and Findings

Soil Map—Orangeburg County, South Carolina
(US-301 Extension)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:18,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 17N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orangeburg County, South Carolina
Survey Area Data: Version 7, Jan 8, 2009

Date(s) aerial images were photographed: 6/9/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Orangeburg County, South Carolina (SC075)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BoB	Bonneau sand, 0 to 4 percent slopes	0.3	0.0%
By	Byars loam	3.2	0.4%
Cx	Coxville sandy loam	179.1	23.2%
Dn	Dunbar sandy loam	25.3	3.3%
DpA	Duplin loamy sand, 0 to 2 percent slopes	41.7	5.4%
FaA	Faceville loamy sand, 0 to 2 percent slopes	127.9	16.6%
FaB	Faceville loamy sand, 2 to 6 percent slopes	51.8	6.7%
FuB	Fuquay sand, 0 to 6 percent slopes	22.2	2.9%
GoA	Goldsboro sandy loam, 0 to 2 percent slopes	50.7	6.6%
LcB	Lucy loamy sand, 0 to 6 percent slopes	3.2	0.4%
Ly	Lynchburg fine sandy loam	31.5	4.1%
NeB	Neeses loamy sand, 2 to 6 percent slopes	6.0	0.8%
NeC	Neeses loamy sand, 6 to 10 percent slopes	15.0	1.9%
NoA	Noboco loamy sand, 0 to 2 percent slopes	134.8	17.5%
NoB	Noboco loamy sand, 2 to 6 percent slopes	10.0	1.3%
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	21.8	2.8%
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	23.3	3.0%
Ra	Rains sandy loam	4.5	0.6%
TrB	Troup sand, 0 to 6 percent slopes	12.4	1.6%
TrC	Troup sand, 6 to 10 percent slopes	4.6	0.6%
W	Water	1.4	0.2%
Totals for Area of Interest		**770.9**	**100.0%**

APPENDIX II

EDR ENVIRONMENTAL RECORDS REPORT AND TABLE

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US 301 Extension
Santec, SC 29142

Inquiry Number: 2613983.1s
October 27, 2009

EDR DataMap™ Corridor Study

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

SANTEC, SC 29142
SANTEC, SC 29142

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Transporters, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen	RCRA - Non Generators
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems

EXECUTIVE SUMMARY

ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US HIST CDL..... National Clandestine Laboratory Register
PCB TRANSFORMER..... PCB Transformer Registration Database

STATE AND LOCAL RECORDS

SHWS..... Site Assessment Section Project List
ALLSITES..... Site Assessment & Remediation Public Record Database
GWCI..... Groundwater Contamination Inventory
RCR..... Registry of Conditional Remedies
SWF/LF..... Permitted Landfills List
UIC..... Underground Injection Wells Listing
LUST..... Leaking Underground Storage Tank List
UST..... Comprehensive Underground Storage Tanks
AST..... Aboveground Storage Tank List
SPILLS..... Spills Database List
AUL..... Land Use Controls
VCP..... Voluntary Cleanup Sites
DRYCLEANERS..... Drycleaner Database
BROWNFIELDS..... Brownfields Sites Listing
CDL..... Clandestine Drug Lab Sites
NPDES..... Waste Water Treatment Facilities Listing
AIRS..... Permitted Airs Facility Listing
COAL ASH..... Coal Ash Disposal Sites

TRIBAL RECORDS

INDIAN RESERV..... Indian Reservations
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
INDIAN UST..... Underground Storage Tanks on Indian Land
INDIAN VCP..... Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

Manufactured Gas Plants..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	0
RCRA-CESQG	0
RCRA-NonGen	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
DEBRIS REGION 9	0
ODI	0
MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	0
RAATS	0
SCRD DRYCLEANERS	0
US HIST CDL	0
PCB TRANSFORMER	0
STATE AND LOCAL RECORDS	
SHWS	0
ALLSITES	0

MAP FINDINGS SUMMARY

Database	Total Plotted
GWCI	0
RCR	0
SWF/LF	0
UIC	0
LUST	0
UST	0
AST	0
SPILLS	0
AUL	0
VCP	0
DRYCLEANERS	0
BROWNFIELDS	0
CDL	0
NPDES	0
AIRS	0
COAL ASH	0
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Distance (ft.)	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ORANGEBURG	U003520725	DAYS INN SANTEE	I 95 & SC 6	29142	LUST, UST
SANTEE	U003521539	FRANKIES AUTO & TRUCK	RT 2 PO BOX 919 F	29142	LUST, UST
SANTEE	1007229049	RIVERS COUNTRY STORE INC	8851 US 301 & HWY 6	29142	FINDS, LUST
SANTEE	U004019299	RIVERS COUNTRY STORE INC	8851 US 301 & HWY 6	29142	UST
SANTEE	U000482757	TRI COUNTY ELECTRIC COOP	HWY 6	29142	LUST, UST
SANTEE	U003526104	TRUCKSTOPS OF SANTEE	I 95 & US 15 & 301	29142	UST
SANTEE	U003558537	SMITHS AMOCO	I 95 & HWY 6	29142	UST
SANTEE	U004017049	SANTEE WORK CENTER	US HWY 52	29142	UST
SANTEE	U004018505	E Z SHOP 12 SHELL	SC HWY 6 & HWY 15	29142	UST
SANTEE	1007231185	SANTEE GENERAL STORE	8932 OLD 6 HWY	29142	FINDS, LUST
SANTEE	1007239119	FOOD MART 107	9044 OLD HWY 6	29142	FINDS, LUST
SANTEE	A100036475	STAR REDI MIX - SANTEE	7638 OLD HWY 6	29142	AST
SANTEE	U003627464	SMITHS CHEVRON	9039 OLD 6 HWY	29142	UST
SANTEE	U003631288	SANTEE GENERAL STORE	8932 OLD 6 HWY	29142	UST
SANTEE	U003631755	SANTEE LANDING	9103 OLD 6 HWY	29142	UST
SANTEE	U003796659	FOOD MART 107	9044 OLD HWY 6	29142	GWCI, UST
SANTEE	U004017830	SANTEE CONVENIENCE STORE 112	8949 OLD #6 HWY	29142	UST
SANTEE	U003522824	JOHNNIE MALLARD	1/2 MI W US 15 ON SR 1395	29142	UST
VANCE	U003520703	DAVIS & SON	RT 1 PO BOX 1010	29163	UST
VANCE	U003521798	GOLD KIST COMPLEX	SR 310/494 CAMDEN RD	29163	UST
VANCE	1007243744	CRAZY JOES FOOD MART	SC HWY 6 & STATE RD 210	29163	FINDS, LUST
VANCE	U001539278	SNELLS YACHT BASIN	ON LAKE MARION OFF HWY 6	29163	UST
VANCE	S105684753	VANCE MAINTENANCE SHOP	124 LARGO CT HWY 6	29163	LUST
VANCE	U004016936	VANCE MAINTENANCE SHOP	124 LARGO CT HWY 6	29163	GWCI, UST
VANCE	U003523620	MILL CREEK LANDING	216 MILL CREEK LANDING	29163	GWCI, UST
VANCE	1007239128	MILL CREEK LANDING	HWY S 38 1660	29163	FINDS, LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 06/29/2009
Date Data Arrived at EDR: 07/31/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 52

Source: EPA
Telephone: N/A
Last EDR Contact: 10/14/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 06/29/2009
Date Data Arrived at EDR: 07/31/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 52

Source: EPA
Telephone: N/A
Last EDR Contact: 10/14/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/29/2009
Date Data Arrived at EDR: 07/31/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 52

Source: EPA
Telephone: N/A
Last EDR Contact: 10/14/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/30/2009
Date Data Arrived at EDR: 08/11/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 41

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/30/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 09/02/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 19

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/18/2009
Date Data Arrived at EDR: 08/21/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/30/2009
Date Data Arrived at EDR: 07/01/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 82

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Transporters, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/31/2009
Date Data Arrived at EDR: 04/22/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/18/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/31/2009
Date Data Arrived at EDR: 04/22/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/18/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 05/15/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 62

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/16/2009
Date Data Arrived at EDR: 07/16/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 67

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/05/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 05/14/2008
Date Data Arrived at EDR: 05/28/2008
Date Made Active in Reports: 08/08/2008
Number of Days to Update: 72

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/01/2009
Date Data Arrived at EDR: 06/22/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 91

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/26/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2008
Date Data Arrived at EDR: 11/14/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/11/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 10/23/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/30/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/24/2009
Date Data Arrived at EDR: 05/19/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 125

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 09/22/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/22/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/14/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 09/23/2009
Next Scheduled EDR Contact: 12/21/2009
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/28/2009
Date Data Arrived at EDR: 06/23/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 90

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/18/2009
Next Scheduled EDR Contact: 12/21/2009
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 04/09/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/14/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 10/07/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 05/19/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 125

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 09/29/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 08/21/2009
Date Data Arrived at EDR: 08/27/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 09/28/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 05/27/2009
Date Data Arrived at EDR: 08/05/2009
Date Made Active in Reports: 09/29/2009
Number of Days to Update: 55

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/21/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/06/2009
Date Data Arrived at EDR: 07/13/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 70

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/21/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/28/2009
Date Data Arrived at EDR: 07/28/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/16/2009
Next Scheduled EDR Contact: 01/25/2010
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2009
Date Data Arrived at EDR: 07/28/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 55

Source: EPA
Telephone: (404) 562-9900
Last EDR Contact: 09/18/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 92

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Biennially

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 09/09/2009
Date Data Arrived at EDR: 09/09/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/26/2009
Next Scheduled EDR Contact: 02/08/2010
Data Release Frequency: Varies

STATE AND LOCAL RECORDS

SHWS: Site Assessment Section Project List

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/14/2009
Date Data Arrived at EDR: 05/06/2009
Date Made Active in Reports: 06/05/2009
Number of Days to Update: 30

Source: Department of Health and Environmental Control
Telephone: 803-734-5376
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 01/04/2010
Data Release Frequency: Annually

ALLSITES: Site Assessment & Remediation Public Record Database

The South Carolina Department of Health and Environmental Control is pleased to have the Public Record for your review. The purpose of this database is two-fold. First, it will provide to communities another form of notice of cleanup activity, allowing them to have more information about assessment and cleanup activities in their area and in the State. Second, it can assist those seeking to redevelop brownfield properties within South Carolina.

Date of Government Version: 08/11/2009
Date Data Arrived at EDR: 08/13/2009
Date Made Active in Reports: 08/21/2009
Number of Days to Update: 8

Source: Department of Health & Environmental Control
Telephone: 803-896-4000
Last EDR Contact: 10/19/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Quarterly

GWCI: Groundwater Contamination Inventory

An inventory of all groundwater contamination cases in the state.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 11/06/2008
Date Made Active in Reports: 11/19/2008
Number of Days to Update: 13

Source: Department of Health and Environmental Control
Telephone: 803-898-3798
Last EDR Contact: 10/19/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Annually

RCR: Registry of Conditional Remedies

The Bureau of Land and Waste Management established this Registry to help monitor and maintain sites that have conditional remedies. A Conditional Remedy is an environmental remedy that includes certain qualifications. These qualifications are divided into two major categories: Remedies requiring Land Use Controls and Conditional No Further Actions.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/10/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 14

Source: Department of Health & Environmental Control
Telephone: 803-896-4000
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 01/04/2010
Data Release Frequency: Varies

SWF/LF: Permitted Landfills List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/07/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 17

Source: Department of Health and Environmental Control
Telephone: 803-734-5165
Source: Department of Health and Environmental Control, GIS Section
Telephone: 803-896-4084
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 01/04/2010
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of underground injection wells locations.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 09/02/2009
Date Made Active in Reports: 09/18/2009
Number of Days to Update: 16

Source: Department of Health & Environmental Control
Telephone: 803-898-3799
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 08/31/2009
Data Release Frequency: Varies

LUST: Leaking Underground Storage Tank List
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 06/29/2009
Date Data Arrived at EDR: 06/29/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 25

Source: Department of Health and Environmental Control
Telephone: 803-898-4350
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

UST: Comprehensive Underground Storage Tanks
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/08/2009
Date Data Arrived at EDR: 09/16/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 15

Source: Department of Health and Environmental Control
Telephone: 803-896-7957
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

AST: Aboveground Storage Tank List
Registered Aboveground Storage Tanks.

Date of Government Version: 03/25/2004
Date Data Arrived at EDR: 08/04/2004
Date Made Active in Reports: 09/23/2004
Number of Days to Update: 50

Source: Department of Health and Environmental Control
Telephone: 803-898-4350
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 12/21/2009
Data Release Frequency: Varies

SPILLS: Spill List
Spills and releases of petroleum and hazardous chemicals reported to the Oil & Chemical Emergency Response division.

Date of Government Version: 07/10/2009
Date Data Arrived at EDR: 07/10/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 14

Source: Department of Health and Environmental Control
Telephone: 803-898-4111
Last EDR Contact: 09/15/2009
Next Scheduled EDR Contact: 12/21/2009
Data Release Frequency: Varies

AUL: Land Use Controls
The term Land Use Controls or "LUCs" encompass institutional controls, such as those involved in real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term also includes restrictions on access, whether achieved by means of engineered barriers (e.g., fence or concrete pad) or by human means (e.g., the presence of security guards). Additionally, the term includes both affirmative measures to achieve the desired restrictions (e.g., night lighting of an area) and prohibitive directives (e.g., restrictions on certain types of wells for the duration of the corrective action). Considered altogether, the LUCs for a facility will provide a tool for how the property should be used in order to maintain the level of protectiveness that one or more corrective actions were designed to achieve.

