

# S-23-40 (Pace Bridge Road) Bridge Replacement over South Saluda Overflow and S-39-26 (Pace Bridge Road) over Trib. to South Saluda River

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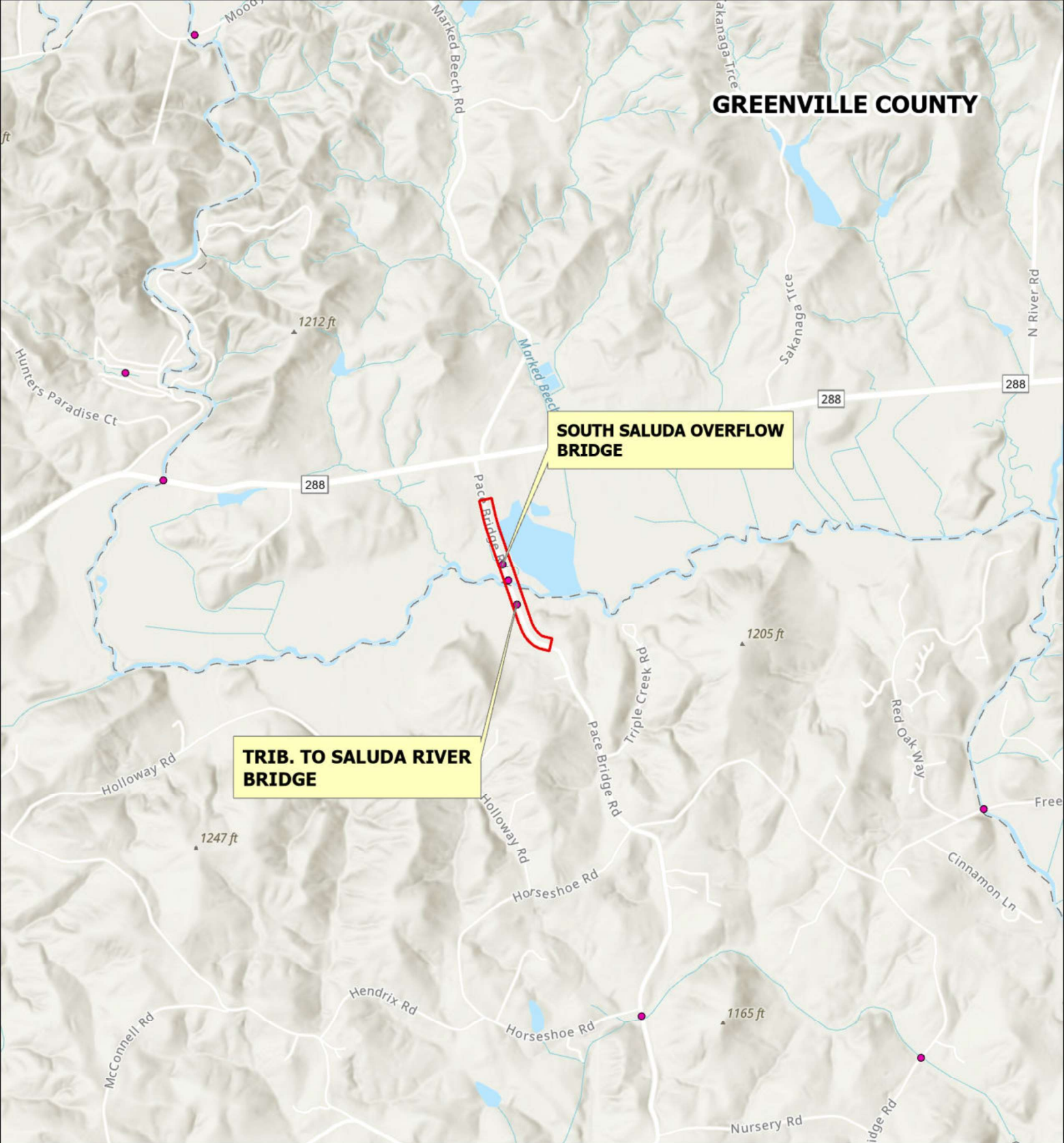
Project ID: P043137 and P043138

## **Project Description:**

South Carolina Department of Transportation (SCDOT) proposes to replace the S-23-40 (Pace Bridge Road) Bridge over South Saluda River and S-39-26 (Pace Bridge Road) over Trib. to South Saluda River in Greenville County.

The purpose of this project is to correct the load restriction placed on the bridges and restore all components to good condition. The existing bridges are posted for load restrictions and have one or more components in poor condition. The S-23-40 bridge was built in 1957. According to the SCDOT Structure Inventory and Appraisal Report from April 2023, the bridge has a sufficiency rating of 40.9. An off-site detour may be utilized during construction. The bridge is currently open to traffic. The S-39-26 bridge was built in 1969. According to the SCDOT Structure Inventory and Appraisal Report from October 2022, the bridge has a sufficiency rating of 54.9. An off-site detour may be utilized during construction. The bridge is currently open to traffic.

Field studies revealed no significant impacts or effects to resources within the project study area.



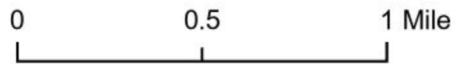
**GREENVILLE COUNTY**

**SOUTH SALUDA OVERFLOW BRIDGE**

**TRIB. TO SALUDA RIVER BRIDGE**

**Legend**

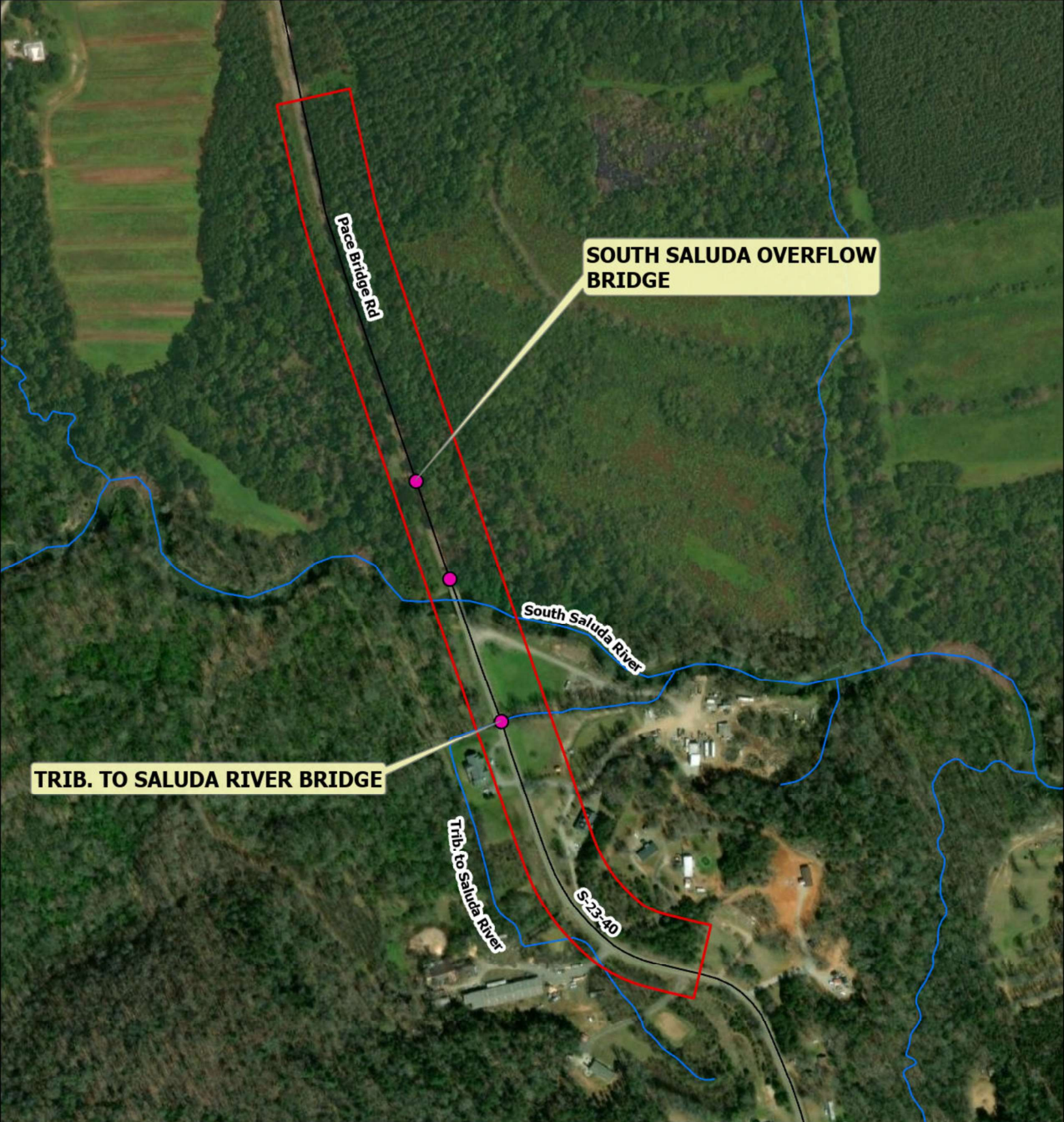
- Study Area
- Bridge



**Figure 1.**  
**Vicinity Map**  
**Replacement of SC Bridges**  
**2541 and 5604**  
**on Pace Bridge Road**  
**over South Saluda Overflow**  
**and Trib. to Saluda River**  
**in Greenville County, SC**



Sources: SCDOT, ArcGIS ESRI Basemap. 2023.



**TRIB. TO SALUDA RIVER BRIDGE**

**SOUTH SALUDA OVERFLOW BRIDGE**

**Legend**

- Study Area
- Bridge
- Stream
- Highway
- Road



0      250      500 Feet



**Figure 2.**  
**Study Area Map**  
**Replacement of SC Bridges**  
**2541 and 5604**  
**on Pace Bridge Road**  
**over South Saluda Overflow**  
**and Trib. to Saluda River**  
**in Greenville County, SC**



Sources: SCDOT, ArcGIS ESRI Basemap. 2023.

## S-40 & S-26 Bridge Replacement Appendices

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Appendix A: Cultural Resources Screening Reports

Appendix B: Natural Resources Technical Memorandum

Appendix C: Bridge Scope and Risk Assessment Form

Appendix D: Floodplain Checklist

Appendix E: Public Comments

# Appendix A: Cultural Resources Screening Form

**CULTURAL RESOURCE FIELD REPORT**

**SCDOT ENVIRONMENTAL SECTION**



**TITLE:** Phase I Cultural Resources Survey of Proposed Improvements to the S-23-40 Bridge over South Saluda River

**DATE OF RESEARCH:** 7/27/23

**ARCHAEOLOGIST:** Lauren Christian, MA, RPA

**ARCHITECTURAL HISTORIAN:** Sean Stucker, MHP

**COUNTY:** Greenville and Pickens

**PROJECT:** Closed and Load Restricted Bridge Replacements- Package 19

**F. A. No.:**

**File No.**

**PIN:** P041160

**DESCRIPTION:**

The South Carolina Department of Transportation (SCDOT) proposes to replace various closed or load-restricted bridges including the S-23-40 (Pace Bridge Road) bridge over the South Saluda River in Greenville County, South Carolina. The river forms the boundary between Greenville and Pickens Counties. While there are three bridges along this stretch, it is the bridge over the river that is being replaced. The project area is defined as that area within 75 feet of either side of the proposed roadway centerline and extending 1,500 feet from the bridge. The archaeological survey covered the entire project area, while the architectural survey examined the Area of Potential Effects (APE), which was defined as all above-ground resources with sightlines to the bridge. This cultural resource survey was performed under contract with HNTB.

**LOCATION:**

The project area is located approximately 3.9 miles east of Slater-Marietta in northeastern Greenville County, South Carolina (Figure 1).

**USGS QUADRANGLE:** Cleveland, SC

**DATE:** 2014    **SCALE:** 1:24000

**UTM:** NAD83

**ZONE:** 17N

**EASTING:** 356656

**NORTHING:** 3875643

**ENVIRONMENTAL SETTING:**

The project area is situated in the Blue Ridge physiographic region, which includes and extends above the Blue Ridge Escarpment and is characterized by metagranite mountains. The topography in the project area ranges from 940 feet above mean sea level (amsl) at the south terminus to 910 feet amsl in the vicinity of the South Saluda River. The surrounding landscape is undeveloped forest land north of the bridge and rural residential development south of the bridge. Vegetation in the northern portion consists of mixed pines and hardwoods with a moderately dense understory, while the southern portion consists of manicured lawns.

**NEAREST RIVER/STREAM AND DISTANCE:**

The project area is bisected by the South Saluda River (HUC 0305010902), which is a tributary of the Saluda River (HUC 03050109). These rivers confluence to the west of Travelers Rest, South Carolina, approximately 5 miles south of the project area.



**SOIL TYPE:**

Soils in the project area were formed from alluvium or residuum weathered from granite, gneiss, and/or diorite. The majority of the soils are somewhat poorly to poorly drained (59.4 percent), with 33.4 percent identified as well drained and 5.9 percent moderately well drained. By the early twentieth century, continuous row cropping destroyed soil nutrients, and large tracts of farmland were rendered unsuitable for cultivation. The Natural Resource Conservation Service (NCRS) maps two soil types in the project area (17 percent) as eroded (Table 1; Figure 2).

**Table 1. Soils Mapped in the Project Area**

Map Unit	Map Name	Drainage Class	Notes	Acres in Project Area	Percent of Project Area
Co	Chewacla soils	Somewhat Poorly Drained	Frequently flooded	3.0	19.6
Cw	Congaree fine sandy loam	Well Drained		1.8	11.8
HID2	Hiwassee clay loam	Well Drained	6–15% slopes, eroded	0.1	0.7
HwE2	Hiwassee sandy loam	Well Drained	10–25% slopes, eroded	2.5	16.3
PaF	Pacolet fine sandy loam	Well Drained	25–40% slopes	0.1	0.7
SrB	Starr loam	Well Drained	0–6% slopes	0.6	3.9
To	Toccoa soils	Moderately Well Drained		0.9	5.9
W	Water			0.2	1.3
Wd	Wehadkee soils	Poorly Drained		6.1	39.8
Total				15.3	100

**REFERENCE FOR SOILS INFORMATION:**

USDA-NCRS Soil Survey Division, Custom Soil Resource Report ([websoilsurvey.sc.egov.usda.gov](http://websoilsurvey.sc.egov.usda.gov))

**GROUND SURFACE VISIBILITY:** 0%  X  1-25%   26-50%   51-75%   76-100%

**CURRENT VEGETATION:**

The vegetation in the northern portion of the project area primarily consists of mixed pines and hardwoods with a moderately dense understory. This understory is very dense on either side of the bridge and along the transmission line that runs parallel to the road. Vegetation in the southern portion consists of manicured landscapes (Figures 3–5).

**INVESTIGATION:**

**BACKGROUND RESEARCH**

New South Associates, Inc. (NSA) conducted background research prior to fieldwork using the ArchSite GIS database maintained by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH). The background research identified two previous cultural resources surveys, two historic structures, and one archaeological site within the 0.5-mile search radius (Table 2, Figure 6). None of these resources are in the project area itself.

