



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**South Carolina**

October 15, 2013

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

In Reply Refer To:  
HDA-SC

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

Dear Mr. Williamson:

The FHWA has received your letter requesting a Finding of No Significant Impact (FONSI) determination for the proposed Bridge Replacements on U.S. Route 701 over the Great Pee Dee River, Great Pee Dee Overflow, and Yauhannah Lake in Horry and Georgetown Counties, South Carolina (Federal Project No. BR88-044). Based on the information provided to complete the environmental process FHWA finds that the project will have no significant impacts; therefore a FONSI determination is justified. Please proceed accordingly with the publication of the notice of availability of location and preliminary design approval and availability of the FONSI. The final documentation is to be made available to the public upon request. A notice of the FONSI approval shall be sent to the affected units of Federal, State, and local governments. A notice shall also be sent to the State inter-governmental review contacts established under Executive Order 12372.

By our adoption of the FONSI and completion of the public comment/hearing requirements of 23 U.S.C. 128, the SCDOT is authorized to proceed with further project development. Please address any questions to Mr. J. Shane Belcher at [jeffrey.belcher@dot.gov](mailto:jeffrey.belcher@dot.gov) or 803-253-3187.

Sincerely,

  
(for) Robert L. Lee  
Division Administrator

Enclosure

cc: Mr. Henry Phillips, SCDOT NEPA Coordinator, RPG 2  
Mr. Tyke Redfearn, P.E., SCDOT Asst. Program Manager (via e-mail)  
File 22.124B



South Carolina  
Department of Transportation

October 14, 2013

Mr. Patrick Tyndall  
Federal Highway Administration  
Planning and Environment Team Leader  
1835 Assembly Street, Suite 1270  
Columbia, SC 29201

RE: Request for a Finding of No Significant Impact (FONSI) for the Bridge Replacements on US 701 at the Great Pee Dee River, Great Pee Dee River Overflow, and Yauhannah Lake in Georgetown and Horry Counties, South Carolina, PIN 30688X, File No. 22.124B, Project No. BR88(044).

Dear Mr. Tyndall:

The Department received approval of an Environmental Assessment (EA) on the above-referenced project from Federal Highway Administration (FHWA) on July 31, 2013. The approved document was made available for review in accordance with 23 CFR 771.119(d) and distributed through the South Carolina inter-governmental review process on August 21, 2013.

Following availability of the environmental document, a Combination Location and Design Public Hearing was duly advertised by the SCDOT via the *Sun News* and the *Georgetown Times* and subsequently conducted on September 10, 2013, at the Waccamaw National Wildlife Refuge Visitors' Center located at 21424 North Fraser Street, Georgetown, SC 29440. Approximately 78 interested individuals were in attendance of which approximately 15 were white females, 9 were black females, and 7 were black males.

No written comments from the public were received at the public hearing, via mail or email within the 30-day comment period. The public hearing certification package is attached for your review and records.

Based on the administrative and environmental documentation to date, it is the Department's recommendation that the project be processed as a FONSI. Please contact me should you require additional information.

Sincerely,

Henry Phillips  
NEPA Coordinator RPG 2

Enclosures

Cc: Tyke Redfearn, Program Manager (Letter only)  
Env File – env/rpg2/georgetown/30688



FEDERAL HIGHWAY ADMINISTRATION  
SOUTH CAROLINA DIVISION OFFICE  
FINDING OF NO SIGNIFICANT IMPACT

for

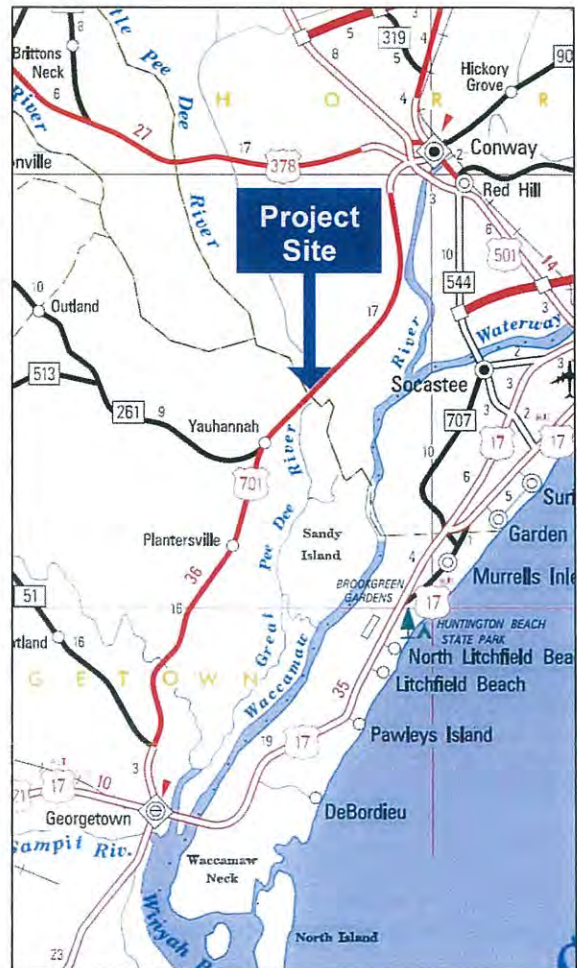
US 701 Bridge Replacements over Yauhannah Lake, Great Pee Dee River, and Overflow  
Georgetown & Horry Counties, South Carolina

Project BR88(044), File No. 22.124B, PCNs 30684X & 30688X

**Project Description**

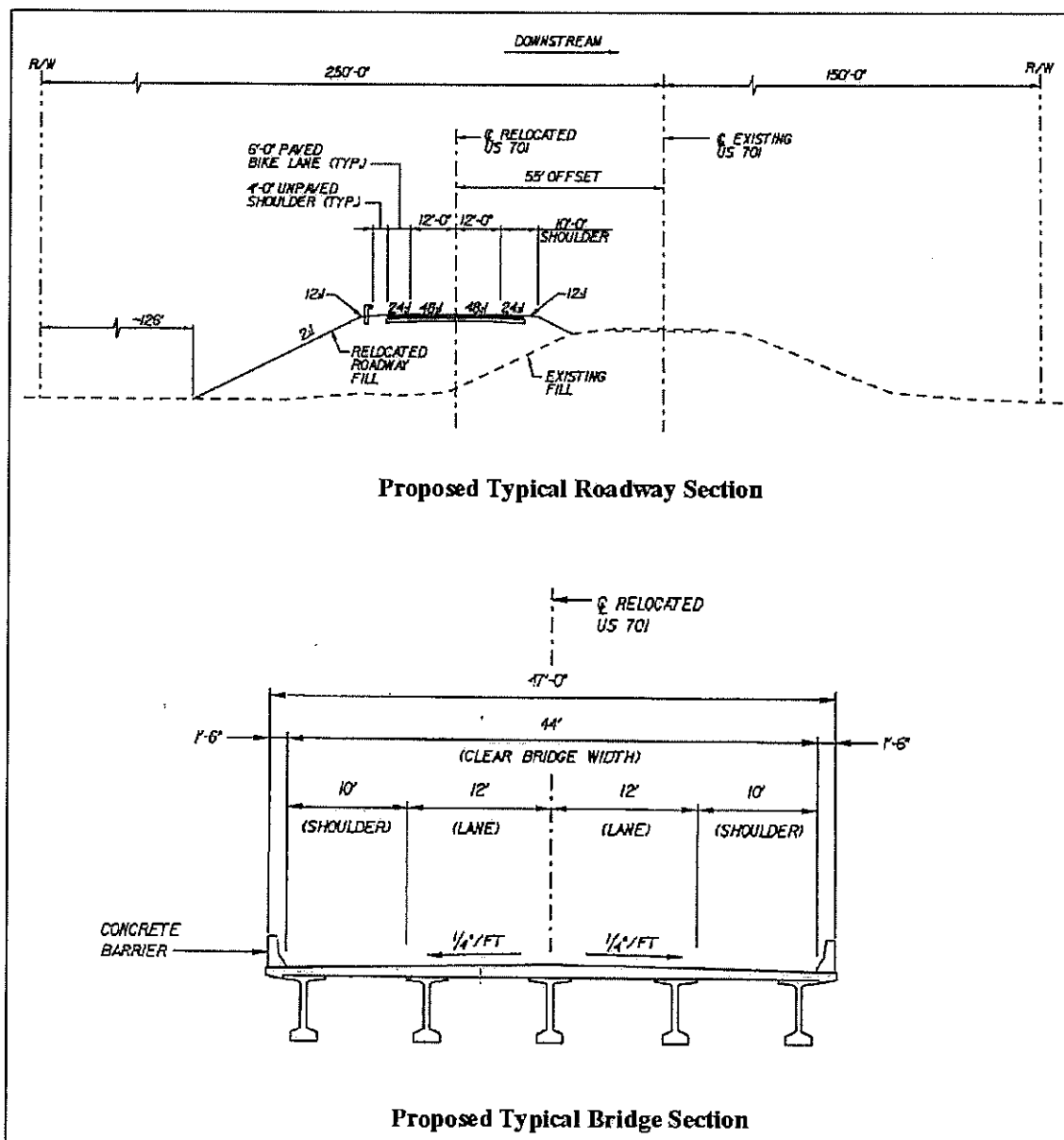
The US 701 Bridge Replacement project consists of the replacement and realignment of an approximately two mile long section of US 701 located in Georgetown and Horry Counties. Figure 1 shows the project location. The project would involve replacing the three (3) existing US 701 bridges over Yauhannah Lake, the Great Pee Dee River, and the Great Pee Dee River Overflow. Constructed in the 1950's, the existing bridges total more than 4,300 linear feet, and they are structurally deficient and functionally obsolete. The project extends from a point near the US 701 / Trinity Road intersection in Georgetown County, to a point near the US 701 / Lucas Bay Road intersection in Horry County. The project not only involves replacement of the three (3) existing bridges but includes realignment of the connecting roadways on embankment fills and the construction of new approach roadways to tie-in to the existing roadway.