Date of Government Version: 10/13/2008
Date Data Arrived at EDR: 10/14/2008
Date Made Active in Reports: 11/19/2008
Number of Days to Update: 36

Source: Department of Health & Environmental Control
Telephone: 803-896-4049
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

VCP: Voluntary Cleanup Sites

Sites participating in the Voluntary Cleanup Program. Once staff and a non-responsible party have agreed upon an approved scope of work for a site investigation and/or remediation, the party enters into a voluntary cleanup contract. Staff oversees the cleanup efforts to ensure that activities are performed to our satisfaction. Upon completion of the negotiated work in the voluntary cleanup contract, the non-responsible party receives State Superfund liability protection.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/10/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 14

Source: Department of Health and Environmental Control
Telephone: 803-896-4049
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 01/04/2010
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Database

The Drycleaning Facility Restoration Trust Fund database is used to access, prioritze and cleanup contaminated registered drycleaning sites.

Date of Government Version: 07/21/2006
Date Data Arrived at EDR: 09/08/2006
Date Made Active in Reports: 09/29/2006
Number of Days to Update: 21

Source: Department of Health & Environmental Control
Telephone: 803-898-3882
Last EDR Contact: 08/28/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Sites Listing

The Brownfields component of the Voluntary Cleanup Program allows a non-responsible party to acquire a contaminated property with State Superfund liability protection for existing contamination by agreeing to perform an environmental assessment and/or remediation.

Date of Government Version: 10/13/2008
Date Data Arrived at EDR: 10/14/2008
Date Made Active in Reports: 11/19/2008
Number of Days to Update: 36

Source: Department of Health & Environmental Control
Telephone: 803-896-4069
Last EDR Contact: 10/06/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

CDL: Clandestine Drug Lab Sites

A listing of clandestine drug lab site locations.

Date of Government Version: 08/10/2009
Date Data Arrived at EDR: 08/10/2009
Date Made Active in Reports: 08/17/2009
Number of Days to Update: 7

Source: Department of Health & Environmental Control
Telephone: 803-896-4288
Last EDR Contact: 10/26/2009
Next Scheduled EDR Contact: 02/08/2010
Data Release Frequency: Varies

NPDES: Waste Water Treatment Facilities Listing

A listing of waste water treatment facility locations.

Date of Government Version: 07/13/2009
Date Data Arrived at EDR: 07/13/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 11

Source: Department of Health & Environmental Control
Telephone: 803-898-4300
Last EDR Contact: 09/29/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Varies

AIRS: Permiited Airs Facility Listing

A listing of permitted airs facilities.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 03/25/2009
Date Made Active in Reports: 05/06/2009
Number of Days to Update: 42

Source: Department of Health & Environmental Control
Telephone: 803-898-4279
Last EDR Contact: 09/15/2009
Next Scheduled EDR Contact: 12/21/2009
Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites
A listing of sites with coal ash ponds.

Date of Government Version: 07/31/2009
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 08/17/2009
Number of Days to Update: 10

Source: Department of Health & Environmental Control
Telephone: 803-898-3964
Last EDR Contact: 09/29/2009
Next Scheduled EDR Contact: 01/11/2010
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/23/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/26/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/24/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 28

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 08/21/2009
Date Data Arrived at EDR: 10/06/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/20/2009
Date Data Arrived at EDR: 08/21/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 31

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/20/2009
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 57

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 08/24/2009
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 26

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/24/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/24/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 08/24/2009
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 26

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 09/08/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 27

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/22/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 08/20/2009
Date Data Arrived at EDR: 08/21/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 31

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/20/2009
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 57

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/21/2009
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 57

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2008
Date Data Arrived at EDR: 12/30/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 76

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/05/2009
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/11/2009
Number of Days to Update: 16

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 05/05/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/20/2009
Next Scheduled EDR Contact: 02/01/2010
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 07/28/2009
Date Data Arrived at EDR: 08/27/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 25

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/11/2008
Date Made Active in Reports: 10/02/2008
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 06/01/2009
Date Data Arrived at EDR: 06/12/2009
Date Made Active in Reports: 06/29/2009
Number of Days to Update: 17

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 09/14/2009
Next Scheduled EDR Contact: 12/14/2009
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 07/17/2009
Date Made Active in Reports: 08/10/2009
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/24/2009
Next Scheduled EDR Contact: 01/04/2010
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Child Day Care List
Source: Department of Social Services
Telephone: 803-898-7345

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Natural Resources
Telephone: 803-734-9494

STREET AND ADDRESS INFORMATION

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APPENDIX III

HISTORICAL RESEARCH DOCUMENTATION

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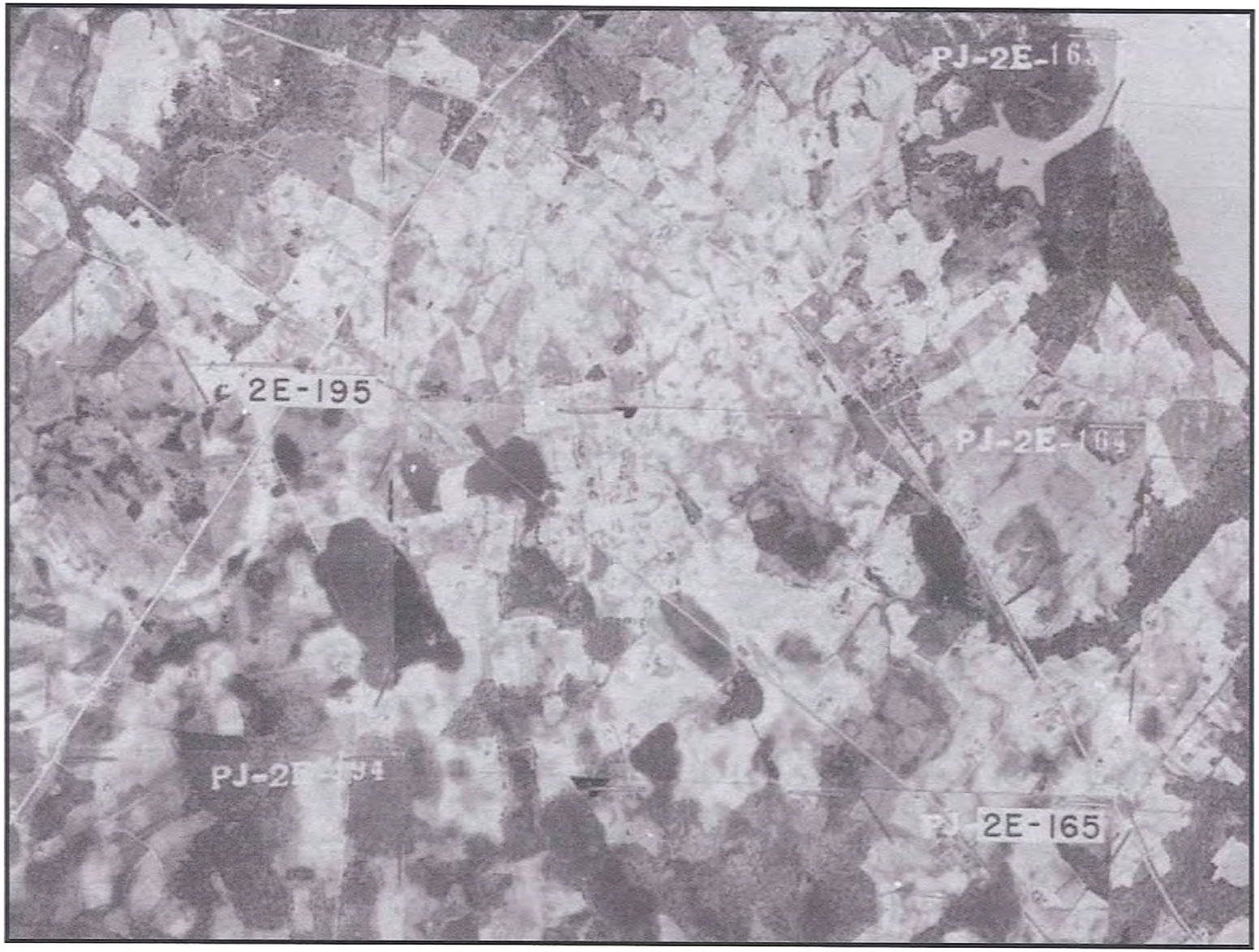


S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1949 Aerial Photograph

S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1958 Aerial Photograph

S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1963 Aerial Photograph

S&ME

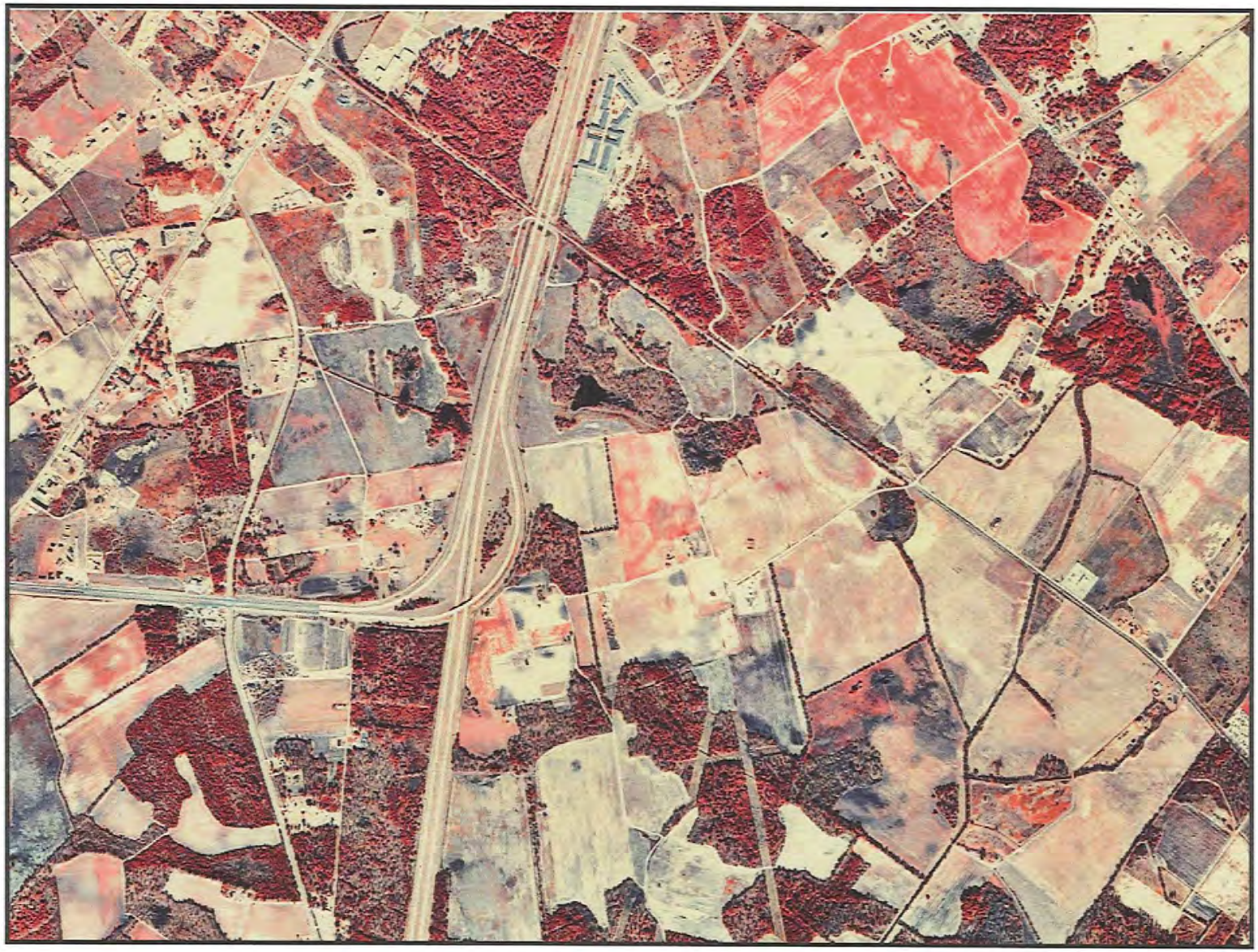
US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1973 Aerial Photograph