The first survey was conducted by Legacy Research Associates (Joy et al. 2005). This intensive survey covered almost the entirety of the project area, except for the northernmost 400 feet. As a result, no cultural resources were identified.

Brockington and Associates conducted the second survey in 2013. This survey was a county-wide recodation of historic architectural resources within Greenville County. Among the resources identified during this survey were Gray Gables (SHPO Site Number 3291) and Allison School (SHPO Site Number 3293), both of which are located on the south side of Pumpkintown Road, outside of the project area to the northwest. Both resources date to the early twentieth century, and neither was recommended as eligible for listing in the NRHP (Owens et al. 2013).

Archaeological site 38GR0097 was recorded in 1982 to the northwest of the current project area during a survey for a proposed bridge replacement. The assemblage consists of a dense concentration of diagnostic bifaces and ceramic sherds that date the site to the Late Archaic period, as well as non-diagnostic tool fragments and lithic debitage. Based



on the type and concentrations of artifacts recovered, site 38GR0097 was interpreted as a habitation site. This site consisted of surface finds only, and no shovel testing or subsurface investigation was conducted when it was recorded. Site 38GR0097 was recommended as not eligible for the NRHP (Thomas 1982).

**Table 2. Previously Recorded Cultural Resources**

Site or SHPO Site No.	Type or Name/Address	Temporal Affiliation /Build Date	NRHP Recommendation	Reference
38GR0097	Diagnostic bifaces and ceramic sherds	Late Archaic period	Not Eligible	Thomas 1982
3291	Gray Gables/641 Pumpkintown Rd.	1908-1912	Not Eligible	Owens et al. 2013
3293	Allison School/641 Pumpkintown Rd.	Early 20th Century	Not Eligible	Owens et al. 2013

## **SURVEY RESULTS**

Although surveyed almost in its entirety in 2005, the project area was revisited, primarily to determine if any architectural resources had reached 50 years of age since that time. The only area archaeologically surveyed was the northernmost 400 feet of the project area, while the previously surveyed portion was subjected to a walkthrough survey. No new cultural resources were identified, and the results of the fieldwork are discussed below.

### **ARCHAEOLOGY**

The Phase I Archaeology Survey was conducted on July 27, 2023. Lauren Christian, MA, RPA, served as Field Director and was assisted in the field by Archaeological Technician John Tomko. The archaeological investigation included a pedestrian walkover of the entire project area and the excavation of shovel tests at 30-meter (100-foot) intervals at the northern end of the project area. Shovel tests were placed along a single transect parallel to either side of Pace Bridge Road. Soil profiles were recorded for all excavated shovel tests, and location data was recorded for all investigated shovel tests using handheld GPS instruments.

Eight shovel test locations were investigated across the northern 400 feet of the project area. Those on the west side of S-23-40 were located within a powerline corridor where exposed red clay subsoil could be seen. Along the east side of the road, red clay subsoil could be seen beneath the leaf litter, with the exception of ST 2 (Figure 7). The soil profile consisted of approximately 20 centimeters of dark brown (10YR 3/3) sandy loam Ap horizon overlying a dark reddish brown (5YR 3/3) sandy clay subsoil (Figure 8). No new or previously recorded archaeological sites were identified in the project area.

### **ARCHITECTURAL SURVEY**

The architectural survey was conducted on August 30, 2023, by Architectural Historian Sean Stucker, MHP. No newly recorded or previously surveyed architectural historic resources were identified within the APE. The bridge carrying S-23-40 over the South Saluda River, constructed in 1957, was not evaluated per the exemptions associated with the FHWA’s Post-1945 Bridges Program Comment (U.S. Department of Transportation, Federal Highway Administration 2012). This bridge (FHWA Structure No. 02540) is of a common type, with a substructure comprised of prestressed concrete channel beams and wood piers that are set into the riverbed, a precast-concrete deck structure, and a bituminous decking surface (Svirsky 2024; Figure 9). Approximately 375 feet to the north is an overflow channel over which an associated bridge (FHWA Structure No. 02541) carries S-23-40 (Svirsky 2024). This bridge, also built in 1957, is of a similar type but with a slab structure in place of the channel beams (Figure 10a). It was also not assessed per the exemptions associated with the program comment. Finally, about 350 feet to the south is an overflow channel over which a third bridge (FHWA Structure No. 05605) carries S-23-40 (Svirsky 2024). Although this bridge was not built until 1969, it is of identical construction to its northern overflow counterpart, if one span shorter (Figure 10b). It too is exempt from assessment per the program comment.





**REMARKS AND RECOMMENDATIONS:**

The survey identified no archaeological sites or isolated finds, nor did it record any new or revisit any previously recorded architectural resources. The proposed project, as currently defined, would have no effects on historic properties.

**SIGNATURE:**

A handwritten signature in black ink that reads 'Nathaniel Dan Pope'.

Principal Investigator

**DATE:** April 19, 2024



## **BIBLIOGRAPHY AND FIGURES**

Joy, Deborah, Steve Rankin, Jared Roberts, David Babineau, and Jay Stevens. 2005. *Intensive Archaeological and Architectural Survey for the Replacement of Bridges over South Saluda River, Tributary of South Saluda River, and South Saluda River Overflow in Greenville and Pickens County, South Carolina*. Legacy Research Associates, Inc., Durham, North Carolina.

Owens, Sheldon, Ashley Pruitt, Cameron Sexton, and Patricia Stallings. 2013. *Greenville County, South Carolina Historic Resources Survey*. Brockington and Associates, Inc.

Svirsky, Alexander. 2024. The National Bridge Inventory Database. *LTBP InfoBridge*.  
<https://infobridge.fhwa.dot.gov/>, accessed November 19, 2018.

Thomas, G.L. 1982. *38GR0097 Site Form*. SC AS Survey. South Carolina Institute of Archaeology and Anthropology, Greenville County, South Carolina. South Carolina Department of Archives & History.

U.S. Department of Transportation, Federal Highway Administration. 2012. Program Comment for Actions Affecting Post-1945 Concrete and Steel Bridges. Advisory Council on Historic Preservation, Washington, D.C.



Figure 1: Project Location Map

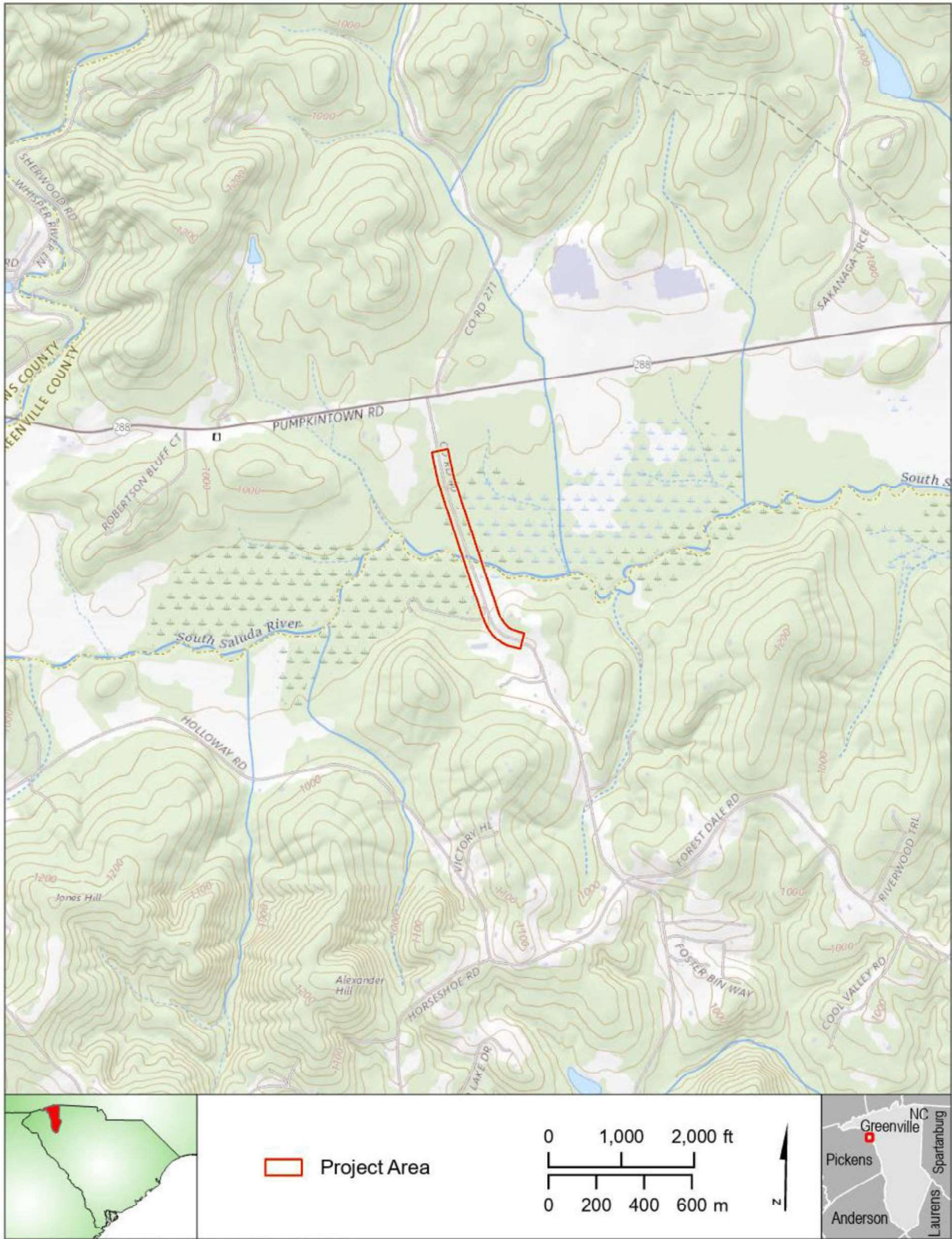
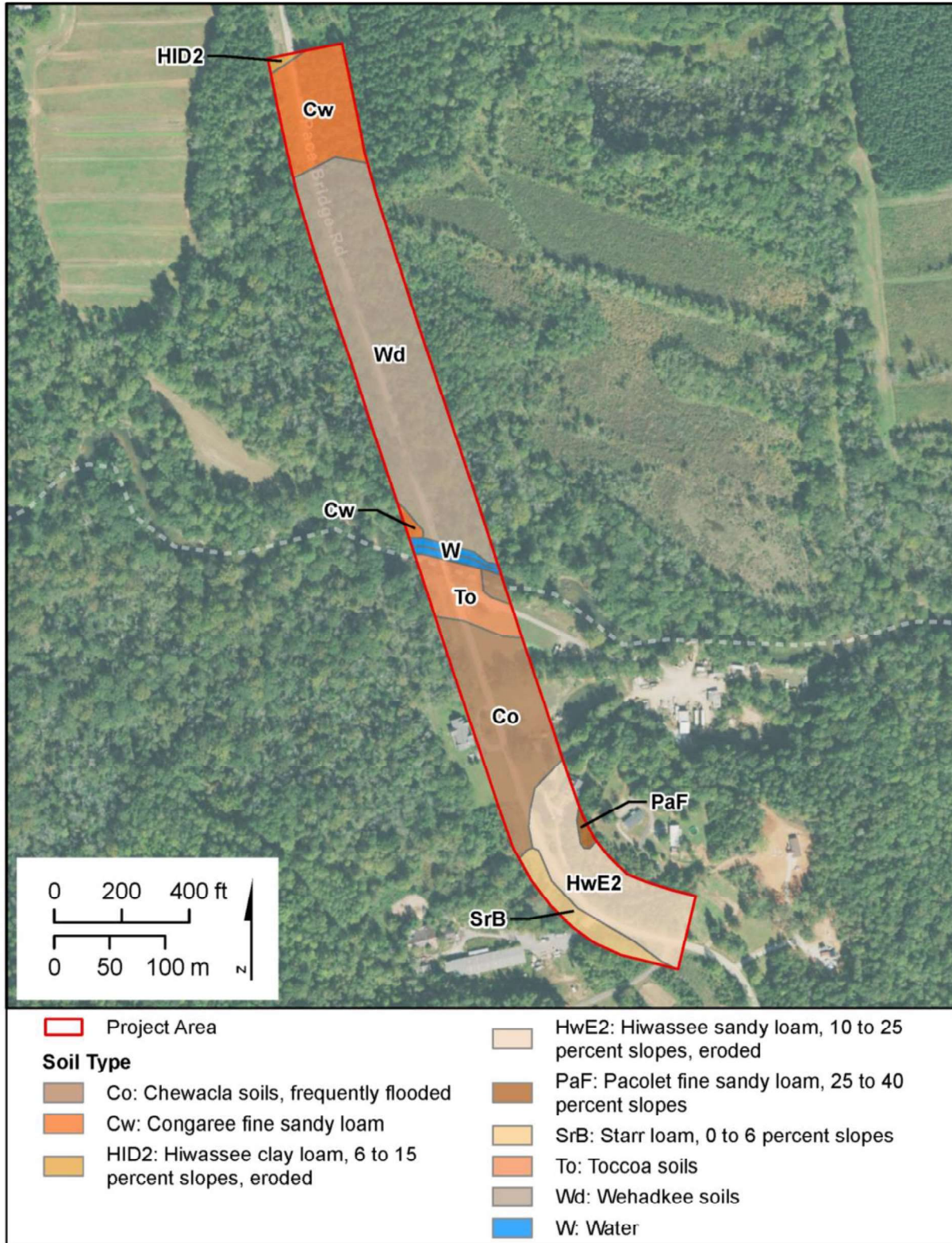




Figure 2: Soils in the Project Area



Basemap: NAIP (2021)



*Figure 3: Forested Portion of Project Area (Looking South)*



*Figure 4: Dense Understory along Transmission Line in Project Area (Looking South)*