The Waccamaw National Wildlife Refuge (Refuge) is adjacent to US 701 along most of the project corridor. The Refuge is managed by the United States Fish and Wildlife Service (USFWS). The focus area of the Refuge is Cowford Lake which is located downstream of the overflow bridge in Horry County.



**Figure 1 – Location Map**

As shown in Figure 2 – Proposed Cross Sections, the proposed bridge deck for each of the three replacement bridges will be 47 feet wide, facilitating a 44 feet clear bridge width between the concrete barriers. The new bridges will have one 12 foot wide travel lane in each direction with a 10 foot wide shoulder in each direction. The new roadway section will consist of one 12 foot wide travel lane in each direction, and a 10 foot wide shoulder in each direction with 6 feet paved and 4 feet unpaved.



**Figure 2 – Proposed Typical Sections**

To avoid a long detour, traffic will be maintained on the existing facilities during the construction of the replacement bridges and roadways. These existing bridges will be demolished upon completion of construction.

In accordance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations, an Environmental Assessment (EA) was completed and approved by SCDOT and FHWA officials on July 31, 2013. SCDOT and FHWA developed the EA in cooperation with USFWS and the United States Coast Guard (USCG). On September 10, 2013, SCDOT conducted a location and design public hearing.

**Purpose and Need**

The purpose of the project is to replace the existing structurally deteriorated and functionally obsolete US 701 bridges and maintain the principal direct rural connection between the larger towns of Conway and Georgetown, as well as the smaller communities such as Bucksport and

Yauhannah in between. Replacement of these three existing bridges was determined urgent by the Department and the Federal Highway Administration due to the physical condition of the existing structures. The existing bridges have been inspected by the Department and rated structurally deficient, and therefore, are in need of replacement for public safety reasons.

### **Project Alternatives**

Several new alternative alignments were considered in the preliminary alignment selection process, and six feasible alternatives were considered for further development. The following is a summary of the alternatives analysis, and detailed information regarding alternatives can be found in the Environmental Assessment (EA), Section III.

#### **“No-Build” and Replace on Existing Alignment Alternatives**

The “no-build” alternative consists of the Department making no improvements to the existing bridges and alignment. This alternative would not improve the safety or structural characteristics of the bridge / highway system. The “no-build” alternative is not considered prudent because of the extreme cost of maintaining / rehabilitating the existing bridges in their current condition and the inconvenience to the public due to repeated lane closures and detours associated with future maintenance operations. Although not prudent, the “no-build” alternative was included as a baseline for comparing all build alternatives.

Replacement of the existing bridges on the existing alignment was also considered, but this would require the road to be fully closed throughout construction, resulting in traffic detours ranging from 37 additional miles from Yauhannah to Conway to 33 additional miles from Bucksport to Georgetown. The need to maintain this principal direct rural connection between the larger towns of Conway and Georgetown, as well as the smaller communities such as Bucksport and Yauhannah in between, make this alternative considered to be not acceptable and not prudent.

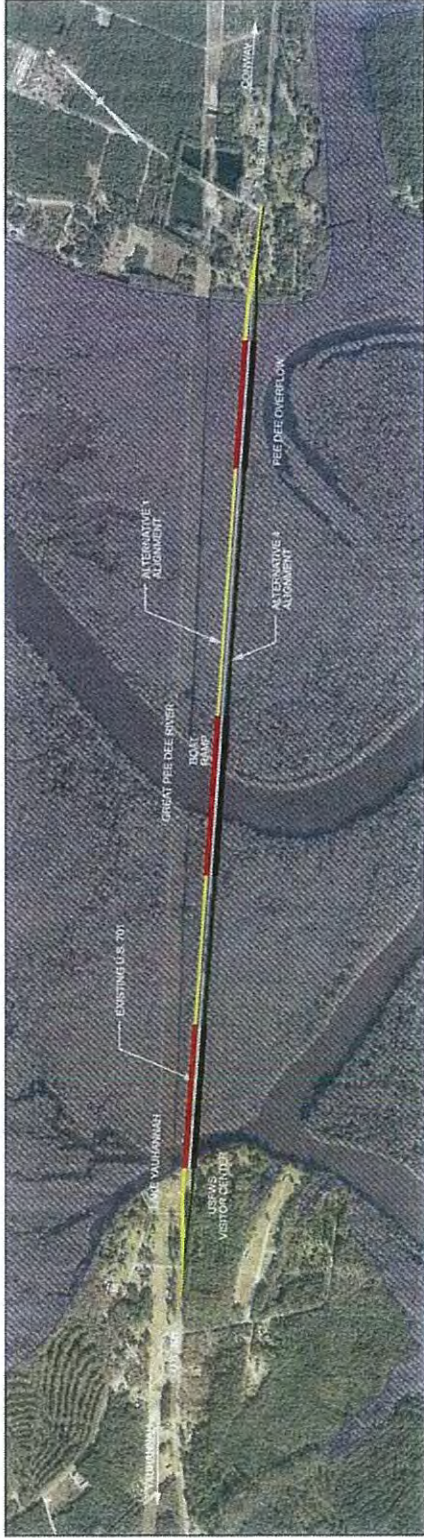
#### **Build Alternatives**

The six build alternatives that were further analyzed consist of two upstream parallel alignments and two downstream parallel alignments, all at varying offsets to the existing alignment, a cross-over alignment that would cross the existing alignment from downstream to upstream, and one upstream bowed alignment. The construction costs for the parallel alignments would be similar, and the construction costs of the non-parallel alignments would be higher by as much as 20%.

All six alternatives considered for further development have the same proposed bridge lengths. The existing and proposed bridge lengths are as follows:

|  | <u>Existing</u><br>(ft.) | <u>Proposed</u><br>(ft.) |
|--|--------------------------|--------------------------|
| Bridge over Yauhannah Lake               | 1,440                    | 1,453                    |
| Bridge over the Great Pee Dee River      | 1,603                    | 1,770                    |
| Bridge over Great Pee Dee River Overflow | 1,320                    | 1,370                    |

Figure 3 – Alignment Alternatives shows the six alternatives that were studied and Table 1 – Environmental Impact Matrix shows potential impacts of those alternatives. Figure 4 – Preferred Alternative shows the preferred alignment. Descriptions of these alternatives begin on page 7.



ALTERNATIVE 1 (72' OFFSET UPSTREAM)  
 ALTERNATIVE 4 (72' OFFSET DOWNSTREAM)

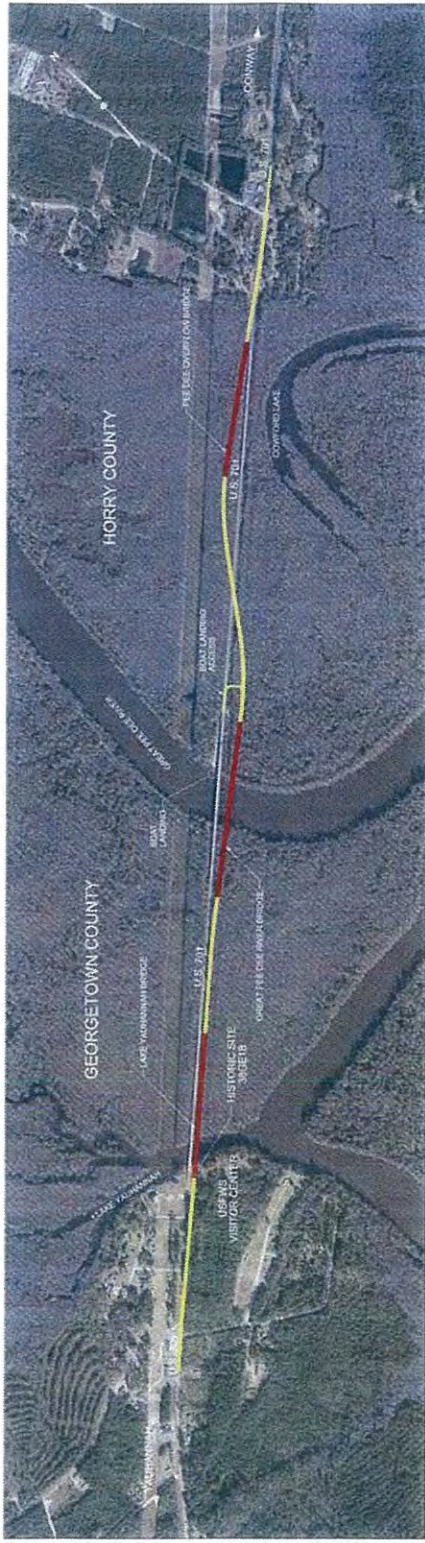
- LEGEND:
- ALTERNATIVE 1 - PROPOSED ROADWAY
  - ALTERNATIVE 4 - PROPOSED ROADWAY
  - ALTERNATIVE 1 - PROPOSED BRIDGE
  - ALTERNATIVE 4 - PROPOSED BRIDGE
  - 100 YEAR FLOOD PLAIN



ALTERNATIVE 2 (55' OFFSET UPSTREAM) - **PREFERRED**  
 ALTERNATIVE 3 (55' OFFSET DOWNSTREAM)

- LEGEND:
- ALTERNATIVE 2 - PROPOSED ROADWAY
  - ALTERNATIVE 3 - PROPOSED ROADWAY
  - ALTERNATIVE 2 - PROPOSED BRIDGE
  - ALTERNATIVE 3 - PROPOSED BRIDGE
  - 100 YEAR FLOOD PLAIN