S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1981 Aerial Photograph



S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1999 Aerial Photograph

S&ME

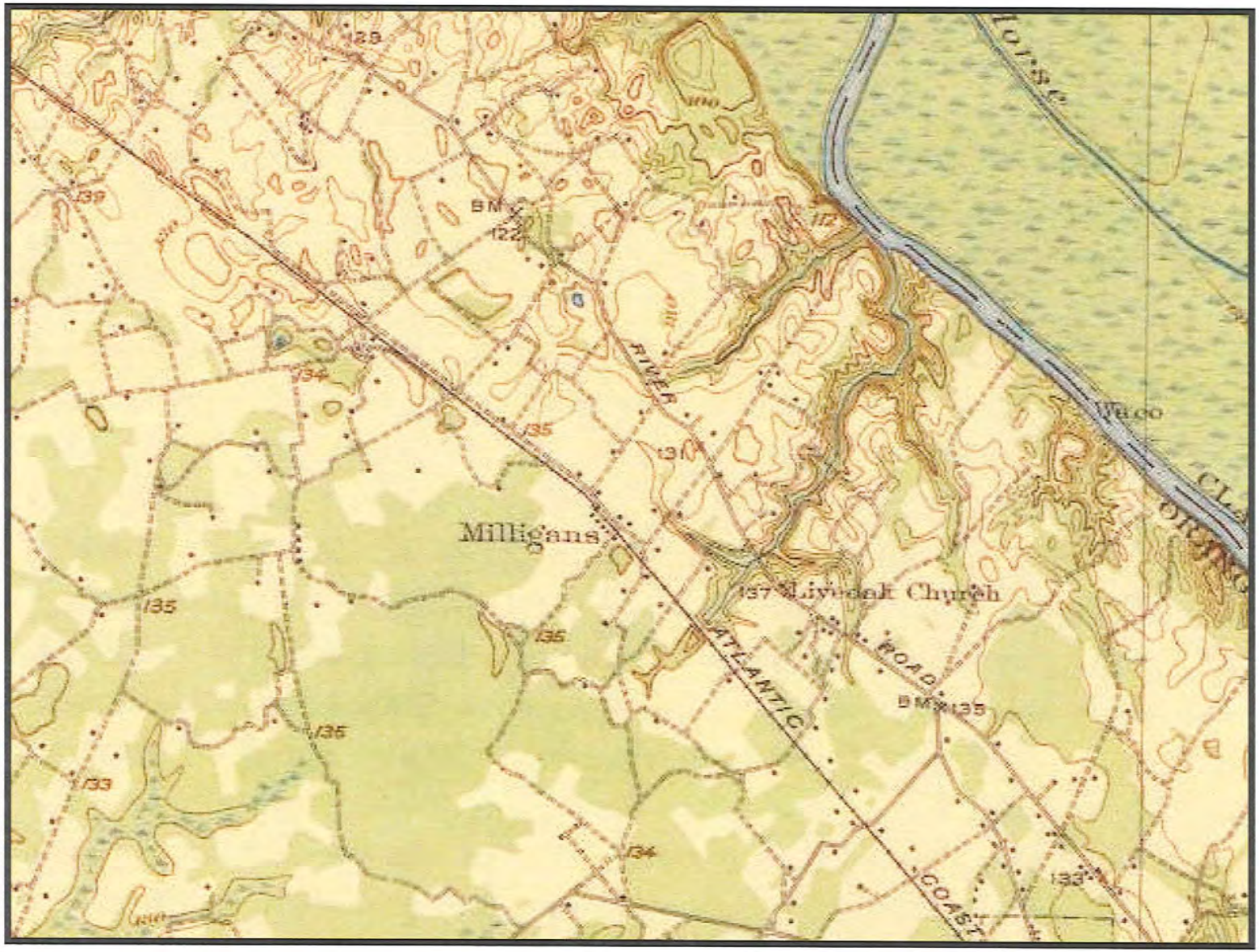
US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

2006 Aerial Photograph

S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

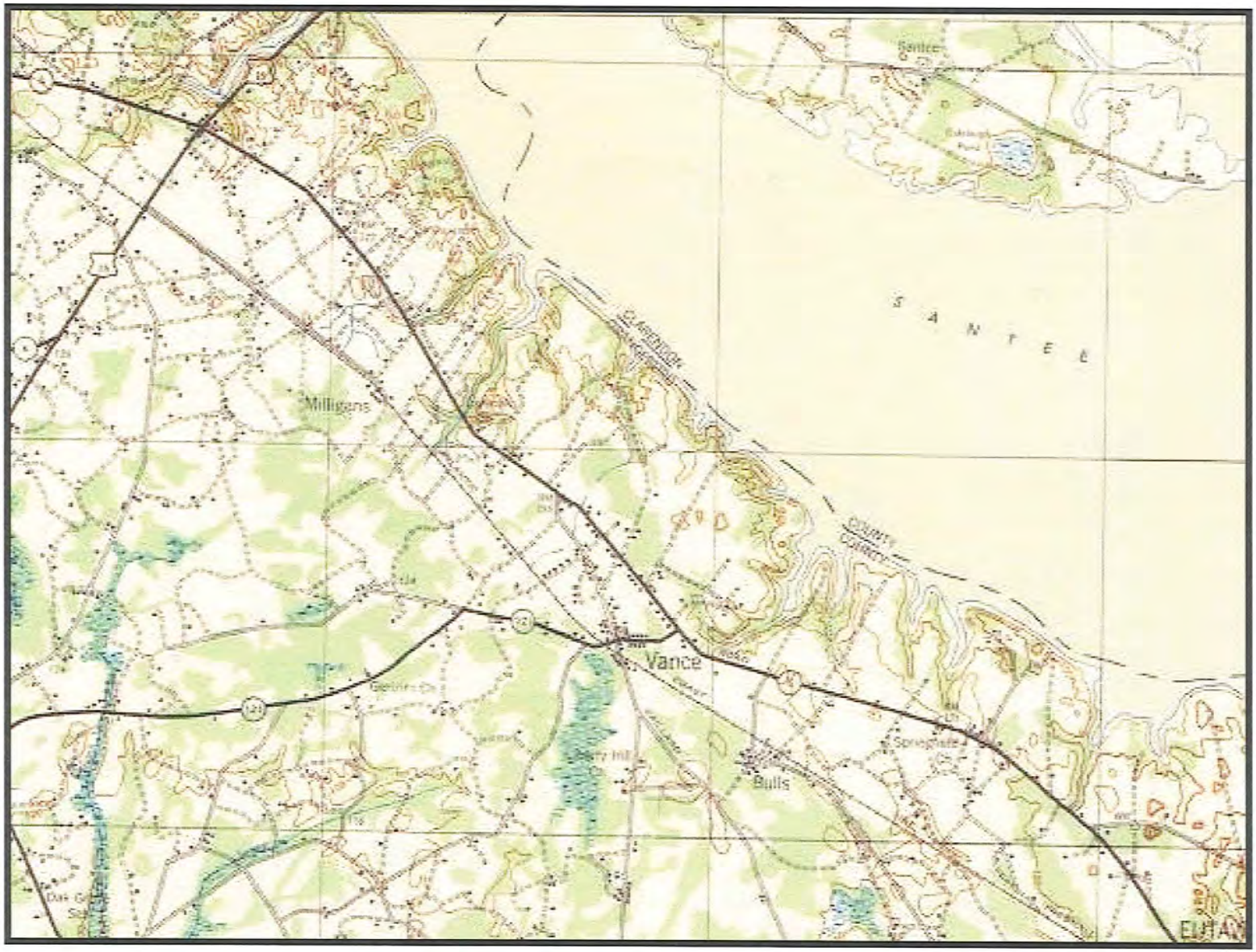
2006 Aerial Photograph



S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

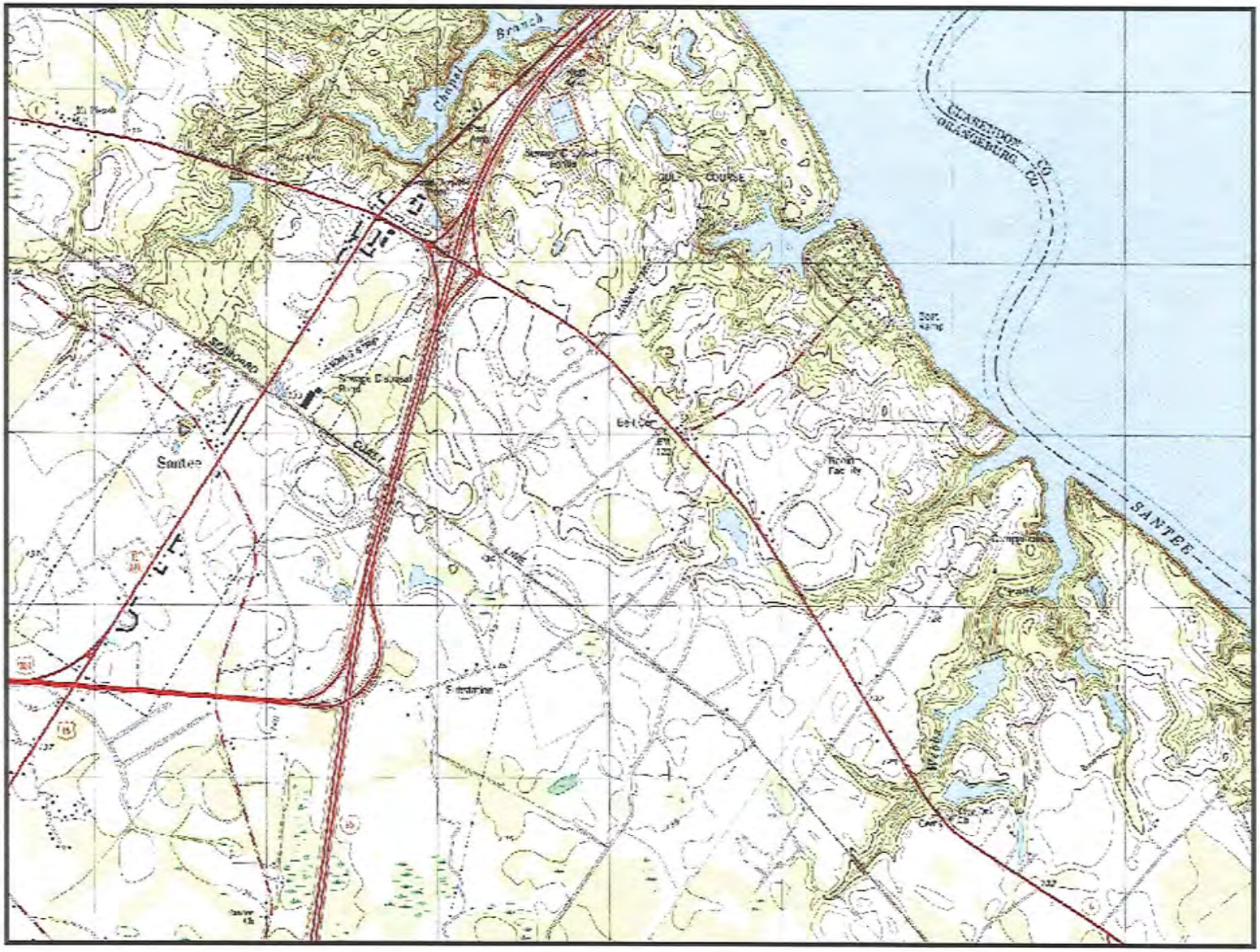
1921 USGS Topographic Map
Eutawville, SC



S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1943 USGS Topographic Map
Eutawville, SC



S&ME

US-301 EXTENSION FROM I-95 TO SC-6
ORANGEBURG COUNTY, SOUTH CAROLINA
S&ME Project No. 1134-09-496

1979 USGS Topographic Map
Vance, SC

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APPENDIX IV

SITE PHOTOGRAPHS, SCDOT FORM 843, AND SITE RECONNAISSANCE CHECKLIST

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US-301 Extension ESA
Site Photographs
Project #: 1134-09-496
Sheet 1 of 6

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 1		
	Date: 12-4-2009	Photographer: TLS
Location / Orientation	Northeast end of corridor facing west	
Remarks	wetland area	

Photo 2		
	Date: 12-4-2009	Photographer: TLS
Location / Orientation	Continuing southeast along corridor, facing west	
Remarks	field planted with pines	

US-301 Extension ESA
Site Photographs
Project #: 1134-09-496
Sheet 2 of 6

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 3

Date: 12-4-2009

Photographer: TLS

Location / Orientation	Along Inca Court facing west
Remarks	Seaboard Coastal Railroad Line

Photo 4

Date: 12-4-2009

Photographer: TLS

Location / Orientation	Along Inca Court facing North
Remarks	Drainage Feature

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 5

Date: 12-4-2009

Photographer: TLS

Location / Orientation	Along Inca Court facing North
Remarks	Tri County Electric Substation

Photo 6

Date: 12-4-2009

Photographer: TLS

Location / Orientation	Looking west from Intracoastal Lane
Remarks	Presumed to be deep groundwater well attached to pivotal irrigation sprinkler

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 7

Date: 12-4-2009

Photographer: TLS

Location / Orientation	Facing west off unnamed unpaved road adjacent to Intracoastal Lane substation
Remarks	Minor residential dumping noted.

Photo 8

Date: 12-4-2009

Photographer: TLS

Location / Orientation	South of Hutch Drive
Remarks	Abandoned Residence

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 9

Date: 12-4-2009

Photographer: TLS

Location / Orientation	South of Hutch Drive
Remarks	Abandoned Feed Troughs, possibly indicative of past use raising livestock

Photo 10

Date: 12-4-2009

Photographer: TLS

Location / Orientation	West off Ltd Road
Remarks	Residence

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 11		
	Date: 12-4-2009	Photographer: TLS
Location / Orientation	West off Ltd Road, back yard of residence featured in Photo 10.	
Remarks	Depicts groundwater well, homes presumed to use propane and septic tanks. In background additional residence can be seen along with I-95/US-301 interchange	

Photo 12		
	Date: 12-4-2009	Photographer: TLS
Location / Orientation	Looking east on Bonner Ave. north of Ellexlee Road	
Remarks	Junk yard	

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 13		
	Date: 12-14-09	Photographer: FS
Location / Orientation	Looking east on Bonner Ave. north of Ellexlee Road	
Remarks	Junk yard and building	

Photo 14		
	Date: 12-14-09	Photographer: FS
Location / Orientation	Looking east from Vernetha Lane	
Remarks	Property with debris and above ground storage tank	

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 15		
	Date: 12-14-09	Photographer: FS
Location / Orientation	Looking east from Vernetha Lane	
Remarks	Overgrown property with debris (tank and silos)	

Photo 16		
	Date: 12-14-09	Photographer: FS
Location / Orientation	Looking east from Vernetha Lane (different angle from Photo 15)	
Remarks	Overgrown property with debris	

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 17		
	Date: 12-14-09	Photographer: FS
Location / Orientation	Looking east from Vernetha Lane (different angle from Photo 15)	
Remarks	Above ground storage tank	

Photo 18		
	Date: 12-14-09	Photographer: FS
Location / Orientation	0.1 mile west of Bonner Avenue and US-301 intersection	
Remarks	Pure Gold establishment utilizes building previously used as gas station.	

