

South Carolina Department of Transportation
On Behalf of the Federal Highway Administration - South Carolina Division Office



PROCESSING FORM FOR PROGRAMMATIC CATEGORICAL EXCLUSIONS
NON MAJOR FEDERAL ACTIONS

Project ID

Route

County

Part 1 - Project Description

Include the Project Name/Description

Purpose of the project is to replace the two existing bridges, north and southbound, on US 301 in Orangeburg county over Four Hole Swamp creek. The southbound bridge is 26' wide and 246' long and was constructed in 1950. The northbound bridge is 39' wide and 290' long and was constructed in 1970. The southbound bridge is currently restricted to 1 lane due to structural issues. Due to the structural deficiencies, the bridges need to be replaced to maintain operational purposes. The new bridges will be constructed on-alignment utilizing a temporary bridge for maintenance of traffic during construction.

Part 2 - PCE Type

Select the appropriate Categorical Exclusion from 23 CFR Part 771.117 that best fits the entire project from the drop-down menu. **Reference Appendix A of the PCE Agreement for a more detailed description of each CE contained in 23 CFR 771.117.**

23 CFR 771.117(c)

23 CFR 771.117(d)

Part 3 - Thresholds

To be processed as a Programmatic Categorical Exclusion (PCE) the following conditions must be met in addition to the General Criteria (as outlined in the PCE Agreement between FHWA-SC and SCDOT). Place a "X" in the appropriate box below. If the answer is "Yes" to any of the below criteria, SCDOT will consult with FHWA-SC to determine the appropriate level of NEPA documentation required and forward to FHWA-SC for approval. ***Reference Part 4 of the Processing form or Section IV of the PCE Agreement for more details and definitions regarding each threshold.**

| | | | |
|----|--|------------------------------|--|
| 1. | Involves any unusual circumstances as described in *23 CFR Part 771.117(b) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 2. | The acquisition of more than *minor amounts of temporary or permanent strips of right-of-way | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

Part 3 - Thresholds Continued

| | | | |
|-----|--|------------------------------|--|
| 3. | Involves acquisitions that result in residential or non-residential displacements | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 4. | Results in capacity expansion of a roadway by adding through lanes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 5. | Involves construction that would result in <u>*major traffic disruptions</u> | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 6. | Involves <u>*changes in access control</u> requiring FHWA approval | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 7. | An adverse effect determination under Section 106 of the National Historic Preservation Act. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 8. | Use of Section 4(f) property that cannot be documented with a FHWA <i>de minimis</i> determination or a programmatic Section 4(f) other than the programmatic evaluation for the use of historic bridges | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 9. | Any use of a Section 6(f) property | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 10. | Requires an Individual USACE 404 Permit | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 11. | Requires an Individual U.S. Coast Guard Permit. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 12. | Work encroaching in a regulatory floodway, adversely affecting the base floodplain (100 yr.) pursuant to E.O. 11988 and 23 CFR Part 650 Subpart A | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 13. | Construction in, across, or adjacent to a river designated as a National Wild and Scenic River | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 14. | Involves an increase of 15 dBA or greater on any noise receptor or abatement measures are found to be feasible and reasonable due to noise impacts | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 15. | May affect and is likely to adversely affect a Federally listed species or designated critical habitat or projects with impacts subject to the BGEPA | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 16. | Involves acquisition of land for hardship, protective purposes, or early acquisition | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 17. | Does not meet the latest Conformity Determination for air quality non-attainment areas (if applicable). | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 18. | Any known or potential <u>major</u> hazardous waste sites within the right-of-way. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 19. | Is not included in or is inconsistent with the STIP and/or TIP | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

Part 3 Continued - Additional criteria to be completed for disposal of excess right-of-way PCE

| | | |
|--|------------------------------|-----------------------------|
| 1. Is the parcel part of a SCDOT environmental mitigation effort or could it be used for environmental mitigation? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Is there a formal plan to use this parcel for a future transportation project (is it part of an approved LRTP)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Part 4 - Threshold Definitions

Unusual Circumstances (23 CFR Part 771.117) - Unusual circumstances are defined as:

- a. Significant environmental impacts;
- b. Substantial controversy on environmental grounds;
- c. Significant impact on properties protected by Section 4(f) of the DOT ACT or Section 106 of the National Historic Preservation Act; or
- d. Inconsistencies with any Federal, State, or local law, requirement, or administrative determination relating to the environmental aspects of the action.

Minor Amount of Right-of-Way (ROW):

A minor amount of ROW is defined as less than 3 acres per linear mile for linear projects or less than 10 acres of impacts for non-linear projects (eg: intersections, bridges), and no removal of major property improvements. Examples of major improvements include residential and business structures, or the removal of other features which would change the functional utility of the property. Removal of minor improvements, such as fencing, landscaping, sprinkler systems, and mailboxes would be allowed.

Major Traffic Disruptions:

A major traffic disruption is defined as an action that would result in: a) adverse effects to through-traffic businesses or schools, b) substantial change in environmental impacts, or c) public controversy associated with the use of the temporary road, detour, or ramp closure.

Changes in Access Control:

Requires approval from FHWA for changes in access control on the Interstate system (eg: Interchange Modification Reports or Interchange Justification Reports).

Additional Comments if Needed:

Relevant field studies and environmental reviews have been completed to determine that the project meets the criteria set forth in the Programmatic Categorical Exclusion Agreement signed by FHWA-SC and SCDOT. It is understood that any additions/deletions to the project may void environmentally processing the project as presently classified; consequently, any engineering changes must be brought to the attention of SCDOT Environmental Services Office immediately. A copy of this form is included in the project file and one (1) copy has been provided to FHWA.

Approved By: Will McGoldrick Digitally signed by Will McGoldrick
Date: 2022.03.18 09:03:32 -04'00' Date Mar 18, 2022

Primavera: Yes No NEPA Start Date: Dec 1, 2021 Does the project contain commitments?: (if Yes attach to form) Yes No

Date: 01/18/2022



Project ID: 40308 County: Orangeburg District: District 7 Doc Type: PCE Total # of Commitments: 9

Project Name: US 301 Bridges over Four Hole Swamp Creek Replacement

The Environmental Commitment **Contractor Responsible** measures listed below **are to be included in the contract and must be implemented**. It is the responsibility of the Program Manager to make sure the Environmental Commitment **SCDOT Responsible** measures are adhered to. If there are questions regarding the commitments listed please contact:

CONTACT NAME: Brad Reynolds **PHONE #:** 803-737-1440

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Water Quality NEPA Doc Ref: Responsibility: **CONTRACTOR**

The contractor will be required to minimize possible water quality impacts through implementation of BMPs, reflecting policies contained in 23 CFR 650B and the Department's Supplemental Specification on Erosion Control Measures (latest edition) and Supplemental Technical Specifications on Seeding (latest edition). Other measures including seeding, silt fences, sediment basins, etc. as appropriate will be implemented during construction to minimize impacts to water quality.