*Figure 5: Manicured Lawn in Southern Portion of Project Area (Looking North)*





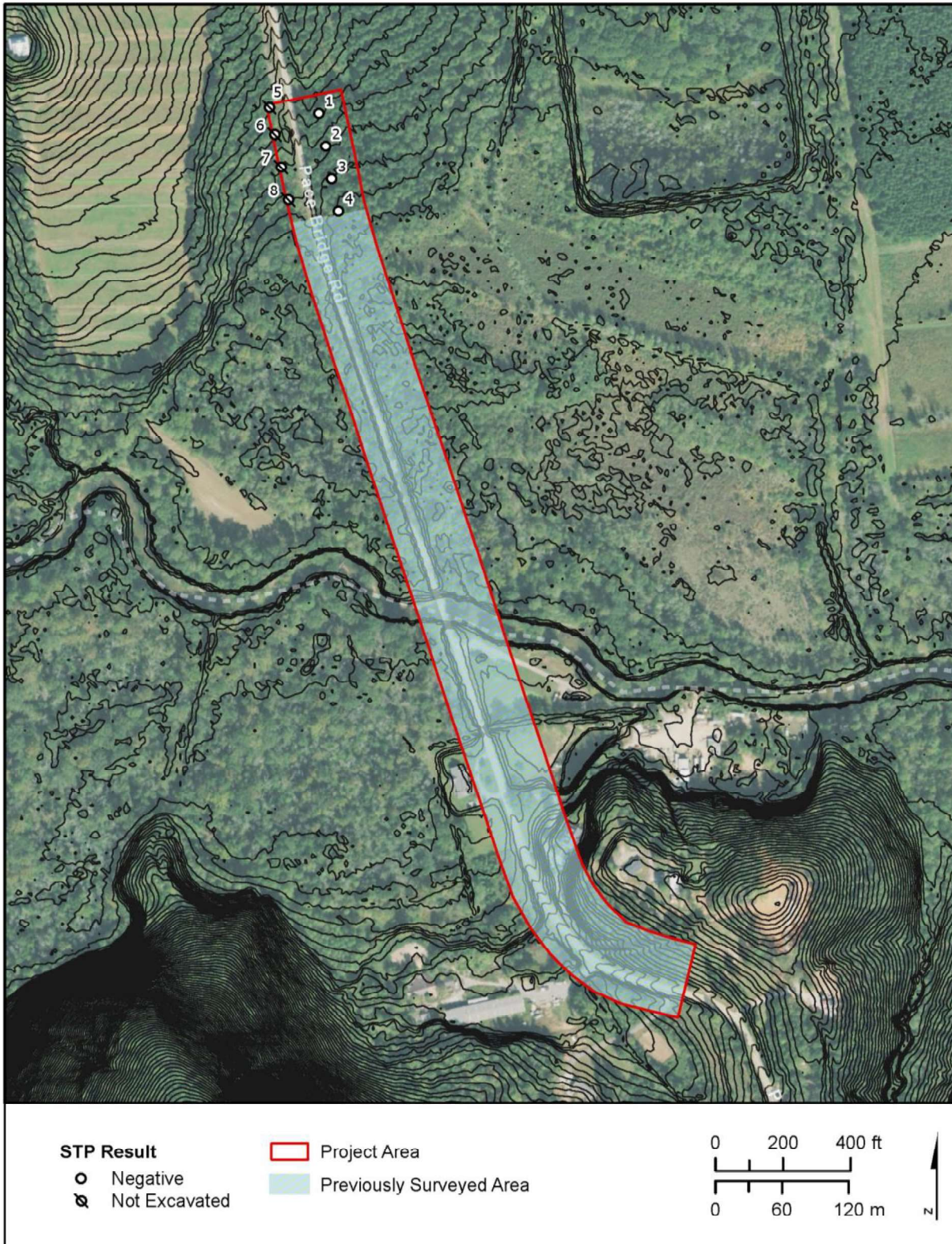
Figure 6: Previously Recorded Cultural Resources Map



Basemap: NAIP (2021)



Figure 7: Shovel Tests Results Map



Basemap: NAIP (2021), Contours derived from SCDNR Lidar: Greenville (2013) and Pickens (2011) Counties



*Figure 8: Soil Profile of STP 2 (Looking South)*







*Figure 9: S-23-40 Bridge over South Saluda River, Built in 1957 and Not Assessed*



a. Bridge Structure, Looking Northeast



b. Bridge Structure Detail, Looking Northeast



*Figure 10: S-23-40 Bridges over South Saluda River Overflow Channels, Not Assessed*



a. Northern Overflow Bridge (Built 1957), Looking Southeast



b. Southern Overflow Bridge (Built 1969), Looking Southwest

# Appendix B: Natural Resources Technical Memorandum



# Natural Resources Technical Memorandum

S-40 Bridge Replacements over South Saluda River (SSR) and SSR Overflow, and S-26 Bridge Replacement over Trib to SSR

SCDOT Project ID: P041160

June 20, 2024



## Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace three (3) bridges on Pace Bridge Road (S-40/S-26) and improve the roadway approaches to the bridges. The bridges include the S-40 bridges over the South Saluda River (SSR) and the SSR Overflow, and the S-26 bridge over a tributary to the SSR. The project is approximately 7.75 miles northwest of the City of Travelers Rest in Greenville County and Pickens counties, South Carolina. Furthermore, the project is located in the Saluda River Watershed (03050109 8-digit Hydrologic Unit Code) and the 45a Southern Inner Piedmont Level IV Ecoregion. Please see Attachment A, Figure 1 for a Site Location Map.

A Project Study Area (PSA) has been established, based on preliminary design, to encompass all potential impacts of the project. The PSA encompasses an area approximately 15.30 acres in size and approximately 3,000 feet (0.57 mile) in total length, generally centered on South Saluda River in either direction. Furthermore, the PSA is 225 feet in total width, generally centered on the centerline of Pace Bridge Road.

Robbins & DeWitt conducted a desktop analysis, scientific literature review, and field surveys for natural resources associated with the proposed bridge replacements. This technical memorandum provides a summary of methods and findings related to natural resources and potential project related impacts. Attached to this memorandum are supporting figures, a SCDOT Permit Determination Form, South Carolina Department of Health and Environmental Control (SCDHEC) Watershed and Water Quality Information Report, and a biological evaluation for federally protected species.

## Desktop Analysis Methods

A desktop analysis was completed as part of an initial evaluation of the PSA to identify key environmental resources to be considered for permitting and/or avoidance and minimization by the design team. The potential resources identified in the desktop evaluation were field verified by Robbins & DeWitt to ensure that critical regulatory items would not be adversely impacted by the project. The following resources were consulted during the desktop analysis:

- Federal Emergency Management Agency (FEMA) Map Service Center (<https://msc.fema.gov/portal>)
- SCDHEC Watershed Atlas (<https://gis.dhec.sc.gov/watersheds>)
- South Carolina Department of Natural Resources (SCDNR) and South Carolina Natural Heritage Program (SCNHP) (<https://schtportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program>)
- SCDNR Digital Elevation Mapping (DEM) and Light Detection and Ranging (LiDAR) (<https://www.dnr.sc.gov/GIS/lidar.html>)
- SCDNR Open Source Geospatial Data (<https://data-scdnr.opendata.arcgis.com/>)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (<https://websoilsurvey.nrcs.usda.gov/app/>)
- U.S. Fish and Wildlife Services (USFWS) Environmental Conservation Online System (ECOS) (<https://ecos.fws.gov/ecp/>)
- USFWS Information for Planning and Consultation (IPaC) (<https://ecos.fws.gov/ipac/>)
- USFWS National Wetland Inventory (NWI) (<http://www.fws.gov/wetlands>)
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) (<http://nhd.usgs.gov/>)
- USGS Topographic Quadrangle Maps (1:24,000-scale) – Cleveland, SC Quadrangle

## Jurisdictional Waters of the U.S.

After completing the desktop analysis, Robbins & DeWitt performed field reviews to determine the boundaries of jurisdictional waters of the U.S., including wetlands, in the PSA. Field reviews were conducted on July 13 and December 27, 2023. A summary of jurisdictional features identified in the PSA is provided in Tables 1 through 3.

**Table 1 - Summary of Delineated Wetlands in the Project Study Area**

Wetland	Latitude	Longitude	Area (acre)
Wetland A	35.009521	-82.569326	0.02
Wetland B	35.009806	-82.569708	0.03
Wetland CC	35.013955	-82.571147	3.79
Wetland DD	35.011807	-82.570604	0.36
Wetland EE	35.010393	-82.570005	0.22
<b>Total</b>			<b>4.42 acres</b>

**Table 2 - Summary of Delineated Streams in the Project Study Area**

Non-Wetland Feature	Latitude	Longitude	Centerline Length (feet)	Area (acre)
Stream A	35.009475	-82.569305	71	0.01
Stream B	35.012290	-82.570452	270	0.46
Stream C	35.011351	-82.570051	230	0.06
<b>Total</b>			<b>571 feet</b>	<b>0.53 acres</b>

**Table 3 - Summary of Non-Wetland Waters in the Project Study Area**

Wetland	Latitude	Longitude	Area (acre)
Pond A	35.009569	-82.569486	0.08
<b>Total</b>			<b>0.08 acre</b>

## Permitting Considerations

Based on the conceptual bridge design, impacts to jurisdictional waters may occur during construction but are expected to remain below the SCDOT U.S. Army Corps of Engineers General Permit impact thresholds.

The USACE Charleston District has identified the South Saluda River as part of the USACE Section 408 program. Coordination with the USACE Section 408 office will be required for the project. It is anticipated that the project will be designed to avoid alterations to the channel that would impair or reduce conveyance or functionality. The Contractor shall provide a bridge plan and profile depicting the final bridge design to the Section 408 USACE Charleston District office for review and concurrence prior to construction.

A completed SCDOT Permit Determination Form and SCDHEC Watershed and Water Quality Information Report are provided in Attachment B.

## Federally Protected Species

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on July 13 and December 27, 2023, and February 20, 2024. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project. Based on the literature and field reviews it is determined that the proposed project will have a biological conclusion of 'no effect' on federally protected species. A Biological Evaluation is provided in Attachment C.

## Migratory Birds

Certain bird species are protected under the Migratory Bird Treaty Act of 1918. The USFWS IPaC online database was reviewed for information pertaining to migratory bird species. Migratory birds were not observed nesting on the existing South Saluda River (SSR) bridge, but migratory bird nests were observed on the SSR Overflow bridge and the Trib to SSR bridge.

## Vegetation

Land use in the PSA includes silviculture/managed woodlands, natural forested floodplains, and residential housing. The only natural community observed within the PSA consists of bottomland hardwoods. Refer to the Biotic Communities section in Attachment C for a detailed description of vegetation observed in the PSA.

## Soils

According to the (USDA-NRCS) Soil Survey Geographic (SSURGO) data, eight Soil Map Units (SMU) and water (W) are mapped within the PSA. Each SMU IS included in Table 3 below.

**Table 4 - Soil Map Units (SMU) in the Project Study Area**

SMU	SMU Name	Area (acres)	Percentage of PSA
Cw	Congaree fine sandy loam	1.8	11.7%
HID2	Hiwassee clay loam, 6 to 15 percent slopes, eroded	0.1	0.4%
Wd	Wehadkee soils	6.1	39.8%
Co	Chewacla soils, frequently flooded	3.0	19.3%

<b>HwE2</b>	Hiwassee sandy loam, 10 to 25 percent slopes, eroded	2.5	16.5%
<b>PaF</b>	Pacolet fine sandy loam, 25 to 40 percent slopes	0.1	0.5%
<b>SrB</b>	Starr loam, 0 to 6 percent slopes	0.6	4.2%
<b>To</b>	Toccoa soils	0.9	6.0%
<b>W</b>	Water	0.2	0.16%

If you have any questions, or if Robbins & DeWitt can be of additional assistance, please feel free to contact Matt DeWitt at (864) 201-8446 or [matt.dewitt@robbins-dewitt.com](mailto:matt.dewitt@robbins-dewitt.com).

Respectfully Submitted



Matt DeWitt, AICP  
Robbins & DeWitt, LLC

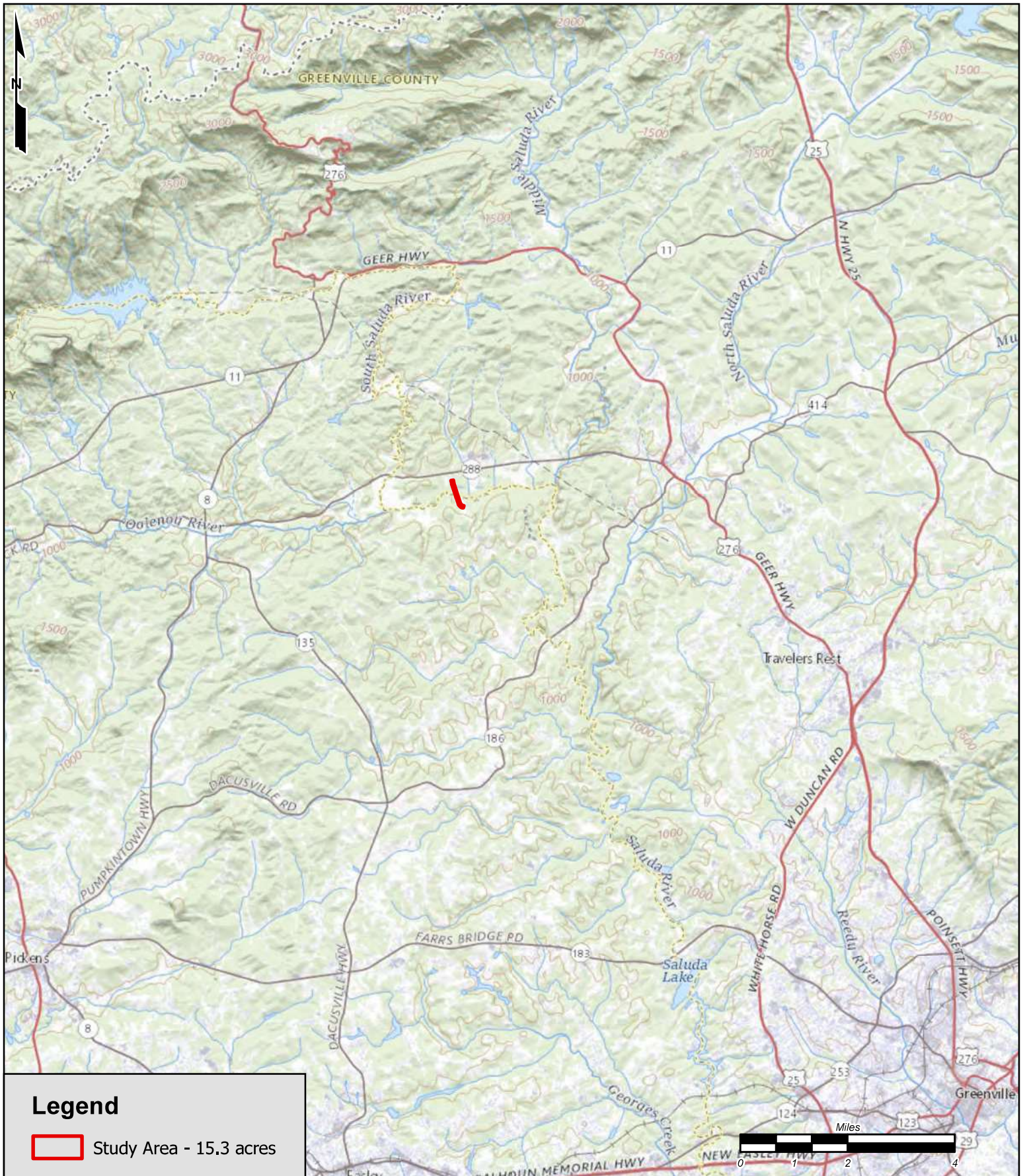


# Attachment A


## Figures



ROBBINS  
& DEWITT



**Legend**

 Study Area - 15.3 acres



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Project Study Area



**S-40 BRIDGE REPLACEMENTS OVER SOUTH SALUDA RIVER (SSR) AND SSR OVERFLOW, AND S-26 BRIDGE REPLACEMENT OVER TRIB TO SSR**