S&ME
620 Wando Park Blvd.
Mount Pleasant, SC 29464

Photo 19	
	**Date:** 12-14-09 **Photographer:** FS
Location / Orientation	South west quadrant of Bonner Avenue and US-301 intersection
Remarks	Junk yard and metal working/welding facility

Phase I Environmental Site Assessment
Site Reconnaissance Checklist

Job Number: 1134-09-496

Site Name: US-301 Extension

Site Address: US-301/I-95 intersection to SC-6

Date of Site Reconnaissance: 12/4/09

Site Reconnaissance performed by: Terri Sciarro + Frank Slaughter

Accompanied by:

Site Map attached: (Y) / N

On-site Observations

Circle (Y)es or (N)o for all items. Record photograph number. Describe observations.

Discolored or disturbed Soil Y / N	Photograph #	Describe disturbed from agriculture
Mounding or piles of Soil Y / (N)	Photograph #	Describe
Fill areas Y / (N)	Photograph #	Describe agriculture?
Depressions Y / (N)	Photograph #	Describe
Wetlands, ponds, lakes (Y) / N	Photograph #	Describe grassy wetland near SC-6 ditches
Rivers, streams, creeks Y / (N)	Photograph #	Describe
Lagoons, surface impoundments Y / (N)	Photograph #	Describe
Solid waste storage/disposal Y / N	Photograph #	Describe small amount of dumping

Phase I Environmental Site Assessment
Site Reconnaissance Checklist

Buildings, structures (Y) / N	Photograph #	Describe residences substations
Landfills Y / (N)	Photograph #	Describe
Stressed vegetation Y / (N)	Photograph #	Describe
Staining Y / (N)	Photograph #	Describe
Unusual or noxious odors Y / (N)	Photograph #	Describe
Monitoring wells Y / (N)	Photograph #	Describe
Drums, above ground storage tanks (Y) / N	Photograph #	Describe small propane tanks for houses AST @ Vernetha Lane
Railroad spurs (Y) / N	Photograph #	Describe railroad
Water supply wells/septic tanks (Y) / N	Photograph #	Describe irrigation wells / house wells septic tanks for residences
Pits Y / (N)	Photograph #	Describe
Municipal water/sewer groundwater? Y / N septic	Photograph #	Describe
Transformers/other PCB equipment (Y) / N	Photograph #	Describe possible on electric lines
Floor drains Y / (N) NA	Photograph #	Describe

Type of flooring Y / N	Photograph #	Describe
Heating fuel source for structures Y / N	Photograph #	Describe propane
Other Y / N	Photograph #	Describe
Other Y / N	Photograph #	Describe
Other Y / N	Photograph #	Describe

Observations of Adjoining Properties

Property to the_____ is at a higher/lower elevation than subject property	Photograph(s) #	Describe observations
Property to the_____ is at a higher/lower elevation than subject property	Photograph(s) #	Describe observations
Property to the_____ is at a higher/lower elevation than subject property	Photograph(s) #	Describe observations
Property to the_____ is at a higher/lower elevation than subject property	Photograph(s) #	Describe observations

List any limitations to the site reconnaissance including locked doors, unsafe conditions, ground cover, low light, excluded areas, etc.

we used available roads | dirt roads to observe site.

SCDOT R/W Form 843 (Revised 7-98)

INITIAL SITE ASSESSMENT

File No. _____ **Project No.** 1134-09-496 **PIN** _____
County Orangeburg **Date** 12/4/09 **Page** _____ **of** _____

Site No: _____ **Plan Sheet No.** _____ **Person Contacted** _____
Site Name: _____ **Site Phone No.** _____
Site Address _____ **Site Location** _____

Owner Name: _____ **Owner Phone No.** _____
Owner Address: _____

Environmental Concern(s): former gas station, at least 2 ASTs, junk yard, metal working shop

Current Land Use(s): agricultural **Previous Land Use(s):** N/A
Former Gas station → Pure Gold Club, 2 ASTs → possibly abandoned

If Petroleum UST's or AST's are/were present, are tanks registered? UST ☐Yes ☐No AST ☐Yes ☐No

☒Other (Explanation) former gas station/Pure Gold site not found in SCDHEC UST Registry

GWPD (UST) Site ID No.(s): _____ AST Registration No.(s) _____

Are UST's or AST's still present? UST ☐Yes ☐No AST ☐Yes ☐No
Is a UST or AST closure assessment report available? UST ☐Yes ☐No AST ☐Yes ☐No

☐Other (Explanation) _____

Can existing UST basin(s) be located? ☐Yes ☐No
Distance from Centerline to Existing: ☐ UST's ☐AST's _____
Distance from Centerline to Existing Dispensers: _____

Can former UST basin(s) or former AST location(s) be identified? UST ☐Yes ☐No AST ☐Yes ☐No
Distance from Centerline to former: ☐ UST ☐AST _____
Distance from Centerline to former dispensers: ☐ UST ☐AST _____

Do you recommend that tanks be located? ☐Yes ☐No _____
Do you recommend additional site assessment? ☐Yes ☐No _____

Additional Comments Regarding Site Specifics, Site History or Environmental Concerns:
recommend further assessment of 2-ASTs as they are within proposed project area.

Recommendation from Project Manager: _____

Do you want site(s) tested? ☐Yes ☐No
Date Site Assessment Requested by Project Manager: _____
Date forwarded to Laboratory: _____

APPENDIX V

INTERVIEW DOCUMENTATION

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BRANCH/LOCATION: CHARLESTON, SC **REFERENCE/JOB NO.:** 1134-09-496

DATE: 12/2/09 **TELE. NO.** 803-533-6267 **TIME:** 11:10

CALLTO: Teddy Wolfe, Operations Manager **CALL FROM:** Terri Sciarro

FIRM: Orangeburg County Fire Department **FIRM:** S&ME, Inc.

CONVERSATION

Orangeburg County Fire Department Operations Manager Teddy Wolfe stated that there have been no environmental responses by his department to the subject property. Mr. Wolfe added that a there is a junk yard on the western side of I-95. He also added that an officer had been killed on the I-95 / US-301 intersection during duty. He referred me to the Local Santee Fire Department (803-854-3270).

DATE: 12/2/09 **TELE. NO.** 803-854-3270 **TIME:** 11:25

CALLTO: Travis Snell, Firefighter **CALL FROM:** Terri Sciarro

FIRM: Santee Fire Department **FIRM:** S&ME, Inc.

CONVERSATION

Santee Fire Department firefighter Travis Snell stated that there have been no environmental responses by his department to the subject property.

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APPENDIX VI

CONTRACT BETWEEN USER AND S&ME, INC.

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S&ME

Celebrating 35 Years
1973 - 2008

February 27, 2009

HDR Incorporated
3955 Faber Place, Suite 300
North Charleston, South Carolina 29405

Attention: Ms. Shannon Renz Meder, P.E.

Reference: **Proposal for Phase I Environmental Site Assessment**
US-301 at I-95 Interchange Improvements & US 301 Extension to SC 6
Orangeburg County, South Carolina
S&ME Proposal No. 34-09-099

Dear Ms. Meder:

We appreciate the opportunity to provide this proposal to perform a Phase I Environmental Site Assessment (ESA) for the above referenced project located in Orangeburg County, South Carolina.

The ESA will be performed to identify environmental concerns and due diligence requirements prior to your planned redesign of the US 301 and I-95 interchange and the US 301 extension to SC 6.

PROJECT INFORMATION

This proposal and project information is provided based upon your email on February 23, 2009 and subsequent telephone conversation on February 25, 2009 with Jim Killingsworth of S&ME, Inc.(S&ME). Based on the information you provided (*Scope of Work for NEPA & Permitting Services, US 301 at I-95 Interchange Improvements & US 301 Extension to SC6*) and our subsequent discussion on February 25, 2009 it is the understanding of S&ME that the requested Phase I ESA includes the area around the existing US 301 and I-95 intersect and the extension of US301 east to SC 6 as exhibited on the attached Figure 1. The site of the interchange improvements and road extension is generally rural with mixed residential, agricultural and commercial sites within proximity of the project site.

SCOPE OF SERVICES

S&ME proposes the following Basic Services:

Our approach to performing a Phase I Environmental Site Assessment (ESA) includes a review of the public record, interviews with appropriate government officials and agencies, a site reconnaissance and preparation of a written report containing findings, opinions and conclusions.

The most widely used standard for performing Phase I assessments is the standard developed by the American Society for Testing and Materials (ASTM) entitled E1527-05 Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process. A revised standard practice was published in November 2005 to satisfy new requirements for All Appropriate Inquiries (AAI) as per 40 CFR Part 312 to permit the User to qualify for certain Landowner Liability Protections (LLPs). The AAI rule became effective November 1, 2006 such that commercial real estate transactions closing after this date must be performed in accordance with the AAI rule (or ASTM E1527-05) to qualify for LLPs.

This is the standard that will be used for the proposed project. If a variation to ASTM E1527-05 or the provided *Scope of Services* must be used, it may require a change to the fee quoted in this proposal.

Four primary tasks are involved in a Phase I Assessment as outlined by ASTM E1527-05: 1) review of the public record; 2) interviews; 3) a site reconnaissance; and 4) preparation of a written report and map.

Task I – Review of the Public Record

A review of reasonably ascertainable and practically reviewable public records for the site and the immediate vicinity will be conducted to characterize environmental features of the site and to identify past and present land use activities, on or in the vicinity of the site, which may indicate a potential for *recognized environmental conditions*. The review of the public record will include:

1. Examination of public records made available to us by regulatory personnel regarding past, present, and pending enforcement actions and investigations at the site and within the immediate vicinity.

2. Examination of one or more of the following resources: aerial photographs, fire insurance maps, street directories and topographic maps of the site and vicinity for evidence suggesting past uses that might have involved hazardous substances or petroleum products.

It is our understanding that no Chain-of-Title or Environmental Lein Information will be provided by the SCDOT for this project.

Task II – Site Reconnaissance

A site reconnaissance will be performed to identify visual signs of past or existing contamination on or adjacent to the site, and to evaluate evidence found in the review of public record that might be indicative of activities resulting in hazardous substances or petroleum products being used or deposited on the site. The site reconnaissance will include the following activities:

1. A visual reconnaissance of the site and adjacent properties will be performed to observe signs of spills, stressed vegetation, buried waste, underground or above ground storage tanks, subsidence, transformers, or unusual soil discoloration which may indicate the possible presence of contaminants on the properties.

2. The periphery of the property will be viewed and a walk-through of accessible areas of the site interior, including any on-site structures, will be conducted.

3. Areas of the site will be photographed to document the current use(s) of the property as well as significant conditions such as unusually discolored soil, stressed vegetation, or other significant features associated with the property.

4. SCDOT R/W Form 843 (7-98) will be completed as applicable during the reconnaissance for those sites with identified environmental concerns within or adjacent to the project area.

Task III– Interviews

Interviews with appropriate government agencies and officials will be conducted to consider any local knowledge of hazardous substances, petroleum products or any other environmental issues on the subject property or on adjacent properties. In addition, any government or company representatives, found pertinent to this inquiry, will be interviewed regarding his or her knowledge of any hazardous substances, petroleum products or any other environmental issues on the subject property or on adjacent properties.

Task IV – Written Report and Map

Upon completion of the public record review, interviews and site reconnaissance, we will provide one written report that documents our findings. The report will reflect our evaluation for use by the client in completing the planned property transaction. The findings will be presented in terms of the presence or absence of *recognized environmental*

conditions as defined in ASTM E1527-05. However, a finding of "no evidence of recognized environmental conditions" should not be interpreted as a guarantee or warranty that the property is "clean" or free of all contaminants.

The RECs and findings noted in the Phase I ESA will be depicted and labeled on an isometric map. S&ME requests the best available site plan from HDR or will use the best available base plan/map, via public information sources.

EXCLUDED SERVICES

Unless specifically authorized as an addition to the Phase I ESA work scope, the assessment will not include locating services, detail site plans, surveying, sampling of materials such as soil, water or air, nor any assessment of environmental aspects to include, but not limited to, wetlands, lead in drinking water, regulatory compliance, cultural/historic risks, industrial hygiene, health/safety, ecological resources, endangered species, indoor air quality (including vapor intrusion), radon or high voltage powerlines, as outlined in Section 13 of ASTM E1527-05. An Asbestos and Lead-based Paint assessment is proposed herein as a separate task.

SCHEDULE

The environmental scope of services (Phase I ESA) shall be completed within four weeks of written authorization to proceed, provided client responsibilities are met and weather permits. Please note that our ability to complete the Phase I ESA services involved in the review of the public record within the project schedule often depends on the availability of certain maps, records, etc. that we may want to review or personnel whom we would want to interview. If we experience difficulties in this regard, we will inform you at the earliest possible time and obtain your concurrence on extending the evaluation time period, or terminating that aspect of the evaluation and preparing our report without the benefit of that information. ASTM E1527-05 states that information is *reasonably ascertainable* if it can be provided for review within 20 days of the request.