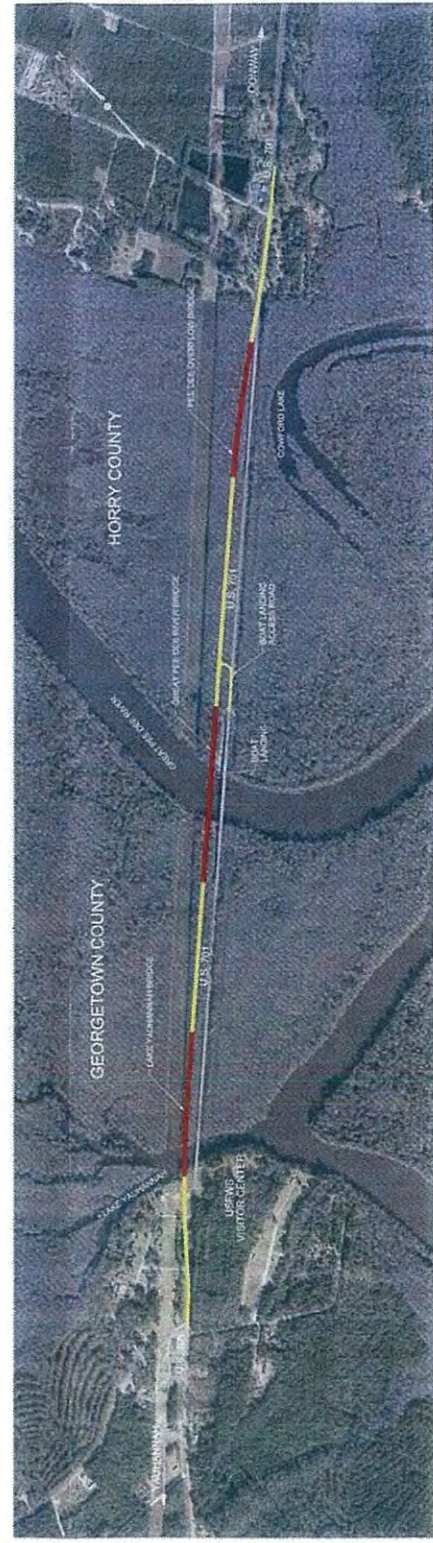




**SCDOT**  
 South Carolina Department of Transportation  
 REPLACEMENT OF US 701 BRIDGES OVER  
 GREAT PEE DEE RIVER, PEE DEE OVERFLOW  
 & LAKE VALHANNAH  
 HORRY/GEORGETOWN COUNTIES, SC

ALTERNATIVE 5 (CROSSOVER)

LEGEND:  
 PROPOSED ROADWAY  
 PROPOSED BRIDGE  
 100 YEAR FLOODED PLAIN

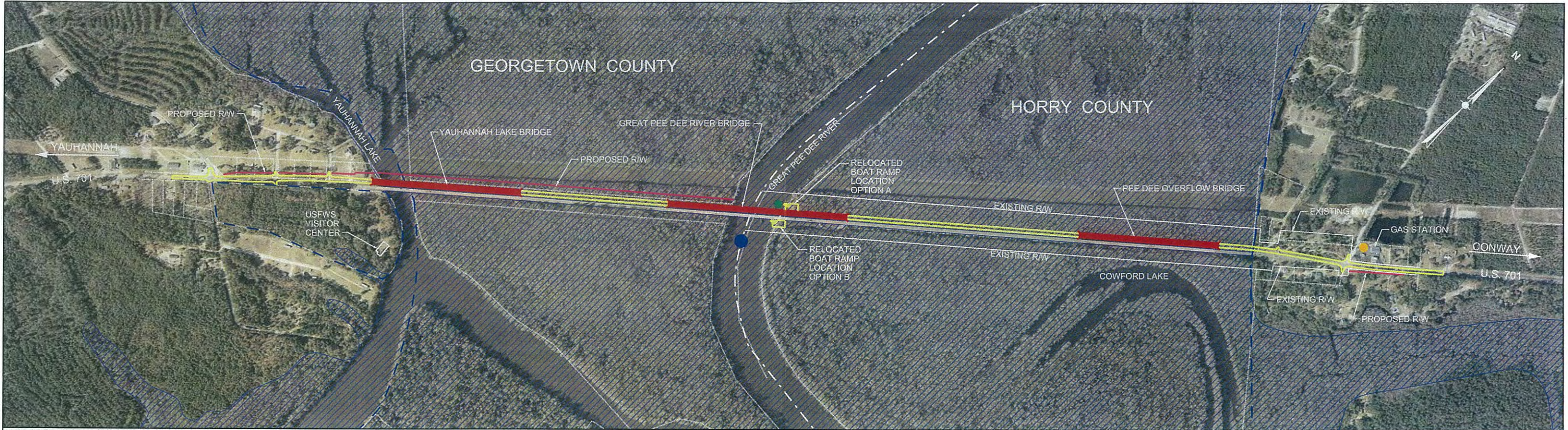


**SCDOT**  
 South Carolina Department of Transportation  
 REPLACEMENT OF US 701 BRIDGES OVER  
 GREAT PEE DEE RIVER, PEE DEE OVERFLOW  
 & LAKE VALHANNAH  
 HORRY/GEORGETOWN COUNTIES, SC

ALTERNATIVE 6 (UPSTREAM)











LEGEND:  
 PROPOSED ROADWAY  
 PROPOSED BRIDGE  
 100 YEAR FLOODED PLAIN

Figure 3 - Alternative Alignments



**PREFERRED ALTERNATIVE**

**LEGEND:**

- |  |                         |   |                                   |
|--|-------------------------|---|-----------------------------------|
|  | PROPOSED ROADWAY        |  | 100 YEAR FLOOD PLAIN              |
|  | PROPOSED BRIDGE         |  | POTENTIAL HAZARDOUS MATERIALS     |
|  | EXISTING PROPERTY LINES |  | THREATENED AND ENDANGERED SPECIES |
|  | EXISTING R/W LINES      |  | RECREATIONAL AREAS                |
|  | PROPOSED R/W LINES      |   |                                   |
|  | WILDLIFE REFUGE LIMITS  |   |                                   |



South Carolina Department of Transportation

REPLACEMENT OF US 701 BRIDGES OVER GREAT PEE DEE RIVER, PEE DEE OVERFLOW & YAUHANNAH LAKE

HORRY/GEORGETOWN COUNTIES, SC



U.S. Department of Transportation  
**Federal Highway Administration**

**Figure 4 - Preferred Alternative**



**Table 1 – Environmental Impact Matrix**

| Impact Category                                  | Impacts by Alternative |                               |  |                                 |                                 |   |                                    |
|--|------------------------|-------------------------------|--|---------------------------------|---------------------------------|---|------------------------------------|
|  | "No Build" Alternative | Alternative 1<br>72' Upstream | Alternative 2<br>55' Upstream<br>(Preferred) | Alternative 3<br>55' Downstream | Alternative 4<br>72' Downstream | Alternative 5<br>Downstream/<br>Upstream<br>Crossover | Alternative 6<br>Upstream<br>Bowed |
| <b>Property</b>                                  |                        |                               |  |                                 |                                 |   |                                    |
| Residential Relocations                          | 0                      | 3                             | 1  | 0                               | 0                               | 0   | 1                                  |
| Acreage  | 0.00 acre              | 2.30 acre                     | 0.94 acre                                    | 0.00 acre                       | 0.00 acre                       | 0.00 acre   | 0.94 acre                          |
| Residential Total Takes<br>(without relocations) | 0                      | 1                             | 0  | 0                               | 0                               | 0   | 0                                  |
| Acreage  | 0.00 acre              | 0.73 acre                     | 0.00 acre                                    | 0.00 acre                       | 0.00 acre                       | 0.00 acre   | 0.00 acre                          |
| Residential Partial Takes                        | 0                      | 3                             | 7  | 2                               | 1                               | 0   | 2                                  |
| Acreage  | 0.00 acre              | 0.37 acre                     | 1.28 acre                                    | 0.20 acre                       | 0.13 acre                       | 0.0 acre  | 0.02 acre                          |
| Commercial Relocations                           | 0                      | 0                             | 0  | 0                               | 0                               | 0   | 0                                  |
| Farmland<br>(NRCS Rating)                        | N/A                    | 147                           | 147  | 145                             | 145                             | 145/147   | 147                                |
| Floodplains                                      | N/A                    | Yes                           | Yes  | Yes                             | Yes                             | Yes   | Yes                                |
| <b>Wetlands</b>                                  |                        |                               |  |                                 |                                 |   |                                    |
| Permanent Impacts                                | 0.00 acre              | 10.88 acre                    | 9.47 acre                                    | 8.55 acre                       | 10.14 acre                      | 10.86 acre  | 15.44 acre                         |
| On Site Mitigation                               | 0.00 acre              | 0.00 acre                     | 0.00 acre                                    | 0.00 acre                       | 0.00 acre                       | 0.00 acre   | -10.00 acre                        |
| Temporary Impacts                                | 0.00 acre              | 12.06 acre                    | 11.07 acre                                   | 11.45 acre                      | 12.35 acre                      | 15.69 acre  | 15.08 acre                         |
| Streams  | N/A                    | None                          | None   | None                            | None                            | None  | None                               |
| <b>Threatened/ Endangered<br/>Species</b>        |                        |                               |  |                                 |                                 |   |                                    |
| Federal  | N/A                    | 2 <sup>(1)</sup>              | 2 <sup>(1)</sup>                             | 2 <sup>(1)</sup>                | 2 <sup>(1)</sup>                | 2 <sup>(1)</sup>                                      | 2 <sup>(1)</sup>                   |
| State Listed Species                             | N/A                    | 1                             | 1  | 1                               | 1                               | 1   | 1                                  |
| Noise (Receptors above the<br>NAC)               | 8                      |                               | 8  | 6                               |                                 |   |                                    |
| <b>Cultural Resources</b>                        |                        |                               |  |                                 |                                 |   |                                    |
| Archaeological Site 38GE18                       | N/A                    | No <sup>(2)</sup>             | No <sup>(2)</sup>                            | No <sup>(2)</sup>               | Yes                             | No <sup>(2)</sup>                                     | No <sup>(2)</sup>                  |
| <b>Section 4(F)<br/>Resources</b>                |                        |                               |  |                                 |                                 |   |                                    |
| Wildlife Refuge<br>(4(f) Programmatic)           | N/A                    | 5.14 acre                     | 3.64 acre                                    | 3.79 acre                       | 6.67 acre                       | 9.26 acre   | 8.99 acre                          |
| Cowford Lake Ecosystem                           | No                     | No                            | No   | Yes                             | Yes                             | No  | No                                 |
| Horry Co. Boat Ramp<br>(De minimis)              | N/A                    | To be<br>Relocated            | To be<br>Relocated                           | No Relocation                   | No Relocation                   | No Relocation   | No Relocation                      |
| <b>Section 6(F) Resources</b>                    |                        |                               |  |                                 |                                 |   |                                    |
| Wildlife Refuge - LWCF<br>Funded                 | N/A                    | 0.77 acre                     | 0.61 acre                                    | 2.76 acre                       | 3.32 acre                       | 2.76 acre   | 0.72 acre                          |
| Hazardous Materials                              | N/A                    | 1 <sup>(3)</sup>              | 1 <sup>(3)</sup>                             | 1 <sup>(3)</sup>                | 1 <sup>(3)</sup>                | 1 <sup>(3)</sup>                                      | 1 <sup>(3)</sup>                   |
| Permits  | N/A                    | Yes <sup>(*)</sup>            | Yes <sup>(*)</sup>                           | Yes <sup>(*)</sup>              | Yes <sup>(*)</sup>              | Yes <sup>(*)</sup>                                    | Yes <sup>(*)</sup>                 |