PROJECT ID: P041160

**GREENVILLE AND PICKENS COUNTY, SOUTH CAROLINA**

Source: USGS National Map (2023)



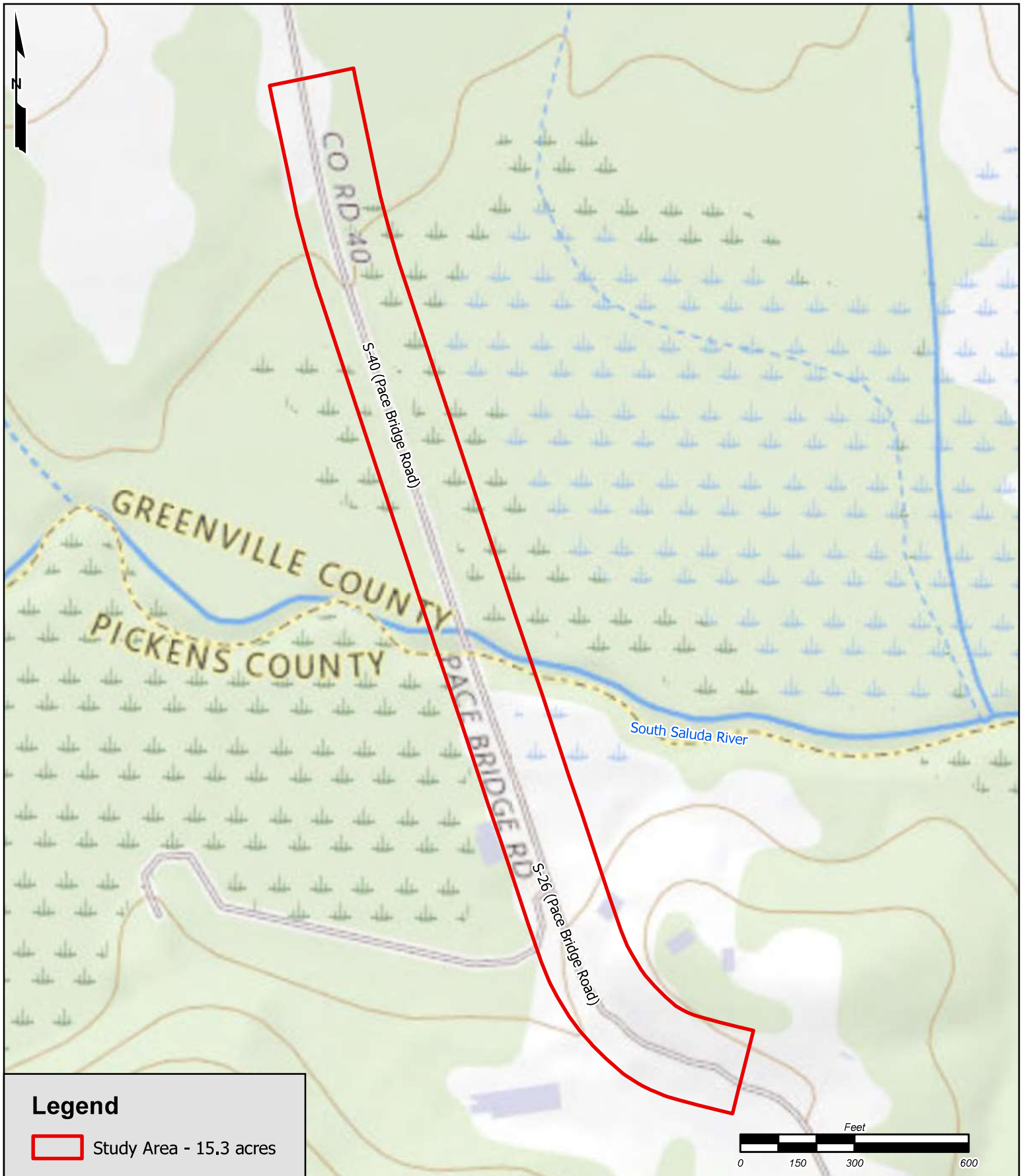
South Carolina Department of Transportation

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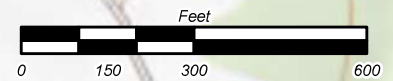

**PROJECT VICINITY**

**FIGURE 1**

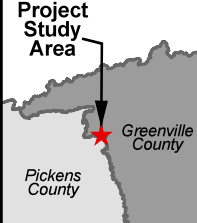


**Legend**

 Study Area - 15.3 acres

**ROBBINS & DEWITT**  
www.Robbins-DeWitt.com




Project Study Area  
Greenville County  
Pickens County

**S-40 BRIDGE REPLACEMENTS  
OVER SOUTH SALUDA RIVER (SSR) AND SSR OVERFLOW,  
AND S-26 BRIDGE REPLACEMENT OVER TRIB TO SSR**

**PROJECT ID: P041160**

**GREENVILLE AND PICKENS COUNTY, SOUTH CAROLINA**

Source: USGS National Map (2023); USGS Cleveland, SC Quadrangle (2020)

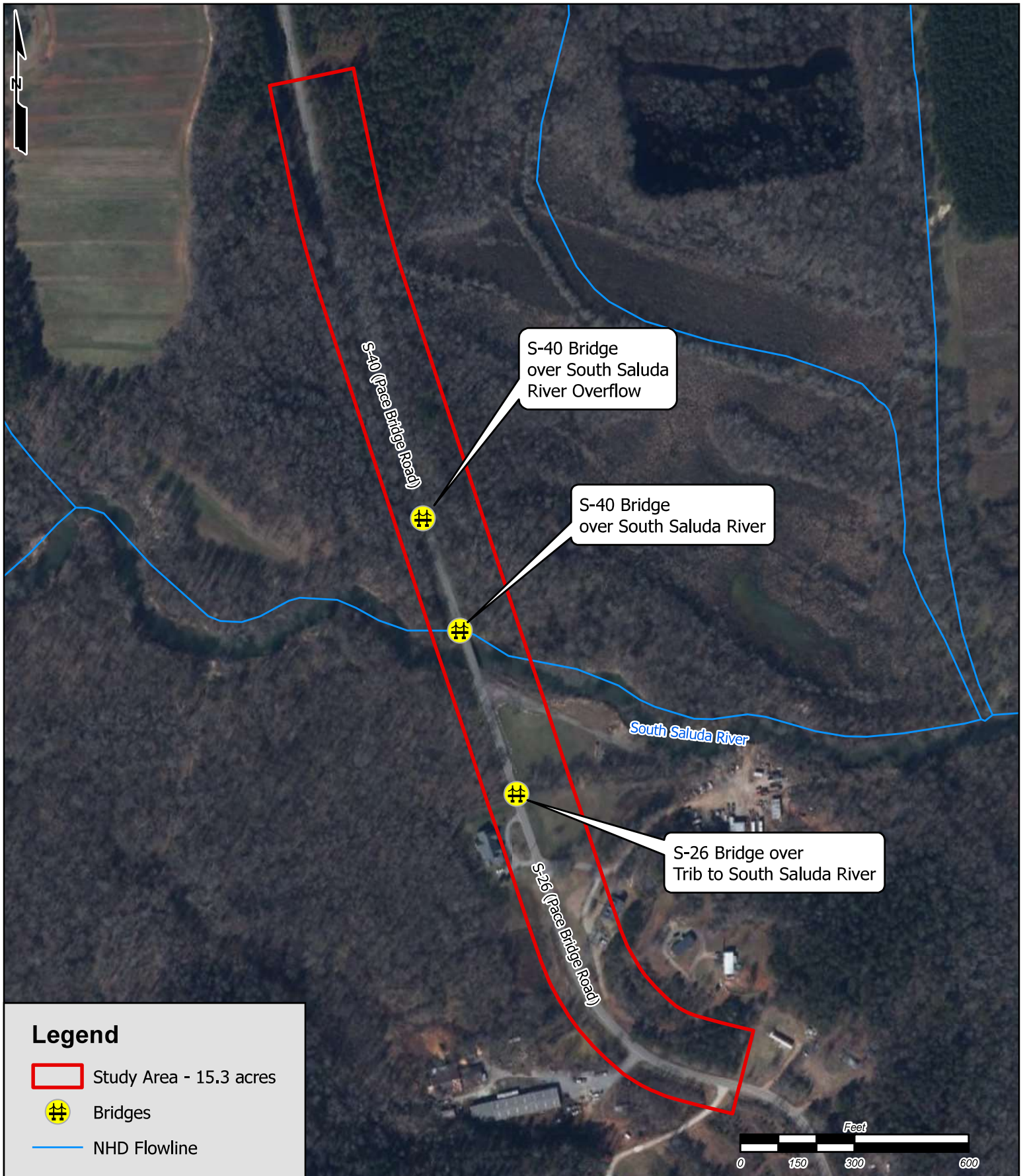


**South Carolina Department of Transportation**

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**USGS TOPOGRAPHIC MAPPING**

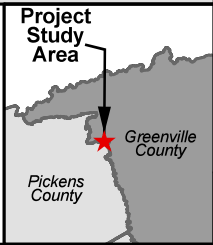
**FIGURE 2**



**Legend**

- Study Area - 15.3 acres
- ⚙ Bridges
- NHD Flowline

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**S-40 BRIDGE REPLACEMENTS  
OVER SOUTH SALUDA RIVER (SSR) AND SSR OVERFLOW,  
AND S-26 BRIDGE REPLACEMENT OVER TRIB TO SSR**

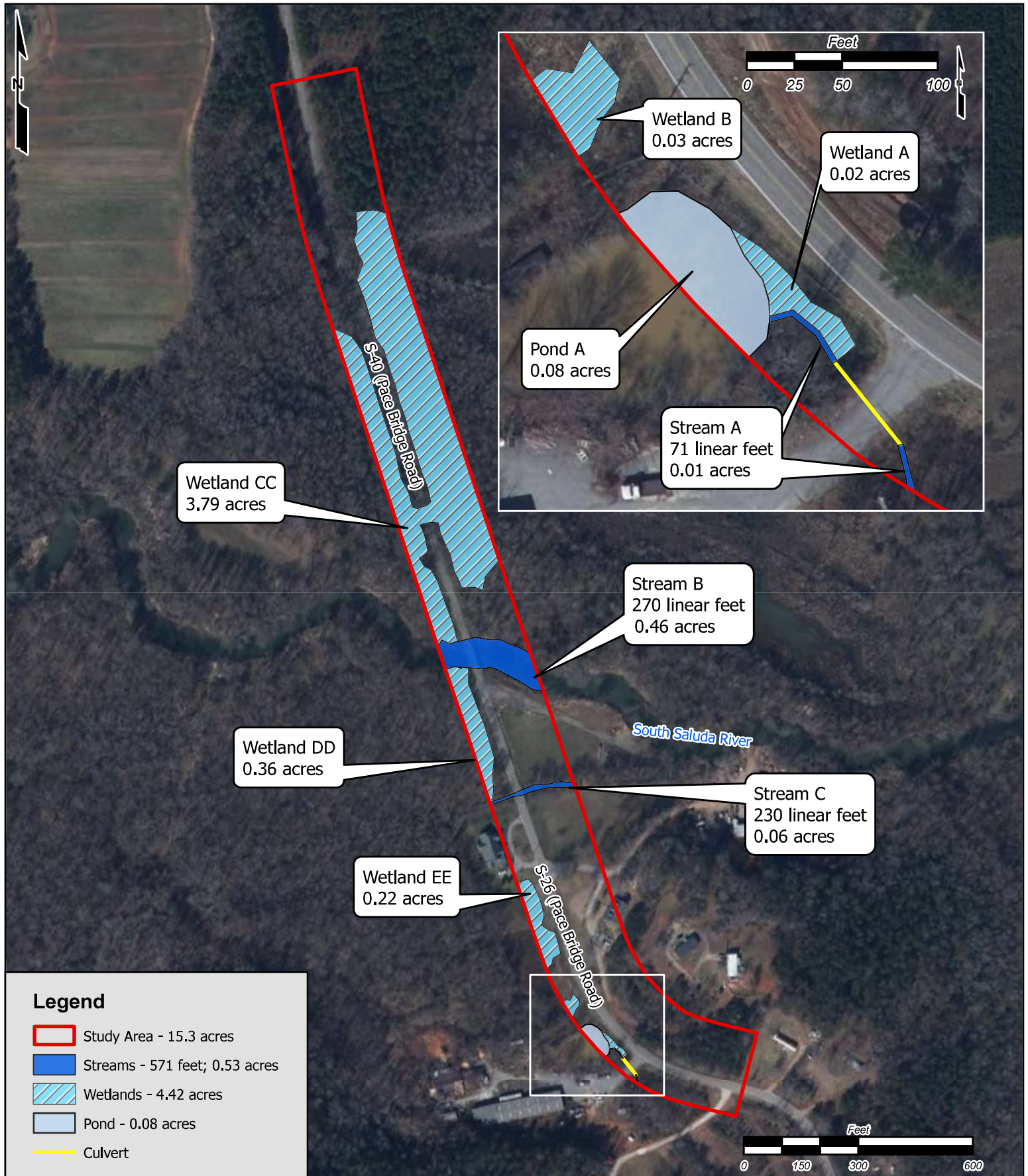
**PROJECT ID: P041160**

**GREENVILLE AND PICKENS COUNTY, SOUTH CAROLINA**

Source: USGS NHD Flowlines (2018); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

**SCDOT**  
South Carolina Department of Transportation

<small>DRAWN BY: TRC</small>	<small>DATE: 02/23/2024</small>
<b>AERIAL IMAGERY</b>	
<b>FIGURE 3</b>	



**Legend**

- Study Area - 15.3 acres
- Streams - 571 feet; 0.53 acres
- Wetlands - 4.42 acres
- Pond - 0.08 acres
- Culvert

**S-40 BRIDGE REPLACEMENTS  
OVER SOUTH SALUDA RIVER (SSR) AND SSR OVERFLOW,  
AND S-26 BRIDGE REPLACEMENT OVER TRIB TO SSR**

PROJECT ID: P041160

GREENVILLE AND PICKENS COUNTY, SOUTH CAROLINA

Source: Approximate boundaries of WOTUS were delineated on August 10 and December 28, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]



DRAWN BY: TRC

DATE: 02/23/2024

APPROXIMATE BOUNDARIES OF WOTUS

FIGURE 4



# Attachment B

## SCDOT Permit Determination Form & Water Quality Information Report



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& DEWITT

# PERMIT DETERMINATION

Date: 10/19/2023

Project ID: P041160

From: Matt DeWitt

Company: Robbins and DeWitt

Contact Info (phone and/or email): matt.dewitt@robbins-dewitt.com

Permit Manager: Will McGoldrick - Alternative Delivery Coordinator

Project Name: S-40 over S Saluda Overflow & S-26 over Trib. to Saluda River

County: Greenville

(Optional) Structure #: \_\_\_\_\_

## STUDY AREA:

Does there appear to be WOTUS in the study area?  YES  NO

## PERMIT TYPE:

It has been determined that no permit is required because:

The following permit(s) is/are necessary:

(Please check which type(s) of permit the project will need)

USACE Permit    GP     IP     NWP

OCRM Permit    Individual CAP     CAP GP

Navigable Permit    State NAV     USCG

## 408 PROJECT INFO:

Is it within a 408 Project:  YES  NO

408 Project Name: Saluda River (North, South, and Middle Fork)

## MITIGATION:

Mitigation Bank:  YES  NO

Mitigation Bank Name: Saluda Mitigation Bank, Corley Mill

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.