If information which we request to review is not made available within a 10-day period, we would consult with you on whether to extend our scheduled completion date or to complete the project without the benefit of that information (either option will satisfy ASTM E1527-05 requirements).

Timely completion of the report is also dependent upon receipt of user required information listed below.

CLIENT RESPONSIBILITIES

In order to properly perform the Phase I ESA, the client must provide the following as required for inclusion into the final report:

- Authorization and Agreement,
- Current site manager and property owner agreement for access to the site, and
- Any existing information relative to *recognized environmental conditions*, including previous reports,
- Complete or have the appropriate SCDOT representative complete and return the attached one-page *Questionnaire for Client/Landowner* and User Provided Information sheet.

LIMITATIONS AND EXCEPTIONS

As indicated in ASTM E1527-05, the practice is intended to constitute *all appropriate inquiries* to permit the User to satisfy one requirement to qualify for *Landowner Liability Protections* including the innocent landowner, contiguous property owner or bona fide prospective purchaser limitations on CERCLA liability in an approach that is both commercially prudent and reasonable. As such the ASTM standard practice seeks to reduce, but not eliminate, uncertainty regarding the potential for *recognized environmental conditions* in connection with the property. Further, *appropriate inquiry* does not imply an exhaustive assessment of real property, but instead calls for the environmental professional to identify a balance between competing demands of limited cost and time and the reduction of uncertainty about unknown conditions.

Materials and information used for this project will be obtained by S&ME from "reasonably ascertainable" and "practically reviewable" sources in compliance with our understanding of the standards set forth by ASTM E 1527-05. The review of public records will be limited to information available to us at the time this report is prepared. Interviews with knowledgeable people and local and state government authorities shall be limited to those people whom we were able to contact during the preparation of this report. We presume information obtained from the public records and from interviews is reliable. However, S&ME cannot warrant or guarantee that the information provided is complete or accurate. In the event responses requested from public agencies are provided to us following the submittal of our report, they will be forwarded to the client in the form received for evaluation by the client.

Physical limitations to this assessment may be; observation of underlying soils may be prevented in some areas due to the presence of structures, paving, dense vegetative cover, or other factors.

This proposal is solely intended for the services described in the Scope of Services and your applicable *Scope of Work* referenced herein. Use of this proposal and resulting

documents, including the final report is limited to the above referenced project and client. No other use is authorized by S&ME, Inc.

FEE

A fee of [redacted] **Thousand, and** [redacted] **Dollars** ([redacted]) is proposed for the labor and mileage, and an estimated fee of *One Thousand, Four Hundred, and Thirty Dollars ($1,430.00) is proposed for the reimbursable subcontracts.* A detail fee determination is enclosed. We will not perform any additional work without written justification and your prior authorization.

CLOSING

S&ME appreciates the opportunity to submit this proposal and provide you with our environmental services. Should you have any questions, please feel free to contact either of us at (843) 884-0005.

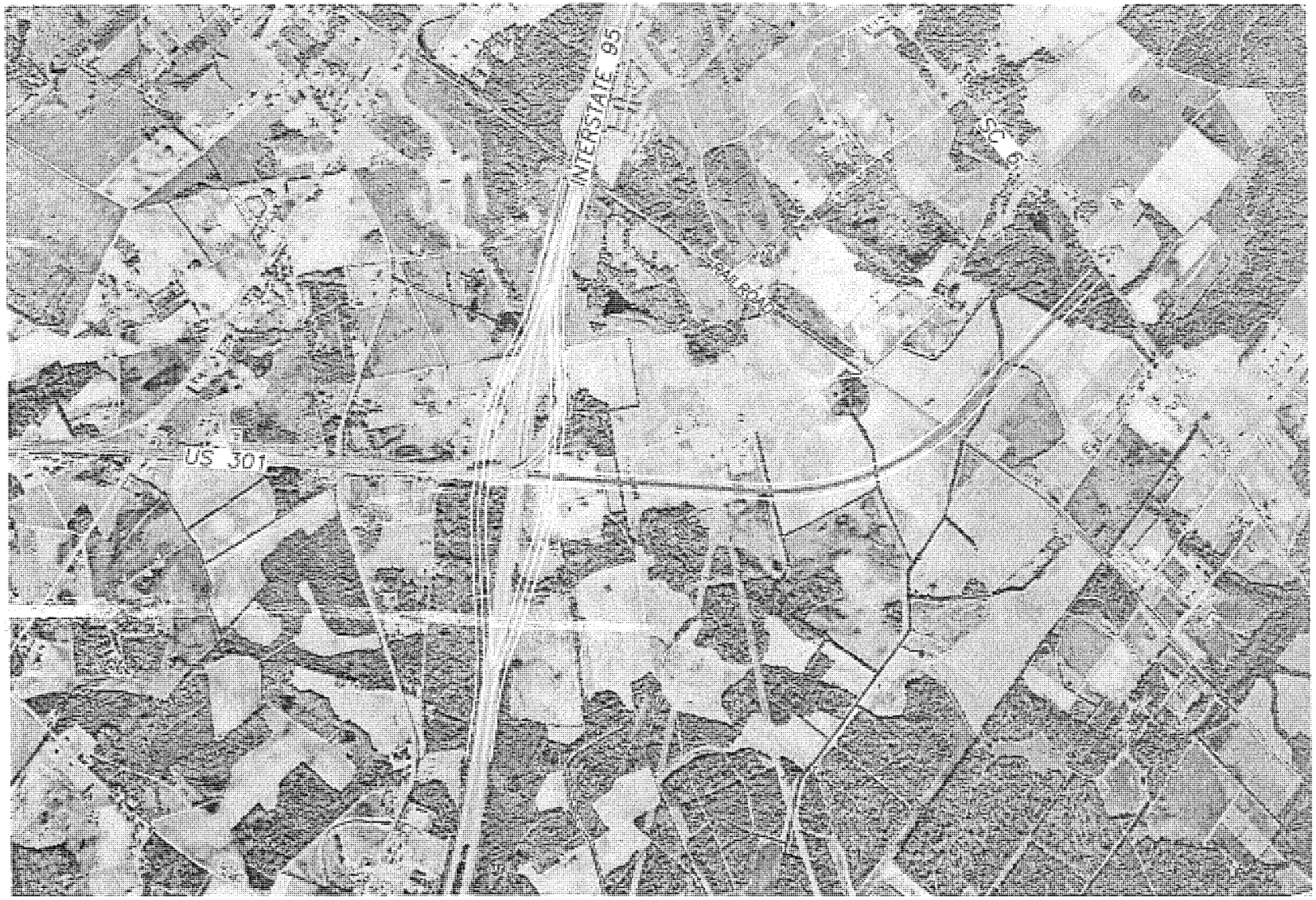
Sincerely,

S&ME, Inc.

Edward Evans
Env. Project Manager

James Killingsworth, CHMM
Sr. Env. Services Manager, V.P.

Enclosure: S&ME Cost Estimate
Figure 1
SCDOT R/W Form 843
Questionnaire



2000 1000 0 2000 4000

SCALE IN FEET

SCALE:	AS SHOWN
APPROVED BY:	
DRAWN BY:	LAJ
DATE:	2-26-09
PROJECT NO.	

S&ME
ENGINEERING · TESTING
ENVIRONMENTAL SERVICES

US 301 AT I-95 INTERCHANGE IMPROVEMENTS AND US 301 EXTENSION TO SC 6

ORANGEBURG COUNTY, SOUTH CAROLINA

FIGURE NO.

1

SCDOT R/W Form 843 (Revised 7-98)

INITIAL SITE ASSESSMENT

File No. _____ **Project No.** _____ **PIN** _____
County _____ **Date** _____ **Page** _____ **of** _____

Site No: _____ **Plan Sheet No.** _____ **Person Contacted** _____
Site Name: _____ **Site Phone No.** _____
Site Address _____ **Site Location** _____

Owner Name: _____ **Owner Phone No.** _____
Owner Address: _____

Environmental Concern(s): _____

Current Land Use(s): _____ **Previous Land Use(s):** _____

If Petroleum UST's or AST's are/were present, are tanks registered? UST ☐Yes ☐No AST ☐Yes ☐No

☐Other (Explanation _____

GWPD (UST) Site ID No.(s): _____ AST Registration No.(s) _____

Are UST's or AST's still present? UST ☐Yes ☐No AST ☐Yes ☐No
Is a UST or AST closure assessment report available? UST ☐Yes ☐No AST ☐Yes ☐No

☐Other (Explanation) _____

Can existing UST basin(s) be located? ☐Yes ☐No
Distance from Centerline to Existing: ☐UST's ☐AST's _____
Distance from Centerline to Existing Dispensers: _____

Can former UST basin(s) or former AST location(s) be identified? UST ☐Yes ☐No AST ☐Yes ☐No
Distance from Centerline to former: ☐UST ☐AST _____
Distance from Centerline to former dispensers: ☐UST ☐AST _____

Do you recommend that tanks be located? ☐Yes ☐No _____
Do you recommend additional site assessment? ☐Yes ☐No _____

Additional Comments Regarding Site Specifics, Site History or Environmental Concerns:

Recommendation from Project Manager: _____

Do you want site(s) tested? ☐Yes ☐No
Date Site Assessment Requested by Project Manager: _____
Date forwarded to Laboratory: _____

USER QUESTIONNAIRE

In order to qualify for *Landowner Liability Protections (LLPs)*, ASTM E1527-05 specifies that the ESA User must provide the following information, if available, to the Environmental Professional. Failure to provide this information could make the ESA incomplete and the User unable to qualify for *LLPs.*

1. Are you aware of any environmental clean-up liens against the property that are filed or recorded under federal, tribal, state or local laws?

2. Are you aware of any Activity and Use Limitations (AUL's) such as engineering controls, land use restrictions, or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, state or local laws?

3. As the User of this ESA, do you have any specialized knowledge or experience related to the subject property or nearby properties?

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If not, is the lower purchase price attributable to known or suspected contamination?

5. Are you aware of information about the property that would be helpful in identifying conditions indicative of contaminant releases, such as: a) past use of the property; b) presence of specific chemicals (past or present); c) spills or chemical releases at the property; or d) environmental cleanups that have taken place at the property?

6. As the User of this Phase I ESA and based on your knowledge and experience of the property, are there any obvious indicators that point to the presence or likely presence of contamination on the property?

In addition, certain other information should be provided, although not necessarily to qualify for *LLPs,* including: contact information for past and current property owners, operators and occupants; the reason for performing this ESA; and documentation showing the property address, location and boundaries.

_____ Signature _____ Date

PHASE I ESA, USER-FURNISHED INFORMATION

The following is a list of documents and information that could be useful to S&ME, Inc. in preparing your Phase I Environmental Site Assessment (ESA). Please check the appropriate boxes below, sign, and fax or mail this form along with the signed Agreement for Services and completed owner's questionnaire. We will contact you regarding review of any available materials. This form will be attached to, and made a part of, your completed Phase I ESA.

Yes	No	
☐	☐	1. Environmental site assessment reports
☐	☐	2. Environmental audit reports
☐	☐	3. Environmental permits (i.e. solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits)
☐	☐	4. Registrations for underground and above-ground storage tanks
☐	☐	5. Material safety data sheets (MSDS)
☐	☐	6. Community right-to-know plan
☐	☐	7. Safety plans; preparedness and prevention plans; spill prevention, counter-measure and control plans, etc.
☐	☐	8. Reports regarding hydrologic conditions on the property or surrounding area
☐	☐	9. Notices or other correspondence from any government agency relating to past or existing environmental liens encumbering the property
☐	☐	10. Hazardous waste generator notices or reports
☐	☐	11. Geotechnical studies
☐	☐	12. Information concerning any pending, threatened, or past litigation or administrative proceedings relevant to hazardous substances or petroleum products
☐	☐	13. Notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products
☐	☐	14. Disclosure of sumps, pits, drainage systems (i.e. the existence of and location)
☐	☐	15. Building plans (architectural, utility, structural)
☐	☐	16. Description of current site operations, including layout drawings or sketches
☐	☐	17. Title report/chain-of-title
☐	☐	18. Tax assessor records (previous owner and occupants)
☐	☐	19. Purchase price analysis (if lower than comparables)
☐	☐	20. Current and historical photographs of the site
☐	☐	21. Current and historical topographic maps of the site

I have reviewed the above list and checked the "Yes" box for those items that would be available to S&ME for review and/or copy.

