S-39-32 (Shady Grove Road) Bridge Replacement over Crow Creek

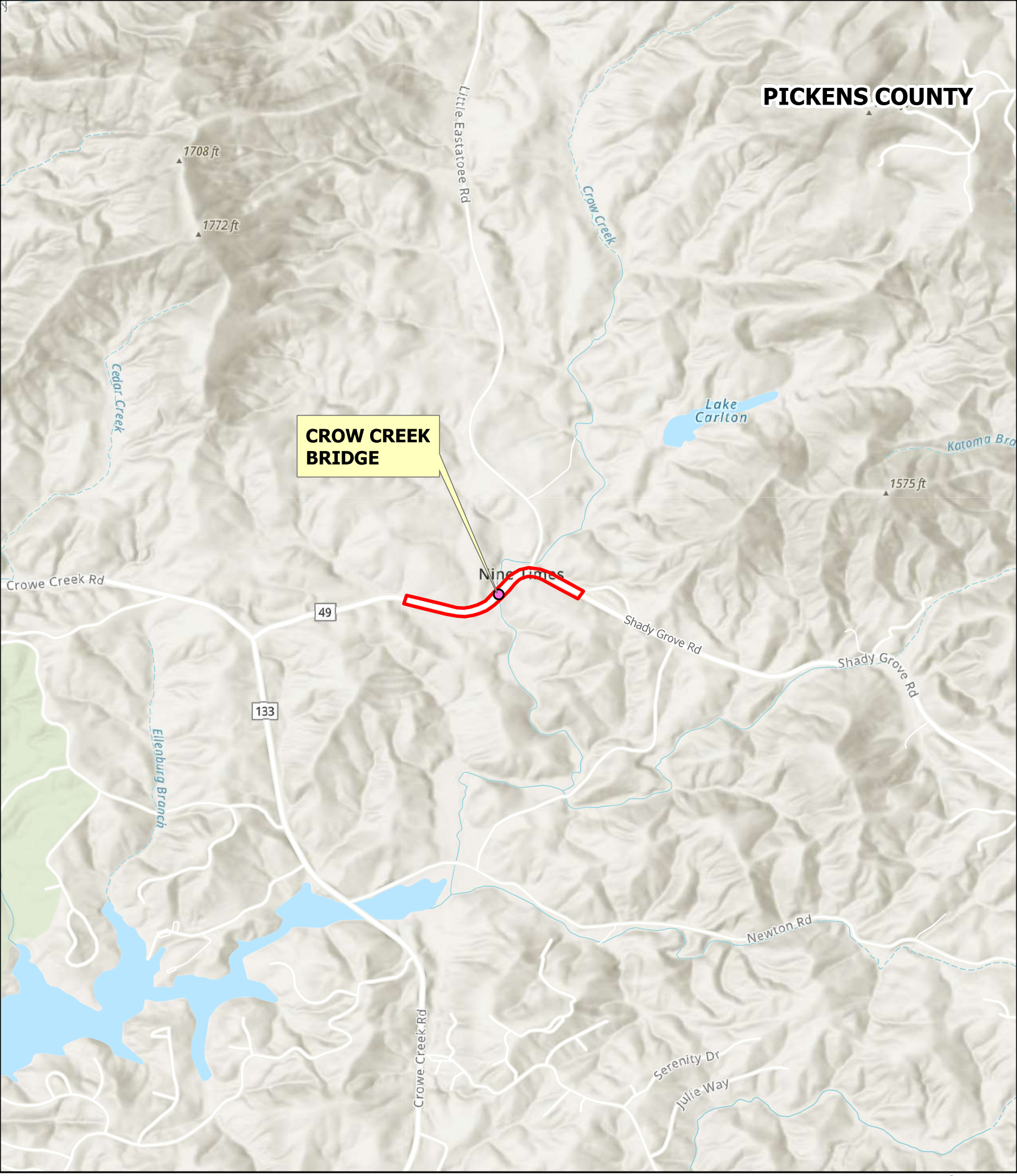
Project ID: P041168

Project Description:

South Carolina Department of Transportation (SCDOT) proposes to replace the S-39-32 (Shady Grove Road) Bridge over Crow Creek in Pickens County (See Figures 1 and 2).

The purpose of this project is to correct the load restriction placed on the bridge and restore all components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge was built in 1960. According to the SCDOT Structure Inventory and Appraisal Report from August 2022, the bridge has a sufficiency rating of 21.0. 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.



Legend

Study Area

Bridge

N

0 0.25 0.5 Mile

HNTB

Figure 1.
Vicinity Map
Replacement of SC Bridge 3448 on Shady Grove Rd over Crow Creek in Pickens County, NC

Sources: SCDOT, ArcGIS ESRI Basemap. 2023.

Legend

- Study Area
- Bridge
- Stream
- Road

N

0 250 500 Feet

HNTB

Figure 2.
Study Area Map
Replacement of SC Bridge 3448 on Shady Grove Rd over Crow Creek in Pickens County, NC

Sources: SCDOT, ArcGIS ESRI Basemap. 2023.

S-32 Bridge Replacement Appendices

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-39-32 Bridge over Crow Creek

DATE OF RESEARCH: 7/26/23 **ARCHAEOLOGIST:** Lauren Christian, MA, RPA

ARCHITECTURAL HISTORIAN: Sean Stucker, MHP

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

F. A. No.: **File No.** **PIN**: P041169

DESCRIPTION:

The South Carolina Department of Transportation (SCDOT) proposes to replace various closed or load-restricted bridges including the S-39-32 (Shady Grove Road) bridge over Crow Creek in Pickens County, South Carolina. The project area is defined as that area within 75 feet of either side of the proposed roadway centerline and extending approximately 1,500 feet on either side of 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 is located approximately 7.25 miles northwest of Pickens in southern Pickens County, South Carolina (Figure 1).

USGS QUADRANGLE: Sunset, SC **DATE:** 2014 **SCALE:** 1:24000

UTM: NAD83 **ZONE:** 17N **EASTING:** 332634 **NORTHING:** 3865395

ENVIRONMENTAL SETTING:

The project area is situated in the Piedmont physiographic region, which is characterized by rolling hills formed from extensive weathering of ancient mountain ranges. The topography in the project area ranges from 950 feet above mean sea level (amsl) at the eastern terminus to 850 feet amsl in the vicinity of Crow Creek. The surrounding landscape is rural, residential, and pastoral. Vegetation in the project area primarily consists of mixed pines and hardwoods with a fairly open understory.

NEAREST RIVER/STREAM AND DISTANCE:

Crow Creek (Hydrological unit code [HUC] 030601010203) bisects the project area and flows into the Keowee River-Lake Keowee (HUC 0306010102) approximately 1.2 miles south-southwest of the project. Keowee River-Lake flows into Lake Hartwell-Seneca River (HUC 0306010108) below the Oconee Power Plant, which is a tributary of the Savannah River (HUC 03060103) approximately 12.5 miles east of Hartwell, Georgia, approximately 39 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 soil types within the project area are moderately well to 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 maps three soil types in the project area, of which 43.4 percent are 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
PaC2	Pacolet fine sandy loam	Well Drained	6–10% slopes, eroded	1.8	17.1
PaE2	Pacolet fine sandy loam	Well Drained	10–25% slopes, eroded	1.4	13.6
PaF	Pacolet fine sandy loam	Well Drained	25–40% slopes	4.7	45.3
PcE3	Pacolet clay loam	Well Drained	10–25% slopes, severely eroded	1.3	12.7
To	Toccoa soils	Moderately Well Drained		1.2	11.2
Total				10.4	100

REFERENCE FOR SOILS INFORMATION:

USDA-NCRS Soil Survey Division, Custom Soil Resource Report (websoilsurvey.sc.egov.usda.gov)

GROUND SURFACE VISIBILITY: 0% _X_ 1-25% __ 26-50% __ 51-75% ___ 76-100% ___

CURRENT VEGETATION:

The vegetation in the project area primarily consists of mixed pines and hardwoods with a fairly open understory. This understory becomes denser along the banks of Crow Creek on either side of the bridge. The majority of the project area consists of mixed hardwood and pine forest with fairly open understory; however, the western portion of the project area consists of manicured landscapes and fallow fields. Additionally, exposed subsoil is present along the cut banks parallel to the road (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 indicated that there are no previously recorded cultural resources or surveyed areas located within the project area or a 0.5-mile search radius. It should be noted that there is an aluminium sign for the Daniel Alexander Cemetery on the north side of the road. According to FindaGrave, this cemetery is located 90 yards north of the driveway for 2790 Shady Grove Road, placing it well outside the APE.L

SURVEY RESULTS

The cultural resources survey identified no sites or isolated finds within the project area. The architectural survey recorded two new resources and several sub-resources. The results of both the archaeological and architectural surveys are discussed below.

ARCHAEOLOGY

The Phase I Archaeology Survey was conducted on July 26, 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 within the project area. Shovel tests were placed along a single transect parallel to either side of Shady Grove Road. Soil profiles were recorded for all excavated shovel tests, and location data was recorded for all investigated shovel tests using handheld GPS instruments.

Sixty-two shovel test locations were plotted at 30-meter intervals across the project area. However, shovel tests that occurred in developed/modified areas, side slopes, or in wetlands were not excavated. All other areas were documented by shovel test excavation or by examining exposed subsoil. As a result, 26 were either excavated or were documented based on surface visibility (Figure 6). On the south side of Shady Grove Road, STs 1 to ST 15 were on steep side slope all the way to the Crow Creek bridge, although a relatively level area was examined at ST 9. On the opposite side of the creek, the landform became relatively level at ST 21 with shovel tests excavated in an open field to ST 31. On the north side of the road, STs 32 to ST 34 were not excavated due to slope, but the terrain was gently rolling at ST 35, and shovel testing occurred through ST 41, where the terrain began sloping to the creek and its wetlands. On the west side of the creek, shovel testing occurred between ST 47 and ST 52. After this point, intersection modifications and steep slope was present., but STs 59 and 60 were excavated.

One general soil profile was noted, consisting of approximately 10 centimeters of dark brown (10YR 3/3) sandy loam Ap horizon overlying a yellowish red (5YR 4/6) sandy clay subsoil (Figure 7). No new or previously recorded archaeological sites were identified in the project area.