*Matt DeWitt*

Biologist, SCDOT/Consultant

Nov 29, 2023

Date



# Watershed and Water Quality Information

General Information

**Applicant Name:** SCDOT **Permit Type:** Construction  
**Address:** 126 PACE BRIDGE RD, MARIETTA, SC, 29661 **Latitude/Longitude:** 35.012383 / -82.570665  
**MS4 Designation:** Not in designated area **Monitoring Station:** S-103  
**Within Coastal Critical Area:** No **Water Classification (Provisional):** FW  
**Waterbody Name:** SOUTH SALUDA RIVER **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
S-103	F	F	F	F	F	F	F	F	F	F	F	InTN	X	N	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)

**ECOLI** - Escherichia coli (Freshwaters)

**BIO** - Macroinvertebrates (Bio)

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

**In TMDL Watershed:** Yes **TMDL Site:** S-103  
**TMDL Report No:** 023-04 **TMDL Parameter:** Fecal  
**TMDL Document Link:** [https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl\\_usaluda\\_fc.pdf](https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl_usaluda_fc.pdf)

Report Date: October 19, 2023



# Attachment C

## Biological Evaluation - Section 7 of the Endangered Species Act



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& DEWITT

## Introduction

The proposed project consists of replacing three (3) bridges on Pace Bridge Road (S-40/S-26) and improvements to the roadway approaches to the bridges. The bridges include the S-40 bridges over the South Saluda River (SSR) and the SSR Overflow, and the S-26 bridge over a tributary to the SSR. The project corridor is located in Greenville and Pickens counties, South Carolina.

Pursuant to Section 7 of the Endangered Species Act (ESA), a field survey was conducted within the Project Study Area (PSA) for the project. A Resource List was obtained from the USFWS Information for Planning and Consultation (IPaC) in January 2024 and updated in April 2024, to detail protected species under USFWS jurisdiction that are known or expected to be in or near the project area. Table 1 below includes the species that appear on the IPaC resource list.

## Federally Protected Species

Species with the federal classification of Endangered (E) or Threatened (T) or Threatened due to Similarity of Appearance (T [S/A]) are protected under the ESA of 1973, as amended (16 U.S.C. 1531 et seq.). Although Section 7 of the ESA does not provide protections for Candidate species, they are listed in Table 1 in the event of a status changes prior to completion of the project. Additionally, species that are proposed for listing are not subject to Section 7 compliance until the time they are formally listed. The bald eagle is protected by the Bald and Golden Eagle Protection Act (BGEPA) and is included in this evaluation.

*Table 1: Threatened and Endangered Species*

Category	Common Name	Scientific Name	Protection Status
Bird	Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Mammal	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Endangered
Mammal	Tricolored Bat	<i>Perimyotis sublavus</i>	Proposed Endangered
Reptile	Bog Turtle	<i>Glyptemys muhlenbergii</i>	Similar in Appearance to Threatened
Insects	Monarch Butterfly	<i>Danaus Plexippus</i>	Candidate
Flowering Plant	Bunched Arrowhead	<i>Sagittaria fasciculata</i>	Endangered
Flowering Plant	Dwarf-flowered Heartleaf	<i>Hexastylis naniflora</i>	Threatened
Flowering Plant	Mountain Sweet Pitcher-plant	<i>Sarracenia rubra ssp. Jonesii</i>	Endangered
Flowering Plant	Small Whorled Pogonia	<i>Isotria medeloides</i>	Threatened
Flowering Plant	Smooth Coneflower	<i>Echinacea laevigata</i>	Threatened
Flowering Plant	Swamp Pink	<i>Helonias bullata</i>	Threatened
Flowering Plant	White Fringeless Orchid	<i>Platanthera integrilabia</i>	Threatened
Lichen	Rock Gnome Lichen	<i>Gymnoderma lineare</i>	Endangered

## Methodology

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on July 13 and December 27, 2023, and February 20, 2024. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project.

## Biotic Communities

Land use in the PSA includes silviculture/managed woodlands, natural forested floodplains, and residential housing. The only natural community observed within the PSA consists of bottomland hardwoods.

Bottomland hardwoods of the Piedmont are quite variable from one site to another. Most bottomland hardwoods have been logged to some degree and have moist soils associated with major river floodplains. Characteristic tree species observed in the PSA include *Liquidambar styraciflua* (sweetgum), *Pinus taeda* (loblolly pine), *Quercus nigra* (water oak), *Carpinus caroliniana* (American hornbeam), and *Betula nigra* (river birch). Groundcover species observed include *Arundinaria gigantea* (river cane), *Rubus* (blackberry), *Aureolaria* ssp. (false foxglove), *Sherardia arvensis* (blue fieldmadder), *Chaerophyllum* ssp. (chervil), *Geranium carolinianum* (Carolina geranium), and various species of *Poa* (grasses) along the roadway fill slopes.

## Results

The SCDNR South Carolina Natural Heritage Species Viewer does not identify any protected species within the PSA or within a one-mile radius of the PSA.

Field reviews of the PSA found no suitable habitat for bald eagle, bog turtle, bunched arrowhead, dwarf-flowered heartleaf, mountain sweet pitcherplant, small whorled pagonia, smooth coneflower, swamp pink, white fringeless orchid, or rock gnome lichen.

According to the IPaC Resource List, the northern long-eared bat only needs to be considered if the project includes wind turbine operations. As the project is limited to roadway and bridge construction, an effect determination is not included.

Suitable habitat for tricolored bat exists in the PSA. Roosting habitat exists under the existing S-40 and S-26 bridges and in cavities and crevices of trees within the PSA. A structure survey of the existing bridges found no evidence of bat roosting. Additionally, a visual inspection and borescope review of cavities and crevices in trees within the PSA did not indicate the presence of any bat species. A Structures Survey Data Sheet and Habitat Assessment Data Sheet are included in Attachment D.

## Conclusions

Based on the literature and field reviews, it is determined that the proposed project will have a biological conclusion of 'no effect' on federally protected species.

If there is a change in listing for the tricolored bat, coordination with USFWS will be required to assess potential project impacts.

If you have any questions, or if Robbins & DeWitt can be of additional assistance, please feel free to contact Matt DeWitt at (864) 201-8446 or [matt.dewitt@robbins-dewitt.com](mailto:matt.dewitt@robbins-dewitt.com).

Respectfully Submitted

A handwritten signature in blue ink that reads "Matt DeWitt". The signature is written in a cursive style with a long horizontal stroke extending from the end of the name.

Matt DeWitt, AICP  
Robbins & DeWitt, LLC

# Attachment D

## Biological Evaluation Attachments



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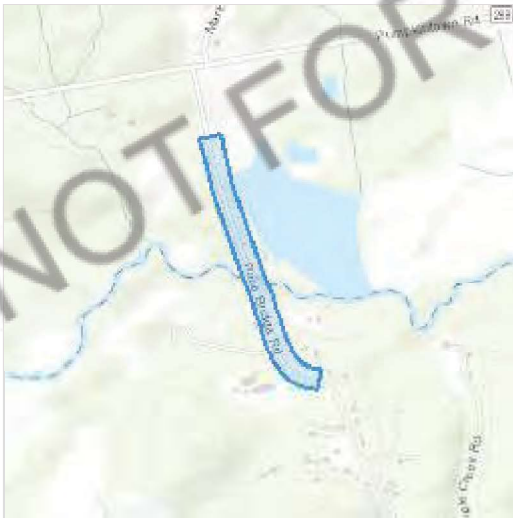
# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Greenville and Pickens counties, South Carolina



## Local office

South Carolina Ecological Services

☎ (843) 727-4707

📅 (843) 727-4218

176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries)<sup>2</sup>.

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).



2. [NOAA Fisheries](#) also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
<p>Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> <li>This species only needs to be considered if the project includes wind turbine operations.</li> </ul> <p>No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a></p>	Endangered
<p>Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a></p>	Proposed Endangered

## Reptiles

NAME	STATUS
<p>Bog Turtle <i>Glyptemys muhlenbergii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6962">https://ecos.fws.gov/ecp/species/6962</a></p>	SAT

## Insects

NAME	STATUS
<p>Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a></p>	Candidate

## Flowering Plants

NAME	STATUS
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<b>Bunched Arrowhead</b> <i>Sagittaria fasciculata</i>	Endangered
Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1720">https://ecos.fws.gov/ecp/species/1720</a>	
<b>Dwarf-flowered Heartleaf</b> <i>Hexastylis naniflora</i>	Threatened
Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2458">https://ecos.fws.gov/ecp/species/2458</a>	
<b>Mountain Sweet Pitcher-plant</b> <i>Sarracenia rubra</i> ssp. <i>jonesii</i>	Endangered
Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/4283">https://ecos.fws.gov/ecp/species/4283</a>	
<b>Small Whorled Pogonia</b> <i>Isotria medeoloides</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1890">https://ecos.fws.gov/ecp/species/1890</a>	
<b>Smooth Coneflower</b> <i>Echinacea laevigata</i>	Threatened
Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3473">https://ecos.fws.gov/ecp/species/3473</a>	
<b>Swamp Pink</b> <i>Helonias bullata</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/4333">https://ecos.fws.gov/ecp/species/4333</a>	
<b>White Fringeless Orchid</b> <i>Platanthera integrilabia</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1889">https://ecos.fws.gov/ecp/species/1889</a>	

## Lichens

NAME	STATUS
<b>Rock Gnome Lichen</b> <i>Gymnoderma lineare</i>	Endangered
Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3933">https://ecos.fws.gov/ecp/species/3933</a>	

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

## Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

**What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?**

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#)

**What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#)

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)"

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the **PROBABILITY OF PRESENCE SUMMARY** below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Chimney Swift *Chaetura pelagica*

Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Kentucky Warbler *Geothlypis formosa*

Breeds Apr 20 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#) specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence(■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

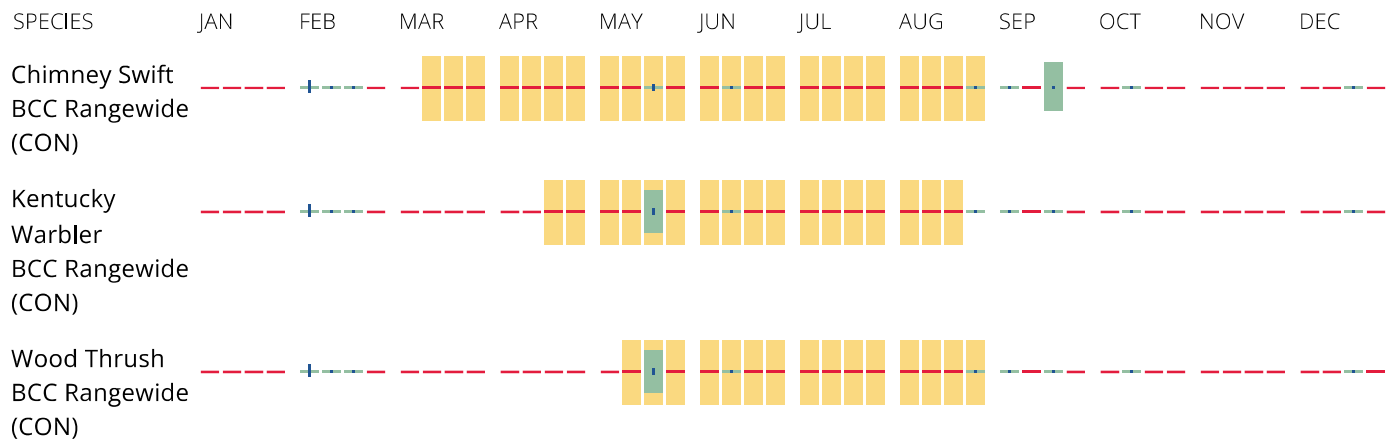
### No Data (—)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data



## Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

## What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle [Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#)

## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report



The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

### Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1A](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

FRESHWATER POND

[PUBHh](#)

RIVERINE

[R2UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and

nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

# STRUCTURES SURVEY DATA SHEET

Investigator Names(s): A.CHANDLER, R.CHANDLER

Date: 2023-07-13, 2024-02-20





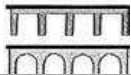

County: GREENVILLE, PICKENS



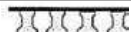

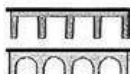

Lat Long/w3w: 35.01247, -82.5707 [S-40 OVER S SALUDA RIVER]





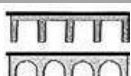

Project Name: S-40 (PACE BRIDGE RD) OVER S SALUDA RIVER AND OVERFLOW,  
S-26 OVER TRIB TO S SALUDA RIVER

SCDOT Structure ID: 02540, 02541, 05605

SCDOT Project No.: P041160

Structure Type:			Underdeck Material:		
<input type="checkbox"/> Parallel Box Beam		<input type="checkbox"/> Steel I-Beam		<input checked="" type="checkbox"/> Concrete	
<input type="checkbox"/> Pre-Stressed Girder		<input type="checkbox"/> Flat Slab / Box		<input type="checkbox"/> Corrugated Steel	
<input type="checkbox"/> Cast in Place		<input type="checkbox"/> Trapezoidal Box		<input type="checkbox"/> Other:	
		<input checked="" type="checkbox"/> Other: CHANNEL BEAM			
Bridge Note: 02540 (S-40 OVER S SALUDA RIVER)					
<input type="checkbox"/> Culvert - Box					
<input type="checkbox"/> Culvert - Pipe/Round					
Culvert Note:					

Structure Type:			Underdeck Material:		
<input type="checkbox"/> Parallel Box Beam		<input type="checkbox"/> Steel I-Beam		<input checked="" type="checkbox"/> Concrete	
<input type="checkbox"/> Pre-Stressed Girder		<input checked="" type="checkbox"/> Flat Slab / Box		<input type="checkbox"/> Corrugated Steel	
<input type="checkbox"/> Cast in Place		<input type="checkbox"/> Trapezoidal Box		<input type="checkbox"/> Other:	
		<input type="checkbox"/> Other:			
Bridge Note: 02541 (S-40 OVER SALUDA OVERFLOW)					
<input type="checkbox"/> Culvert - Box					
<input type="checkbox"/> Culvert - Pipe/Round					
Culvert Note:					

Structure Type:			Underdeck Material:		
<input type="checkbox"/> Parallel Box Beam		<input type="checkbox"/> Steel I-Beam		<input checked="" type="checkbox"/> Concrete	
<input type="checkbox"/> Pre-Stressed Girder		<input checked="" type="checkbox"/> Flat Slab / Box		<input type="checkbox"/> Corrugated Steel	
<input type="checkbox"/> Cast in Place		<input type="checkbox"/> Trapezoidal Box		<input type="checkbox"/> Other:	
		<input type="checkbox"/> Other:			
Bridge Note: 05605 (S-26 OVER TRIB TO SALUDA RIVER)					
<input type="checkbox"/> Culvert - Box					
<input type="checkbox"/> Culvert - Pipe/Round					
Culvert Note:					