Signature Date

DEFINITIONS OF TERMS SPECIFIC TO ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT AND TRANSACTION SCREEN PROCESS

appropriate inquiry – that inquiry constituting "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in CERCLA, 42 USC ξ 9601 (35)(B), that will give a party to a *commercial real estate* transaction the *innocent land owner defense* to CERCLA liability [42 USC ξ 9607 (b)(3)], assuming compliance with other elements of the defense.

de minimis - conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions that are determined to be *de minimis* are not considered to be *recognized environmental conditions*.

environmental site assessment **(ESA)** – the process by which a person or entity seeks to determine if a particular parcel of real *property* (including improvements) is subject to *recognized environmental conditions*. At the option of the user, an environmental site assessment may include more inquiry than that constituting *appropriate inquiry* or, if the user is not concerned about qualifying for the *innocent landowner defense,* less inquiry than that constituting *appropriate inquiry.*

innocent landowner defense – that defense to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability provided in 42 USC ξ 9601 (35) and ξ 9607 (b)(3). One of the requirements to qualify for this defense is that the party make "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial of customary practice."

material threat - a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the *environmental professional*, is threatening and might result in impact to public health or the environment.

practically reviewable – information that is practically reviewable means that the information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the *property* without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the *property* or a geographic area in which the property is located are not generally *practically reviewable.* Most databases of public records are *practically reviewable* if they can be obtained from the source agency by the county, city, zip code, or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized, or maintained by the source agency only chronologically are not generally *practically reviewable.* Listings in publicly available records, which do not have adequate address information to be located geographically, are not generally considered *practically reviewable.* For large databases with numerous facility records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not

practically reviewable unless they can be obtained from the source agency in the smaller geographic area of zip codes. Even when information is provided by zip code for some large databases, it is common for an unmanageable number of sites to be identified within a given zip code. In these cases, it is not necessary to review the impact of all of the sites that are likely to be listed in any given zip code because that information would not be *practically reviewable.* In other words, when so much data is generated that it cannot be feasibly reviewed for its impact on the *property*, it is not *practically reviewable.*

reasonably ascertainable – information that is reasonably ascertainable is information that is (1) *publicly available*, (2) obtainable from its source within reasonable time and cost constraints, and (3) *practically reviewable.*

recognized environmental conditions – the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes *hazardous substances or petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. An *historical recognized environmental condition* is defined as an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may be considered a *recognized environmental condition* currently. The final decision rests with the environmental professional and will be influenced by the current impact of the *historical recognized environmental condition* on the property. If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the Phase I *Environmental Site Assessment* report. The *environmental professional* shall provide an opinion of the current impact on the property of this *historical recognized environmental condition* in the opinion section of the report. If this *historical recognized environmental condition* is determined to be a *recognized environmental condition* at the time the Phase I *Environmental Site Assessment* is conducted, the condition shall be identified as such and listed in the conclusions section of the report.

reasonable time and cost – information that is obtainable within reasonable time and cost constraints means that the information is provided by the source within 20 calendar days of receiving a written, telephone, or in-person request at no more than a nominal cost intended to cover the source's cost of retrieving and duplicating the information. Information that can only be reviewed by a visit to the source is reasonably ascertainable if the visit is permitted by the source within 20 days of request.

APPENDIX VII

QUALIFICATIONS OF EP AND OTHERS

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Project Role
Senior Consultant

Company
S&ME, Inc.-Charleston, SC

Education
BS, Biology, 1983, Winthrop University

Years of Experience
Joined S&ME in 1990 with 5 year of experience

Professional Registrations

Certified Hazardous Material Manager (CHMM), #7864

Licensed (AHERA) Project Designer, SCDHEC, #PD-20410

Licensed (AHERA) Inspector and Management Planner, SCDHEC, #MP-20232

Professional Memberships

Environmental Information Association, Board Member 1994-1998

Society of Military Engineers

Academy of Hazardous Materials Managers

JIM KILLINGSWORTH, CHMM
SR. ENVIRONMENTAL MANAGER, V.P.

Mr. Killingsworth is the Environmental Services Senior Manager for S&ME's Charleston operations. Mr. Killingsworth is experienced in various environmental areas and has continuously managed multiple open contracts for large entities requiring a wide range of environmental and industrial hygiene services.

A large part of his experience includes assessment, development of design documents, and project and contract management for large remedial actions. Design and project management for various remedial actions includes asbestos, lead based paint, polychlorinated biphenyl, mold and fuel tanks.

Mr. Killingsworth also provides management and oversight for due diligence and permitting services to include Phase I and Phase II Environmental Site Assessments, Underground Storage Tanks (UST), Natural and Cultural Resources Investigations and Permitting and NEPA Compliance.

KEY PROJECTS AND ASSIGNMENTS

Indefinite Delivery Contract for the MUSC
Charleston, South Carolina
Project Director of the Indefinite Delivery Contract (IDC) for Environmental Services from 1991 to present. Tasks performed and managed under the contract has included but is not limited to asbestos, lead-based paint, soil/groundwater issues, waste issues, air quality compliance, NEPA Compliance, and indoor air quality services.

Charleston County School District
Charleston, South Carolina
Senior Manager of environmental and industrial hygiene services providing service to over 80 facilities and 30 renovation and demolition projects of various sizes. He has been integral in the two building programs providing hazardous material (asbestos, lead, PCBs, USTs) assessments and design working with CCSD and the respective Construction Management (CM) firms. Due diligence services were provided to include Phase I and II ESAs, cultural and natural resources for acquisition and site development. He was Project Manager for a lead-based paint assessment and control program for 42 elementary schools which CCSD and S&ME were both awarded an Engineering Excellence Award by the Consulting Engineering Council of SC for value and contribution to the community.

Dillon County Schools Districts

Dillon, South Carolina

Project Manager to three school districts on four sites providing NEPA services and compliance. The work was performed concurrently to meet NEPA requirements and obtain a Finding of No Significant Impact (FONSI). The lead agency, USDA, issued a FONSI on all sites within 90 project days.

Indefinite Delivery Contract for Patriots Point Naval Authority

Charleston, South Carolina

Project Director of the Indefinite Delivery Contract (IDC) for Environmental Services from 2002 to present. Tasks managed under the contract has included but is not limited to, waste issues, natural resources, storm water, asbestos, lead-based paint and indoor air quality services. The environmental services support the maintenance functions and specific construction activities. Assessment, design and oversight for the removal of coatings with high metal contents, and the subsequent re-application of coatings on the USS Yorktown was awarded an Engineering Excellence Award by the Consulting Engineering Council of SC for value and contribution to the community.

CONTINUING EDUCATION

Hazardous Waste Management: The Complete Course, Environmental Resource Center, Cary, North Carolina, 1996.

EPCRA Compliance Reporting, Environmental Resource Center, Cary, North Carolina, 1995.

Designing Asbestos Response Actions, Georgia Tech, Atlanta, Georgia, 1991.

Savannah River Nuclear Site Safety and Radiation Training, Badging and Screening Process, New Ellenton, South Carolina, 1991.

Asbestos in Buildings: Inspection and Assessment, and The Management Plan, The Environmental Institute, Atlanta, Georgia, 1990.

Environmental Health School, South Carolina Department of Health and Environmental Control, Columbia, South Carolina, February-April 1986.

Lead Based Paint Inspector, Medical University of South Carolina, Charleston, South Carolina, 2000.

Radiation Training Program for the NITON XR (XRF) Spectrum Analyzer Course, Scitec Corporation, Charlotte, North Carolina, 1999.

Complying with Air Quality Regulations: Emissions Inventories and Operating Permits, Professional Engineers of North Carolina, Raleigh, North Carolina, 1994.

Hazardous Material Institute: SARA Section 313 (Form R), Houston, Texas, 1993.

Principles of Indoor Air Quality, Georgia Tech, Atlanta, Georgia, 1993.

Principals and Practice of Industrial Hygiene, Georgia Tech, Atlanta, Georgia, 1991.

PUBLICATIONS / AWARDS

Consulting Engineers of SC: Engineering Excellence Award 2001, Environmental Projects under $500,000.00, Lead Based Paint Study and Remediation Plan in CCSD Elementary Schools

Consulting Engineers of SC: Engineering Excellence Award 2004. Environmental Projects under $500,000.00, USS Yorktown Lead Coating Removal and Renewal Project

Project Role
Environmental Engineer

Company
S&ME, Inc.-Charleston, SC

Education
BS, Major in Chemical Engineering, Minor in Environmental Engineering, 2002, Clemson University

Years of Experience
Joined S&ME in 2006 with 3 years of experience

Professional Registrations
SC Professional Engineer, 2009

Professional Memberships
Carolina Air Pollution Control Association (CAPCA)

TERRI LYNN SCIARRO, PE
ENVIRONMENTAL ENGINEER

Ms. Sciarro is a Project Manager for S&ME's Charleston Office and an environmental engineer licensed in South Carolina. She is skilled in the following disciplines: Environmental Assessments and NEPA Coordination; HUD Environmental Assessments; Air quality permitting / modeling;

RELEVANCE TO PROJECT

- HUD/HRSA/USDA/L&WCF/FAA Environmental Assessments/ NEPA Coordination
- FHWA/FAA/HUD Noise Study
- HUD Thermal Radiation Study
- FEMA PDM Grant Applications
- Air Permitting and Modeling Experience

KEY PROJECTS AND ASSIGNMENTS

Various HUD Environmental Assessments / Reviews
Multiple Locations, SC
Prepared multiple Environmental Reviews and Environmental Assessments for area non profits in accordance with Housing and Urban Development NEPA requirements to facilitate obtaining funding for housing developments. The studies included coordination with local, state and federal agencies on such compliance areas as wetlands, historical and archeological resources, endangered species, hazardous environments, noise, environmental justice and socioeconomic issues.

Various HUD Noise Studies
Multiple Locations, SC
Prepared multiple HUD Noise Studies for properties within 1000 feet of highways, 15 miles of airports, and/or 3000 feet of railways according to the requirements of 24 CFR Part 51 Subpart B. Noise mitigation strategies were utilized to minimize noise impacts to proposed developments.

Various Thermal Radiation Studies
Multiple Locations, SC
Prepared multiple HUD Thermal Hazard Assessments for properties within 1 mile of above ground storage tanks (ASTs) according to the requirements of 24 CFR Part 51, Subpart C. Calculated Acceptable Separation Distances from both fire (thermal radiation) and explosion (blast overpressure).

Charleston Executive Airport (2008)
John's Island, SC
Completed an Airport Noise Study using INM 7.0 software to meet due diligence requirements for the NEPA for Federal Aviation Authority (FAA) financing.

Highway SC-802 (2007)
Beaufort, SC
Managed Highway Traffic Noise Study performed using TNM 2.5 software to meet due diligence requirements of the NEPA for Federal Highway Administration (FHWA) financing and conceptual design of noise barrier.

Seabrook Island FEMA PDM Grant Application (2006)
John's Island, SC
Successfully prepared a FEMA Pre-Disaster Mitigation (PDM) Grant application for a local government detailing project need and cost effectiveness. Included in the application was a NEPA Environmental Review and Benefit Cost Analysis (BCA).

Various BAQ Construction Permit Applications
South Carolina
Prepared Bureau of Air Quality construction permit applications for several commercial, institutional and manufacturing facilities throughout South Carolina. Application preparation included emission source inventories, emissions calculations, ambient air dispersion modeling, consultation with Bureau of Air Quality permitting engineers, and oversight of final permit issuance. Performed both screen and refined modeling for various industries to demonstrate compliance with National Ambient Air Quality Standards, PSD Minor Source Increment Analysis', and Toxic Air Pollutant Standards.

Various Emission Reporting Spreadsheets
Charleston, SC
Developed Microsoft Excel worksheets to serve as air emissions tracking utilities for conditional major source permit holders. The worksheets can be used to automatically generate the emissions reports required by the industries' permits.

Various EPCRA Tier II
Charleston, SC
Prepared EPCRA Tier II for various chemical industries.

CONTINUING EDUCATION

Adult CPR and Basic First Aid, 2005
Phase I ESA Training 2009
Environmental Health and Safety Training (HAZWOPER) Supervisor 8 hour update, 2005.
Environmental Health and Safety Training (HAZWOPER) 8 hour update, 2004-2009
Environmental Health and Safety Training (HAZWOPER), 2003, Columbia, South Carolina
Niton Manufacturer's Training Course for the Niton XRF Spectrum Analyzer, 2000, Medical University, Charleston, South Carolina

APPENDIX L

Farmland Conversion Impact Rating for Corridor Type Projects

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U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of _____
1. Name of Project **I-95/US301 Interchange & US301 Connector**	5. Federal Agency Involved **FWHA**	
2. Type of Project **Roadway Corridor**	6. County and State **Orangeburg, SC**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated	Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction **Acres:** **%**	7. Amount of Farmland As Defined in FPPA **Acres:** **%**	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
A. Total Acres To Be Converted Directly			9	
B. Total Acres To Be Converted Indirectly, Or To Receive Services			12	
C. Total Acres In Corridor	0	0	21	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*			100	

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15			7	
2. Perimeter in Nonurban Use	10			5	
3. Percent Of Corridor Being Farmed	20			0	
4. Protection Provided By State And Local Government	20			0	
5. Size of Present Farm Unit Compared To Average	10			10	
6. Creation Of Nonfarmable Farmland	25			0	
7. Availablility Of Farm Support Services	5			5	
8. On-Farm Investments	20			5	
9. Effects Of Conversion On Farm Support Services	25			0	
10. Compatibility With Existing Agricultural Use	10			0	
TOTAL CORRIDOR ASSESSMENT POINTS	160	0	0	32	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100			100	
Total Corridor Assessment (From Part VI above or a local site assessment)	160	0	0	32	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	132	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Total point value less than 160. Maximum possible soil value of 100 applied per agreement between NRCS and SCDOT.

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

APPENDIX M

Bridge Replacement Scoping Trip Risk Assessment Form

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Memorandum

U.S. Department
of Transportation
Federal Highway Administration

Subject: Hydrology in NEPA Documents

Date: August 18, 2011

From: FHWA Division Office
Columbia, South Carolina

In Reply Refer To: HDA-SC

To: Mr. Randy Williamson
Environmental Engineer
SC Dept. of Transportation

As you know, we have met several times over the past few weeks to discuss the best way to handle hydrology issues in our NEPA documents. After consulting internally and with your staff, we will begin utilizing the process outlined below for all projects.