ARCHITECTURAL SURVEY

On August 31, 2023, Architectural Historian Sean Stucker, MHP, conducted the architectural survey of the APE, which was defined as all above-ground resources 50 years of age or older with sightlines to the bridge. Such resources were documented with South Carolina State Survey forms and photography and assessed for NRHP eligibility in accordance with the *South Carolina State Historic Preservation Office (SHPO) Survey Manual: South Carolina Statewide Survey of Historic Places*. Two architectural resources were recorded, but the bridge itself, constructed in 1960, 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 (ID 03448) is of a common type, with a concrete-slab substructure and cross-braced wood piers which are embedded into the creek bed and banks, a precast-concrete panel deck structure, and a bituminous decking surface (Figure 8). Newly identified resources are listed in Table 3 and are depicted in Figure 9, and they are discussed below.

Table 3. Newly Recorded Architectural Resources

Site No.	Address	Style/Type	Build Date	NRHP Recommendation
0222	864 Little Eastatoee Road	Laterally gabled house	c. 1941	Not Eligible
0222.01	864 Little Eastatoee Road	Outbuilding	c. 1940s	Not Eligible
0222.02	864 Little Eastatoee Road	Garage	c. 1940s	Not Eligible
0223	2767 Shady Grove Road	Ranch house	c. 1957	Not Eligible
0223.01	2767 Shady Grove Road	Agricultural outbuilding	c. 1950	Not Eligible

SHPO Site Numbers 0222-0222.02 – 864 Little Eastatoee Road

Facing south from its site on the west side of Little Eastatoee Road and located approximately 850 feet northeast of the subject bridge over Crow Creek, SHPO Site Number 0222 is a modified laterally gabled house. Pickens County tax records list a construction date of 1941, and it is visible in 1948 aerial imagery, so the house is assumed to have been

built circa 1941 (NETRonline 2023). SHPO Site Numbers 0222.01 and 0222.02 seem to appear in the grainy 1948 aerial photograph and are certainly present in 1956, and both share material and design qualities with the main house, so they are assumed to have been built around the same time (NETRonline 2023; United States Geological Survey 1956).

The one-and-a-half story frame dwelling has a rectangular historic core. The roof ridge is staggered near the center of the house, suggesting that the eastern half is a historic addition. A laterally gabled screen porch is appended to the southern half of the east elevation, and a cross-gabled roof projects from the west end of the rear (north) elevation to shelter a small porch that contains the rear entrance and several sash windows. The house is situated atop a bluff, and only the rear (north) and a portion of the east elevations were partially visible through the surrounding trees and foliage, which hindered photography and documentation. A modern picture window is centered in the addition portion of the rear elevation. The bricks in the wide rectangular chimney rising from that section of the rear roof slope differ from those of the smaller square chimney in the rear roof slope of what is most likely the original core. Visible sash windows on the east elevation are one-over-one vinyl sash, and vinyl cladding covers the eaves, while the exterior walls are clad in vinyl siding with a novelty profile. The projecting gable end contains an arched louver vent, and composition shingles cover the roof. The foundation is not visible (Figure 10).

SHPO Site Number 0222.01 is a CMU outbuilding with a hipped composition shingle roof with exposed rafter tails. The one-by-two bay building is set back about 50 feet behind the house, and it has a window centered on the north elevation and two unevenly spaced windows that are staggered towards the south corner on its east elevation. The entrance is centered on the south elevation, while the west elevation is not visible from the public right-of-way (ROW). The windows appear to be six-over-six wood sash with what seems to be a screen door in the entry (Figure 11).

SHPO Site Number 0222.02 is a frame garage building with a front-gabled raised seam metal roof with exposed rafter tails. Facing south, it is set back nearly 250 feet behind the house and is located about halfway down the driveway, whose entrance is located about 400 feet to the rear of the house. The open garage bay spans the entirety of the south elevation, while the north elevation has two evenly spaced windows. The east elevation is unfenestrated; the west elevation is not visible from the ROW. The siding is weatherboard, and wooden plank roof decking is visible in the overhanging eaves. The foundation is CMU piers, and there are rectangular louver vents in both gable ends (Figure 12).

Although SHPO Site Number 0222 is a circa 1941 laterally gabled house, it is not a distinctive or noteworthy example of this commonplace South Carolina house type. Its integrity is, furthermore, impacted by both the additions and the replacement materials that include exterior cladding and windows. SHPO Site Number 0222.01 and SHPO Site Number 0222.02 are similarly unnoteworthy examples of common South Carolina building types (rural outbuilding and garage, respectively), and the visible windows in the latter do not appear to be historic. None of the three buildings were found to embody the distinctive characteristics of a style, period, or method of construction nor to possess significance for their engineering or materials. They are not known to be associated with events or persons significant in the past. Therefore, these resources are recommended as not individually eligible for the NRHP under Criteria A, B, or C.

SHPO Site Numbers 0223-0223.01 – 2767 Shady Grove Road

Facing north from its site on the south side of Shady Grove Road and located approximately 850 feet southwest of the subject bridge over Crow Creek, SHPO Site Number 0223 is a Courtyard Ranch house with additions. Pickens County tax records list a construction date of 1957, and it is not visible in 1956 aerial imagery. It does appear on the topographic map from 1963, so the house is assumed to have been built circa 1957 (NETRonline 2023; United States Geological Survey 1956). The house has a laterally gabled extension on its east side, and a gable addition that is set atop the western cross-gabled wing, which is recessed approximately 15 feet from the façade and extends the building westward one bay. A shed dormer is set into the west slope of this two-story gable addition, which does not appear in the 1980s aerial imagery (NETRonline 2023). The house is sited over 400 feet from the public ROW and is also partially obstructed from view by the surrounding trees and foliage, which somewhat hindered photography and documentation.

The house has a one-story U-shaped historic core with a shed roof extending from the lateral gable roof to cover an engaged porch, which occupies the space between the façade end gables and stretches one bay into the eastern cross-gabled wing where a projecting gable pediment covers the entry steps. The pediment contains decorative woodwork and is supported on wood posts set on fieldstone piers. All of the materials appear to be modern. Windows are mostly single and paired one-over-one vinyl sash with a triple window with central arched and narrow flanking windows to the left of the entrance. Property records list the exterior siding as vinyl, and an attached garage is included within the two-story addition with the entry on the west elevation north bay. The front gables all have arched louver vents, and the roof is covered in composition shingles. The foundation appears to have several courses of stone or brick veneer, and a stone chimney is situated in the roof ridge of the eastern cross-gabled wing (Figure 13).

Sited about 300 feet northwest of SHPO Site Number 0223 and only about 200 feet from the road, SHPO Site Number 0223.01 is a laterally gabled frame building that predates the house. It does not seem to appear in 1948 aerial imagery but is visible in 1955. It appears on the topographic map from 1963, so it is assumed to have been built circa 1950 (NETRonline 2023). Google Streetview imagery from as recently as 2017 shows a dilapidated agricultural outbuilding with a garage bay centered on the north elevation, frame walls with no cladding on the east and west sides, and a shed roof wing extending across the south elevation that was partially enclosed. The roof structure was failing with missing roof panels at the east end, and the hayloft was visible through the open wall on that elevation. The current survey documented a reconfigured building with a single-leaf entry door centered on the north elevation, a garage bay centered on the west elevation, an unfenestrated east side, and a fully open shed roof structure across the south elevation. The entry door has an old appearance but seems to be new, and the weatherboard siding is rusticated but appears to be replacement. The roof may have been retained, with a panel added where one was missing at the east end (Figure 14).

Although SHPO Site Number 0223 is a circa 1957 Courtyard Ranch house, it is not a distinctive or noteworthy example of this South Carolina house type. Its integrity is, furthermore, impacted by both the additions and the substantial amount of replacement materials that include exterior cladding, windows, and porch materials. SHPO Site Number 0223.01 is a non-distinctive example of a common South Carolina building type (rural outbuilding) and one that, likewise, appears to have been reconfigured and remodeled with mostly replacement materials. Neither of these buildings were found to embody the distinctive characteristics of a style, period, or method of construction nor to possess significance for their engineering or materials. They are not known to be associated with events or persons significant in the past. Therefore, these resources are recommended as not individually eligible for the NRHP under Criteria A, B, or C.

REMARKS AND RECOMMENDATIONS:

The survey identified no archaeological sites or isolated finds. Two new architectural resources were recorded, but neither are recommended as eligible for the NRHP. The proposed project, as currently defined, would have no effects on historic properties.