Special Provision

Migratory Bird Treaty Act NEPA Doc Ref: Responsibility: **CONTRACTOR**

The federal Migratory Bird Treaty Act, 16 USC § 703-711, states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The South Carolina Department of Transportation (SCDOT) 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.

The contractor shall notify the Resident Construction Engineer (RCE) at least four (4) weeks prior to construction/demolition/maintenance of bridges and box culverts. The RCE will coordinate with SCDOT Environmental Services Office (ESO), Compliance Division, to determine if there are any active birds using the structure. After this coordination, it will be determined when construction/demolition/maintenance can begin. If a nest is observed that was not discovered after construction/demolition/maintenance has begun, the contractor will cease work and immediately notify the RCE, who will notify the ESO Compliance Division. The ESO Compliance Division will determine the next course of action.

The use of any deterrents by the contractor designed to prevent birds from nesting, shall be approved by the RCE with coordination from the ESO Compliance Division. The cost for any contractor provided deterrents will be provided at no additional cost to SCDOT.

Special Provision

Stormwater NEPA Doc Ref: Responsibility: **CONTRACTOR**

Stormwater control measures, both during construction and post-construction, are required for SCDOT projects with land disturbance and/or constructed in the vicinity of 303(d), TMDL, ORW, tidal, and other sensitive waters in accordance with the SCDOT's MS4 Permit. The selected contractor would be required to minimize potential stormwater impacts through implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and SCDOT's Supplemental Specifications on Seed and Erosion Control Measures (latest edition).

Special Provision

Project ID: 40308

SCDOT
NEPA ENVIRONMENTAL COMMITMENTS
FORM



ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

General Permit

NEPA Doc Ref:

Responsibility:

CONTRACTOR

Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under SCDOT's General Permit (GP). The required mitigation for this project will be determined through consultation with the USACE and other resource agencies.

Special Provision

Cultural Resources

NEPA Doc Ref:

Responsibility:

CONTRACTOR

The contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Archaeologist directs otherwise.

Special Provision

Non-Standard Commitment

NEPA Doc Ref:

Responsibility:

CONTRACTOR

Floodplains

The project will be designed in an effort to meet "No-Rise" requirements. Final design efforts to minimize floodplain impacts will be coordinated with the local county NFIP representative and appropriate regulatory agencies as necessary. The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator for approval.

Special Provision

Project ID: 40308

SCDOT
NEPA ENVIRONMENTAL COMMITMENTS
FORM



ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Lead-Based Paint

NEPA Doc Ref:

Responsibility:

CONTRACTOR

The existing structures shall be removed and disposed of by the Contractor in accordance with Subsection 202.4.2 of the Standard Specifications. The Contractor's attention is called to the fact that this project may require removal and disposal of structural components containing lead-based paints. Removal and disposal of structural components containing lead-based paints shall comply with all applicable Federal, State, and Local requirements for lead as waste, lead in air, lead in water, lead in soil, and worker health and safety.

Special Provision

NEPA Doc Ref:

Responsibility:

Special Provision

NEPA Doc Ref:

Responsibility:

Special Provision



Cultural Resources Project Screening Form

File Number: PIN: Route: County:

Project Name:

Type 1: Resurfacing, installation of fencing, signs, pavement markings, traffic signals, passenger shelters, railroad warning devices, construction of bicycle/ped lanes, installation of rumble strips, landscaping)

Project Type

Type 2: Off-system bridge replacement, intersection improvements that involve turn lanes and/or realignment of roads no greater than 300' in length)

Type 3: Projects that do not fall into Type 1 and Type 2 categories (e.g. road widening)

Comments

This project involves the replacement of the northernmost of twin bridges crossing Four Holes Swamp. A small amount of new right of way may be required, but almost all construction will be on top of existing road fill. To investigate the project historic maps and aerial photos dating to between 1913 and 1968 were consulted; modern soil survey maps of the project area were examined, and Lidar coverage of the project area was obtained. The documents and Lidar coverage indicated that no structures were present in the project area >1913, but an old roadbed entered the NE portion of the project area. Additionally, all but a small portion of the project area was shown to be low lying and at least intermittently inundated, and therefore to have little or no site potential. A pedestrian reconnaissance of the project area conducted on 6-24-14 confirmed the findings of the documentary investigation. Only the eastern-most approximately 55 meters of the project area was found to be dry, but this area is mapped as outside the project construction limits. The old roadbed was located but will not be impacted by the project as currently designed. No historic properties affected. No additional cultural resources investigations are recommended for this project.

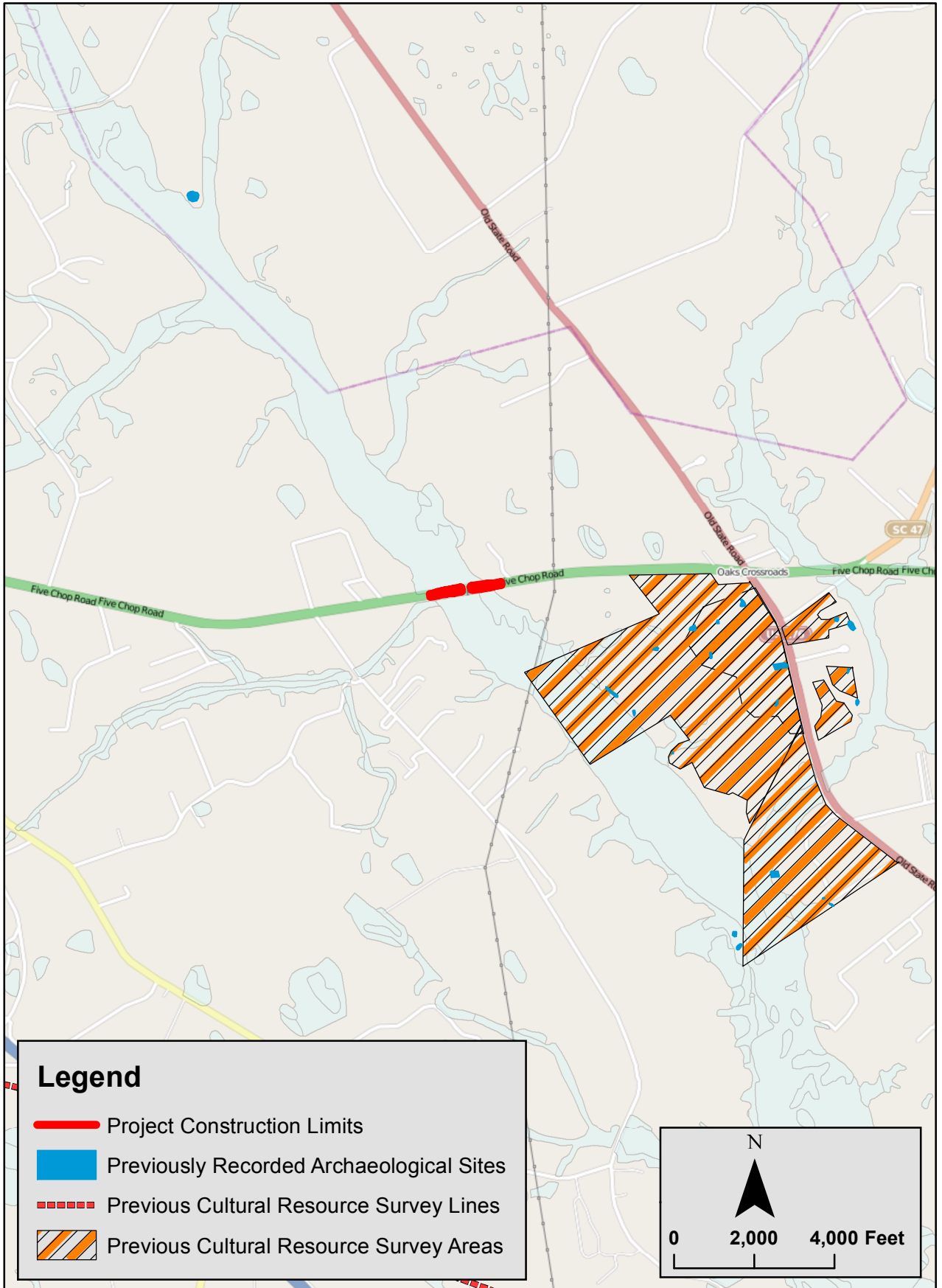
Effect Determination:

*SHPO consultation is required for all Type 3 projects and any project with a No Adverse or Adverse Effect Determination.





This screening form was developed to satisfy documentation requirements for Type I and Type II projects under a Programmatic Agreement between the Federal Highway Administration, the South Carolina State Historic Preservation Office, and the South Carolina Department of Transportation. For Type I and Type II projects that have no effect on historic properties, the completion of this screening form with supporting documentation (e.g. ArchSite Map) provides evidence of FHWA and SCDOT's compliance with Section 106 of the National Historic Preservation Act.

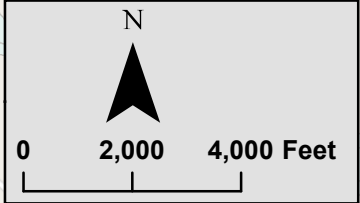
Prepared by:

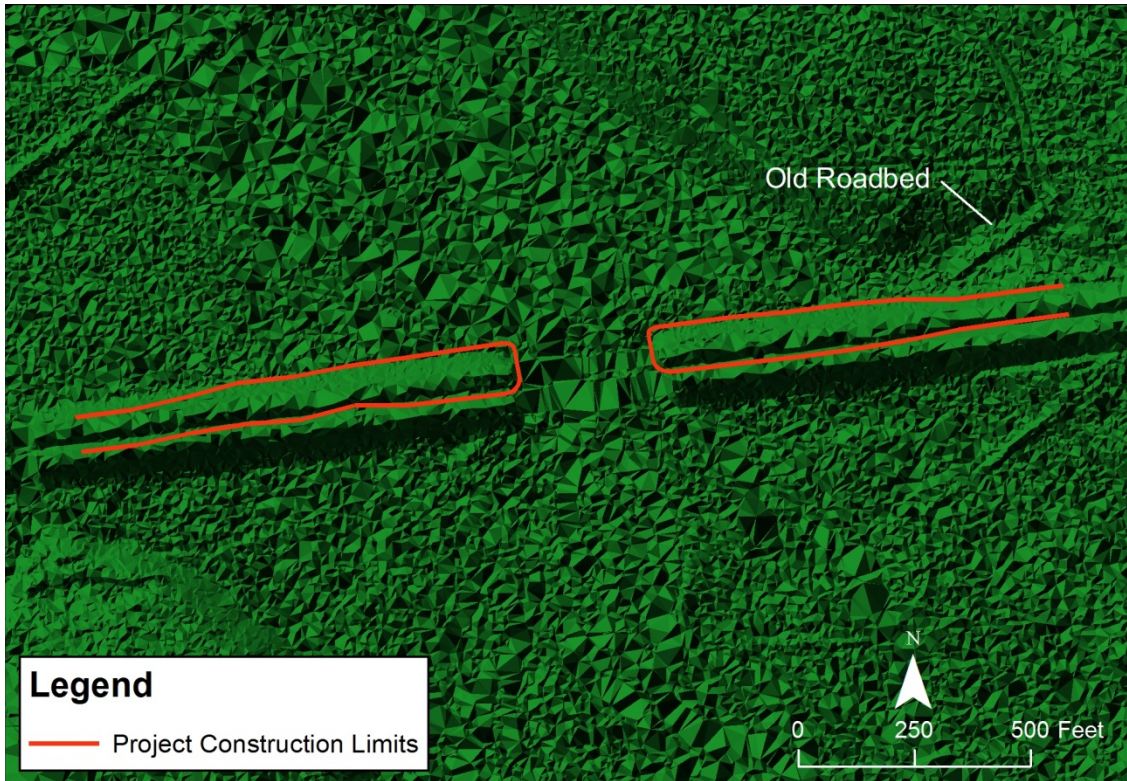
Review Date:



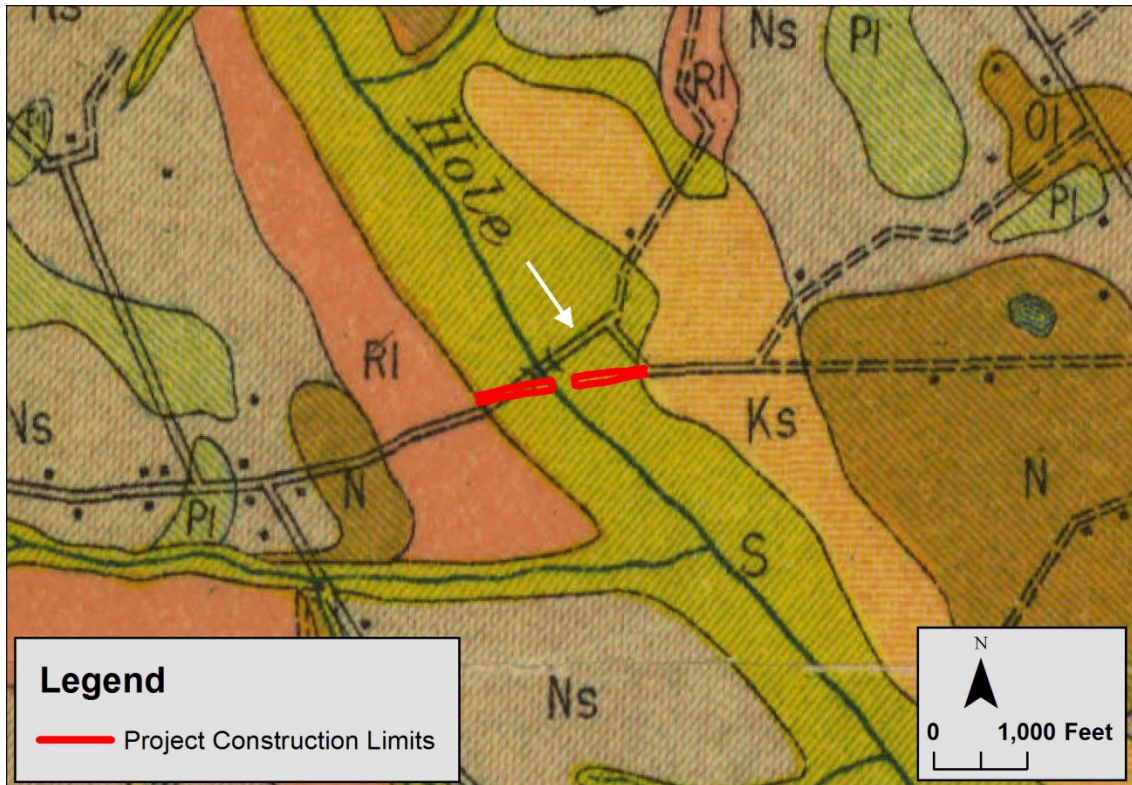
Legend

-  Project Construction Limits
-  Previously Recorded Archaeological Sites
-  Previous Cultural Resource Survey Lines
-  Previous Cultural Resource Survey Areas





Lidar Image of Project Area.



Approximate Location of Project Area on the 1913 USDA Bureau of Soils Soil Map of Orangeburg County. The White Arrow Indicates the Road Segment that Probably Corresponds to the Old Roadbed Noted North of the Project Construction Limits.



Old Road Bed North of Project Construction Limits. View NE.



Typical Vegetation at East End of Project Area, North of Construction Limits. View W.



Typical Vegetation in Central Portion of Project Area, North of Construction Limits. View W.



Inundated Portion of Project Area, North of Construction Limits. View NW.

**Biological Survey for US 301 Bridge Replacement over Four Holes Swamp,
Orangeburg County, South Carolina**

Prepared by: Ed Iverson Biologist

Pursuant to Section 7 of the Endangered Species Act a field survey was conducted on the proposed new right of way. The following list of endangered (E), threatened (T), state threatened (ST) species was obtained from the U. S. Fish and Wildlife Service:

ANIMALS

Bald eagle – *Haliaeetus leucocephalus* – (BGEPA)
Frosted flatwoods salamander – *Ambystoma cingulatum* – (T)
Red-cockaded woodpecker – *Picoides borealis* – (E)
Wood stork – *Mycteria americana* – (E)
Atlantic sturgeon – *Acipenser oxyrinchus* – (E)
Shortnose sturgeon – *Acipenser brevirostrum* – (E)

PLANTS

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

METHODS

The project area was examined by reconnaissance methods and remote sensing data on June 30, 2014. Habitats surveyed were determined by each species ecological requirements.

RESULTS

The improvements will require primarily palustrine forested wetland and some areas of upland forested. The wetland areas consists of sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), bald-cypress (*Taxodium distichum*), and water tupelo (*Nyssa aquatica*). The upland forested areas are characterized by loblolly pine (*Pinus taeda*) and saw palmetto (*Serenoa repens*).

Based on the lack of suitable habitat and no observations of the federally listed species during the assessment, the proposed action will not affect any threatened or endangered species or critical habitats currently listed by the USFWS for Orangeburg County.

From: [Frierson, Ed W](#)
To: [McGoldrick, Will](#)
Subject: RE: 301 over 4 Hole
Date: Tuesday, October 26, 2021 2:53:33 PM
Attachments: [image001.png](#)
[image002.png](#)

Will,

The endangered species list has not changed since 2014 so according to USFWS standards, the BA is still valid. Let me know if anyone questions that or if you have any additional questions.

Ed

From: McGoldrick, Will <McGoldriWR@scdot.org>
Sent: Tuesday, October 26, 2021 11:03 AM
To: Frierson, Ed W <FriersonEW@scdot.org>
Subject: 301 over 4 Hole

Ed,

Can you take a look over the BA you did back in 2014 for this CE-B and verify if it needs updating or not, please? The BA is towards the middle part of the CE.

Respectfully,



Will McGoldrick, Assoc. DBIA

Alternative Delivery Environmental Coordinator

P 803-737-1326 **E** mcgoldriwr@scdot.org

955 Park Street, P.O. Box 191, Columbia, SC
29202-0191





Watershed and Water Quality Information

General Information

Applicant Name: SCDOT **Permit Type:** MS4
Address: 4694 FIVE CHOP RD, SOUTH CAROLINA, 0 **Latitude/Longitude:** 33.457307 / -80.648269
MS4 Designation: Not in designated area **Monitoring Station:** E-048
Within Coastal Critical Area: No **Water Classification (Provisional):** FW-SP
Waterbody Name: FOUR HOLE SWAMP **Entered Waterbody Name:**

Parameter Description

| | | | | | |
|------|----------------------------|-----------|--------------------------|--------|--------------------------------|
| NH3N | Ammonia | CD | Cadmium | CR | Chromium |
| CU | Copper | HG | Mercury | NI | Nickel |
| PB | Lead | ZN | Zinc | DO | Dissolved Oxygen |
| PH | pH | TURBIDITY | Turbidity | ECOLI | Escherichia coli (Freshwaters) |
| FC | Fecal Coliform (Shellfish) | BIO | Macroinvertebrates (Bio) | TP | (Lakes) Phosphorus |
| TN | (Lakes) Nitrogen | CHLA | (Lakes) Chlorophyll a | ENTERO | Enterococcus (Coastal Waters) |
| HGF | Mercury (Fish Tissue) | PCB | PCB (Fish) | | |