Notes: (1) – A seasonal construction moratorium will serve to protect the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). As a result of this measure, the project may affect, but is not likely to adversely affect, the shortnose sturgeon and the Atlantic sturgeon. No other federally threatened or endangered species will be affected.

(2) – Impact is limited to previously disturbed area

(3) – Potential for encountering petroleum contaminated soil/groundwater during construction

(\*) – Refer to the Permit section of the EA for list of permits required

*Alternative 1: 72' Upstream & Parallel Alignment*

Alternative 1 involves construction in a new parallel alignment approximately 72 feet northwest (upstream) of the centerline of the existing alignment. The major design issues associated with this alternative include the impact on properties along the upstream side of the north and south approaches, wetland impacts, relocation of the existing boat ramp, and utility relocations. Alternative 1 involves the most residential property impacts of all build alternatives with three relocations and one total property take. The acquisition from the Refuge property is more than that of Alternative 2. Wetland impacts, both permanent and temporary, are greater than those of Alternatives 2 and 3.

*Alternative 2: 55' Upstream & Parallel Alignment (Preferred)*

Alternative 2 (preferred) involves construction in a new parallel alignment approximately 55 feet northwest (upstream) of the centerline of the existing alignment. 55 feet has been established as the minimum offset distance from the existing centerline that will permit the safe operation of the existing US 701 roadway and provide adequate space for drainage provisions during construction. The major design issues associated with this alternative include the impact on properties along the upstream side of the north and south approaches, wetland impacts, relocation of the existing boat ramp, and utility relocations.

Alternative 2 (preferred) would require one (1) residential property relocation which is less than Alternative 1 and more than Alternative 3. Alternative 2 would require a total of seven partial property takes, the greatest partial takes of all build alternatives, but the acquisition from the Refuge property would be the lowest of all build alternatives. Permanent wetland impacts are the second lowest behind Alternative 3. Temporary wetland impacts are the lowest of all build alternatives. Since Alternative 2 avoids the Cowford Lake ecosystem and avoids higher quality wetlands, the project team selected Alternative 2 as the preferred alignment.

*Alternative 3: 55' Downstream & Parallel Alignment*

Alternative 3 involves construction in a new parallel alignment approximately 55 feet southeast (downstream) of the centerline of the existing alignment. Alternative 3 generally positions the new alignment along the same alignment as the original US 701 bridge, constructed circa the 1920s. The major design issues associated with this alternative include the impact on properties along the downstream side of the south approach, wetland impacts, and utility relocations. Alternative 3 would not involve the relocation of the existing boat landing, but would include improvements to the boat landing access road.

Alternative 3 would impact the least amount of total wetlands area, but those wetlands are higher quality than those impacted by Alternative 2 (preferred). Alternative 3 would also require the use of more Refuge property and would impact the Cowford Lake ecosystem.

*Alternative 4: 72' Downstream & Parallel Alignment*

Alternative 4 involves construction in a new parallel alignment approximately 72 feet southeast (downstream) of the centerline of the existing alignment. The major design issues associated with this alternative include the impact on properties along the downstream side of the south approach, wetland impacts, and utility relocations. Alternative 4 involves the second lowest impact to residential properties of all build alternatives with no relocations or total takes and a small partial take on one property, but the acquisition from the Refuge property would be the

third highest overall. Alternative 4 would also impact Cowford Lake. Permanent and temporary wetland impacts are greater than those of Alternatives 1, 2 and 3.

#### *Alternative 5: Downstream / Upstream Crossover Alignment*

Alternative 5 involves construction in a new alignment beginning on the southeast (downstream) of the existing alignment in Georgetown County, crossing over the existing alignment, and ending on the northwest (upstream) of the existing alignment in Horry County. The new bridges over Yauhannah Lake and the Great Pee Dee River would be located southeast (downstream) of the existing bridges. The bridge over the Great Pee Dee River Overflow would be located northwest (upstream) of the existing bridge. The major design issues associated with this alternative include wetland impacts, utility relocations, and maintenance of traffic/traffic closure during construction.

Alternative 5 involves the lowest impact to residential properties of all build alternatives, but the acquisition from the Refuge property would be the greatest of all the alternatives. Permanent and temporary wetland impacts are greater than those of Alternatives 2, 3 and 4, and this alternative would have the greatest temporary wetland impacts overall.

#### *Alternative 6: Upstream Bowed Alignment*

Alternative 6 involves construction in a new bowed alignment approximately 132 feet northwest (upstream) of the centerline of the existing alignment. The alignment was developed to be close to the wetland area previously disturbed by the construction of a power line. The major design issues associated with this alternative include the impact on properties along the upstream side of the south approach, wetland impacts, and utility relocations. Total wetland impacts would be greatest of all alternatives.

### **Environmental Impacts Summary**

The corridor crosses Yauhannah Lake, the Great Pee Dee River and the Great Pee Dee River Overflow, as well as extensive floodplain forested wetlands. The Waccamaw National Wildlife Refuge occupies a major portion of the project corridor. The project would result in certain modifications to the human and natural environment. However, the environmental studies indicate the absence of any major impacts on the human and natural environment. The EA document, Section IV, discusses in detail the probable beneficial and adverse social, economic, and environmental effects of the project and describes the measures proposed to mitigate any adverse impacts. The "Environmental Commitments" section of the EA describes the project commitments. Some of the highlights from the EA are summarized herein.

### **Wetlands Impacts**

Wetlands were given special consideration during development and evaluation of the project with a subsequent determination that the preferred alternative would pose the least impact to wetlands. The impacted wetlands will be less than 10 acres. SCDOT has committed to reclaiming the wetland areas temporarily lost through construction activities which will require returning disturbed areas to their original elevations to the extent practical. Detailed plans for mitigation of wetland impacts will be determined later during final design and negotiation of the terms for the Clean Water Act, Section 404 Individual Permit which is regulated by the United States Army Corps of Engineers (USACE).

With respect to wetlands, Alternative 2 (upstream - preferred) would result in approximately 1.0 acre greater permanent wetland impacts than Alternative 3 (downstream). However, based on a field analysis and observations conducted by biologists from the SCDOT and the USFWS on September 28, 2012 (letter report is included in EA, Appendix B, Page B-96), the wetlands impacted by Alternative 2 are of a lesser quality due to an old road bed running along the upstream side of the bridge. This abandoned road bed area has resulted in less potential biomass due to observations of lower populations of mature obligate wetland plant species in the floodplain. In addition, the nearby regularly maintained power line right of way keeps a large swath of wetland on the upstream side in an unnatural immature palustrine emergent wetland state. This marsh-type environment has a significantly different and less diverse biotic community than the primarily palustrine forested wetland and palustrine unconsolidated bottom wetland communities on the downstream side of the existing bridge.

One method of assessing the value and function of wetlands is in terms of wildlife habitat. The USFWS Resource Category criteria are outlined in the USFWS Mitigation Policy, 46 CFR 7644-7663. Resource categories and mitigation planning techniques are assigned based on the following criteria:

- Category 1 - Communities of one-of-a-kind high value to wildlife, unique and irreplaceable on a national or eco-regional basis, habitat is not replaceable in kind based on present-day scientific and engineering skills within a reasonable time frame.
- Category 2 - Communities of high value to wildlife, which are relatively scarce or are becoming scarce on a national, or eco-regional basis, habitat, can be replaced in kind within a reasonable time frame based on present-day scientific and engineering skills.
- Category 3 - Community types of high to medium wildlife value which are relatively abundant on a national basis, out-of-kind replacement is allowable if a tradeoff analysis demonstrates equivalency of substituted habitat type and/or habitat values. These sites are often in conjunction with a replenishing source.
- Category 4 - Community types of low to medium wildlife value, generally losses will not have a substantial adverse effect on important fish and wildlife resources. These sites have often been affected by the present roadway or human disturbances and are usually isolated.

Based on these criteria and the on-site analysis, the wetlands on the upstream side (preferred) best fit Category 4, except they are not isolated and the wetlands on the downstream side best fit Category 3 with the possibility of even some Category 2 wetlands present.

In addition to general wetland protection, the habitat on the downstream side of the bridge includes the relatively unique ecosystem around Cowford Lake. Alternative 3 (downstream) would result in additional clearing and access road construction which would eliminate most of the forested wetlands remaining between the bridges and Cowford Lake which currently serve as a natural filter for storm water runoff flowing into the lake. This forested wetland buffer strip provides an important wildlife corridor for both forest wildlife and wading birds including the federally endangered wood stork, which has been known to forage along the edge of Cowford Lake.