SIGNATURE: Principal Investigator **DATE:** April 18, 2023

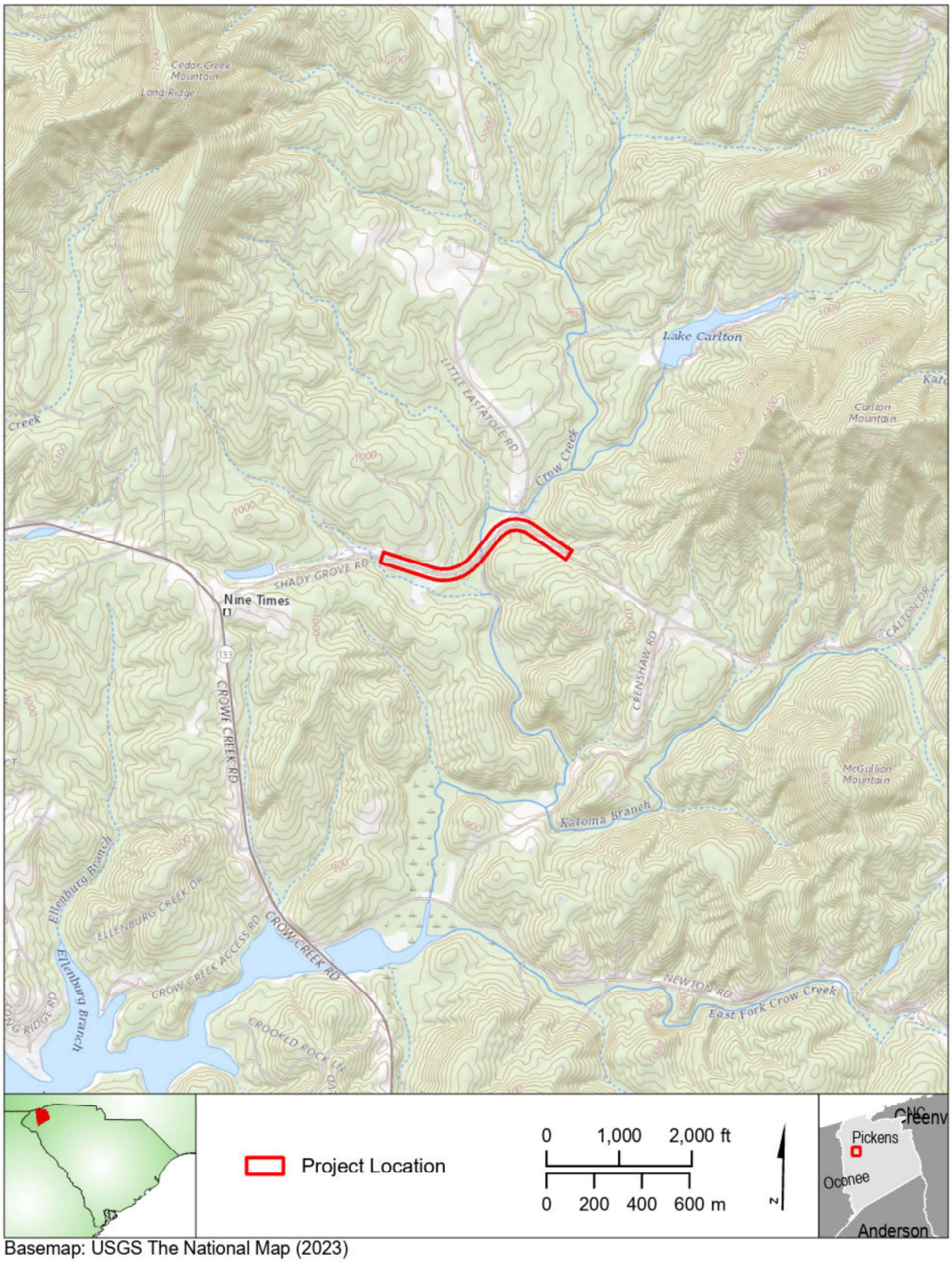
BIBLIOGRAPHY AND FIGURES

NETRonline. 2023.vNETRonline: Historic Aerials - Viewer. *Historic Aerials*. https://www.historicaerials.com/viewer, accessed August 25, 2023.

United States Geological Survey. 1956. *1956 Aerial Photo of Pickens County, South Carolina*Aerial Photograph. EarthExplorer.

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



Basemap: USGS The National Map (2023)

Figure 2. Soils Mapped in the Project Area

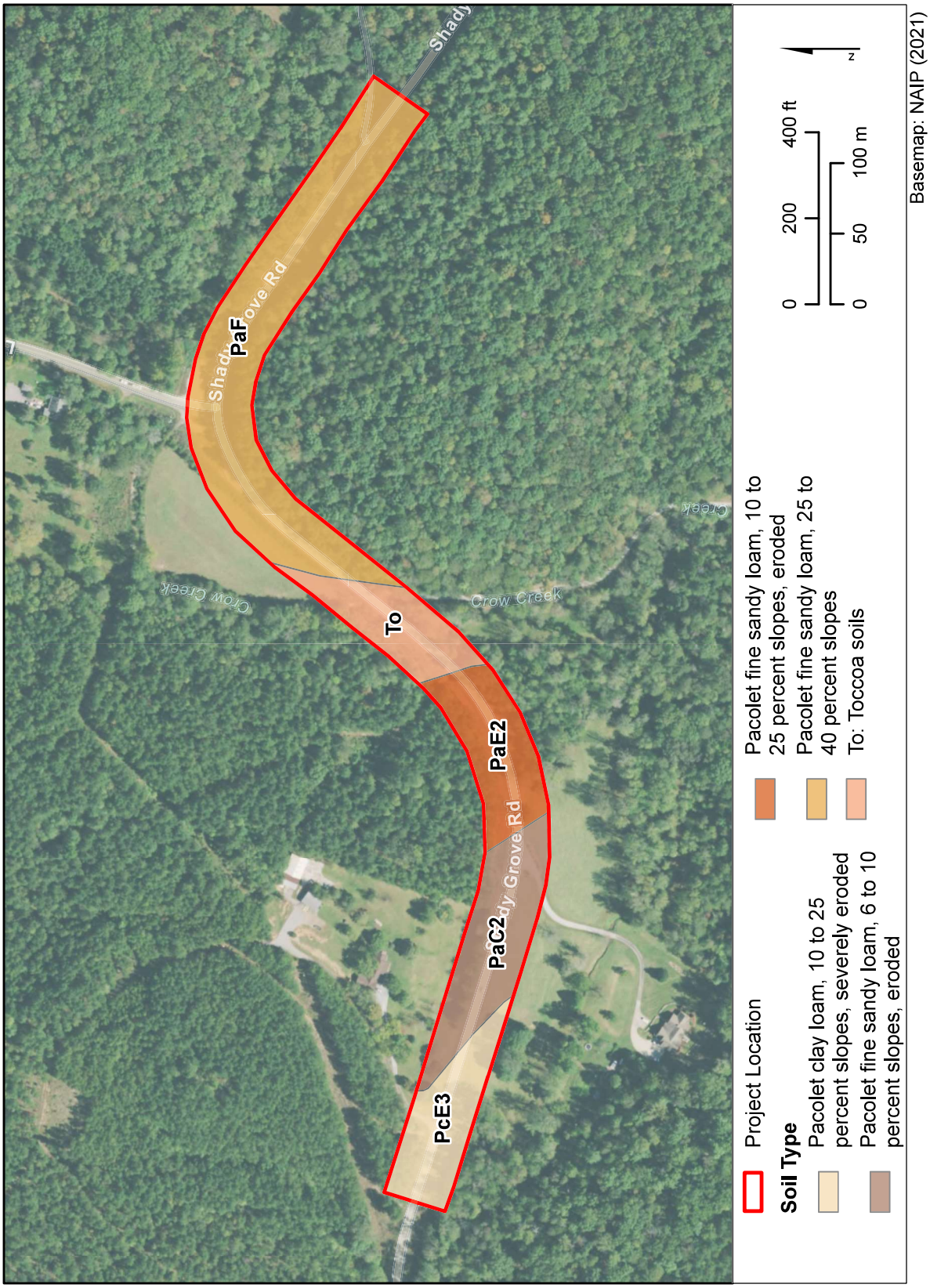


Figure 3. Wooded Section of Project Area (Looking East)

Figure 4. Fallow Field in Southwest Portion of Project Area (Looking East)

Figure 5. Subsoil Visible on Cut Banks along Road (Looking East)

Figure 6. Shovel Tests Results Map

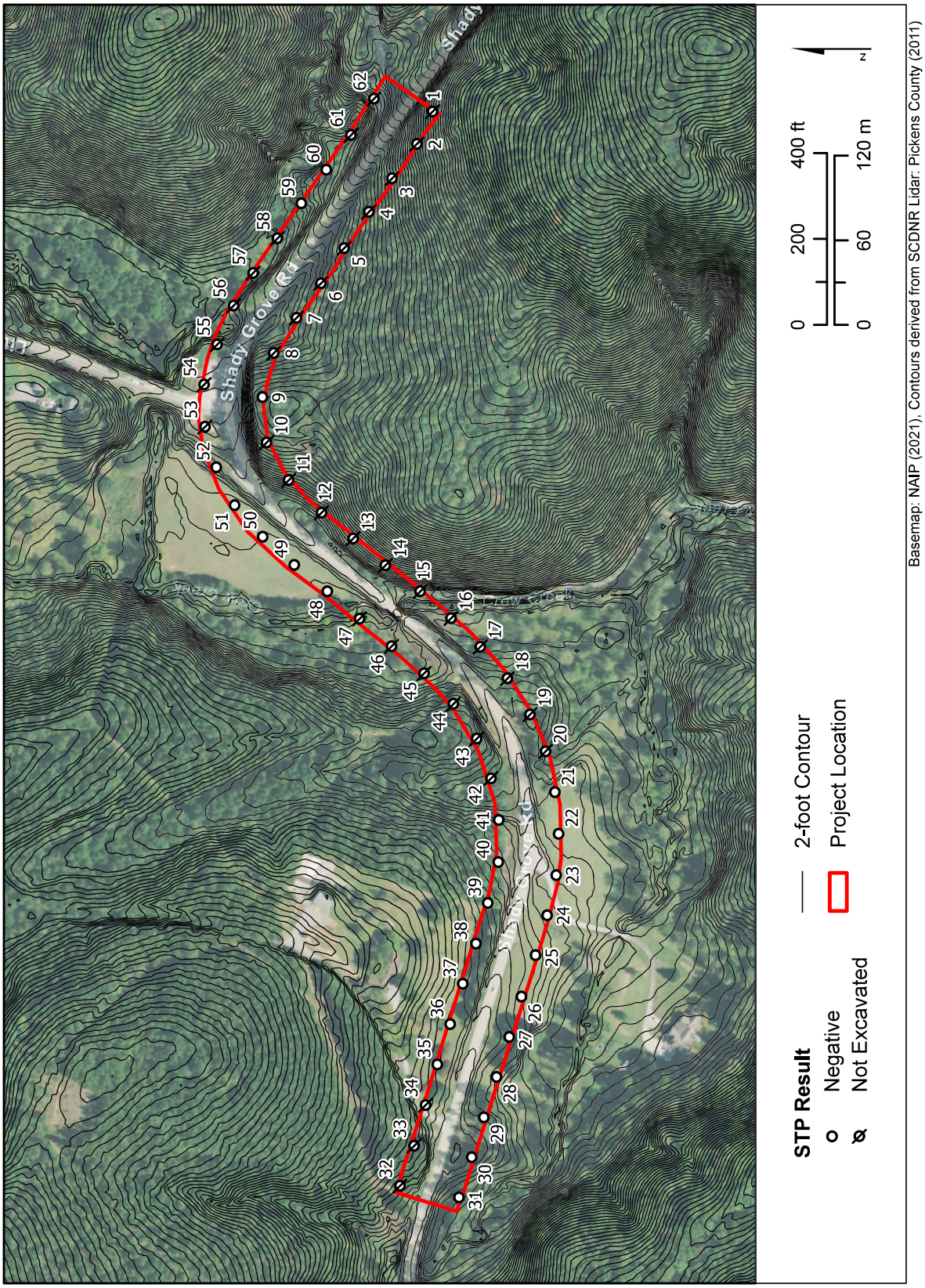


Figure 7. Soil Profile of STP 9 (Looking North)