Impaired Status (downstream sites)

| Station | NH3N | CD | CR | CU | HG | NI | PB | ZN | DO | PH | TURBIDITY | ECOLI | FC | BIO | TP | TN | CHLA | ENTERO | HGF | PCB | |
|---------|------|----|----|----|----|----|----|----|----|----|-----------|-------|----|-----|----|----|------|--------|-----|-----|---|
| E-048 | X | X | X | X | N | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| E-111 | F | F | F | F | A | F | F | F | F | F | F | InTN | X | X | X | X | X | X | X | X | X |
| E-112 | A | A | A | A | A | A | A | A | A | A | A | A | X | X | X | X | X | X | X | X | X |
| E-100 | A | A | A | A | A | A | A | A | A | A | A | A | X | X | X | X | X | X | X | X | X |

F = Standards full supported A = Assessed at upstream station WnTN = Within TMDL, parameter not supported WnTF = Within TMDL, parameter full supported
 N = Standards not supported X = Parameter not assessed at station InTN = In TMDL, parameter not supported InTF = In TMDL, parameter full supported

Parameters to be addressed (those not supporting standards)

HG - Mercury **ECOLI - Escherichia coli (Freshwaters)**

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes **TMDL Site:** E-111
TMDL Report No: 010-2020 **TMDL Parameter:** Ecoli
TMDL Document Link: https://scdhec.gov/sites/default/files/media/document/UFHS_ECOLI_TMDL.pdf

Report Date: January 12, 2022

Date: 1/12/22

PERMIT DETERMINATION

FROM Will McGoldrick COMPANY SCDOT

CONTACT INFO (phone and/or email) 803-737-1326; mcgoldriwr@scdot.org

SCDOT PROJECT ENGINEER Brad Reynolds

TO Will McGoldrick - Design Build Coordinator

Project Description Bridge replacement over Four Hole swamp along US 301

Route or Road No. 301 County Orangeburg

CONST. PIN 40308 OTHER PINS or STRUCTURE # _____

RESPONSE:

It has been determined that no permits are required because:

The following permit(s) is/are necessary:
(Please check which type(s) of permit the project will need)

USACE Permit GP IP 401 JD

OCRM Permit CAP CZC

Navigable SCDHEC NAVGP – if checked a USCG and/or USACE navigable permit may also be required, but will be determined during the NEPA and Permitting stages.

Other _____

Water Classification: <select one> *Print and attach the SCDHEC water quality report*

303(d) listed no yes, for * HG (fish)

TMDL developed no yes, for * Ecoli

*List all that apply using the SCDHEC abbreviations

Comments: _____

The determination above was based on the most recently available information at the time. This is a preliminary determination and is subject to change if the design of the project is modified.

Will McGoldrick Digitally signed by Will McGoldrick
Date: 2022.01.12 10:32:13 -05'00'