Although wetland impacts are unavoidable, while finalizing the design, SCDOT will work to minimize wetland impacts using design strategies. Some of those strategies include utilizing steeper (2H:1V) embankment fill slopes and utilizing, to the extent practicable, the existing causeway fill to minimize the taking of wetland throughout the project. Implementing erosion control measures and related Best Management Practices (BMPs) reflected in 23 CFR 650B, which include seeding of slopes, hay bale emplacement, silt fences, and sediment basins as appropriate, would also minimize impact to adjacent wetlands. Reclamation of wetland areas temporarily lost through construction activities will involve returning disturbed areas to their original elevations to the extent practicable and allowing for adjacent vegetation to naturally reclaim the area and/or developing and following an appropriate Invasive Species Management Plan.

In conjunction with the above minimization strategies, SCDOT will follow an acceptable plan for replacing the impacted wetlands through compensatory mitigation. The USACE is responsible for determining the appropriate form and amount of compensatory mitigation required. The Clean Water Act (Section 404) requires a permit for placing dredge or fill material in waters of the United States or the wetlands under the authority of the USACE, and the proposed project will require a Section 404 Individual Permit. SCDOT, in coordination with USFWS, plans to locate and acquire an appropriate property that will generate the compensatory mitigation credits required to compensate for unavoidable impacts associated with the proposed bridge replacements. Mitigation details will be finalized during the permit application process.

### **Water Quality**

The project will involve work within the Great Pee Dee River, Yauhannah Lake, and the forested wetlands associated with these water bodies, as well as the wetlands associated with the Great Pee Dee River Overflow. Water quality information gathered during the research portion of this project is further described in the Natural Resources Summary Report in the EA's enclosed CD. During construction activities, temporary siltation may occur in these water bodies and erosion will be of a greater degree than presently occurring on existing terrain. The contractor would be required to minimize this impact through implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400. The SCDOT has issued an Engineering Directive Memorandum (Number 23), dated March 10, 2009, regarding Department procedures to be followed in order to ensure compliance with S.C. Code of Regulations 72-400, Standards for Stormwater Management and Sediment Reduction. Exposed areas may be stabilized by following the Department's Supplemental Technical Specification for Seeding SCDOT Designation SC-M-810 (11/08). As erosion control methods necessary to curtail runoff will be employed during construction, SCDOT determined that there should be no substantial impact on water quality in the area as a result of this project.

Formerly, the Great Pee Dee River was included in SCDHEC hydrologic unit #03040201-170, which included primarily the Pee Dee River and its tributaries from the Little Pee Dee River to Winyah Bay. Recently, a SCDHEC re-designation incorporated a larger regional watershed, designated the Great Pee Dee River / Winyah Bay watershed. This watershed unit is now designated as unit #03040207-02 and was formerly units #03040201-170, #03040201-160, and a portion of #03040207-040.

The Great Pee Dee River above the US 701 bridge is listed by SCDHEC as a State impaired water for purposes of fish consumption due to mercury contamination under Section 303(d) of the Clean Water Act (2004 and 2008 listing). At the time of the earlier research, the SCDHEC water shed data for what was then hydrologic unit #03040201-170 also indicated that aquatic life uses are not supported in the Great Pee Dee River at the US 701 Bridge due to occurrences

of zinc in excess of the aquatic life acute standards. However, the recent data, for what is now unit #03040207-02, shows that aquatic life uses are fully supported (SCDHEC Water Quality Standards and Water Shed Planning Section; SCDHEC Bureau of Water, 2005/2009). Recreational uses are fully supported.

The proposed project will require a Clean Water Act Section 401 Water Quality Certification. SCDHEC administers the certification concurrently during the USACE Section 404 permitting process. Certification is required for activities permitted by the USACE for construction occurring in navigable waters or discharge of dredged or fill material into the State's waters. This certification assures the project would comply with state water quality standards.

### **Section 4(f) Resources**

The US Department of Transportation Act (DOT Act) of 1966 included a special provision, Section 4(f), which established the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. FHWA regulations provide guidance for coordinating with the agencies that manage these resources. The requirements of Section 4(f) apply to the proposed project because the preferred alternative would require the use of land from the Refuge and the Horry County Public Boat Landing.

#### *Waccamaw National Wildlife Refuge*

In regards to the impacts to the Refuge, SCDOT, FHWA and USFWS have coordinated and will continue to coordinate during planning and preliminary engineering of the proposed project. Although, Alternative 3 (downstream) would have the least wetland impacts, in order to avoid the Cowford Lake ecosystem (which is the focus area of the Refuge) and the higher quality wetlands on the downstream side of the existing US 701 alignment, the Biologists from SCDOT and USFWS jointly recommended that the new alignment should be located to the upstream side of the existing US 701. For Alternative 2 (upstream - preferred), permanent impacts to the Refuge include the purchase and use of approximately 4.25 acres of land parallel to and directly adjacent to the existing US 701 alignment. This will be less than 1% of the total Refuge property (+/- 27,000 acres). Coordination with the Refuge therefore meets the applicability requirements for Programmatic Section 4(f) Evaluation and Approval, established by the FHWA. FHWA and SCDOT coordinated with USFWS to determine a plan for addressing the potential impacts and mitigation measures for the Refuge. The mitigation measures are listed below.

- Move New US 701 alignment to the upstream of the current alignment to minimize the possible impacts to the Cowford Lake ecosystem.
- Add a left turn lane on US 701 at the Entrance of the Refuge Visitor Center. The addition of a left turn lane will enhance the safety at this location and encourage use by citizens for many years to come.
- Monitor Archaeological Site 38GE18 during ground disturbing construction activities. A large portion of this site has been severely damaged or destroyed. However, a 20-foot wide strip on the Refuge property is intact and contributes to the National Register eligibility of the site. All parties with jurisdiction over this site coordinated and recorded this and other commitments in a Memorandum of Agreement. The EA, Appendix B Page B-124 includes a copy of the Memorandum of Agreement signed by the FHWA, the SCDOT, the USFWS, the Catawba Indian National Tribal Historic Preservation Office, and the South Carolina State Historic Preservation Office.

- Provide compensatory mitigation by paying an agreed upon lump sum amount that the Refuge can use to purchase replacement property.

The Refuge should experience no net loss as a result of SCDOT's above mentioned plans to mitigate for the proposed action. The use of the Refuge will therefore continue for its intended purpose. Information related to these findings and details of the ongoing coordination with USFWS are included in the Programmatic Section 4(f) Evaluation and the Programmatic Section 4(f) Checklist which are included in the EA, Appendix A.

#### *Horry County Public Boat Landing*

The Horry County Public Boat Landing is another public recreation area which is located beneath the existing US 701 Great Pee Dee River Bridge. With the selection of the preferred alternative, this boat landing will be relocated and a new access road will be constructed. The SCDOT commits to keep the boat ramp accessible, to the extent practical, during construction. Any parking areas impacted by construction will be reconstructed as necessary. Horry County concurred with the proposed action, and the concurrence letter is included in the EA, Appendix B Page B-113. In accordance with FHWA guidelines, a Section 4(f) *De minimis* use checklist was prepared for the Horry County Public Boat Landing. A copy of the Section 4(f) *De minimis* Use Checklist and Evaluation is included in the EA, Appendix B, page B-109.

#### **Threatened and/or Endangered Species**

Biologists from the project team conducted field reviews on several occasions so search for species listed by USFWS as threatened or endangered for Georgetown and Horry Counties. None of the listed species were observed during field surveys. The information collected was compiled into one general Biological Assessment Report which is included in the EA, Appendix B, Page B-2. It is known however that the Atlantic and shortnose sturgeon (*Acipenser oxyrinchus oxyrinchus* and *Acipenser brevirostrum*) do exist in the Great Pee Dee River, and SCDOT commits to implement a seasonal moratorium for all in water work between January 1 and April 15 and commits to not impede more than 50% of the channel during the months of January through April. In conjunction with this commitment, SCDOT determined that the project may affect, but is not likely to adversely affect, the Atlantic and shortnose sturgeon. Coordination with and concurrence from NOAA Fisheries is included in the EA, Appendix B, Pages B-32 through 40. For all other listed species, SCDOT determined that the proposed project will have no effect upon threatened or endangered species or critical habitats currently listed by the USFWS. USFWS's concurrence with this determination is included in the EA, Appendix B, Page B-94.

#### **Terrestrial and Aquatic Wildlife**

Since the project corridor includes almost two miles of forested wetland habitat as well as riverine and deepwater habitat, the project team carefully considered impacts to terrestrial and aquatic wildlife. Details of findings are included in the Natural Resources Summary Report included in the EA's enclosed CD. All three proposed bridges will be longer than the existing bridges, and furthermore, the bridge spans for all three bridges will be generally longer than the existing bridge spans. This longer bridging, combined with removal of some of the existing causeway fill will permit greater opportunity for wildlife passage. Through the use of required BMPs, erosion control methods necessary to curtail runoff during construction, and the use of SCDOT designated seeding techniques; there should be no substantially increased impact on

water quality in the area as a result of this project. Therefore, major impacts to aquatic wildlife are not expected.

Alternative 2 (downstream - preferred) is located parallel and adjacent to the existing alignment and uses new roadway fill overlapped with the existing fill. The aquatic wildlife would not be further fragmented by not placing an independent embankment further away. No other bridging is located over the Great Pee Dee River system in this area except for the US 378 bridge, located approximately 24 miles to the northwest, the US 378 bridge over the Little Pee Dee River, located approximately 13 miles northwest, or the US 17 bridge over the Waccamaw River, located approximately 21 miles to the south-southwest. Except for the existing US 701 bridging and causeways, the bottomland forest and swamp habitat continues relatively uninterrupted for many miles upstream and downstream, providing habitat for a number of species.

Effects to threatened and endangered species such as the the Atlantic and shortnose sturgeon are discussed in the above section. Although these may, or may not, be listed by USFWS as threatened and/or endangered, SCDNR maintains a list of South Carolina's rare, threatened, and endangered species.