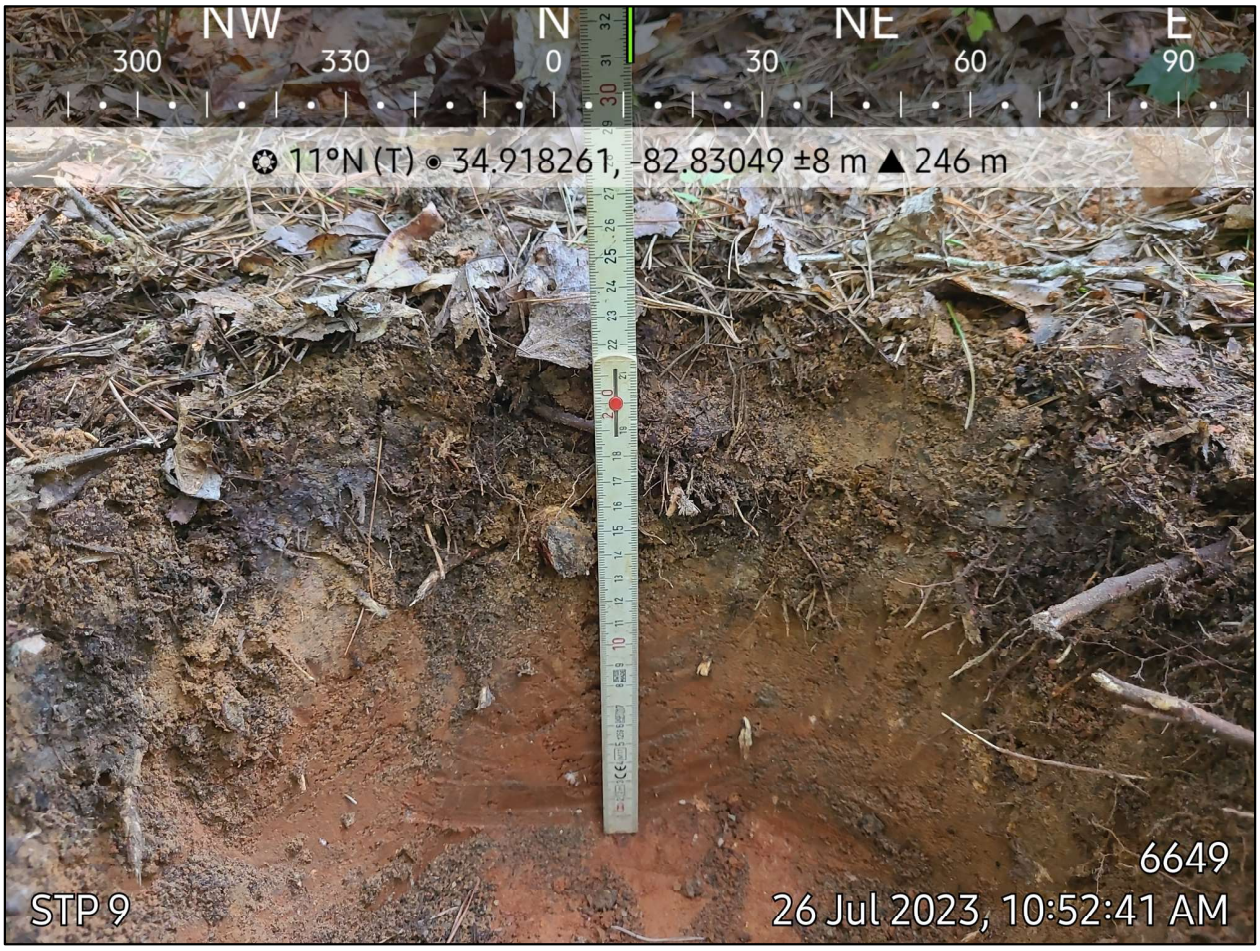


Figure 8. S-39-32 Bridge over Crow Creek, Built 1960 and Not Assessed

a. Bridge Structure, Looking West

b. Bridge Surface, Looking Southwest

Figure 9. Newly Recorded Cultural Resources Map

Basemap: NAIP (2021)

Figure 10. SHPO Site Number 0222 – 864 Little Eastatoee Road

a. Property Overview, Looking Southwest

b. East Elevation, Looking West

c. Rear Oblique, Looking Southwest

d. North Elevation (Rear), Looking South

Figure 11. SHPO Site Number 0222.01 – 864 Little Eastatoee Road

a. Oblique, Looking Southwest

b. North Elevation, Looking South

Figure 12. SHPO Site Number 0222.02 – 864 Little Eastatoee Road

a. Oblique, Looking Northwest

b. East Elevation, Looking West

Figure 13. SHPO Site Number 0223 – 2767 Shady Grove Road

a. Oblique, Looking Southwest

b. Oblique, Looking Southwest

c. Façade, Looking South

Figure 14. SHPO Site Number 0223.01 – 2767 Shady Grove Road

a. Oblique, Looking Southwest

b. Oblique, Looking Southwest

c. Google Streetview Oblique View in March 2013, Looking Southwest

Appendix B: Natural Resources Technical Memorandum

Natural Resources Technical Memorandum

S-32 (Shady Grove Road) Bridge Replacement over Crow Creek

SCDOT Project ID: P041168

June 20, 2024

Robbins & DeWitt

Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace the S-32 (Shady Grove Road) bridge over Crow Creek in Pickens County, South Carolina. The project is approximately 7 miles northwest of the Town of Pickens. The project is located in the Seneca River Watershed (03060101 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 10.34 acres in size and approximately 2,500 feet (0.57 mile) in total length, generally centered on Crow Creek in either direction. Furthermore, the PSA is 150 feet in total width, generally centered on the centerline of Shady Grove Road.

Robbins & DeWitt conducted a desktop analysis, scientific literature review, and field surveys for natural resources associated with the proposed bridge replacement. 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) – Sunset, 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 18, 2023. A summary of jurisdictional features identified in the PSA is provided in Table 1.

Table 1 - Summary of Delineated Streams and Non-Wetland Waters in the Project Study Area

Stream	Latitude	Longitude	Centerline Length (feet)	Area (acre)
Stream A	34.917221	-82.832159	246	0.08
Total			**246 feet**	**0.08 acres**

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. 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 18, 2023, November 17, 2023 and April 16, 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 observed nesting on the existing bridge.

Vegetation

Land use in the PSA is primarily comprised of undeveloped forestland, large-lot residential development, silviculture, and agriculture. Two natural communities were observed within the PSA, consisting of oak-hickory forest, and 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, five Soil Map Units (SMU) are mapped within the PSA. Each SMU IS included in Table 3 below.

Table 2 - Soil Map Units (SMU) in the Project Study Area

SMU	SMU Name	Area (acres)	Percentage of PSA
PaC2	Pacolet fine sandy loam, 6 to 10 percent slopes, eroded	1.8	17.0%
PaE2	Pacolet fine sandy loam, 10 to 25 percent slopes, eroded	1.4	13.6%
PaF	Pacolet fine sandy loam, 25 to 40 percent slopes	4.7	45.4%
PcE3	Pacolet clay loam, 10 to 25 percent slopes, severely eroded	1.3	12.8%
To	Toccoa soils	1.2	11.2%

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.