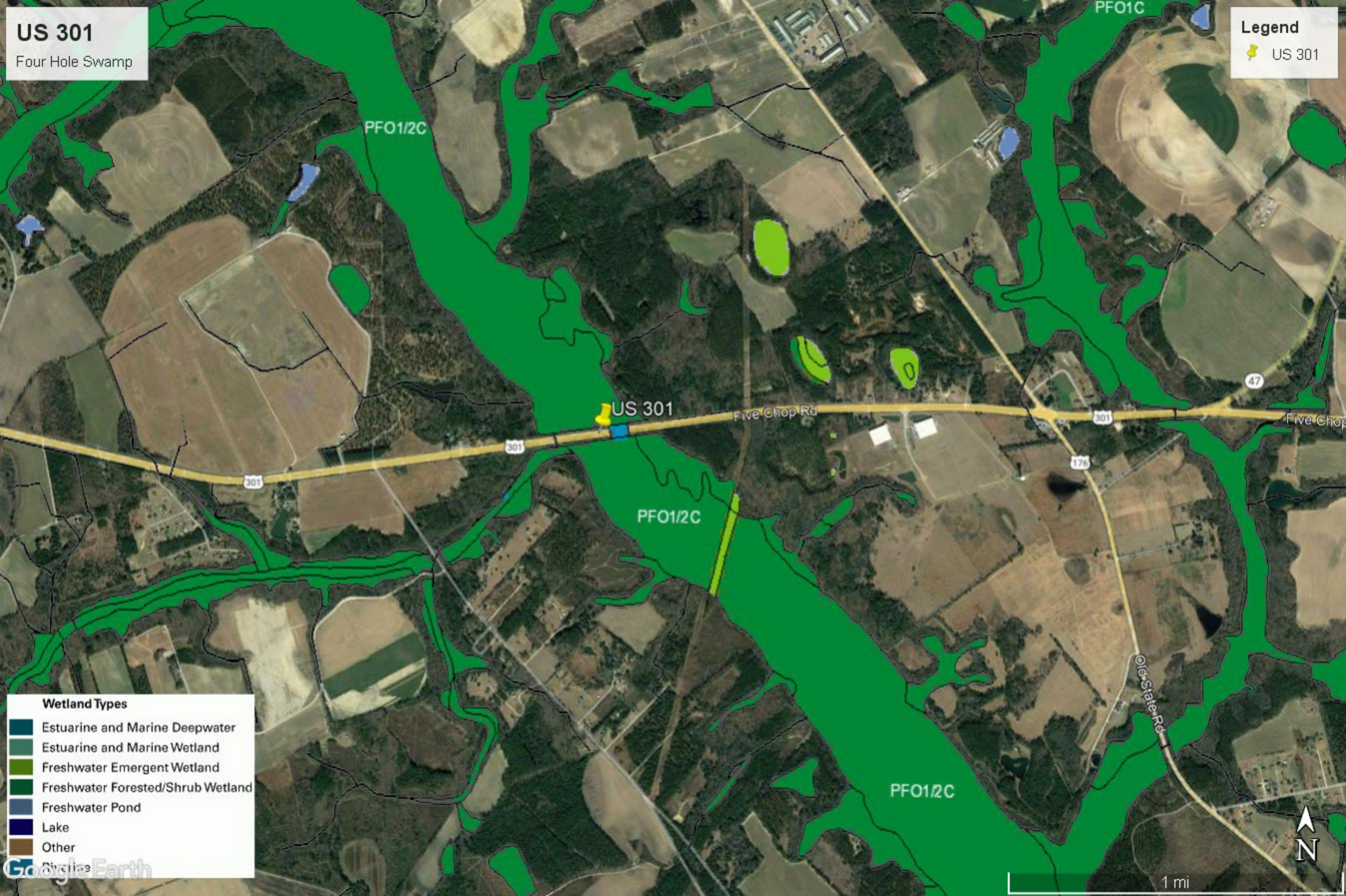
Biologist, SCDOT/Consultant

1/12/22

Date

US 301
Four Hole Swamp

Legend
📍 US 301



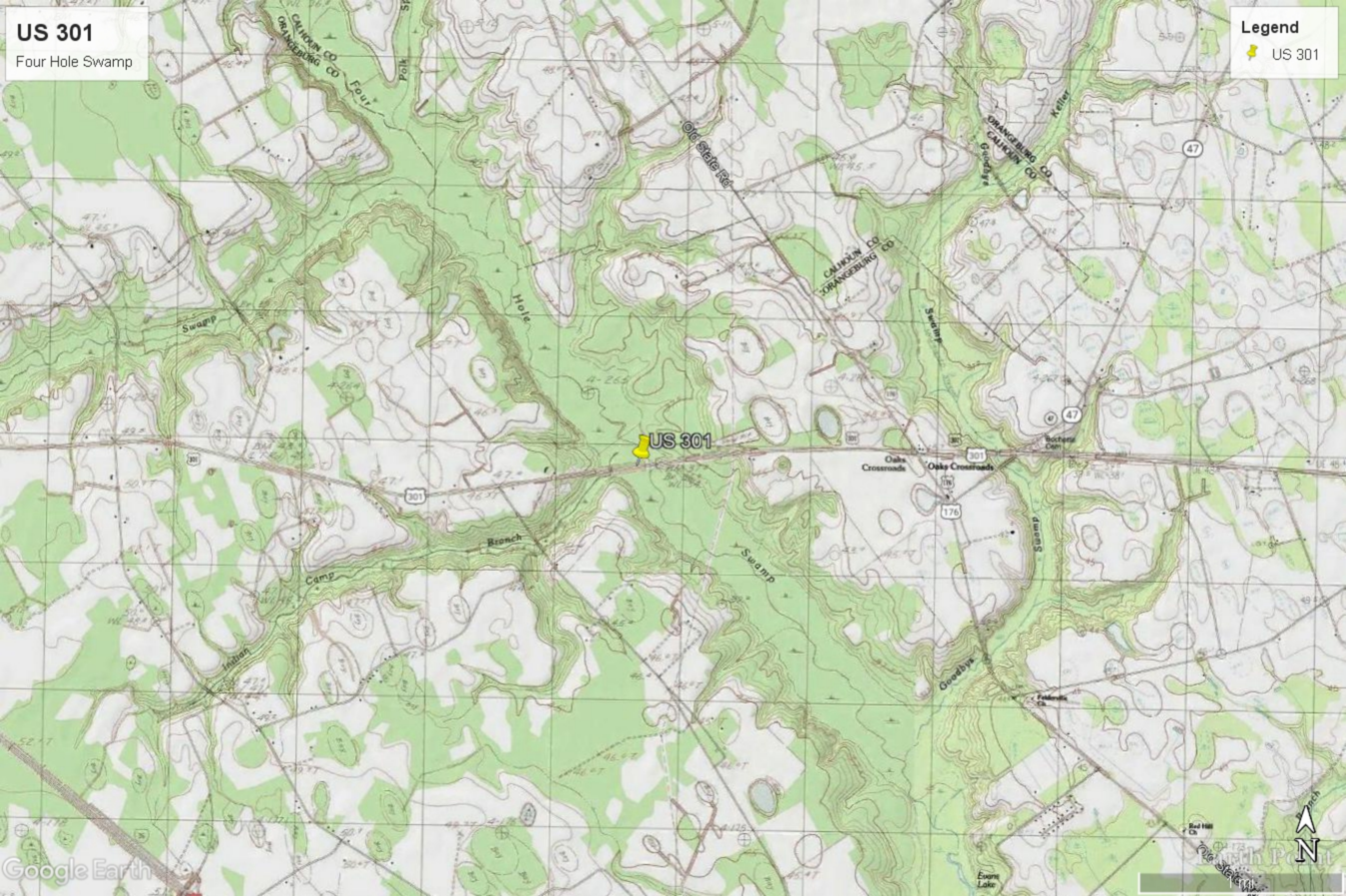
Wetland Types

| | |
|--|-----------------------------------|
| | Estuarine and Marine Deepwater |
| | Estuarine and Marine Wetland |
| | Freshwater Emergent Wetland |
| | Freshwater Forested/Shrub Wetland |
| | Freshwater Pond |
| | Lake |
| | Other |



US 301
Four Hole Swamp

Legend
📍 US 301



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **Floodway** elevations have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on this FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.7 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **Floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The projection used in the preparation of this map was South Carolina State Plane, FIPSZONE 3900. The horizontal datum was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRM for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NCS Information Services
NCEM, NIMS12
National Geodetic Survey, SSMC-3, #9207
1315 East-West Highway
Silver Spring, Maryland 20910-3292
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at <http://www.ngs.noaa.gov/>

Base map information shown on the Flood Insurance Rate Map (FIRM) was derived from the U.S. Geological Survey (USGS), National Geodetic Survey, Census Bureau, Orangeburg County, SC and South Carolina Office of Research and Statistics. This information was developed at scales of 1"=2000', 1"=1000' and 1"=500'. Users of this FIRM should be aware that minor adjustments may have been made to specific base map features.

This map may reflect more detailed or up to date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables, if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limits locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of communities within the National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