Road Type:			
<input type="checkbox"/> Interstate	<input type="checkbox"/> US Highway	<input checked="" type="checkbox"/> State Road	<input type="checkbox"/> County Road
		S-40 / S-26	

Surrounding Habitat (check all that apply):				
<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Commercial	<input type="checkbox"/> Pine Forest	<input type="checkbox"/> Grassland
<input checked="" type="checkbox"/> Riparian	<input checked="" type="checkbox"/> Wetland	<input checked="" type="checkbox"/> Mixed Forest	<input type="checkbox"/> Bottomland Hardwood	
<input type="checkbox"/> Other:				

Conditions Under Bridge (check all that apply):			
<input checked="" type="checkbox"/> Bare Ground/Sediment	<input type="checkbox"/> Concrete	<input checked="" type="checkbox"/> Rip Rap	<input checked="" type="checkbox"/> Flowing Water
<input type="checkbox"/> Standing Water	<input checked="" type="checkbox"/> Open Vegetation (not obstructing flight path)	<input type="checkbox"/> Closed Vegetation (may obstruct flight path)	<input type="checkbox"/> Two Lanes
<input type="checkbox"/> Four (+) Lanes	<input type="checkbox"/> Unpaved Road	<input type="checkbox"/> Railroad	<input type="checkbox"/> Other:

Bats Present:	
<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Bat Indicators (check all that apply):				
<input type="checkbox"/> Visual	<input type="checkbox"/> Smell	<input type="checkbox"/> Sound	<input type="checkbox"/> Staining	<input type="checkbox"/> Guano

Species Present:	
<input type="checkbox"/> Big brown ( <i>Eptesicus fuscus</i> )	<input type="checkbox"/> Northern long-eared ( <i>Myotis septentrionalis</i> )
<input type="checkbox"/> Brazilian free-tailed ( <i>Tadarida brasiliensis</i> )	<input type="checkbox"/> Northern yellow ( <i>Lasiurus intermedius</i> )
<input type="checkbox"/> Eastern red ( <i>Lasiurus borealis</i> )	<input type="checkbox"/> Rafinesque's big-eared ( <i>Corynorhinus rafinesquii</i> )
<input type="checkbox"/> Eastern small-footed ( <i>Myotis leibii</i> )	<input type="checkbox"/> Silver-haired ( <i>Lasionycteris noctivagans</i> )
<input type="checkbox"/> Evening ( <i>Nycticeius humeralis</i> )	<input type="checkbox"/> Southeastern ( <i>Myotis austroriparius</i> )
<input type="checkbox"/> Gray ( <i>Myotis grisescens</i> )	<input type="checkbox"/> Seminole ( <i>Lasiurus seminolus</i> )
<input type="checkbox"/> Hoary ( <i>Lasiurus cinereus</i> )	<input type="checkbox"/> Tri-colored ( <i>Perimyotis subflavus</i> )
<input type="checkbox"/> Little brown ( <i>Myotis lucifugus</i> )	<input checked="" type="checkbox"/> UNKNOWN

Roost Description (if known, check all that apply):			
<input type="checkbox"/> Day Roost	<input type="checkbox"/> Nursery Roost	<input type="checkbox"/> Night Roost	<input checked="" type="checkbox"/> UNKNOWN
Number of Roosts:			

Roost Design (check all that apply):			
<input type="checkbox"/> Crack/Crevice/Expansion Joint: Under Bridge		<input type="checkbox"/> Crack/Crevice/Expansion Joint: Top of Bridge	
<input type="checkbox"/> Plugged Drain	<input type="checkbox"/> Under/Along Main Bridge Structure	<input type="checkbox"/> Rail	<input type="checkbox"/> Other:

---

**Human Disturbance or Traffic Under Bridge or at Structure?**

High

Low

None

**Areas Inspected (check all that apply):**

Vertical Surfaces on I-Beams

Vertical Surfaces between Concrete End Walls and Bridge Deck

Expansion Joints

Rough Surfaces

Guardrails

Services

Other:

Areas NOT Inspected because of Safety or Inaccessibility:

**Evidence of Migratory Birds Using the Structure?**

YES (02541, 05605)

NO

**Additional Information:**

Road is currently closed.



Photograph 1

Date: 2023-07-13

Taken by: A. Chandler

S-40 over S Saluda River



Photograph 2

Date: 2023-07-13

Taken by: A. Chandler

Underneath S-40 over S Saluda River



Photograph 3

Date: 2023-07-13

Taken by: A. Chandler

Underneath S-40 over S  
Saluda River



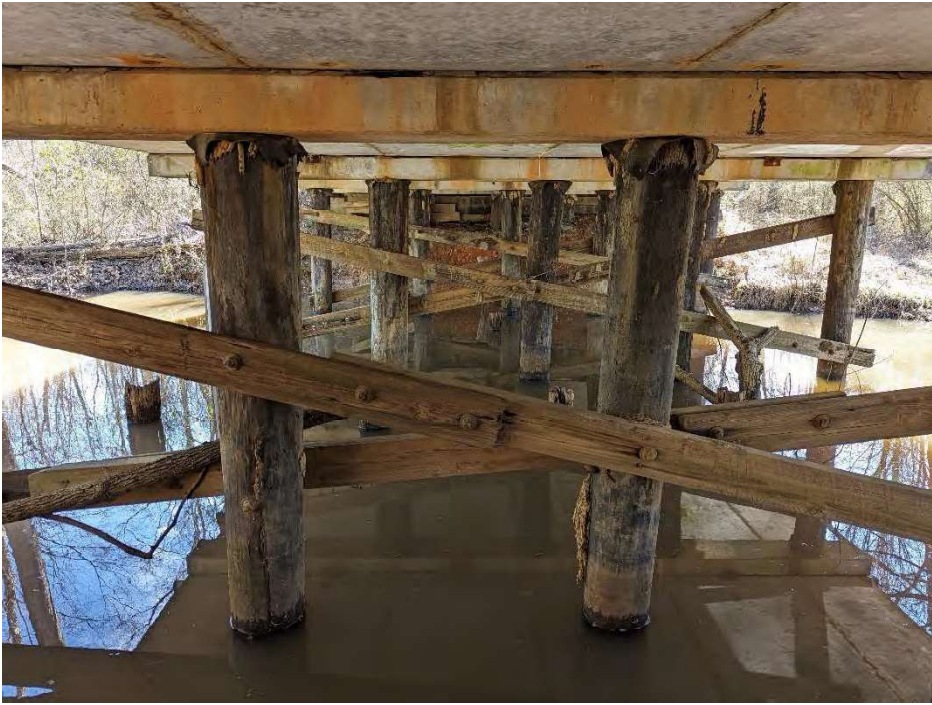
Photograph 4

Date: 2024-02-20

Taken by: A. Chandler

S-40 over Saluda  
Overflow





Photograph 5

Date: 2024-02-20

Taken by: A. Chandler

Underneath S-40 over Saluda Overflow



Photograph 6

Date: 2024-02-20

Taken by: A. Chandler

Underneath S-26 over Trib to Saluda River

# BAT HABITAT ASSESSMENT DATA SHEET

**Project Name:** S-40 (PACE BRIDGE RD) OVER S SALUDA RIVER AND OVERFLOW, S-26 OVER TRIB TO S SALUDA RIVER

**Date:** 2023-07-13, 2024-02-20

**County:** GREENVILLE, PICKENS

**Surveyor:** A. CHANDLER,  
R. CHANDLER

**Lat Long:** 35.01247, -82.5707 [S-40 OVER S SALUDA RIVER]

## Brief Project Description

--

## Project Area

Project Area			
Project	Total Acres	Forest Acres	Open Acres
	15.3	7.61	7.69
Proposed Tree Removal	Completely Cleared	Partially Cleared (Will Leave Trees)	Preserve Acres – No Clearing
	0.50 (anticipated)		7.11 (anticipated)

## Vegetation Cover Types

Pre-Project	Post-Project
Forested	Forested
Maintained right-of-way	Maintained right-of-way

## Landscape within 5-mile Radius

**Flight corridors to other forested areas?**

--

**Describe Adjacent Properties (e.g., forested, grassland, commercial or residential development, water sources)**

Forested, residential development, S Saluda River, overflow, tributary to river

## Proximity to Public Land

**What is the distance from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?**

--

## Sample Site Description

<b>Sample Site No. (s):</b>	Project Study Area (15.3 acres)
-----------------------------	---------------------------------

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
		71 lf	230 lf 270 lf

Pools/Ponds (# and size)	0.08 ac	Open and accessible to bats?
		Yes

Wetland (approx. acres)	Permanent	Seasonal
	3.79, 0.36, 0.22, 0.03, 0.02	

Describe existing condition of water sources:

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')
	2 (11-20%)	3 (21-40%)	3 (21-40%)

Dominant Species of Mature Trees	River birch, water oak
----------------------------------	------------------------

Exfoliating Bark (%)	5%
----------------------	----

Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)
	4 (41-60%)	3 (21-40%)	1 (1-10%)

No. of Suitable Snags	2%
-----------------------	----

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

1 = 1-10%, 2 = 11-20%, 3 = 21-40%, 4 = 41-60%, 5 = 61-80%, 6 = 81-100%

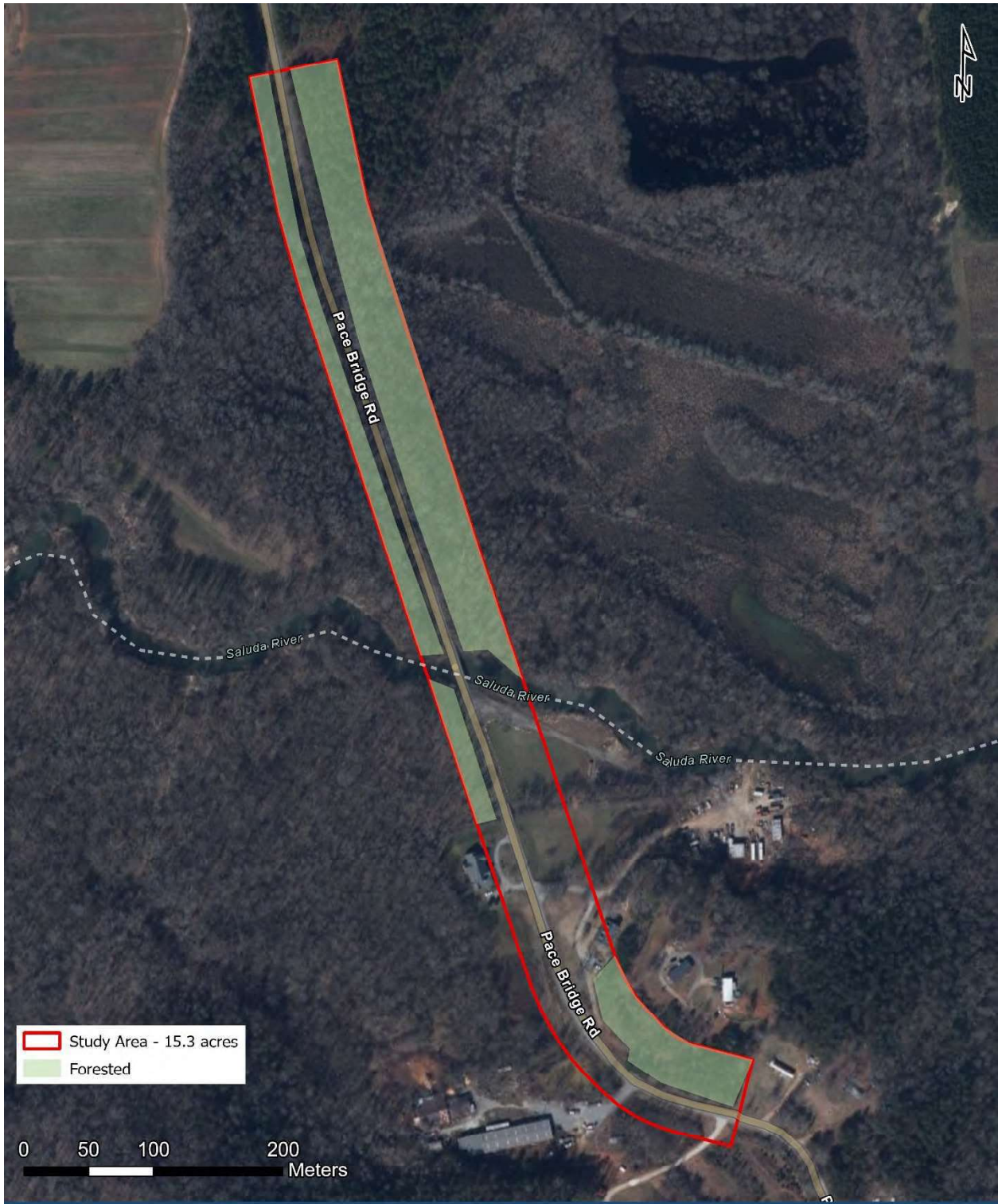
IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS? YES

IS THE HABITAT SUITABLE FOR TRI-COLORED BATS? YES

**Additional Comments:**

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources



S-40 over S Saluda River and Overflow,  
S-26 over Tributary to S Saluda River

Imagery collected in 2020 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by ESRI, Esri Community Maps Contributors, City of Greenville, Tennessee STS GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



Photograph 1

Date: 2023-07-13

Taken by: M. DeWitt

Forested wetland



Photograph 2

Date: 2023-07-13

Taken by: M. DeWitt

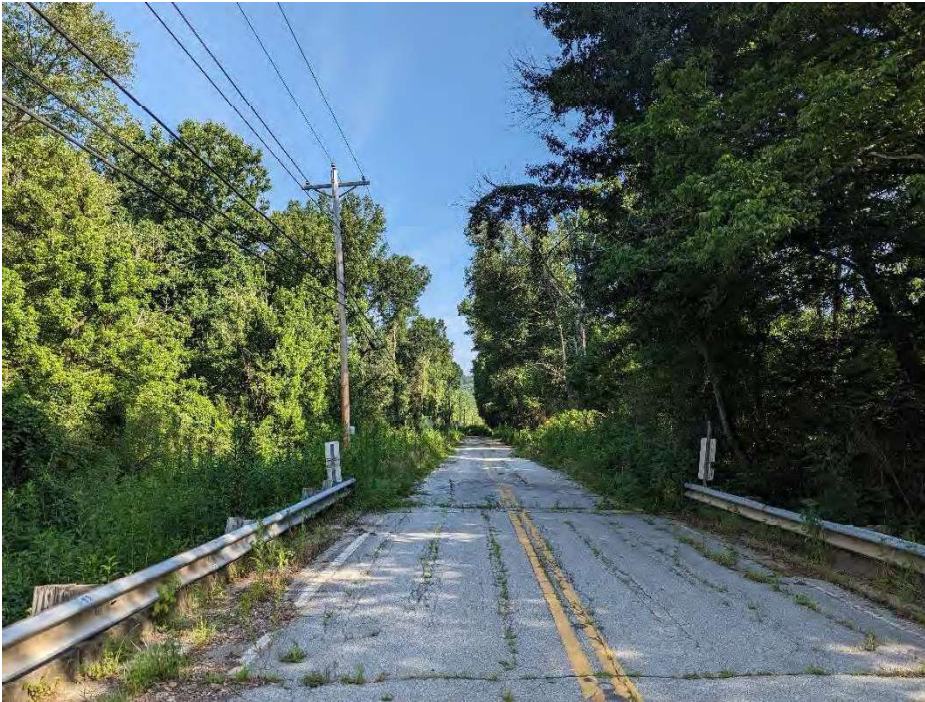


Photograph 3

Date: 2023-07-13

Taken by: A. Chandler

S Saluda River



Photograph 4

Date: 2023-07-13

Taken by: A. Chandler

S-40/S-26 roadway and utilities



Photograph 5

Date: 2024-02-20

Taken by: A. Chandler

North bank of S Saluda River, east of S-40



Photograph 6

Date: 2024-02-20

Taken by: A. Chandler

Forested wetland at overflow

# Appendix C: Bridge Scope and Risk Assessment Form

S-23-40



# BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: Greenville

DATE: 07/31/2024

ROAD #: S-23-40

STREAM CROSSING: South Saluda River Overflow

## Purpose & Need for the Project:

SCDOT proposes to replace the SC Route S-23-40 (2541) (Pace Bridge Road) over the South Saluda River Overflow in Greenville County. The purpose of this project is to replace the existing bridge concurrently with bridge 2540 that is currently shut down.