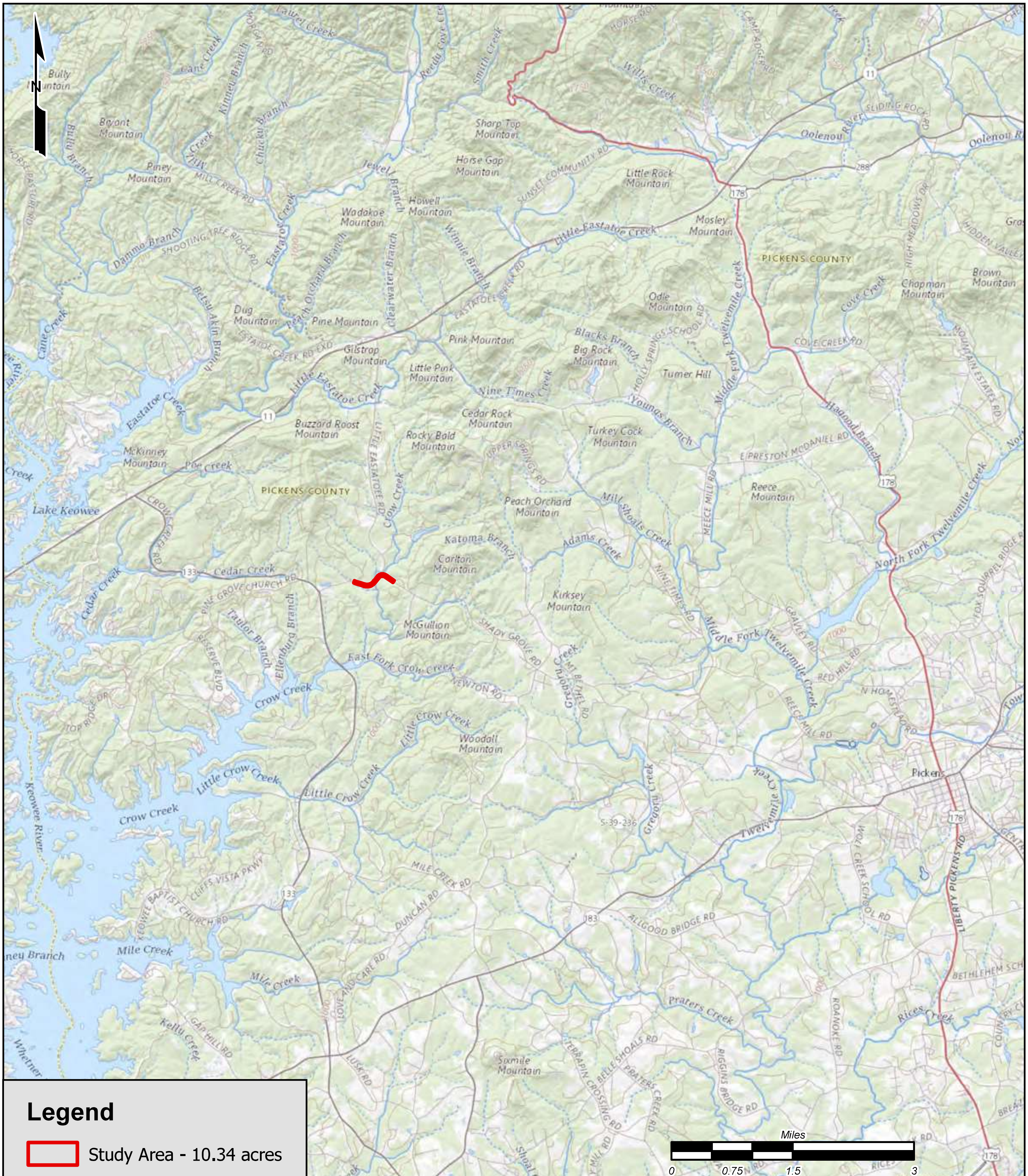
Respectfully Submitted

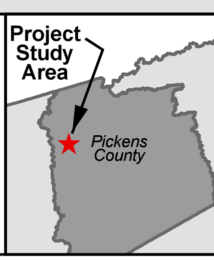
Matt DeWitt, AICP
Robbins & DeWitt, LLC

Attachment A

Figures

ROBBINS
& DEWITT


N
Legend
Study Area - 10.34 acres
Miles
0
0.75
1.5
3
Bully Mountain
Bryant Mountain
Piney Mountain
Sharp Top Mountain
Horse Gap Mountain
Little Rock Mountain
Wadakoe Mountain
Howell Mountain
Mosley Mountain
PICKENS COUNTY
Chapman Mountain
Brown Mountain
Odle Mountain
Dug Mountain
Pine Mountain
Gilstrap Mountain
Pink Mountain
Big Rock Mountain
Little Pink Mountain
Turner Hill
Buzzard Roost Mountain
Cedar Rock Mountain
Rocky Bald Mountain
Turkey Cock Mountain
McKinney Mountain
Reece Mountain
Peach Orchard Mountain
Lake Keowee
Katoma Branch
Carlton Mountain
Kirksey Mountain
Cedar Creek
McGullion Mountain
East Fork Crow Creek
Crow Creek
Little Crow Creek
Woodall Mountain
Pickens
Keowee River
Mile Creek
Praters Creek
Sixmile Mountain
Oolenoy River
Little Eastatoe Creek
Eastatoe Creek
Nine Times Creek
Middle Fork Twelvemile Creek
North Fork Twelvemile Creek
Twelvemile Creek
Rices Creek
CROW CREEK RD
PINE GROVE CHURCH RD
SHADY GROVE RD
NEWTON RD
MILE CREEK RD
DUNCAN RD
ALLGOOD BRIDGE RD
LIBERTY PICKENS RD
CLIFFS VISTA PKWY
LUSK RD
GAP HILL RD
TERRAPIN CROSSING RD
BELLE SHOALS RD
RIGGINS BRIDGE RD
ROANOKE RD
WOLF CREEK SCHOOL RD
REECE MILL RD
GRAVLEY RD
RED HILL RD
MEECE MILL RD
E PRESTON MCDANIEL RD
UPPER SPRINGS RD
COVE CREEK RD
SUNSET COMMUNITY RD
MILL CREEK RD
SHOOTING TREE RIDGE RD
133
11
178
288
183
PICKENS COUNTY



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S-32 BRIDGE REPLACEMENT
OVER CROW CREEK
PROJECT ID: P041168

GREENVILLE COUNTY, SOUTH CAROLINA

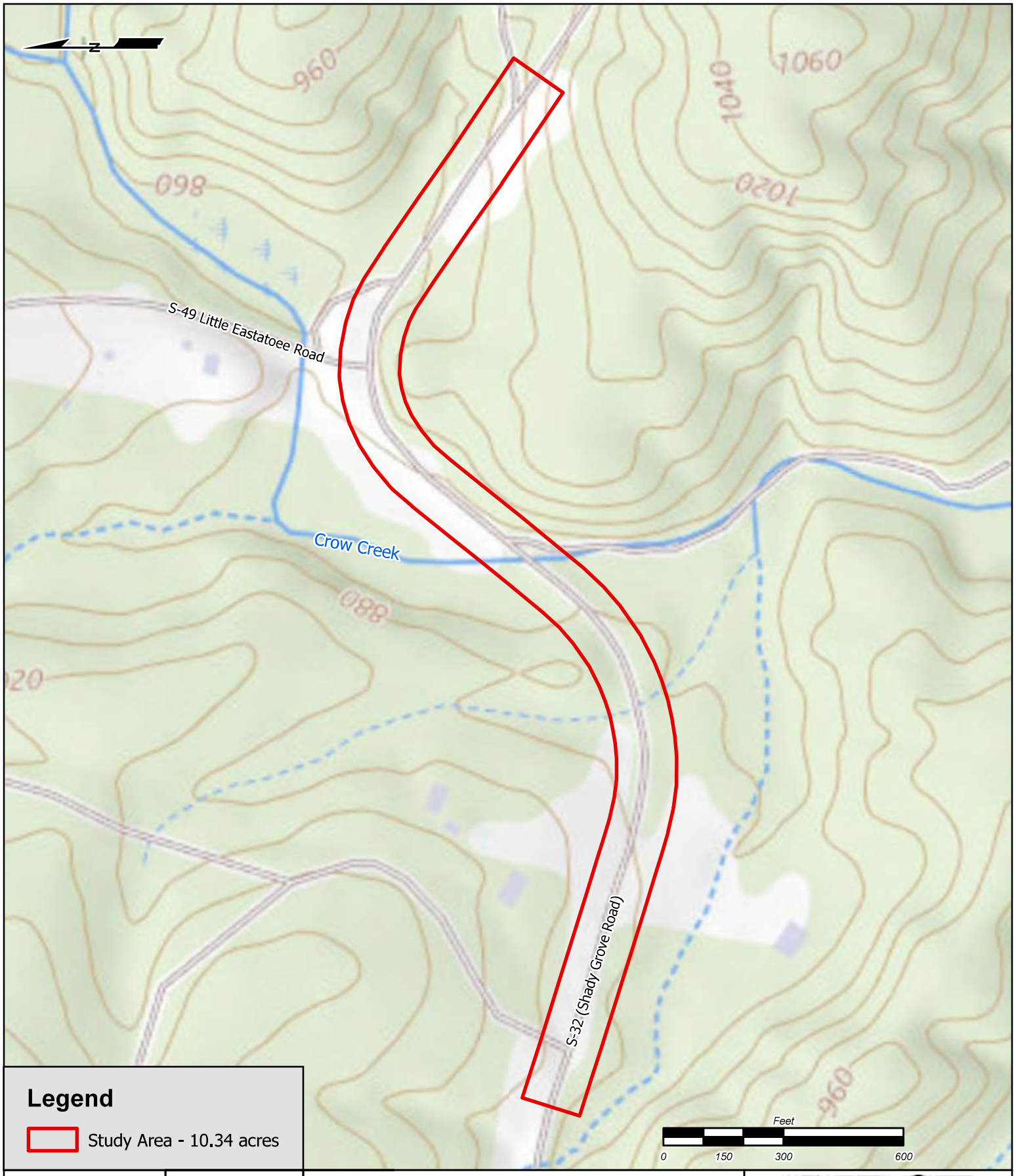
Source: USGS National Map (2023)