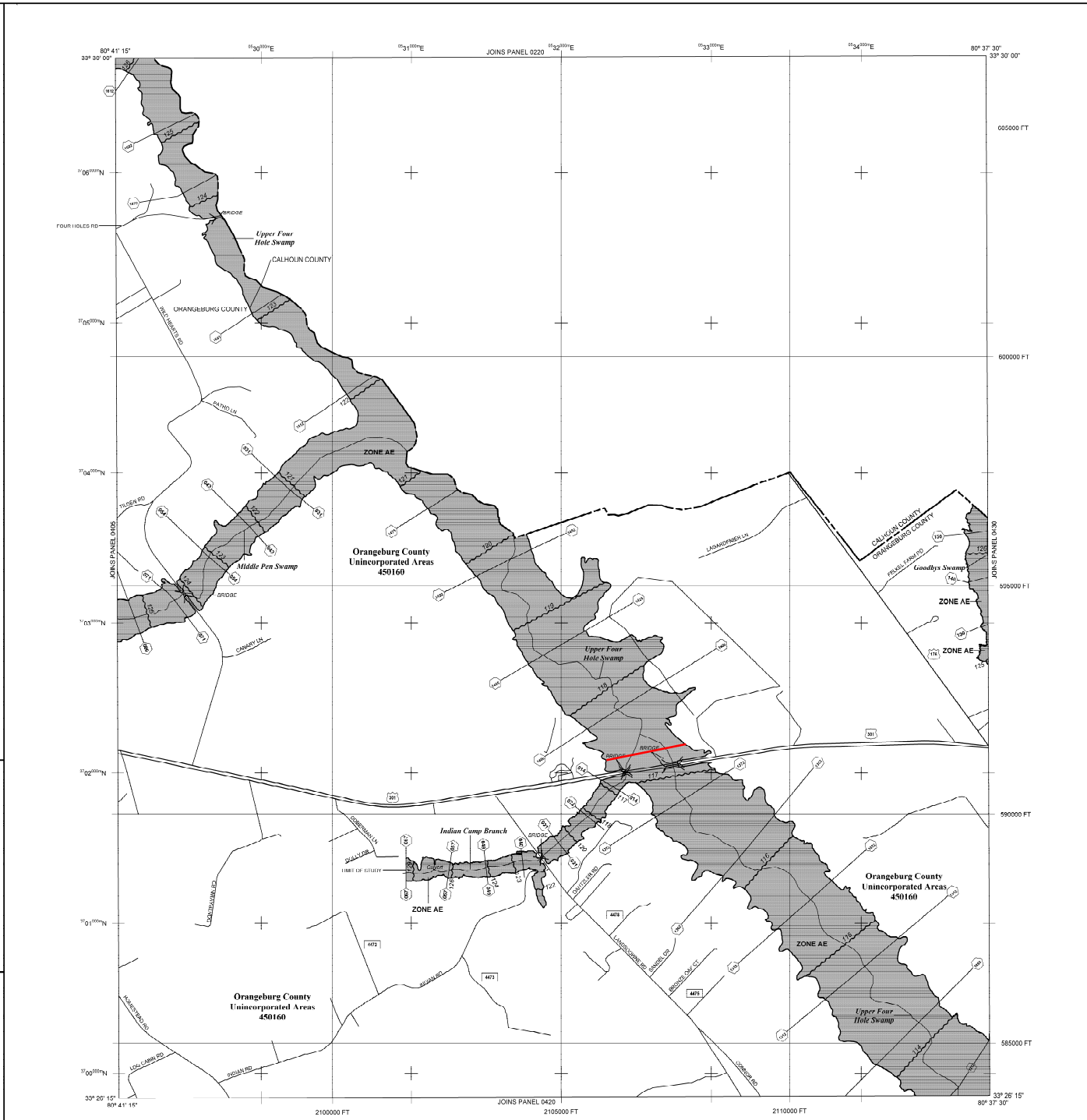
For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eExchange** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of South Carolina and the Federal Emergency Management Agency (FEMA). The State of South Carolina has implemented a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to map floodplain areas at the local level. As a part of this effort, the State of South Carolina has joined in a Cooperative Technical State Agreement with FEMA to produce and maintain this digital FIRM.

<http://www.dnr.state.sc.us/>



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AV, VE, and V2. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A**: No Base Flood Elevation
- ZONE AE**: Base Flood Elevations determined
- ZONE AH**: Flood depth of 1 to 3 feet (lowly areas of ponds); Base Flood Elevations determined
- ZONE AO**: Flood depths of 1 to 3 feet (usually areas from sloping terrain); average depths determined; For areas of shallow flat flooding, velocities also determined
- ZONE AV**: Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently identified. Zone AV indicates that the former flood control system is being removed to provide protection from the 1% annual chance or greater flood.
- ZONE AV2**: Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined
- ZONE VE**: Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined
- ZONE V2**: Coastal flood zone with velocity hazard (wave action); base flood elevations determined

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**: Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood heights are unacceptably high, as possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERS PROTECTED AREAS (OPAs)**: CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

BOUNDARIES

- Floodplain boundary
- Floodway boundary
- Zone A boundary
- GIS and OPA boundary

BOUNDARY DIVIDING SPECIAL HAZARD AREA ZONES AND FLOOD ELEVATIONS

Boundary dividing Special Flood Hazard Area Zones and Flood Elevations, flood depths or flood velocities. Base Flood Elevations are shown in feet. Base Flood Elevation value where uniform within zone: 117.00

TRANSVERSE LINE

Transverse line

CULTURAL, HISTORIC, PREHISTORIC, OR ARCHAEOLOGICAL

Archaeological site

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

59° 07' 30", 32° 22' 30"

MAP REPOSITORIES

Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

JANUARY 16, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-438-6622.

MAP SCALE 1" = 1000'

0 500 1000 2000 FEET
0 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0410C

FIRM

FLOOD INSURANCE RATE MAP

ORANGEBURG COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 410 OF 760

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | PANEL NUMBER | PANEL SUFFIX |
|-------------------|--------------|--------------|
| ORANGEBURG COUNTY | 402-409 | 0410 C |

Notice to User: The Map Number shown below should be used for Map History table located in the Flood Insurance Study report for this jurisdiction. Above should be used on insurance applications for the subject community.

MAP NUMBER
45075C0410C

EFFECTIVE DATE
JANUARY 16, 2014

Federal Emergency Management Agency

BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: Orangeburg

DATE: 01/16/2014

ROAD #: US 301

STREAM CROSSING: Four Hole Swamp

Purpose & Need for the Project:

Replacement of structurally deficient and functionally obsolete bridge over Four Hole Swamp in on US 301 in Orangeburg County, South Carolina.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? Yes No

Panel Number: 45075C0410C Effective Date: 01/16/2014 (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number _____ 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:

The bridge is in a Zone AE with BFEs and the new bridge is designed to meet "No-Rise" Requirements.

- Preliminary assessmnet indicates this project may require a CLOMR/LOMR. Impacts will be determined by a detailed hydraulic analysis.

Justification:

BRIDGE SCOPE AND RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans Yes File No. 38.340 Sheet No. 6-10 (See Attached)
 No

b. Road Plans Yes File No. 38.618 Sheet No. 38-39 (See Attached)
 No

B. Historical Highwater Data

a. USGS Gage Yes Gage No. _____ Results: _____
 No

b. SCDOT/USGS Documented Highwater Elevations

Yes Results: 1928 124.08 (123.09 NAVD 88)
 No

c. Existing Plans Yes See Above
 No

V. Field Review

A. Existing Bridge

Length: 245.8 ft. Width: 31.3 ft. Max. span Length: 22.33 ft.

Alignment: Tangent Curved

Bridge Skewed: Yes No Angle: _____

End Abutment Type: Vertical Concrete

Riprap on End Fills: Yes No Condition: Okay(On RT U/S)

Superstructure Type: Flat Slab

Substructure Type: Piles

Utilities Present: Yes No

Describe: Buried Fiber Optic on U/S; Water, Gas, Telecommunications on D/S of BR

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %
Percent Blocked Vertically: 0 %

Hydraulic Problems: Yes No

Describe: Controlled by D/S BR

BRIDGE SCOPE AND RISK ASSESSMENT FORM

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: Yes No Location: Low Flow Channels

b. Distance from F.G. to Normal Water Elevation: 9.5 ft.

c. Distance from Low Steel to Normal Water Elev.: 7.5 ft.

d. Distance from F.G. to High Water Elevation: 5.0 ft.

e. Distance from Low Steel to High Water Elev.: 2.0 ft.

f. Channel Banks Stable: Yes No

Describe:

g. Soil Type: Mouzon Fine Sandy Loam

h. Exposed Rock: Yes No Location: _____

i. Give Description and Location of any structures or other property that could be damaged due to additional backwater.