## I. FEMA Acknowledgement

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

Panel Number: 45045C0200E Effective Date: 08/18/2014 (See Attached)

## II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number N/A 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 preliminary bridge model shows a "No-Rise" with no increases US or DS of the project area.

- Preliminary assessment 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. NA Sheet No. NA (See Attached)  
 No

b. Road Plans  Yes File No. \_\_\_\_\_ Sheet No. \_\_\_\_\_ (See Attached)  
 No

### B. Historical Highwater Data

a. USGS Gage  Yes Gage No. \_\_\_\_\_ Results: \_\_\_\_\_  
 No

b. SCDOT/USGS Documented Highwater Elevations  
 Yes Results: \_\_\_\_\_  
 No

c. Existing Plans  Yes See Above  
 No

## V. Field Review

### A. Existing Bridge

Length: 56 ft. Width: 25.6 ft. Max. span Length: 14 ft.

Alignment:  Tangent  Curved

Bridge Skewed:  Yes  No Angle: \_\_\_\_\_

End Abutment Type: RC Caps with Timber Piles

Riprap on End Fills:  Yes  No Condition: Some misplaced riprap

Superstructure Type: Concrete Deck on RC Caps

Substructure Type: Timber Piles

Utilities Present:  Yes  No

Describe:

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

Hydraulic Problems:  Yes  No

Describe:

## BRIDGE SCOPE AND RISK ASSESSMENT FORM

### V. Field Review (cont.)

#### B. Hydraulic Features

a. Scour Present:  Yes  No Location: piles at bent 2

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

c. Distance from Low Steel to Normal Water Elev.: 8.4 ft.

d. Distance from F.G. to High Water Elevation: 2.1 ft.

e. Distance from Low Steel to High Water Elev.: 1.0 ft.

f. Channel Banks Stable:  Yes  No

Describe:

g. Soil Type: gravel/cobble

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.

House located nearby, but will not be impacted. No structures will be impacted by additional backwater.

#### C. Existing Roadway Geometry

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

Yes  No

Describe:

Existing road is temporarily closed.

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

Existing horizontal alignment has been retained with an adjustment to vertical curve.

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:     TBD     ft.      Width:     36     ft.      Elevation:     TBD     ft.

Span Arrangement:     TBD    

Notes: To be determined.

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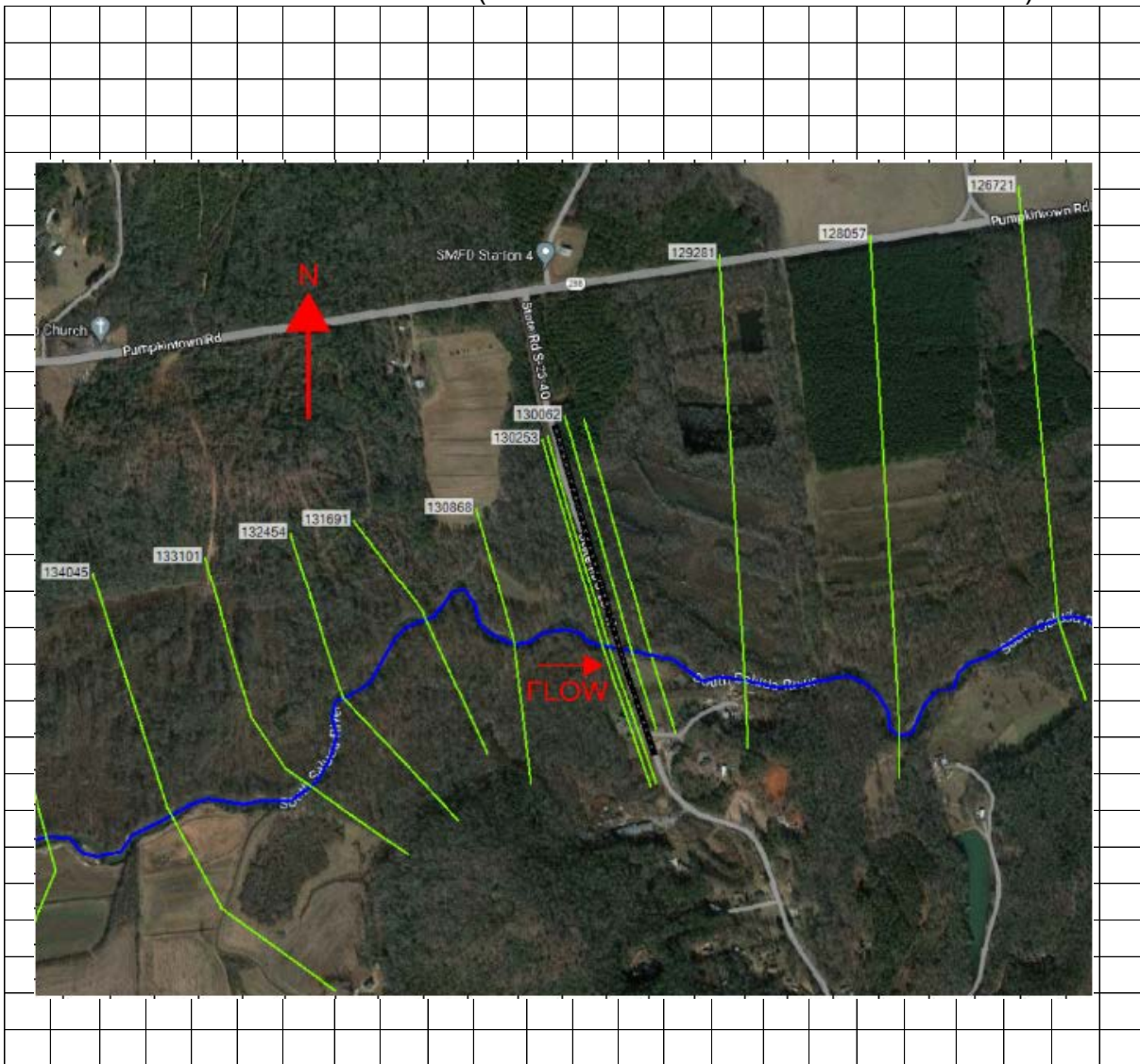
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BRIDGE SITE DIAGRAM: (Show North Arrow and Direction of Flow)



Performed By: Richard Hinton, PE

# Appendix C: Bridge Scope and Risk Assessment Form

S-39-26

# BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: Pickens

DATE: 07/31/2024

ROAD #: S-39-26

STREAM CROSSING: Trib to South Saluda River

## Purpose & Need for the Project:

SCDOT proposes to replace the SC Route S-39-26 (Pace Bridge Road) over the Tributary to South Saluda River in Pickens County. The purpose of this project is to replace the existing bridge concurrently with bridge 2540 that is currently shut down.

## I. FEMA Acknowledgement

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

Panel Number: 45045C0200E Effective Date: 08/18/2014 (See Attached)

## II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number N/A 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 preliminary bridge model shows a "No-Rise" with no increases US or DS of the project area.

- Preliminary assessment 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. NA Sheet No. NA (See Attached)  
 No

b. Road Plans  Yes File No. C-435 Sheet No. 6 (See Attached)  
 No

### B. Historical Highwater Data

a. USGS Gage  Yes Gage No. \_\_\_\_\_ Results: \_\_\_\_\_  
 No

b. SCDOT/USGS Documented Highwater Elevations  
 Yes Results: \_\_\_\_\_  
 No

c. Existing Plans  Yes See Above  
 No

## V. Field Review

### A. Existing Bridge

Length: 45 ft. Width: 27.7 ft. Max. span Length: 15 ft.

Alignment:  Tangent  Curved

Bridge Skewed:  Yes  No Angle: \_\_\_\_\_

End Abutment Type: RC Caps with Timber Piles

Riprap on End Fills:  Yes  No Condition: Some misplaced riprap

Superstructure Type: Concrete Deck on RC Caps

Substructure Type: Timber Piles

Utilities Present:  Yes  No

Describe:

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

Hydraulic Problems:  Yes  No

Describe:  High Water marks shown on house adjacent to bridge location.

# BRIDGE SCOPE AND RISK ASSESSMENT FORM

## V. Field Review (cont.)

### B. Hydraulic Features

a. Scour Present:  Yes  No Location: \_\_\_\_\_

b. Distance from F.G. to Normal Water Elevation: \_\_\_\_\_ 9.4 ft.

c. Distance from Low Steel to Normal Water Elev.: \_\_\_\_\_ 8.4 ft.

d. Distance from F.G. to High Water Elevation: \_\_\_\_\_ 1.6 ft.

e. Distance from Low Steel to High Water Elev.: \_\_\_\_\_ 0.5 ft.

f. Channel Banks Stable:  Yes  No

Describe:

g. Soil Type: gravel/cobble \_\_\_\_\_

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.

House located nearby, but will not be impacted. No structures will be impacted by additional backwater.

### C. Existing Roadway Geometry

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

Yes  No

Describe:

Existing road is temporarily closed.

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

Existing horizontal alignment has been retained with an adjustment to vertical curve.

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:     TBD     ft.      Width:     36     ft.      Elevation:     TBD     ft.

Span Arrangement:     TBD    

Notes: To be determined.

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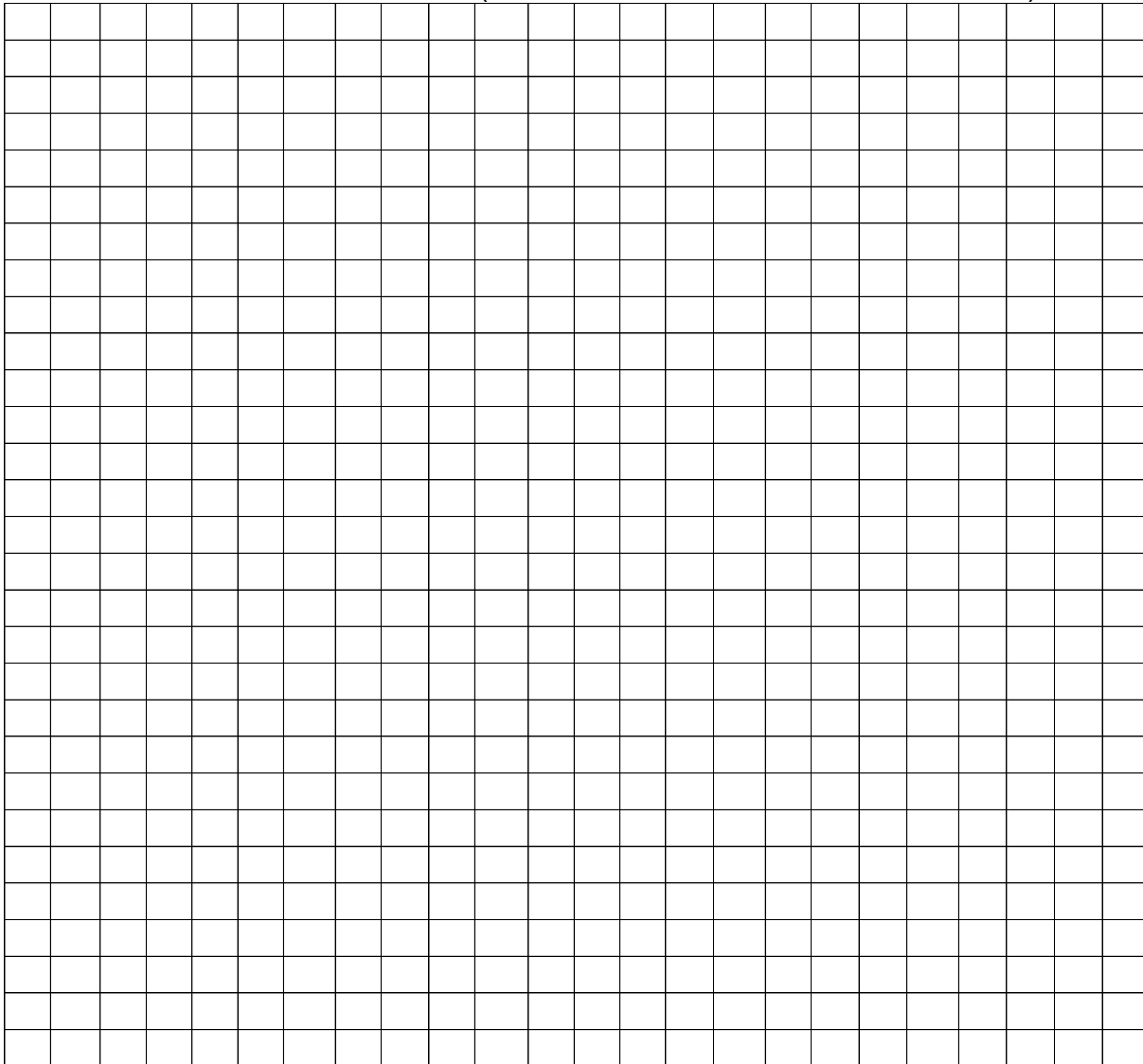
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### BRIDGE SITE DIAGRAM: (Show North Arrow and Direction of Flow)



Performed By: Richard Hinton, PE

# Appendix D: Floodplains Checklist

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S-23-40

**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

SCDOT proposes to replace bridge crossing the South Saluda River overflow along S-23-40 (Pace Bridge Road) in Greenville County.

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:

The purpose of this project is to replace the existing bridge concurrently with bridge 2540 that is currently shut down. Roadway improvements are based on the proposed new structure.