For all bridge replacement projects, a qualified Hydraulic Engineer will complete the Bridge Replacement Scoping Trip Risk Assessment Form during the initial field review. As a result of this assessment, the Hydraulic Engineer should be able to conclude, that:

(1) the project, while located in a floodplain, is expected to cause no more than a 1 ft. rise in the backwater flood elevation,
(2) the project, while located in a FEMA designated floodway/floodplain, will result in a "No Rise/Impact" certificate. A detailed hydraulic analysis will be performed to verify this assessment, or
(3) the project, while located in a FEMA designated floodway/floodplain, will result in a CLOMR submittal. Impacts will be determined with a detailed hydraulic analysis.

The results of the assessment will be summarized in the NEPA document and the completed assessment form will be attached as an appendix. This will satisfy the NEPA requirements in evaluating the project's impacts to the floodplain/floodway and the project will continue through the designated contracting method (D/B or D/B/B). If a more detailed hydraulic analysis is necessary to verify the conclusion of the initial field review, it will be completed by the responsible hydraulic engineer as final design details become available. If a detailed hydraulic analysis is deemed necessary and fails to verify (1) or (2) above, the project will go through the environmental re-evaluation process prior to proceeding to construction.
If, as a result of the Risk Assessment, the Hydraulic Engineer anticipates that the project will result in a CLOMR submittal, SCDOT and FHWA will need to agree on the level of additional

hydraulic analysis that is necessary to complete the NEPA process. In these cases, a project scheduled to go through the design/build process may be pulled and processed through normal design-bid-build practices.

The Bridge Replacement Scoping Trip Risk Assessment Form is attached to this memo and we will look for this on future NEPA document submittals. We appreciate your patience and coordination in getting this issue resolved and look forward to implementing these changes.

Patrick L. Tyndall
Planning and Environment Team Leader

Attachment: Bridge Replacement Scoping Trip Risk Assessment Form

Cc:
Wayne Corley, SCDOT
Mark Lester, SCODT

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Orangeburg DATE: 12-29-11

ROAD #: US-301 STREAM CROSSING: N/A

Purpose & Need for the Project:

Extension of hwy 301 to intersect SC 6 1.1 miles south of Santee

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? ☐ Yes ☑ No

Panel Number: _____ Effective Date: _____ (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Numbe _____ illustrates the existing 100 year flood:

☐ Passes under the existing low chord elevation.
☐ Is in contact with the existing low chord elevation.
☐ Overtops the existing bridge finished grade elevation.

III. No Rise/CLOMR Preliminary Determination

☑ Preliminary assessment indicates this project may be constructed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed to verify this assessment.

Justification: no floodplain areas

☐ Preliminary assessmnet indicates this project may require a CLOMR/LOMR. Impacts will be determined by a detailed hydraulic analysis.

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☐ Yes ☑ No File No. _____ Sheet No. _____ (See Attached)

b. Road Plans ☐ Yes ☑ No File No. _____ Sheet No. _____ (See Attached)

B. Historical Highwater Data

a. USGS Gage ☐ Yes ☑ No Gage No. _____ Results: _____

b. SCDOT/USGS Documented Highwater Elevations ☐ Yes ☑ No Results: _____

c. Existing Plans ☐ Yes ☑ No See Above

V. Field Review

A. Existing Bridge

Length: _____ ft. Width: _____ ft. Max. span Length: _____ ft.

Alignment: ☐ Tangent ☑ Curved

Bridge Skewed: ☐ Yes ☐ No Angle: _____

End Abutment Type: _____

Riprap on End Fills: ☐ Yes ☑ No Condition: _____

Superstructure Type: _____

Substructure Type: _____

Utilities Present: ☐ Yes ☑ No

Describe: _____

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

Hydraulic Problems: ☐ Yes ☑ No
Describe:

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: ☐ Yes ☑ No Location: _____

b. Distance from F.G. to Normal Water Elevation: na ft.
c. Distance from Low Steel to Normal Water Elev.: na ft.
d. Distance from F.G. to High Water Elevation: na ft.
e. Distance from Low Steel to High Water Elev.: na ft.

f. Channel Banks Stable: ☑ Yes ☐ No
Describe:

g. Soil Type: Sand channel with large boulders

h. Exposed Rock: ☐ Yes ☑ No Location: _____

i. Give Description and Location of any structures or other property tat could be damaged due to additional backwater.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement
☐ Yes ☐ No
Describe:

If "yes", does the existing vertical and horizontal curves meet the proposed design speed criteria?

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

If "No", will the proposed bridge be"

- [ ] Staged Constructed
- [x] Replaced on New Alignment

VI. Field Review (cont.)

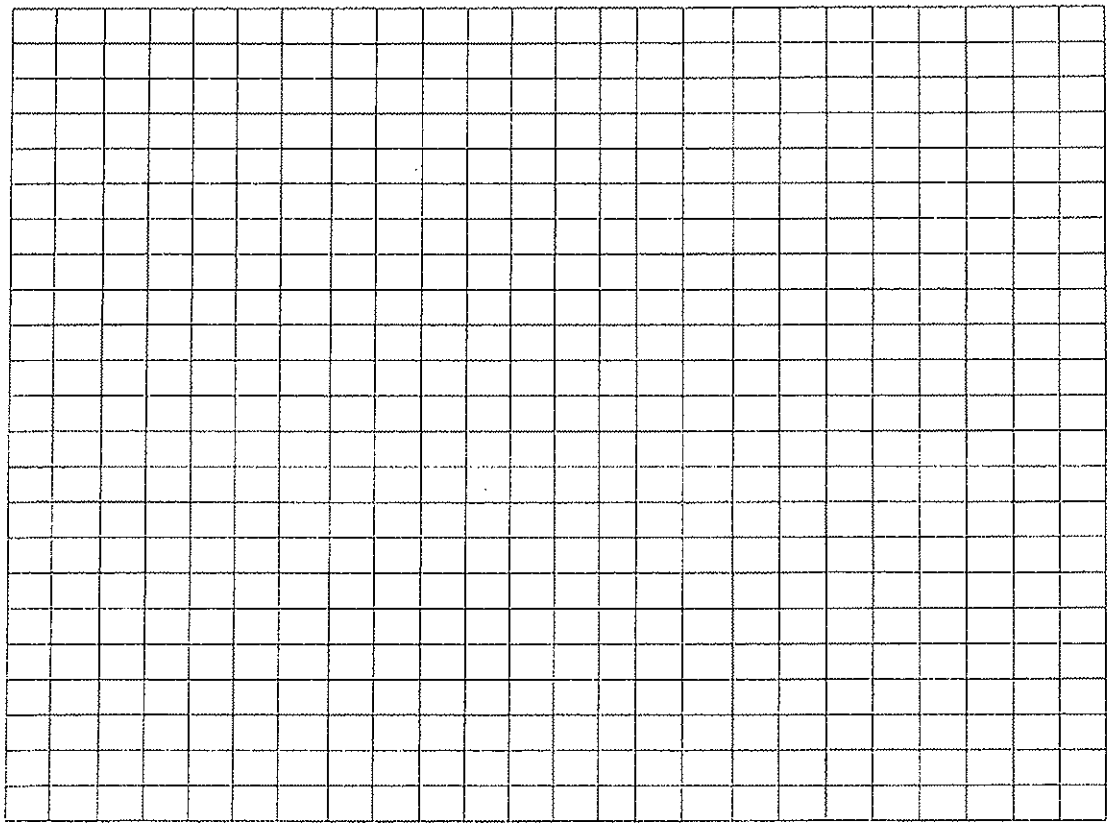
A. Proposed Bridge Recommendation:

Length: _____ ft. Width: _____ ft. Elevation: _____ ft.

Span Arangement: _____

Notes:

DIAGRAM: (Show North Arrow and Direction of Flow)



BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

Performed By: _____

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APPENDIX N

Borrow Pit Screening Report- I-95/US 301 Interchange Improvement and US 301 Connector to SC 6

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Borrow Pit Screening Report

I-95 / US 301 Interchange Improvement and US 301 Connector to SC 6

Orangeburg County, South Carolina

SCDOT PIN No. 36984
SCDOT File No. 38.036984

January 6, 2011

Prepared by:

HDR Engineering, Inc. of the Carolinas

3955 Faber Place, Suite 300
North Charleston, South Carolina 29405
843-414-3700

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Project Description

The South Carolina Department of Transportation (SCDOT), in partnership with the Lower Savannah Council of Governments (LSCOG), proposes to improve the Interstate 95 (I-95) / United States Highway (US 301) Interchange and construct the US 301 Connector to South Carolina Route 6 (SC 6), south of the Town of Santee in Orangeburg County for a total of approximately 1.8 miles. The proposed improvements consist of modifying the I-95 / US 301 interchange from a partial access interchange to a full access interchange. The interchange design is a partial cloverleaf that would address increasing and future traffic demands. The proposed improvements also include building a new location roadway to connect existing US 301 to SC 6 near Naval Station Road, bridging over I-95. Construction of the US 301 Connector would be phased. Initially, the US 301 Connector would be constructed as a five-lane section from I-95 to the proposed inland port intermodal facility just west of the CSXT railroad crossing and taper down to a three-lane section from there to SC 6. The three-lane section may be widened to five-lanes in the future, as warranted by increasing traffic demands. A grade-separated bridge over the CSXT railroad is also proposed. SC 6 would be improved by the inclusion of turn lanes

Engineering Directive Memorandum No. 30

The proposed project is located east of I-95, may require borrow pits, and has an estimated construction cost greater than $5 million dollars. Therefore, the project meets the criteria established in SCDOT's Engineering Directive Memorandum (EDM) No. 30 as a project that requires screening of borrow pits to determine if sufficient non-wetland sites exist to provide fill for the project. The purpose of this Directive is to avoid or minimize the impacts of borrow pits on wetlands. As directed in EDM No. 30, the area within a one-mile radius of the project was screened. The screening included a review of the National Wetlands Inventory (NWI) maps, current Orangeburg County Land Use maps, and current aerial photography.

Screening Results

The screened area is shown on Figure 1 (attached) and is approximately 6,686 acres (10.8 square miles). Approximately 5,045, acres (7.9 square miles) of the total screened area are undeveloped upland and 511 acres are NWI wetlands. Neither the quality of potential borrow soils in the upland areas nor the willingness of landowners to see or lease their property as borrow pits was evaluated.

The South Carolina Department of Health and Environmental Control's (SCDHEC) database of permitted mines in Orangeburg County was also queried. Based on this review, there are 2 permitted mines within a five-mile radius of the project and 3 additional mines within a ten-mile radius (Figure 2). The quality of potential borrow soils from the permitted mines was not evaluated.

Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 applies when: 1) there is a federal or federally-licensed action, including grants, licenses, and permits, and 2) that action has the potential to affect properties listed in or eligible for listing in the National Register of Historic Places. Section 106 requires each federal agency to identify and assess the effects of its actions on historic resources. The responsible federal agency must consult with appropriate state and local officials, Indian tribes, applicants for federal assistance, and members of the public and consider their views and concerns about historic preservation issues when making final project decisions. Effects are resolved by mutual agreement, usually among the affected state's State Historic Preservation Officer (SHPO) or the Tribal Historic Preservation Officer (THPO), the federal agency, and any other involved parties. The proposed roadway improvements will require federal Clean Water Act (CWA) Section 404/401 permitting and, therefore, potential impacts to cultural resources must be assessed pursuant to Section 106.

Screening Results

Previous cultural resource assessments and consultation with SHPO indicate that construction of the road improvements will not impact any protected historical structures or archaeological resources. Cultural resources associated with potential borrow pit sites will be assessed once specific sites have been selected. Figure 3 depicts the location of National Register resources and Historic Structures [as documented on the South Carolina Institute of Archaeology and Anthropology (SCIAA) / South Carolina Department of Archives and History online cultural resource information system, ArchSite (http://archsite.cas.sc.edu/ArchSite)] in the vicinity of the project area and potential borrow pit sites.

Section 7 of the Endangered Species Act

Pursuant to Section 7 of the Endangered Species Act (ESA) of 1973 (as amended), all federal agencies are required to use their existing authorities to conserve threatened and endangered species and, in consultation with the U.S. Fish and Wildlife Service (USFWS), to ensure that their actions (e.g., issuing a permit) do not jeopardize listed species or destroy or adversely modify Critical Habitat. As a result, permitting agencies such as the Army Corps of Engineers mandate that the permit applicant must make a determination as to whether there will be impacts to endangered species. The proposed roadway improvements will require federal CWA Section 404/401 permitting, and, therefore, potential impact to threatened or endangered species or Critical Habitat must be assessed pursuant to Section 7 of the ESA.

Screening Results

Previous protected species assessments and consultation with USFWS indicate that construction of the road improvements will not impact protected resources under the USFWS jurisdiction. According to the South Carolina Rare, Threatened & Endangered Species Inventory mapping (available from the South Carolina Department of Natural Resources), there are no known occurrences of federally protected species or Critical Habitat within a mile of the project area. Additional assessment and coordination with USFWS will be conducted once specific borrow pit sites have been selected to ensure adherence to Section 7 regulations.