None

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement

Yes No

Describe:

Bridge on 4 Lane Section of 301 and D/S BR can be used during construction for traffic in both directions.

If "yes", does the existing vertical and horizontal curves meet the proposed design speed criteria?

Yes

If "No", will the proposed bridge be:

Staged Constructed

Replaced on New Alignment

BRIDGE SCOPE AND RISK ASSESSMENT FORM

VI. Field Review (cont.)

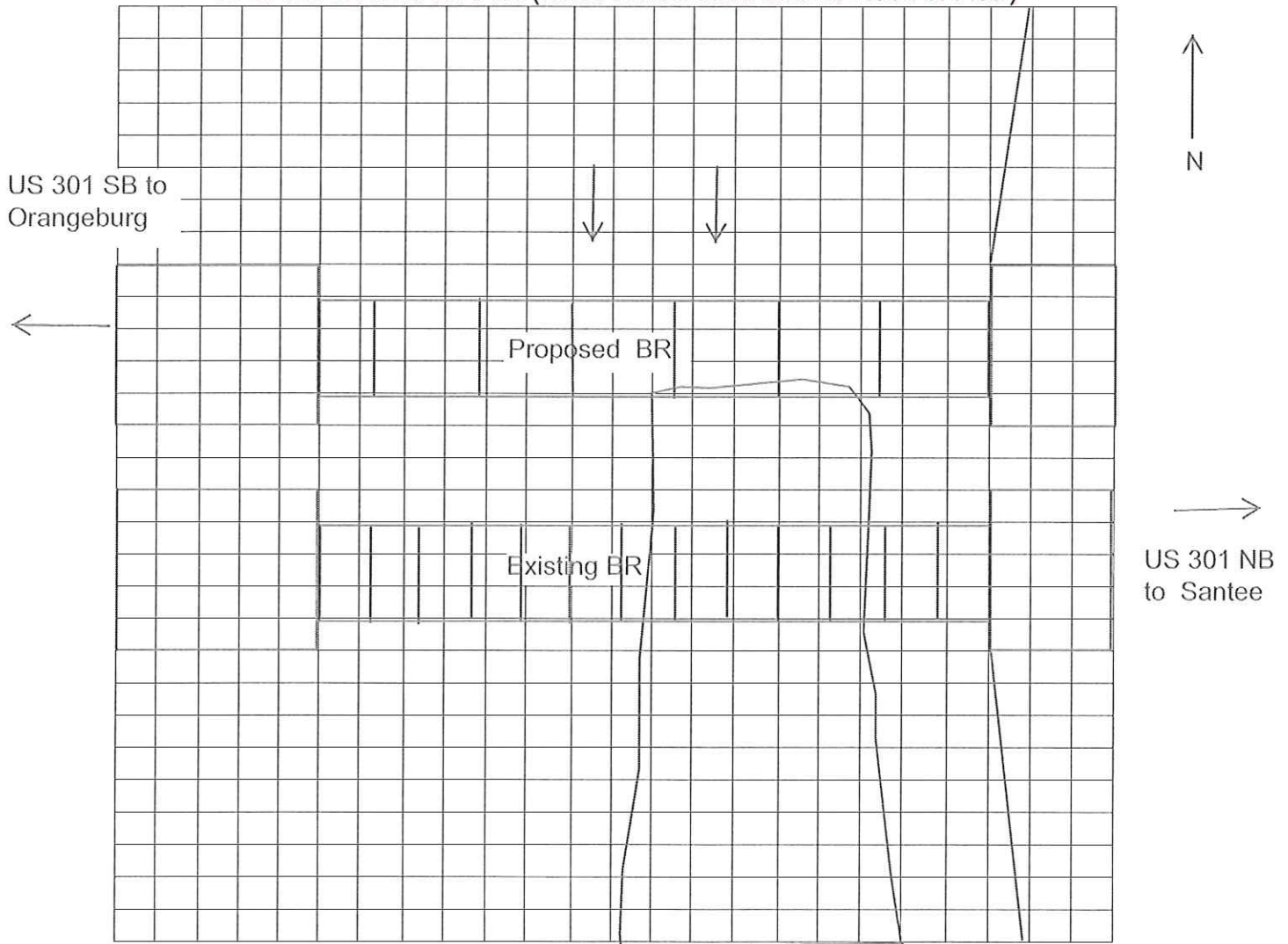
A. Proposed Bridge Recommendation:

Length: 294 ft. Width: 44 ft. Elevation: 122.30 ft.

Span Arrangement: 44'-44'-44'-44'-44'-44'-30'

Notes: Location of piers are critical for Hydraulic Efficiency. New Bridge length and spans are limited by downstream US 301 NB Bridge.

BRIDGE SITE DIAGRAM: (Show North Arrow and Direction of Flow)



Performed By: T. P. Knight

South Carolina Department of Transportation
Location and Hydraulic Design of Encroachments on Floodplains Checklist

23 CFR 650, this regulation shall apply to all encroachments and to all actions which affect base floodplains, except for repairs made with emergency funds. Note: These studies shall be summarized in the environmental review documents prepared pursuant to 23 CFR 771.

I. PROJECT DESCRIPTION

A. Narrative Describing Purpose and Need for Project

- a. Relevant Project History:
- b. General Project Description and Nature of Work (attach Location and Project Map):
- c. Major Issues and Concerns:

B. Are there any floodplain(s) regulated by FEMA located in the project area?

Yes No

C. Will the placing of fill occur within a 100-year floodplain?

Yes No

D. Will the existing profile grade be raised within the floodplain?

E. If applicable, please discuss the practicability of alternatives to any longitudinal encroachments.

F. Please include a discussion of the following: commensurate with the significance of the risk or environmental impact for all alternatives containing encroachments and those actions which would support base floodplain development:

- a. What are the risks associated with implementation of the action?

- b. What are the impacts on the natural and beneficial floodplain values?

- c. What measures were used to minimize floodplain impacts associated with the action?

- d. Were any measures used to restore and preserve the natural and beneficial floodplain values impacted by the action?

G. Please discuss the practicability of alternatives to any significant encroachments or any support of incompatible floodplain development.

H. Were local, state, and federal water resources and floodplain management agencies consulted to determine if the proposed highway action is consistent with existing watershed and floodplain management programs and to obtain current information on development and proposed actions in the affected? Please include agency documentation.

SCDOT Hydraulic Engineer

Date