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 01/05/2024

PROJECT VICINITY

FIGURE 1



Legend

Study Area - 10.34 acres

Project Study Area

Pickens County

ROBBINS & DEWITT

www.Robbins-DeWitt.com

S-32 BRIDGE REPLACEMENT
OVER CROW CREEK
PROJECT ID: P041168

GREENVILLE COUNTY, SOUTH CAROLINA

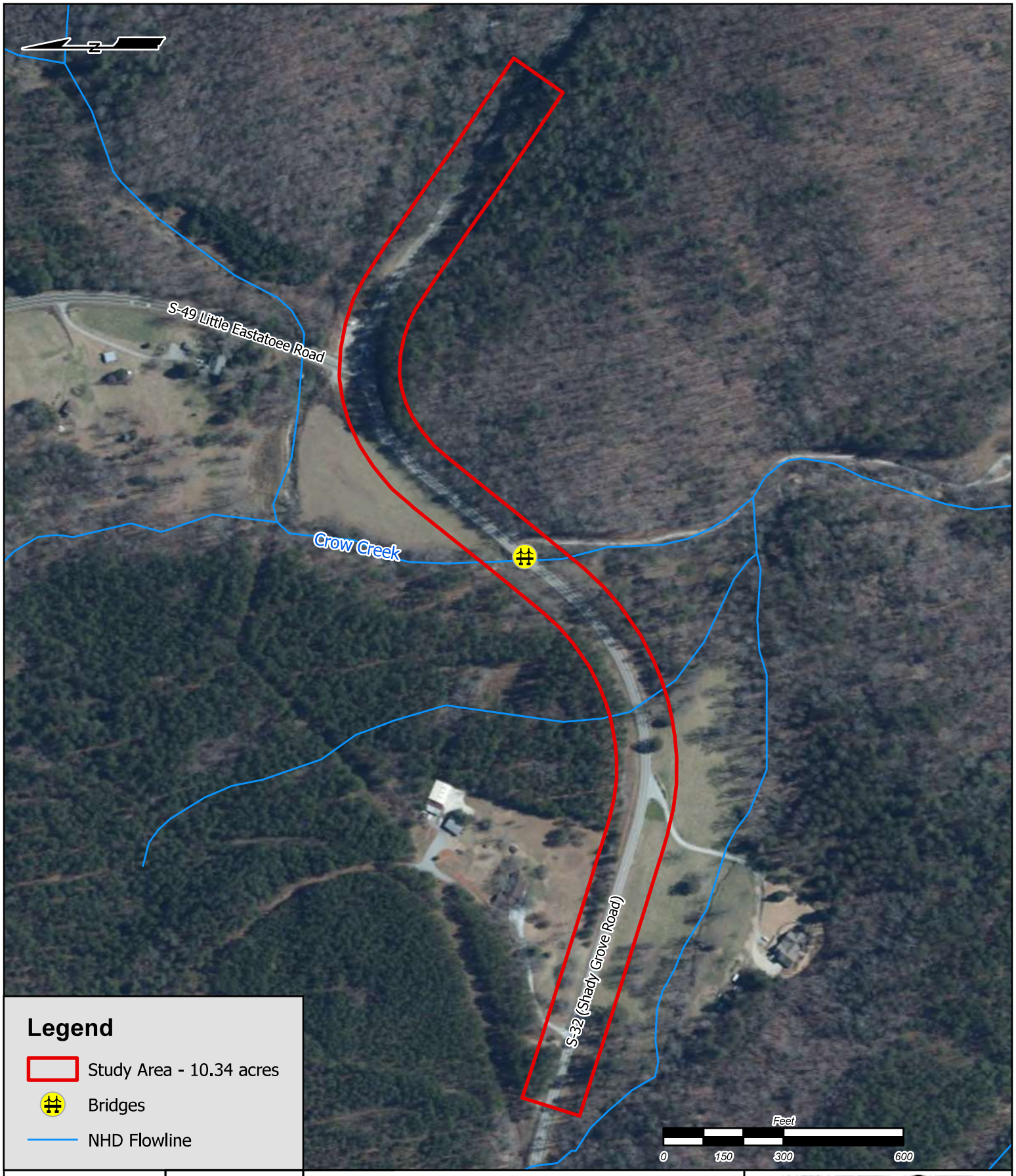
Source: USGS National Map (2023); USGS Sunset, SC Quadrangle (2020)

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 01/05/2024

USGS TOPOGRAPHIC MAPPING

FIGURE 2



Legend

- Study Area - 10.34 acres
- Bridges
- NHD Flowline

Project Study Area

Pickens County

ROBBINS & DEWITT

www.Robbins-DeWitt.com

S-32 BRIDGE REPLACEMENT
OVER CROW CREEK
PROJECT ID: P041168

GREENVILLE COUNTY, SOUTH CAROLINA

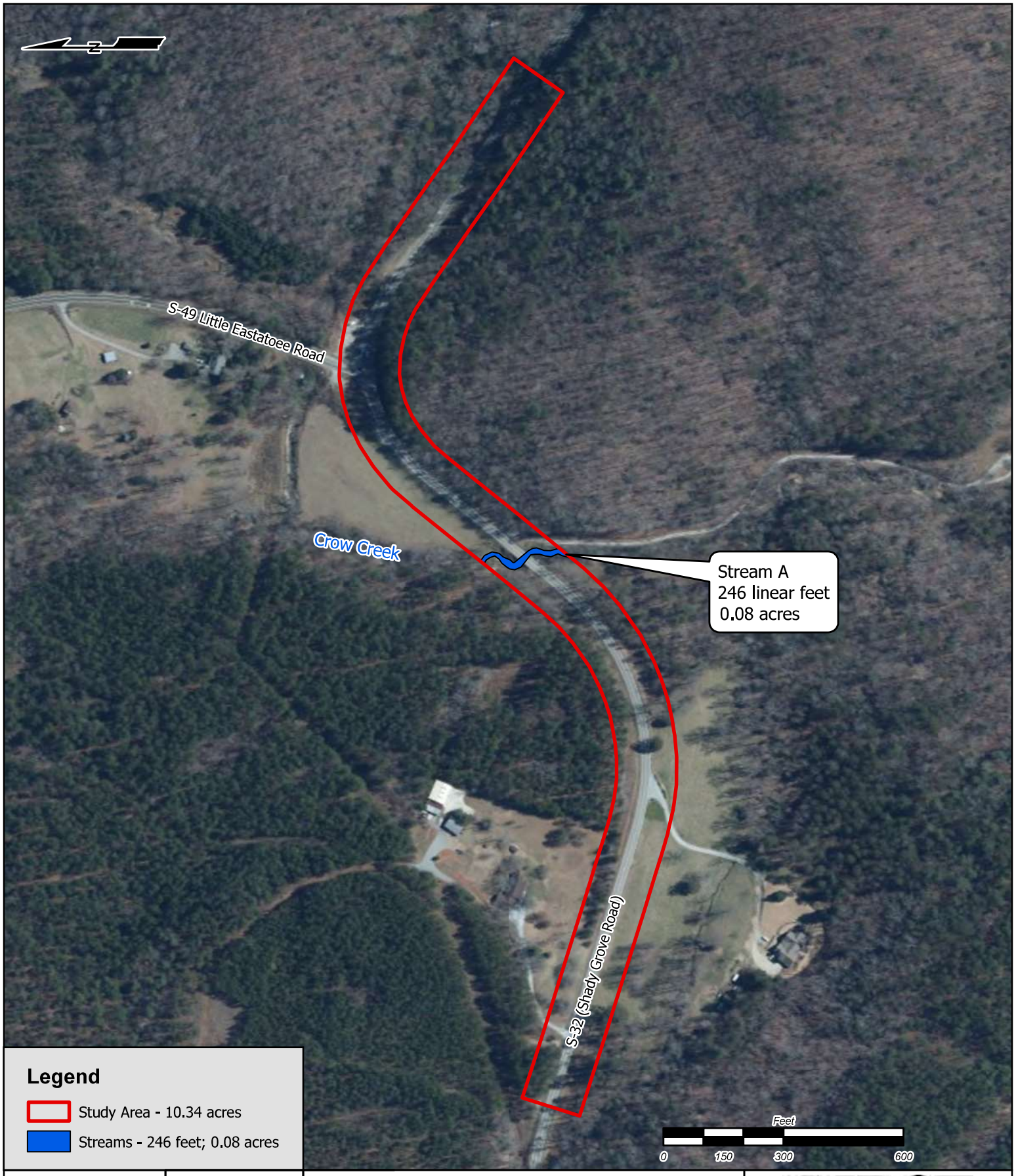
Source: USGS NHD Flowlines (2018); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

SCDOT South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 01/05/2024

AERIAL IMAGERY

FIGURE 3



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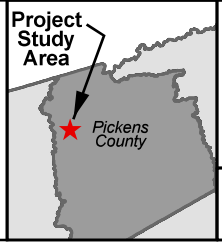


S-32 BRIDGE REPLACEMENT
OVER CROW CREEK
PROJECT ID: P041168

GREENVILLE COUNTY, SOUTH CAROLINA

Source: Approximate boundaries of WOTUS were delineated on November 17, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC	DATE: 01/05/2024

APPROXIMATE BOUNDARIES OF WOTUS

FIGURE 4

Attachment B

SCDOT Permit Determination Form & Water Quality Information Report

ROBBINS & DEWITT

PERMIT DETERMINATION

Date: 06/18/2024 Project ID: P041168

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-32 over Crow Creek

County: Pickens (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:

MITIGATION:

Mitigation Bank: ◉ YES ○ NO

Mitigation Bank Name: Big Generostee Creek Mitigation Bank

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

Revised 04/2024

Healthy People Healthly Communities

Watershed and Water Quality Information

General Information

Applicant Name: SCDOT
Address: 2817 SHADY GROVE RD, SUNSET, SC, 29685
MS4 Designation: Not in designated area
Within Coastal Critical Area: No
Waterbody Name: Unnamed Trib

Permit Type: Construction
Latitude/Longitude: 34.917084 / -82.837217
Monitoring Station: RL-17061
Water Classification (Provisional): FW
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
RL-17061	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RL-18081	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SV-338	X	F	F	F	F	F	F	F	F	F	F	F	X	X	F	F	F	X	X	X
RL-19159	X	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	X	X	X
CL-017	X	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	X	N	X

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

Parameters to be addressed (those not supporting standards)

Fish Consumption Advisory

HGF - Mercury (Fish Tissue)

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: No
TMDL Report No:
TMDL Document Link:

TMDL Site:
TMDL Parameter:

Report Date: October 19, 2023

Attachment C

Biological Evaluation – Section 7 of the Endangered Species Act

ROBBINS & DEWITT

Introduction

The proposed project consists of replacing the S-32 (Shady Grove Road) bridge over Crow Creek, and associated road work, in Pickens County, 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 requested from the USFWS Information for Planning and Consultation (IPaC) in October 2023 and updated in June 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	*Haliaeetus leucocephalus*	BGEPA
Mammal	Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Mammal	Tricolored Bat	*Perimyotis sublavus*	Proposed Endangered
Reptile	Bog Turtle	*Glyptemys muhlenbergii*	Similar in Appearance to Threatened
Insects	Monarch Butterfly	*Danaus Plexippus*	Candidate
Flowering Plant	Dwarf-flowered Heartleaf	*Hexastylis naniflora*	Threatened
Flowering Plant	Mountain Sweet Pitcher-plant	*Sarracenia rubra ssp. Jonesii*	Endangered
Flowering Plant	Smooth Coneflower	*Echinacea laevigata*	Threatened

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 18, 2023, November 17, 2023 and April 16, 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 is primarily comprised of undeveloped forestland, large-lot residential development, silviculture, and agriculture. Two natural communities were observed within the PSA, consisting of oak-hickory forest, and bottomland hardwoods.

Oak-hickory forests are commonly found in the rolling uplands of the Piedmont, occurring in mostly fragmented stands. Many hardwoods are present, with oaks and hickories being dominant. Typical canopy and subcanopy species observed in the PSA include *Quercus alba* (white oak), *Quercus rubra* (northern red oak), *Carya tomentosa* (mockernut hickory), *Carya glabra* (pignut hickory), *Acer rubrum* (red maple), *Cornus florida* (flowering dogwood), *Liriodendron tulipifera* (tulip-poplar), and *Pinus taeda* (loblolly pine). The understory species observed include samplings of the overstory species, as well as *Oxydendron arboreum* (sourwood), *Fagus grandifolia* (American beech), and flowering dogwood. Groundcover observed was sparse and included grasses and other herbaceous species.