Of those listed only by SCDNR, the Rafinesque's big eared bat (*Corynorhinus rafinesquii*) has been known to occur beneath the Great Pee Dee River Overflow Bridge and the Yauhannah Lake Bridge. The bats are known to prefer concrete girder bridges over flat slab bridges so the proposed bridges will be of similar construction and will provide similar habitat. If existing bridge demolition activities are expected to occur in late fall to early winter which is the typical maternal roosting period of the Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), prior to performing demolition work during this period, the SCDOT district personnel/contractor will coordinate with SCDOT Environmental Management Office to prepare an appropriate plan to minimize interference with maternal roosting. Such a plan could include temporary moratoriums that limit certain activities and/or methods to prevent roosting, such as netting or other physical barriers. The plan would also contain provisions for monitoring for maternal roosting activities.

The swallow tailed kite (*Elanoides forficatus*) is a federal species of concern and an SCDNR endangered species, which is also known to exist in the vicinity of the project corridor. The swallow tailed kite is the focal point of the Refuge. According to information provided by the Refuge manager, as documented in the Natural Resources Summary Report, the kite is known to use the wooded swamp around Cowford Lake (downstream of existing US 701) as a nesting area. Alternative 2 (upstream - preferred) would keep the new alignment further away from Cowford Lake in relation to the current alignment. This placement will reduce the roadway noise level around Cowford Lake, and the ecosystem around Cowford Lake as well as the swallow tailed kite's habitat would be better protected with Alternative 2.

During field reviews, SCDOT biologists noticed the nests of barn swallows (*Hirundo rustica*). The nesting season of the barn swallows occurs from mid-May through August. The Department will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds, such as the barn swallows, and destroying their active nests. Prior to construction/demolition of the bridges the district personnel/contractor will coordinate with SCDOT Environmental Management Office to determine if there are any active nests on the bridge. After this coordination, it will be determined whether construction/demolition can begin. After construction/demolition has begun, measures can be taken to prevent birds from nesting, such as netting, noise producers, and etc. If during construction or demolition a nest is observed on the bridge that was not discovered during the biological surveys, the contractor will cease work and immediately notify the SCDOT Environmental Management Office. SCDOT biologists will determine whether the nest is active and the species utilizing the nest. After this



coordination, it will be determined whether construction/demolition can resume or whether a temporary moratorium will be put into effect.

By implementing the above mentioned strategies, no impacts to terrestrial or aquatic wildlife are expected.

### **Navigable Waters**

The construction of the proposed Great Pee Dee River Bridge will require a USCG Bridge Permit in compliance with Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. The existing structure, over the Great Pee Dee River's navigational channel, is a fixed-span bridge with a vertical clearance of approximately 37 feet above mean high water (NAVD 88) and a horizontal clearance of approximately 110 feet between the concrete bridge supports. The depth of the navigational channel is approximately 16.5 feet below mean low water. The proposed fixed-span bridge will at least provide equivalent navigational clearances.

In a letter dated December 4, 2009 addressed to the Federal Highway Administration, the United States Coast Guard (USCG) confirmed that its research and examination indicated that the Great Pee Dee River is navigated by vessels greater than 21 feet in length both upstream and downstream of the proposed site. A copy of the letter is included in the EA, Appendix B, Page B-52. In this letter, the USCG advised that the proposed bridge over the Great Pee Dee River will require approval of the proposed location and plan through the issuance of a Coast Guard Bridge Permit. The letter also stated that, in accordance with 23 CFR Part 650 (*Bridges, Structures, and Hydraulics*), Subpart H (*Navigational Clearances for Bridges*), section 650.805 (*Bridges not requiring a USCG permit*), Coast Guard bridge permits will not be required for the proposed US 701 replacement bridges over the Great Pee Dee River Overflow and Yauhannah Lake,

A permit for construction in state navigable waters, issued by the SCDHEC, is required for activities occurring in or above state navigable waters. State navigable waters include waters that may be navigated by small pleasure or fishing boats. The permits required by Sections 404 and 401 would serve as the state navigable waters permit and no separate application would be required.

During construction of the new bridge, SCDOT will ensure that there will be no unreasonable interference with navigation. Upon completion of the new bridge and the shifting of traffic onto the new bridge, the existing bridge will be removed in its entirety. The piers and substructures of the existing bridge as well as the piers of a previous bridge will be removed to the natural river bottom in accordance with SCDOT standard specifications (Section 202.4.2.4).

Based on all of the information gathered to date, such as but not limited to public meetings, property owner interviews, and land use plans, SCDOT determined that the project design will meet the reasonable needs of navigation for this section of the Great Pee Dee River.

### **Floodplains**

The one-dimensional hydraulic model was developed for the natural, existing, and proposed conditions to measure the potential impacts from the project. A hydrological analysis of the watershed was completed to estimate design flows and project surveys and mapping were used to develop the hydraulic model. The existing conditions include a total of 4,363 feet of total bridge length, including a 1,603 foot bridge at the Great Pee Dee River. The proposed bridge configuration includes a total bridge length of 4,593 feet including a 1,770 foot bridge at the Great Pee Dee River. The proposed bridges will also include longer spans which reduce future

obstructions, or bridge supports, within the floodplain. The increase in bridge length as well as the increased efficiency in bridge spans will reduce backwater for the proposed conditions. These measures will reduce the impacts within the waterway and floodplain area.

The existing 100-year high water flood elevation is 16.9' (NAVD 88) above mean sea level with 0.4' of backwater, and the proposed 100-year high water flood elevation is 16.8' (NAVD 88) with 0.3' of backwater. The one-dimensional hydraulic study with the Floodplains Checklist (included in the EA's enclosed CD) for the proposed condition therefore resulted in a backwater of less than 1.0 foot for the 100-year flood, therefore, satisfying FEMA and SCDOT criteria. As the project design is completed, a two-dimensional analysis will be developed to provide additional necessary design data for the project.

The project will not be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an appreciable environmental impact on this base floodplain as documented in the hydraulic analysis report. According to U.S. Department of Transportation (USDOT) Order 5650.2, Floodplain Management and Protection, "Expansion of a facility already located within a floodplain usually would not be considered a significant encroachment." The USDOT Order 5650.2 further defines a significant encroachment as involving one or more of the following impacts:

1. A considerable probability of loss of human life,
2. Likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility, and
3. A notable adverse impact on natural and beneficial floodplain values.

As documented in the hydraulic study, the level of risk associated with the probable area of flooding and its consequences attributed to this encroachment is not any greater than that associated with the present roadway. The proposed alternative increases the total bridged area within the floodplain, thus reducing the backwater from the existing roadway and bridge conditions. The project should therefore be eligible for a "no-rise" certification.

### **Relocations/Right of Way Impacts**

Based on preliminary design plans for Alternative 2, the preferred alternative, the project would require more than 2 acres of new right-of-way from private landowners as well as one residential relocation. The preferred alternative would also require the purchase and use of Refuge property, and mitigation for this use is described further in the "Section 4(f) Resources" paragraph above.

The potential relocation is based on preliminary design. Design plans were developed to avoid acquisition and relocation impacts to the extent practical. Property owners will be compensated for acquired property in accordance with SCDOT policy and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The SCDOT will provide to the displacees full benefits accorded under the Act. This includes fair market value for the acquired property.

### **Farmland**

Through the use of county farmland listings provided by the Natural Resources Conservation Service (NRCS), it has been determined that the project area does include areas of statewide importance so a Farmland Conversion Impact Rating Form SCS-CPA-160 has been completed for the project corridor. The score computed for this proposed action is 147. As the total points are less than 160, neither consideration of alternative sites nor additional studies for the study

area are required under the Farmland Protection Policy Act of 1981. Typically, farmland soils do not include land already in or committed to urban development or water storage. The proposed project corridor is not currently being farmed and is not currently serving, nor is it expected to serve agricultural uses. Impacts to important farmland soils are, therefore, not anticipated as part of this project.

### **Noise Impacts**

In accordance with the Code of Federal Regulations (CFR) Section 23, Part 772 which contains the FHWA's traffic noise standards, traffic noise impacts were predicted for this project. The results of the traffic noise analysis indicate that traffic related noise impacts would occur to eight (8) receivers under the 2032 Build Alternative 2 and six (6) receivers under the 2032 Build Alternative 3. However, eight (8) receivers would be impacted under the 2032 No-Build Alternative. No receivers in the project area would substantially exceed the FHWA noise abatement criteria. Noise abatement measures were evaluated for this project but were found not to be acoustically feasible since it would not provide at least a 5 dBA noise reduction to impacted receivers due to the number of required access breaks.

The major construction elements of this project are expected to be earth removal, hauling, grading, paving, and pile driving. General construction noise impacts, such as temporary speech interference for passers-by and those individuals living or working near the project, can be expected particularly from pile driving, paving operations, and earth moving equipment during construction. However, considering the relatively short-term nature of construction noise and the likely limitation of construction to daytime hours, these impacts are not expected to be substantial. The contractor would be required to comply with applicable local noise ordinances and OSHA regulations concerning noise attenuation devices on construction equipment.

### **Cultural Resources**

The project team conducted a review of archaeological, historic and cultural resources for the project corridor. The Cultural Resources Survey, included in the EA's enclosed CD, identified one Historic Site, 38GE18. This site extends on both sides of US 701 on the southeastern side of Yauhannah Lake. A large portion of this site has been severely damaged or destroyed, but a 20-foot wide strip on the Refuge property is intact and contributes to the National Register eligibility of the site. No adverse effects to site 38GE18 are anticipated from this project; however, the Department has committed to monitoring of the site by one of the Department's archeologists during ground disturbing construction activities. If any significant portion of the site is encountered, the construction activities in that area will be halted. All parties with jurisdiction over this site coordinated and recorded this and other commitments in a Memorandum of Agreement. The EA, Appendix B Page B-124 includes a copy of the Memorandum of Agreement signed by the FHWA, the SCDOT, the USFWS, the Catawba Indian National Tribal Historic Preservation Office, and the South Carolina State Historic Preservation Office.