Conclusions

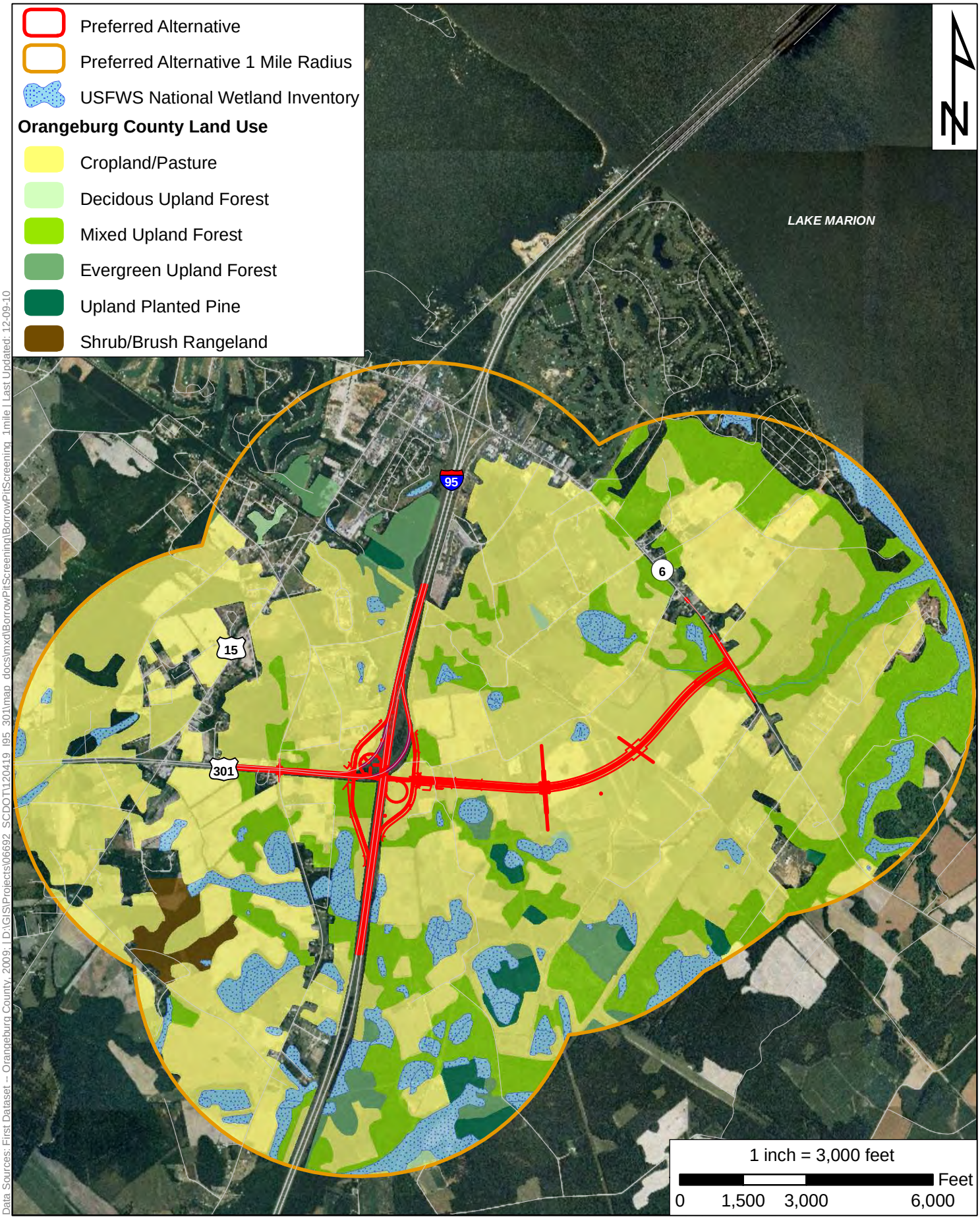
Based on the results of the borrow pit screening, it is determined that there is sufficient upland or high ground area near the project from which borrow materials may be obtained. Therefore, as directed in EDM No. 30, the following special provision shall be added to the project's contract proposal:

> *"Borrow Pit Location – Borrow material for this project shall <u>not</u> be obtained from wetlands, streams or rivers."*

In addition, the estimated construction and right-of-way cost for the project is expected to be $30 million or greater; therefore the attached "Special Provision for Borrow Pits on Large Projects" shall be included in the contract proposal.

Additional surveys and agency consultation are necessary to determine the effect that the establishment of borrow pit sites will have on protected species, Critical Habitat, and cultural resources. All efforts will be made to avoid, minimize, and mitigate for any unavoidable impacts to these import resources associated with borrow pit sites for this project.

This report has been prepared in accordance with generally accepted engineering practice for specific application to this project. The conclusions contained in this report were based on the applicable standards of our profession in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.



Data Sources: First Dataset -- Orangeburg County, 2009; I:\GIS\Projects\06692_SCDOT\120419_I95_301\map_docs\mxd\BorrowPitScreening_1mile | Last Updated: 12-09-10

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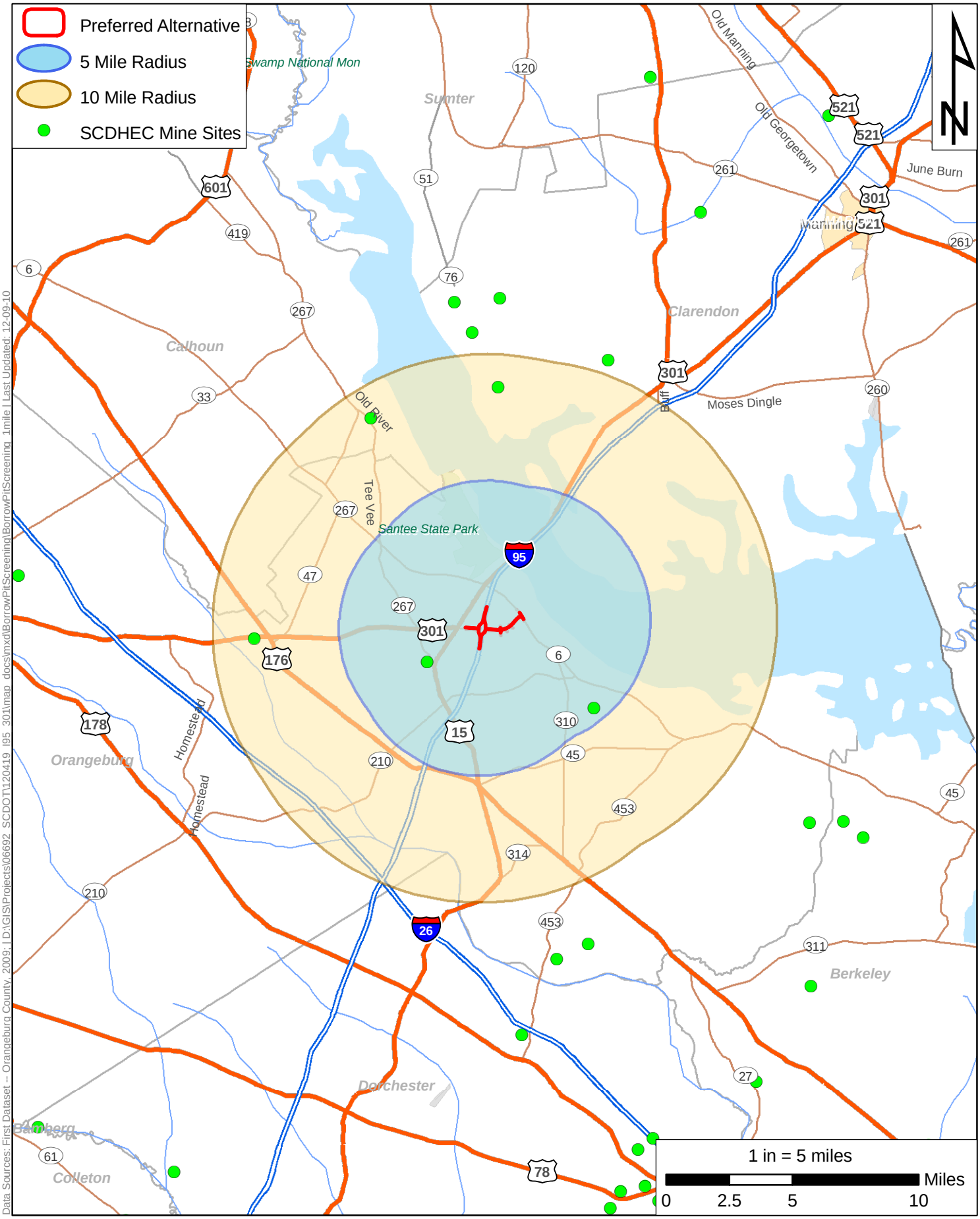
Undeveloped Upland Areas

Figure 1



SCDHEC Permitted Mining Sites

Figure 2

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SOUTH CAROLINA INSTITUTE OF ARCHAEOLOGY AND ANTHROPOLOGY
&
SOUTH CAROLINA DEPARTMENT OF ARCHIVES AND HISTORY

http://archsite.cas.sc.edu/ArchSite/(eeguln45fls05u2eqlz5wd55)/public.aspx

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SCIAA and SCDAH ArchSite Screen Shot

Figure 3

Special Provision for Borrow Pits on Large Projects

Permitting of Borrow Pits

Prior to using borrow material from commercial or other borrow pits located wholly or in part in wetland areas, the contractor shall submit written evidence that operations to obtain fill material from the borrow pit(s) have received all appropriate and necessary authorizations from federal, state, and/or local authorities.

Permitted Borrow Pits

If the appropriate federal, state, and local authorities have issued permits, the contractor shall provide to SCDOT copies of all permits issued for such borrow pit sites.

Borrow Pits Without Section 404 Permit

For borrow pit sites for which a Section 404 permit under the Clean Water Act has not been issued, the contractor shall provide SCDOT with copies of documentation provided by the contractor or its subcontractor(s) to the U.S. Army Corps of Engineers, which shall, at a minimum, clearly define the location of the borrow pits and any wetlands on the borrow pit site; describe the proposed activities and processes that will be used to prepare the site, obtain fill material from the site, and store material at the site; and request the U.S. Army Corps of Engineers to confirm in writing that no Section 404 permit is required for those operations. No operations shall take place at the borrow sites for at least thirty days from the date of the submission of confirmation request to the U.S. Army Corps of Engineers. The contractor shall also provide copies to SCDOT of any response(s) provided by the U.S. Army Corps of Engineers to its documentation.

Responsibility

SCDOT has no obligation or duty to review, assess, evaluate, or act upon such documentation and maintains no authority or responsibility to alter, amend, reject, accept, or otherwise exercise any control over the contractor or subcontractor regarding compliance with Clean Water Act Section 404 and the implementing regulations for Section 404. Documentation submitted to SCDOT is for public information and coordination purposes only. The contractor is responsible for all costs related to the selection, operation, and/or activities at any borrow pit site in wetlands including fines, additional mitigation, and impact delays related to failure to obtain any and all necessary federal, state, and local permits and approvals for borrow pits and operations. Nothing herein shall affect in any way SCDOT's right to accept or reject any fill material not meeting the required technical specifications.

SUPPLEMENTAL SPECIFICATION

February 2009

THE SOUTH CAROLINA MINING ACT

The South Carolina Mining Act enacted by the General Assembly in 1973 requires that the Department adopt reclamation standards to govern activities of the Department and any person acting under contract with the Department, on highway rights-of-way or material pits maintained solely in connection with the construction, repair and maintenance of the public road systems in South Carolina.

STANDARD PLAN FOR THE RECLAMATION OF EXCAVATED AREAS ADOPTED BY THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

Reclamation plans as stated herein shall include all areas disturbed in excavations of borrow and material pits, except planned inundated areas.

The final side slopes of areas excavated for borrow and material pits shall be left at such an angle so as to minimize erosion and the possibility of slides. The minimum slope in every case shall be not less than 3:1.

Small pools of water that are or are likely to become noxious, odious, or foul, should not be allowed to collect or remain on the borrow pit. Suitable drainage ditches, conduits, or surface gradient shall be constructed to avoid collection of noxious, odious, or foul pools of water unless the borrow pit is to be reclaimed into a lake or pond.

Borrow pits reclaimed to a lake or pond must have an adequate supply of water to maintain a water level sufficient to maintain a minimum water depth of four (4) feet on at least fifty (50) percent of the surface area of the lake or pond.

Excavated areas will be drained where feasible unless otherwise requested by the property owner where, in such instances, the property owner may wish to develop the excavated area for recreational purposes or for the raising of fish, or for other uses, in compliance with the South Carolina Mining Act.

Where material is stripped from the ground surface in relatively thin layers, the area, after excavation has been completed, will be thoroughly scarified and terraced and planted to establish satisfactory vegetation necessary to control erosion. Vegetative cover should be established on a continuing basis to ensure soil stability appropriate to the area. Conservation practices essential for controlling both on-site and off-site erosion and siltation must be established. A minimum of seventy-five (75) percent vegetative ground cover, with no substantial bare spots, must be established and maintained into the second growing season.

Excavated areas that are drained will be seeded to obtain a satisfactory vegetative cover. The side slopes of excavated area will be planted to vegetation.

The deputy secretary for engineering, or his duly appointed representative, will make a final inspection of the reclaimed area and keep a permanent record of his approval thereof. A map or sketch providing the location and approximate acreage of each pit used on the project will be provided to the resident construction engineer for inclusion in the final plans.

All applicable regulations of agencies and statutes relating to the prevention and abatement of pollution shall be complied with by the contractor in the performance of the contract.

****

The contractor shall comply with the provisions of the plan that are applicable to the project as determined by the engineer. Seeding or other work necessary to comply with the plan on pits furnished by the contractor shall be at the expense of the contractor. Bermuda shall not be planted on ground surface pit areas. The quantity of fescue seed specified in Subsection 810.04 of the standard specifications shall be increased by fifteen (15) pounds in lieu of the deleted Bermuda seed.