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 river floodplains. Characteristic tree species observed in the PSA include *Liquidambar styraciflua* (sweetgum), tulip-poplar, *Fraxinus pennsylvanica* (green ash), 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, or mountain sweet pitcherplant.

Marginally suitable habitat exists for dwarf flowered heartleaf along the floodplain of Stream A (Crow Creek); however, no suitable habitat for the species exists within the proposed limits of construction for the project.

Marginal suitable habitat exists for smooth coneflower within the existing roadway shoulders and other maintained portions of the PSA; however, the pH of the soils in the PSA are primarily too acidic for the species. Additionally, no individuals of the species were identified during field reviews.

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 tri-colored bat exists in the PSA. Roosting habitat exists under the existing S-32 bridge and in cavities and crevices of trees within the PSA. A structure survey of the existing S-32 bridge 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 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.

Respectfully Submitted

Matt DeWitt, AICP
Robbins & DeWitt, LLC

Attachment D

Biological Evaluation Attachments

ROBBINS & DEWITT

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

The northern long-eared bat determination key has been disabled as we prepare to release the final tools and consultation guidance for the northern long-eared bat this summer. We will announce the availability of the new key as soon as it is in production.

This [illegible]al habi[illegible]'s (US[illegible]nced bel[illegible]t 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

Pickens County, South Carolina

Local office

South Carolina Ecological Services

(843) 727-4707
(843) 727-4218

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

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[1] 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[2]).

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
Northern Long-eared Bat Myotis septentrionalis Wherever found This species only needs to be considered if the following condition applies: • This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Reptiles

NAME	STATUS
Bog Turtle Glyptemys muhlenbergii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6962	SAT

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS

Dwarf-flowered Heartleaf Hexastylis naniflora — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2458

Mountain Sweet Pitcher-plant Sarracenia rubra ssp. jonesii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4283

Smooth Coneflower Echinacea laevigata — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/3473

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

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], 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".

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-incidental-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

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

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
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31

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.

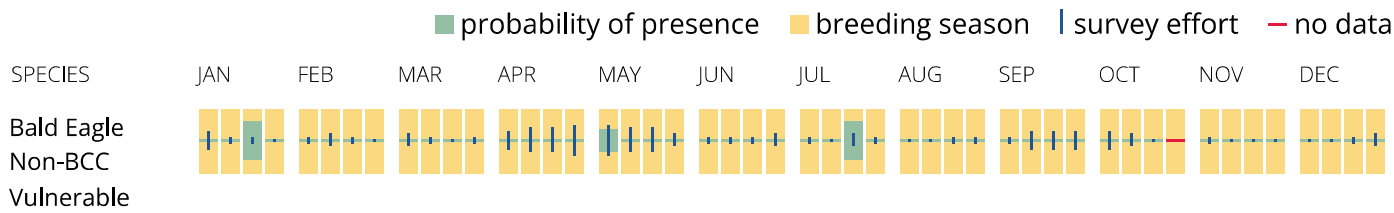
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



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[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] 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-incidental-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
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

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.

Chuck-will's-widow Antrostomus carolinensis — Breeds May 10 to Jul 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Eastern Whip-poor-will Antrostomus vociferus — Breeds May 1 to Aug 20
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.

Prairie Warbler Setophaga discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
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.

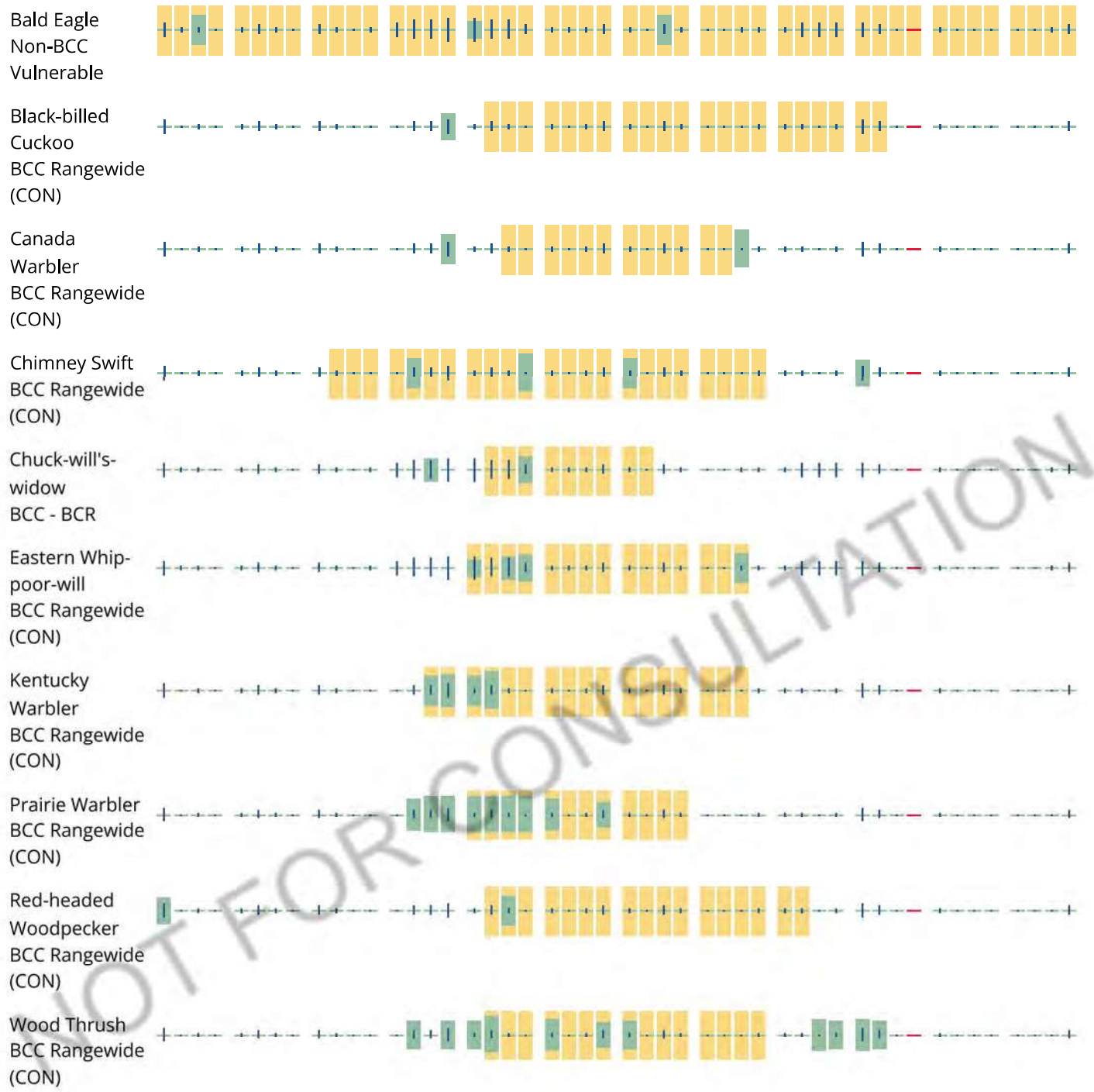
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC



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:

RIVERINE

- R3UBH
- R4SBC

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

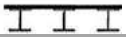
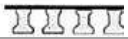
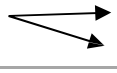
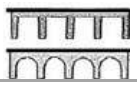
Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid 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.

STRUCTURES SURVEY DATA SHEET

Investigator Names(s): A. CHANDLER	
Date: 2023-07-18	County: PICKENS
Lat Long/w3w: 34.91721, -82.83215	
Project Name: S-32 (SHADY GROVE RD) OVER CROW CREEK	
SCDOT Structure ID: 03448	SCDOT Project No.: P041168

Structure Type:			Underdeck Material:
☐ Parallel Box Beam 	☐ Steel I-Beam 		☒ Concrete
☐ Pre-Stressed Girder 	☒ Flat Slab / Box 		☐ Corrugated Steel
☐ Cast in Place  	☐ Trapezoidal Box 		☐ Other:
	☐ Other:		
Note:			
☐ Culvert - Box			
☐ Culvert - Pipe/Round			

Road Type:			
☐ Interstate	☐ US Highway	☒ State Road	☐ County Road
		S-32	

Surrounding Habitat (check all that apply):				
☒ Residential	☒ Agricultural	☐ Commercial	☐ Pine Forest	☐ Grassland
☒ Riparian	☐ Wetland	☒ Mixed Forest	☒ Bottomland Hardwood	
☐ Other:				

Conditions Under Bridge (check all that apply):			
☒ Bare Ground/Sediment	☐ Concrete	☒ Rip Rap	☒ Flowing Water
☐ Standing Water	☒ Open Vegetation (not obstructing flight path)	☐ Closed Vegetation (may obstruct flight path)	☐ Two Lanes
☐ Four (+) Lanes	☐ Unpaved Road	☐ Railroad	☐ Other:

Bats Present:	
☐ YES	☒ NO

Bat Indicators (check all that apply):				
☐ Visual	☐ Smell	☐ Sound	☐ Staining	☐ Guano

Species Present:	
☐ Big brown (*Eptesicus fuscus*)	☐ Northern long-eared (*Myotis septentrionalis*)
☐ Brazilian free-tailed (*Tadarida brasiliensis*)	☐ Northern yellow (*Lasiurus intermedius*)
☐ Eastern red (*Lasiurus borealis*)	☐ Rafinesque's big-eared (*Corynorhinus rafinesquii*)
☐ Eastern small-footed (*Myotis leibii*)	☐ Silver-haired (*Lasionycteris noctivagans*)
☐ Evening (*Nycticeius humeralis*)	☐ Southeastern (*Myotis austroriparius*)
☐ Hoary (*Lasiurus cinereus*)	☐ Seminole (*Lasiurus seminolus*)
☐ Little brown (*Myotis lucifugus*)	☐ Tri-colored (*Perimyotis subflavus*)
	☒ UNKNOWN