### **Hazardous Materials**

The project team prepared a Hazardous Material / Waste Site Assessment for the project corridor, and the report is included in the EA's enclosed CD. The Pee Dee Grocery, located near the northeastern terminus of the project corridor, is a registered UST site, and it has known Underground Storage Tanks (USTs). The Site Assessment also reported several Above Ground Storage Tanks (ASTs) in the northwestern part of the corridor.

It is the SCDOT's practice to avoid the acquisition of USTs and other hazardous waste materials if at all possible. If soils that appear to be contaminated with petroleum products are

encountered during construction at the bridge, SCDHEC would be informed. If avoidance were not a viable alternative, tanks and other hazardous materials would be tested and removed and/or treated in accordance with the United States Environmental Protection Agency (EPA) and SCDHEC requirements. Costs necessary for cleanup would be taken into consideration during the right-of-way appraisal and acquisition process for the selected Build Alternative.

## **Air Quality**

Both Georgetown and Horry Counties are currently in attainment with all air quality standards set by the Clean Air Act and in regional compliance with National Ambient Air Quality Standards (NAAQS). As a result of meeting all air quality standards the county is not subject to transportation conformity and additional air quality analysis is not required. The preferred alternative is included in the STIP (August 15, 2013, page 23) and would be consistent with the goals set forth in the STIP, and the proposed alternative would not be expected to increase the amount of air pollution to the extent that the region would be in non-attainment.

In addition to regulation of "criteria" pollutants, the FHWA provides guidance on addressing mobile source air toxics (MSATs) in the environmental review process for highway projects. The purpose of this project is to eliminate structural deficiency and functional obsolescence by constructing three replacement bridges along US 701. This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

## **Land Use**

On the Horry County side, most of the project corridor is zoned Commercial Forest / Agricultural (CFA). At the northeastern end of the corridor, small sections of land are zoned Residential District (MSF 10) and Highway Commercial District (HC). The residential portions of the corridor are single family residential. The future land use map for Horry County indicates US 701 to be a rural corridor through a scenic and conservation area. The Horry County future land use map does not indicate any future significant development in the planned corridor.

On the Georgetown County side, most of the project corridor area is zoned Conservation Preservation District (CP). The area along the northwest side of the southwest portion of the corridor is zoned Planned Development Unit (PD). The Yauhannah Bluff property is zoned Forest Agriculture District (FA). The Georgetown County future land use map indicates the area around the Great Pee Dee River and Yauhannah Lake to be conservation/preservation and the area to the southwest of this to be low density residential. The Georgetown County future land use map does not indicate any future significant development in the planned corridor.

A major portion of the project corridor traverses the Waccamaw National Wildlife Refuge, which in the area of the corridor, is predominantly forested wetland. The Refuge is adjacent to US 701 on both sides of the roadway. In 1997, a Final Environmental Impact Statement (FEIS) was

prepared for the proposed establishment of the Waccamaw National Wildlife Refuge by the USFWS. In the FEIS, USFWS proposed to establish the refuge in the vicinity of the Great Pee Dee and Waccamaw Rivers in Georgetown, Horry and Marion Counties, South Carolina. The Purposes of the proposed refuge would be to (1) protect and manage diverse habitat components within an important coastal river ecosystem for the benefit of endangered and threatened species, freshwater and anadromous fish, migratory birds, and forest wildlife, including a wide array of plants and animals associated with bottomland hardwood habitats; and, (2) provide compatible wildlife-dependent recreational activities including hunting, fishing, wildlife observation, photography, and environmental education and interpretation for the enjoyment of present and future generations.

The proposed project is consistent with current land uses in the area. The existing two-lane bridges and roadways will be replaced by new two-lane bridges and roadways adding no additional travel lanes or medians. After the project is completed, the corridor would look similar in character and nature as it does today. The project is not expected to adversely impact development potential in the area.

### **Social and Economic Impacts**

Through interviews and during public meetings, the project team recognized that many local citizens cross the Great Pee Dee River daily to work and to access goods and services. It is also apparent that commercial trucks, such as logging trucks, use US 701 to access the industries in both Conway and Georgetown. If the existing bridges were closed, the available detour routes add more than 30 miles to a one-way commute. Since the proposed project will maintain this connection during and after construction, SCDOT expects no social and/or economic impacts.

The project team evaluated the proposed project in accordance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations). According to 2005 – 2007 census data approximately 36.5% of the population of Georgetown County is minority and approximately 19.5% of the population of Horry County is minority. The project area is located in a rural portion of both counties. The Bucksport community, located near the northern portion of the project, has a population of approximately 1,117, based on the 2000 census. The per capita personal income for Georgetown County was \$22,513 and the per capita personal income for Horry County was \$23,829. The median family income for Georgetown County was \$51,069 and the median family income for Horry County was \$49,084. The Bucksport community is 97.8% minority (2000) with 20.9% of individuals below the poverty level, as compared to the overall Horry County figure of 12%. No specific census information was readily available for Yauhannah, located near the southern portion of the project. Based on the need to maintain a direct connection between the local communities, the project is not expected to specifically benefit, harm, or disproportionately impact any social group, including elderly, handicapped, non-drivers, minority, or ethnic groups.

### **Wild and Scenic Rivers**

None of the water bodies affected by the US 701 Bridge replacement project are federally listed as wild and scenic rivers. However, the Great Pee Dee River, from the US 378 Bridge at Florence / Marion Counties to the US 17 Bridge in Georgetown is included in the SCDNR State Scenic River Program.

## **Invasive Plant Species**

Invasive plant species are those that have been introduced into an environment in which they did not evolve; and, therefore have no natural enemies to limit their reproduction and spread. Many of these species are considered noxious weeds and even some native plants can be considered invasive species. Transportation projects result in the disturbance of vegetated areas, which can allow invasive plant species to overtake an area when re-vegetation occurs. However, Best Management Practices (BMPs) are used to reduce the introduction or spread of invasive species.

SCDOT will comply with the intent of Presidential Executive Order (EO) 13112 regarding Invasive Species by formulating a plan to actively re-plant native vegetation for all temporarily disturbed areas. The plan will include planting fast growing, locally native plant species to minimize the potential for establishment of aggressive, invasive species.

## **Permits**

The project will require the following permits and certifications:

- **Wetlands – Section 404 Permit:** The Clean Water Act (Section 404) requires a permit for placing dredge or fill material in waters of the United States or wetlands under the authority of the United States Army Corps of Engineers (USACE). Further discussions are included in the Wetlands subsection (EA, Page 34).
- **Water Quality Certification – Section 401:** The proposed project will require Clean Water Act Section 401 Water Quality Certification. Further discussions are included in the Water Quality subsection (EA, Page 32).
- **Coastal Zone Consistency Determination:** As a division of SCDHEC, the Office of Ocean and Coastal Resource Management (SCDHEC-OCRM) is responsible for protecting the State's coastal zone and critical areas. The coastal zone includes all lands and waters in the eight coastal counties of South Carolina. The critical areas are the coastal waters, tidelands, beaches and beach/dune systems. The proposed project is located in a coastal county, but is not expected to involve impacts to critical areas. Therefore, SCDHEC-OCRM must provide a consistency determination to ensure the project would be consistent with the local management program.

The wetland permit (Section 404) along with the concurrent Section 401 Water Quality Certification, issued by the SCDHEC Bureau of Water, and the Coastal Zone Consistency Determination, issued by the SCDHEC-OCRM, will be addressed through a joint application process, with the Corps of Engineers as the lead agency.

- **US Coast Guard Bridge Permit:** The construction of the proposed Great Pee Dee River Bridge will require a USCG Bridge Permit in compliance with Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. Further discussions are included in the Navigable Waters subsection (EA, Page 38).
- **NPDES Construction General Permit:** A National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act will be required

for construction activities. The SCDHEC is responsible for managing the NPDES program to assure stormwater runoff during construction will not have an adverse effect on water quality.

### **Project Coordination**

Throughout development of the project, coordination has occurred with state and federal regulatory and resource agencies. A Letter of Intent (LOI) announcing the proposed project was distributed on December 17, 2004. Since that time there have been numerous meetings to coordinate comments between SCDOT and other agencies. Appendix B of the approved EA includes the LOI's and agency responses that were received, and the EA, Section V, contains details of coordination efforts. In fact USFWS and USCG cooperated during preparation of the EA and provided quality assurance reviews prior to finalizing the EA. SCDOT and FHWA will continue to coordinate with USFWS and USCG for the entire duration of the project. FHWA and SCDOT also presented the preferred alignment at the Agency Coordination Effort (ACE) meeting on September 13, 2012, and meeting notes are included in the EA, Appendix B, Page B-221.

### **Public Involvement**

*Public Information Meeting:* On June 17, 2008, an informal drop-in format public meeting was held from 4:00 pm to 6:00 pm at the Mt. Tabor Baptist Church at the intersection of US 701 and Tabor Drive in Yauhannah. Approximately 127 people attended the meeting, and meeting sign-in sheets and comment forms are included in the EA, Appendix B, beginning on Page B-234. Most of the citizen comments were in favor of the bridge replacement project. Most of the citizens in attendance recognized the need for the bridge replacement for safety reasons, and most also agreed that, due to the considerable traffic detour that would result from closing existing bridges, the existing bridges should stay open during construction of the project.

*Public Hearing 1:* On November 10, 2009, from 6:00 p.m. to 8:00 p.m., SCDOT hosted a Location and Design Public Hearing at the Mount Tabor Baptist Church in Yauhannah. Just over fifty (50) citizens attended the hearing which included an informal question and answer period as well as a formal recorded period that included SCDOT's verbal presentation and one (1) person's verbal comments. One (1) person issued a written comment at the hearing, and one (1) person submitted a letter containing comments. SCDOT also received two (2) letters from regulatory agencies containing comments. The lone citizen that submitted the written comment supported the project as well as keeping the existing bridges open during construction. The public hearing transcript as well as the written comment and letters, and SCDOT's written responses are included in the EA, Appendix B, beginning on Page B-251.