The project crosses the South Saluda River which is shown on the Flood Insurance Map (FIRM) Panel 45045C0200E. The project is located within a FEMA Zone A. The project is not expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an environmental impact on the base flood elevation.

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?

The proposed bridge will need to be raised to accommodate the thickness of the new bridge and meeting freeboard requirements.

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

N/A

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?

Risks are minimal. The project will replace the existing bridge with a larger bridge opening and it will not impact the BFE's along the floodplain.

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

The project is not expected to impact the floodplain values, as the hydraulics will be retained/improved.

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

A reduction in the number of piers and lengthening the bridge.

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

N/A

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

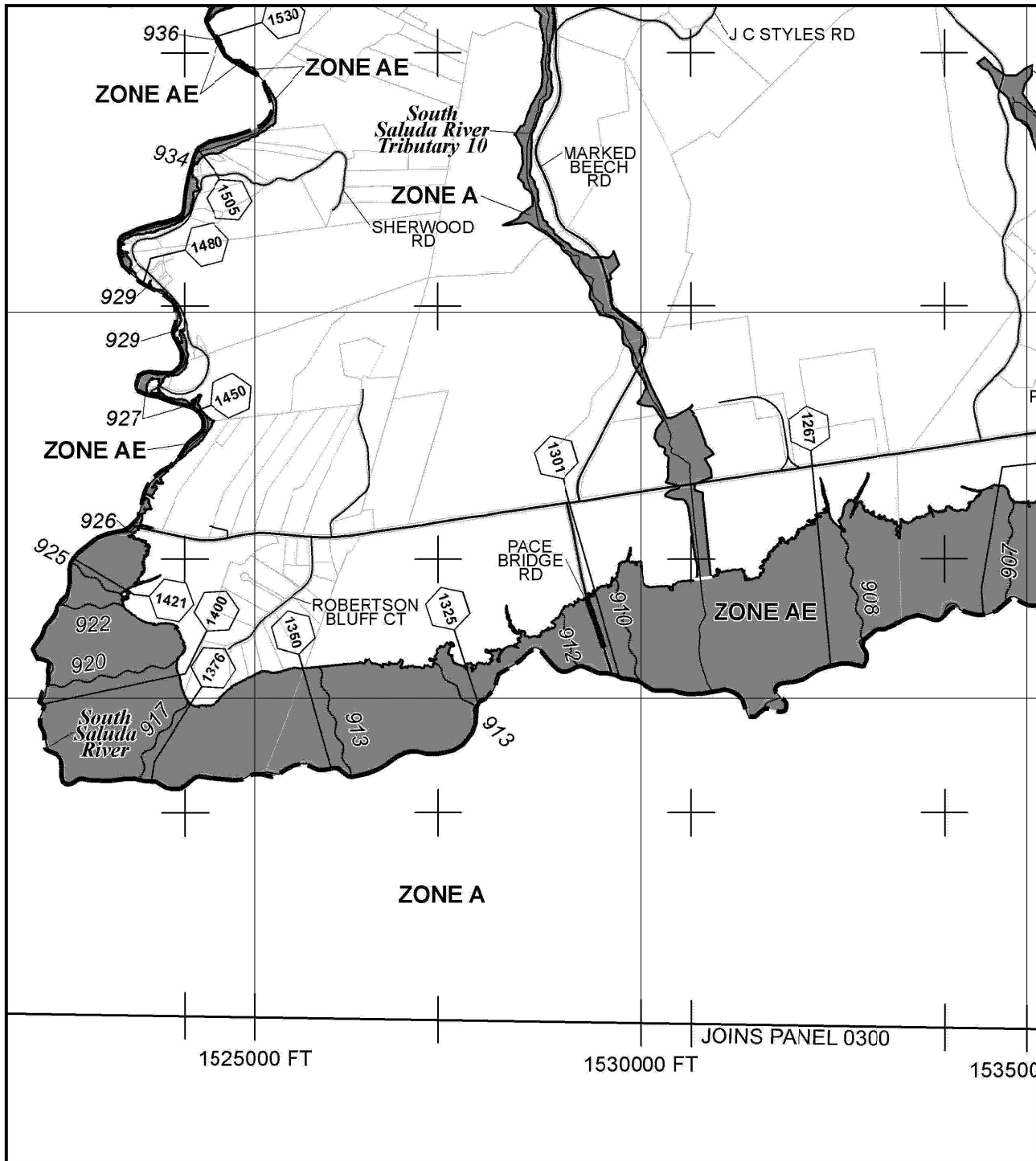
The impacts are not significant encroachments and will not result in a negative impact to the base flood elevations nor potential development.

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.

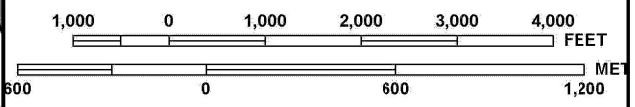
All analysis were performed in accordance with SCDOT, FEMA, and local regulations. As the project progresses to final design, the hydraulic modeling will be updated based on the final bridge layout.

\_\_\_\_\_  
SCDOT Hydraulic Engineer

\_\_\_\_\_  
Date



MAP SCALE 1" = 2000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0200E

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**GREENVILLE COUNTY,**  
**SOUTH CAROLINA**  
**AND INCORPORATED AREAS**

**PANEL 200 OF 625**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENVILLE COUNTY	450089	0200	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
**45045C0200E**  
**MAP REVISED**  
**AUGUST 18, 2014**

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

# Appendix D: Floodplains Checklist

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S-39-26

**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

SCDOT proposes to replace bridge crossing the Tributary to South Saluda River along S-39-26 (Pace Bridge Road) in Pickens County.

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:

The purpose of this project is to replace the existing bridge concurrently with bridge 2540 that is currently shut down. Roadway improvements are based on the proposed new structure.

The project crosses the Tributary to South Saluda River which is shown on the Flood Insurance Map (FIRM) Panel 45045C0200E. The project is located within a FEMA study area AE. The project is not expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an environmental impact on the base flood elevation.

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?

The proposed bridge will need to be raised to accommodate the thickness of the new bridge and to meet freeboard requirements.

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

N/A

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?

Risks are minimal. The project will replace the existing bridge with a larger bridge opening and it will not impact the BFE's along the floodplain.

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

The project is not expected to impact the floodplain values, as the hydraulics will be retained/improved.

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

A reduction in the number of piers and lengthening the bridge.

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

N/A

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

The impacts are not significant encroachments and will not result in a negative impact to the base flood elevations nor potential development.

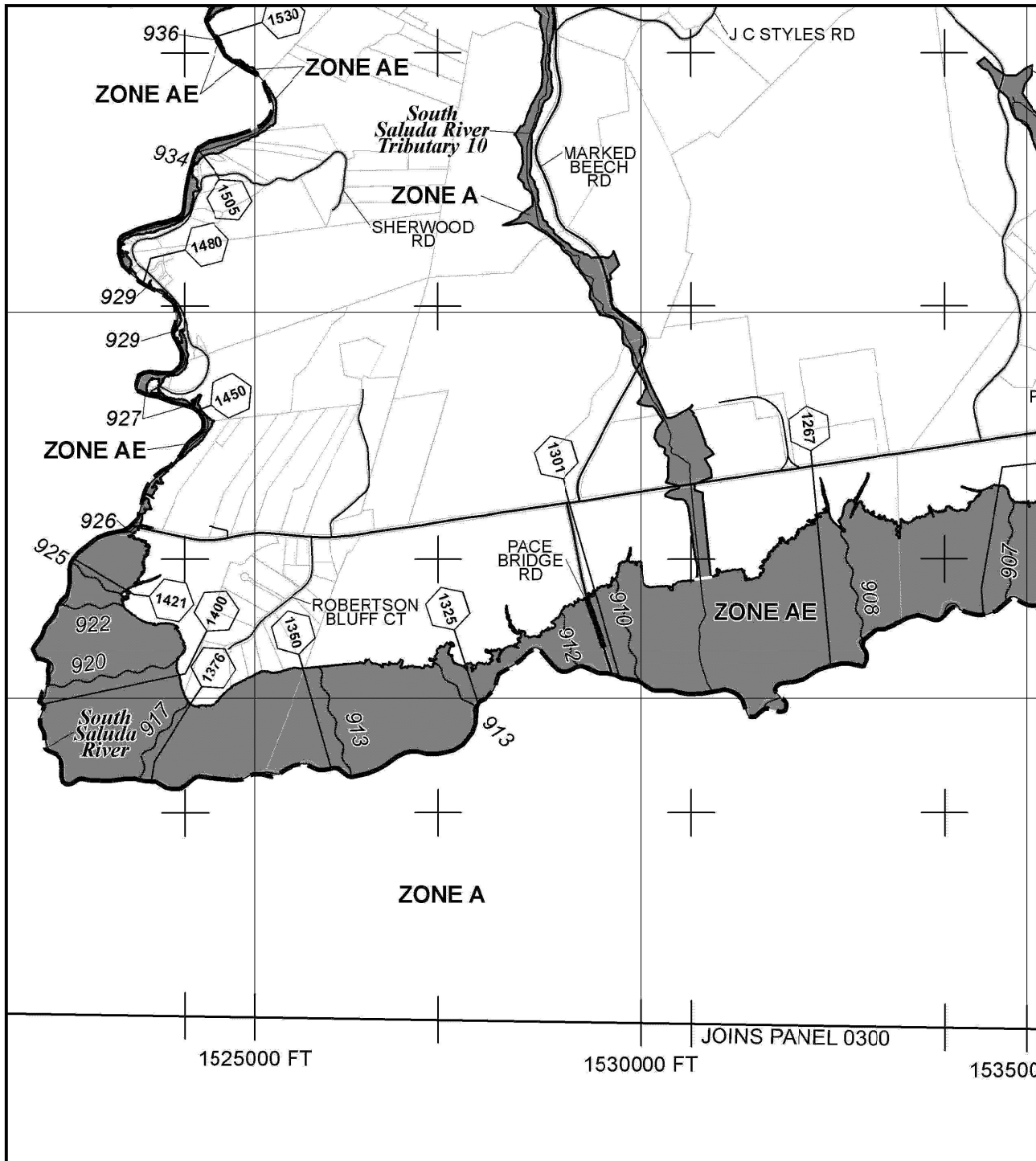
H. Were local, state, and federal water resources and floodplain management agencies consulted to determine if the proposed highway action is consistent with existing watershed and floodplain management programs and to obtain current information on development and proposed actions in the affected? Please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

All analysis were performed in accordance with SCDOT, FEMA, and local regulations. As the project progresses to final design, the hydraulic modeling will be updated based on the final bridge layout.

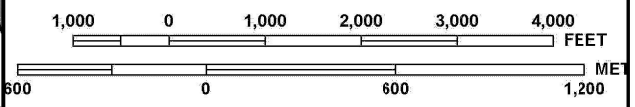
\_\_\_\_\_  
SCDOT Hydraulic Engineer

\_\_\_\_\_  
Date





MAP SCALE 1" = 2000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0200E

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**GREENVILLE COUNTY,**  
**SOUTH CAROLINA**  
**AND INCORPORATED AREAS**

**PANEL 200 OF 625**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENVILLE COUNTY	450089	0200	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
**45045C0200E**  
**MAP REVISED**  
**AUGUST 18, 2014**

Federal Emergency Management Agency

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## Appendix E: Public Comments

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Full Name	City	Comment	Response
John Shaluly	Greenville	Yes. Thank you for updating the infrastructure! Fix them all!	*does not wish to receive response*
Amy Brissey	Pickens	I believe before closing other roads, the bridges that are not complete in Pickens County need to be completed. Hester Store Rd has been closed for about 2 years. This makes travel to Greenville lengthened consuming more time and fuel. Also, if these bridges can't be completed in a timely manner then maybe someone can organize the work being done ahead of the project to reduce the time they will be out.	Amy Brissey,  Thank you for your comment on the proposed bridge projects in Package 19 in Greenville and Pickens counties. While the bridge on Hester Store Road, the Doddies Creek Bridge, is not included in Package 19 it has been identified for replacement by SCDOT. SCDOT is working to address closed and load restricted bridges across the state to restore all bridge components to good condition. While we understand this can be an inconvenience during closures, construction, and detours this is done to increase safety. For more information on that project please reach call SCDOT at 1-855-GO-SCDOT.
Jackson Hurst	Kennesaw, GA	I approve and support SCDOT's Closed and Load Restricted Bridge Package 19 Project. The aspect that I love about SCDOT's Closed and Load Restricted Bridge Package 19 Project is that the 8 bridges will be replaced.	Jackson Hurst,  Thank you for your comment on the proposed bridge projects in Package 19 in Greenville and Pickens counties. Your feedback on the proposed project has been reviewed and logged in the project record. We appreciate your interest and feedback on the proposed project.

**From:** [Pitts, Michael E.](mailto:Pitts, Michael E.)  
**To:** [Amybrisse@gmail.com](mailto:Amybrisse@gmail.com)  
**Cc:** [McGoldrick, Will](#); [Nicole Weirich](#)  
**Subject:** SCDOT Bridge Package 19 - Public Comment Response  
**Date:** Friday, August 30, 2024 7:40:56 AM  
**Attachments:** [image001.png](#)

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External Email: Use caution when clicking on links, replying, or opening attachments.

Amy Brisse,

Thank you for your comment on the proposed bridge projects in Package 19 in Greenville and Pickens counties. While the bridge on Hester Store Road, the Dobbies Creek Bridge, is not included in Package 19 it has been identified for replacement by SCDOT. SCDOT is working to address closed and load restricted bridges across the state to restore all bridge components to good condition. While we understand this can be an inconvenience during closures, construction and detours this is done to increase safety. For more information on that project please reach call SCDOT at 1-855-GO-SCDOT.

Thank you,



**Michael E. Pitts, P.E., Assoc. DBIA**  
*Alternative Delivery Program Manager*

**O** 803.737.2566 **M** 803.413.9316 **E** [pittsme@scdot.org](mailto:pittsme@scdot.org)

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

**From:** [Pitts, Michael E.](#)  
**To:** [ghostlightmater@yahoo.com](mailto:ghostlightmater@yahoo.com)  
**Cc:** [McGoldrick, Will](#); [Nicole Weirich](#)  
**Subject:** SCDOT Bridge Package 19 - Public Comment Response  
**Date:** Friday, August 30, 2024 7:43:14 AM  
**Attachments:** [image001.png](#)

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External Email: Use caution when clicking on links, replying, or opening attachments.

Jackson Hurst,

Thank you for your comment on the proposed bridge projects in Package 19 in Greenville and Pickens counties. Your feedback on the proposed project has been reviewed and logged in the project record. We appreciate your interest and feedback on the proposed project.

Thank you,



**Michael E. Pitts, P.E., Assoc. DBIA**  
*Alternative Delivery Program Manager*

☎ 803.737.2566    📠 803.413.9316    ✉ [pittsme@scdot.org](mailto:pittsme@scdot.org)  
955 Park Street, P.O. Box 191, Columbia, SC 29202-0191