*Public Hearing 2:* Following availability and advertisement of the Environmental Assessment, approved July 31, 2013, SCDOT hosted a Combination Location and Design Public Hearing at the Waccamaw National Wildlife Refuge located at 21424 N. Fraser Street, Georgetown, South Carolina. 78 individuals from the public signed the attendance sheets, and two (2) individuals issued formal verbal comments. No (0) written comments were received at the hearing and three (3) written comments were received from regulatory agencies during the 15-day comment period following the hearing. Both formal verbal comments supported the project, and commenters encouraged SCDOT to act sooner than later. One of those comments also requested maintenance of the existing bridges and causeways because the commenter noticed issues with dense vegetation and standing water. The project team forwarded this comment to SCDOT's local maintenance offices.

A copy of the Public Hearing Certification package is included in the Appendix of this FONSI.

### Agency Comments

In accordance with 23 CFR 771.119(d), following advertisement of EA availability and the 30-day comment period, three (3) written comments were received from regulatory agencies. Most of these comments acknowledged the Environmental Commitments that SCDOT and FHWA are agreeing to implement. Further compliance with the commitments will be coordinated during the permits application process.

### Preferred Alternative Impact Summary

Table 2 summarizes direct human and natural environment impacts related to the preferred alternative.

**Table 2 – Preferred Alternative Impacts**

| Impact Category                               | Alternative 2 55' Upstream (Preferred) |
|---|--|
| <b>Property</b>                               |  |
| Residential Relocations                       | 1                                      |
| Acreage                                       | 0.94 acre                              |
| Residential Total Takes (without relocations) | 0                                      |
| Acreage                                       | 0.00 acre                              |
| Residential Partial Takes                     | 7                                      |
| Acreage                                       | 1.28 acre                              |
| Commercial Relocations                        | 0                                      |
| Farmland (NRCS Rating)                        | 147                                    |
| Floodplains                                   | Yes                                    |
| <b>Wetlands</b>                               |  |
| Permanent Impacts                             | 9.47 acre                              |
| On Site Mitigation                            | 0.00 acre                              |
| Temporary Impacts                             | 11.07 acre                             |
| Streams                                       | None                                   |
| <b>Threatened/ Endangered Species</b>         |  |
| Federal                                       | 2 <sup>(1)</sup>                       |
| State Listed Species                          | 1                                      |
| Noise (Receptors above the NAC)               | 8                                      |
| <b>Cultural Resources</b>                     |  |
| Archaeological Site 38GE18                    | No <sup>(2)</sup>                      |
| <b>Section 4(F) Resources</b>                 |  |
| Wildlife Refuge (4(f) Programmatic)           | 3.64 acre                              |
| Cowford Lake Ecosystem                        | No                                     |
| Horry Co. Boat Ramp (De minimis)              | To be Relocated                        |



| Section 6(F) Resources        |                  |
|-------------------------------|------------------|
| Wildlife Refuge - LWCF Funded | 0.61 acre        |
| Hazardous Materials           | 1 <sup>(1)</sup> |
| Permits                       | Yes <sup>*</sup> |

Notes: (1) – A seasonal construction moratorium will serve to protect the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). As a result of this measure, the project may affect, but is not likely to adversely affect, the shortnose sturgeon and the Atlantic sturgeon. No other federally threatened or endangered species will be affected.

(2) – Impact is limited to previously disturbed area

(3) – Potential for encountering petroleum contaminated soil/groundwater during construction

(\*) – Refer to the Permit section of the EA for list of permits required

### Project Commitments

The FHWA and SCDOT worked closely together, in cooperation with USFWS, to incorporate suggestions from citizens and regulatory and resource agencies to avoid and minimize impacts to the surrounding human and natural environments during the project's design and development. Project commitments to avoid and minimize impacts include:

- 1) SCDOT will employ the following avoidance measures regarding both the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*):
  - a) A seasonal construction moratorium for all in-water work related to the bridge replacement project will be implemented for the period of January 1 through April 15. In-water work is defined as any activity (e.g. excavation, fill, pile driving, drilled shaft construction) that could result in the physical destruction or alteration of important spawning habitats. During the moratorium, the contractor would be allowed to work from a barge in order to construct columns, caps, and bridge superstructure. The contractor would be allowed to move barges between shafts during the moratorium; however, barges must be secured by cables as placement of spuds to secure barges will not be allowed during the moratorium. Equipment and materials used during the construction of the bridge will not obstruct or impede passage through more than 50 percent of the channel. This restriction will allow the migratory pathway to remain open while both shortnose sturgeon and Atlantic sturgeon are likely to be migrating, see the EA, Page 31.
- 2) Standard sediment control measures will be implemented by the contractor, see the EA, Page 32.
- 3) The stipulations outlined in the Memorandum of Agreement (MOA), located in the EA, Appendix B Page B-124, between the Department, the State Historic Preservation Office (SHPO), the Federal Highway Administration (FHWA), the United States Fish and Wildlife Service (USFWS), and the Catawba Indian Nation Tribal Historic Preservation Officer (CIN-THPO), dated 6/20/2012 will be implemented by the Department. They are:
  - a) The southern bridge approach has substantially impacted a small portion of 38GE18. The project's "area of potential effect" will be limited to this area. To protect the adjacent intact portion of 38GE18, the FHWA and SCDOT will ensure that the boundaries of archaeological site 38GE18 are identified as a "Restricted

Area” on all construction plans. The construction plans will include the following notation, “no ground-disturbing activities, including construction, heavy equipment access, and storage for equipment and materials are allowed within the Restricted Area.” SCDOT will also inform the selected contractor about these restrictions at the Pre-Construction meeting where all special provisions are discussed.

- b) SCDOT’s contractor will erect orange tree-saving fencing at the edge of the project’s construction limits within the boundaries of archaeological site 38GE18 to clearly indicate the location of the “Restricted Area” as shown on the construction plans.
- c) All construction activities within the boundaries of archaeological site 38GE18 will be monitored by a professional archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards for Archaeology. (48 FR 44738-39).
- d) SCDOT will provide the FHWA, the USFWS, the SHPO, and the CIN-THPO with a written report that describes the results of monitoring activities.

All work within the boundaries of archaeological site 38GE18 will cease immediately if unanticipated cultural materials or human skeletal remains are discovered during construction monitoring activities. SCDOT will immediately inform the USFWS, the FHWA, the SHPO and the CIN-THPO about the late discovery.

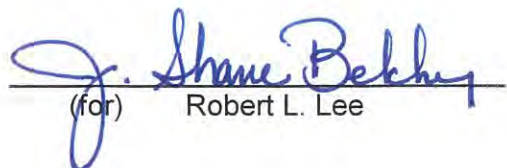
- 4) The stipulations outlined in the letter to Horry County, dated October 22, 2012, regarding the Horry County public boat landing will be implemented by the Department. With the selection of the preferred alternative, the boat landing will be removed and relocated. But at times that are safe and practical, SCDOT maintains its previous commitment of keeping the existing or the relocated boat ramp accessible during construction. See the EA, Appendix B, Page B-113.
- 5) The general conditions and specifications for an Individual Permit from the Corps of Engineers for wetland encroachment will be implemented. See the EA, Page 40.
- 6) The contractor will utilize 2:1 slopes in wetland areas where appropriate, and reclamation of wetland areas temporarily lost through construction activities will involve returning disturbed areas to their original elevations to the extent practicable, allowing for adjacent vegetation to naturally reclaim the area, see the EA, Page 37.
- 7) To mitigate for unavoidable wetland impacts, SCDOT will follow the Corps of Engineers SOPs to locate and acquire an appropriate property that will generate the compensatory mitigation credits required to compensate for unavoidable impacts associated with the proposed bridge replacements, see the EA, Page 37.
- 8) SCDOT will comply with the intent of Presidential Executive Order on Invasive Species 13112, of February 3, 1999, by formulating a plan to actively re-plant native vegetation for all temporarily disturbed areas. The plan will include planting fast growing, locally native plant species to minimize the potential for establishment of aggressive, invasive species, see the EA, Page 38.
- 9) The Department will test the UST sites along the project corridor for potential contamination before construction begins, see the EA, Page 55.

- 10) SCDOT will provide noise data to local authorities.
- 11) Coast Guard permit will be obtained, see the EA, Page 40.
- 12) The Department will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests. Prior to construction/demolition of the bridges the district personnel/contractor will coordinate with SCDOT Environmental Management Office to determine if there are any active nests on the bridge. After this coordination, it will be determined whether construction/demolition can begin. After construction/demolition has begun, measures can be taken to prevent birds from nesting, such as netting, noise producers, and etc. If during construction or demolition a nest is observed on the bridge that was not discovered during the biological surveys, the contractor will cease work and immediately notify the SCDOT Environmental Management Office. SCDOT biologists will determine whether the nest is active and the species utilizing the nest. After this coordination, it will be determined whether construction/demolition can resume or whether a temporary moratorium will be put into effect, see the EA, Page 46.
- 13) If existing bridge demolition activities are expected to occur in late fall to early winter, which is the typical maternal roosting period of the Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), prior to performing demolition work during this period, the district personnel/contractor will coordinate with SCDOT Environmental Management Office to prepare an appropriate plan to minimize interference with maternal roosting. Such a plan could include temporary moratoriums that limit certain activities and/or methods to prevent roosting, such as netting or other physical barriers. The plan would also contain provisions for monitoring for maternal roosting activities, see the EA, Page 45.
- 14) In order to mitigate for impacts to the Waccamaw National Wildlife Refuge, as detailed in the EA, Page 59, SCDOT commits to:
  - a) Construct a southbound left turn lane at the Visitors' Center access drive.
  - b) Relocate and reconstruct the Visitors' Center access drive as necessary to maintain safe access.
  - c) Provide appropriate payment for purchasing property to mitigate the right of way acquisition from the Refuge.

### **FHWA Decision**

The FHWA has determined that this project will have no significant impact on the human environment. This Finding of No Significant Impact is based on the Environmental Assessment and other supporting information, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. The Environmental Assessment provided sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope and content of the Environmental Assessment and other environmental documentation for this project.

Date: 10/15/2013

  
(for) Robert L. Lee