Roost Description (if known, check all that apply):			
☐ Day Roost	☐ Nursery Roost	☐ Night Roost	☒ UNKNOWN
Number of Roosts:			

Roost Design (check all that apply):			
☐ Crack/Crevice/Expansion Joint: Under Bridge		☐ Crack/Crevice/Expansion Joint: Top of Bridge	
☐ Plugged Drain	☐ Under/Along Main Bridge Structure	☐ Rail	☐ 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	☒ Cervices
☐ Other:			
Areas NOT Inspected because of Safety or Inaccessibility:			

Evidence of Migratory Birds Using the Structure?	
☒ YES	☐ NO

Additional Information:

Photograph 1
Date: 2023-07-18
Taken by: A. Chandler
Under S-32 bridge, concrete flat slab

Photograph 2
Date: 2023-07-18
Taken by: A. Chandler
End bent of S-32 bridge and crevices under the bridge deck

Photograph 3
Date: 2023-07-18
Taken by: A. Chandler
Under S-32 bridge, concrete flat slab

Photograph 4
Date: 2023-07-18
Taken by: A. Chandler
S-32 bridge over Crow Creek

BAT HABITAT ASSESSMENT DATA SHEET

Project Name: S-32 (SHADY GROVE RD) OVER CROW CREEK

Date: 2023-07-18

County: PICKENS

Lat Long: 34.91721, -82.83215

Surveyor: A. CHANDLER

Brief Project Description
Replacing the S-32 (Shady Grove Rd) bridge over Crow Creek and associated roadway approach work.

Project Area			
	Total Acres	Forest Acres	Open Acres
Project	10.3 acres	5.1 acres	5.2 acres
	Completely Cleared	Partially Cleared (Will Leave Trees)	Preserve Acres – No Clearing
Proposed Tree Removal	0.31 acres (anticipated)	None	4.79 acres (anticipated)

Vegetation Cover Types	
Pre-Project	Post-Project
Hardwood forest Agricultural Fields Maintained Roadway	Hardwood forest Agricultural Fields Maintained Roadway

Landscape within 5-mile Radius
Flight corridors to other forested areas?
Yes
Describe Adjacent Properties (e.g., forested, grassland, commercial or residential development, water sources)
Forested, Residential, Agricultural, Crow Creek

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)?
Within 2.5 miles: Unnamed WMA, Keowee Toxaway State Park Within 5 miles: Jocassee Gorges WMA, Unnamed WMA, Wadakoe Mountain WMA

Sample Site Description	
Sample Site No. (s):	Project Study Area (10.5 acres)

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

Pools/Ponds (# and size)	N/A	Open and accessible to bats?	

Wetland (approx. acres)	Permanent	Seasonal

Describe existing condition of water sources: Crow Creek – steady flow

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')
	2 (11-20%)	3 (21-40%)	1 (11-20%)

Dominant Species of Mature Trees	Sycamore, Birch, Poplar, Hickory

Exfoliating Bark (%)	

Size of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)
	1 (11-20%)	3 (21-40%)	2 (11-20%)

No. of Suitable Snags	1%
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

Photograph 1
Date: 2023-07-18
Taken by: A. Chandler
From Crow Creek, facing south

Photograph 2
Date: 2023-07-18
Taken by: A. Chandler
From Crow Creek, facing south

Photograph 3
Date: 2023-07-18
Taken by: A. Chandler
Crow Creek bank, south of S-32, facing east

Photograph 4
Date: 2023-07-18
Taken by: A. Chandler
Crow Creek bank, north of S-32, facing east

Appendix C: Bridge Scope and Risk Assessment Form

BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: Pickens DATE: 06/18/2024

ROAD #: S-32 STREAM CROSSING: Crow Creek

Purpose & Need for the Project:

The purpose of the project is to correct the load restriction placed on the bridge and restore all components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition.

I. FEMA Acknowledgement

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

Panel Number: 45077C0140E Effective Date: 12/21/2017 (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:

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

Justification:

BRIDGE SCOPE AND RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 39.313.1 Sheet No. 10 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 39.313 Sheet No. 10 (See Attached)

B. Historical Highwater Data

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

b. SCDOT/USGS Documented Highwater Elevations

☐ Yes ☐ No Results: _____

c. Existing Plans ☐ Yes ☐ No See Above

V. Field Review

A. Existing Bridge

Length: 60 ft. Width: 42 ft. Max. span Length: 15 ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: Spill Through

Riprap on End Fills: ☐ Yes ☑ No Condition: _____

Superstructure Type: Concrete Deck

Substructure Type: RC Caps with Timber Piles

Utilities Present: ☑ Yes ☐ No

Describe: Overhead power lines along the south westbound side of the bridge

Debris Accumulation on Bridge: Percent Blocked Horizontally: <5 %

Percent Blocked Vertically: <5 %

Hydraulic Problems: ☐ Yes ☑ No

Describe:

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: 12.7 ft.
c. Distance from Low Steel to Normal Water Elev.: 11.1 ft.
d. Distance from F.G. to High Water Elevation: _____ ft.
e. Distance from Low Steel to High Water Elev.: _____ ft.

f. Channel Banks Stable: ☑ Yes ☐ No
Describe: Generally in good condition with minor scour/erosion.

g. Soil Type: Sand / Gravel

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.

There are few restidential structures upstream of this bridge. Most of the surrounding area is undeveloped or pasture.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement
☑ Yes ☐ No
Describe:

Adequate detour route exists.

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

Yes

If "No", will the proposed bridge be:
☐ Staged Constructed
☐ Replaced on New Alignment

BRIDGE SCOPE AND RISK ASSESSMENT FORM

VI. Field Review (cont.)

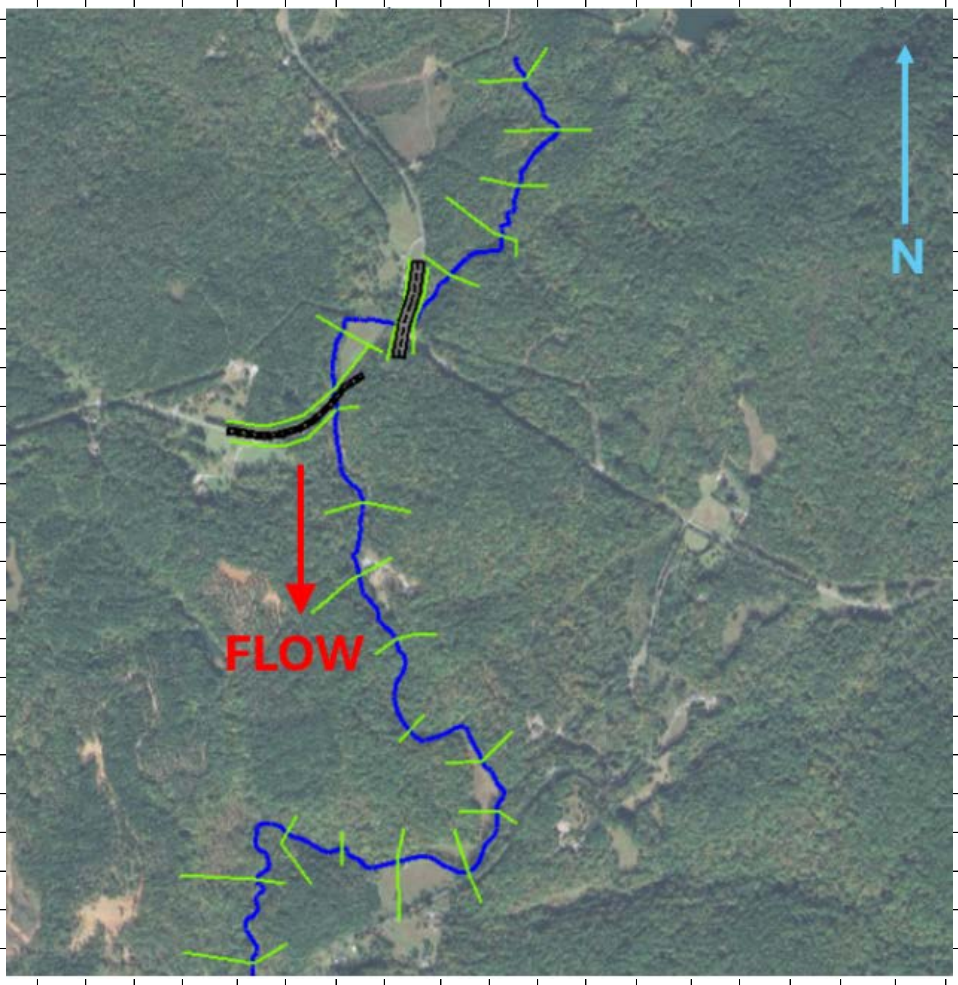
A. Proposed Bridge Recommendation:

Length: 160 ft. Width: 42 ft. Elevation: 855.86 ft.

Span Arangement: 2-span (60'-100')

Notes: Proposed minimum low chord elevation is 855.86'. Proposed minimum profile/deck elevation is 859.62'. Proposed 33" and 39" box beam superstructure with asphalt surface course.

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



Performed By: Hassan Ismail

Title: Project Manager

Appendix D: Floodplains Checklist

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

The purpose of the project is to correct the load restriction placed on the bridge and restore all components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition.

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:

Roadway improvements are limited to those associated with accommodating the new structure.
The project crosses Crow Creek which is shown on the Flood Insurance Rate Map (FIRM) Panel 45077C0140E. Crow Creek is within a designated Special Flood Hazard Area Zone AE in the vicinity of the Project. 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 appreciable environmental impact on the base flood elevation. In addition, the project would be developed to comply with all appropriate floodplain regulations and guidelines.

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 roadway grade will be raised to accommodate the larger bridge structure.

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

Minor longitudinal encroachments are expected based on the revised roadway profile The bridge will be constructed on existing alignment to reduce longitudinal impacts.

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 larger bridge opening. The increased opening will have a minimal impact on 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 similar bridge size will be used and constructed on the existing alignment.

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

Not Applicable

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

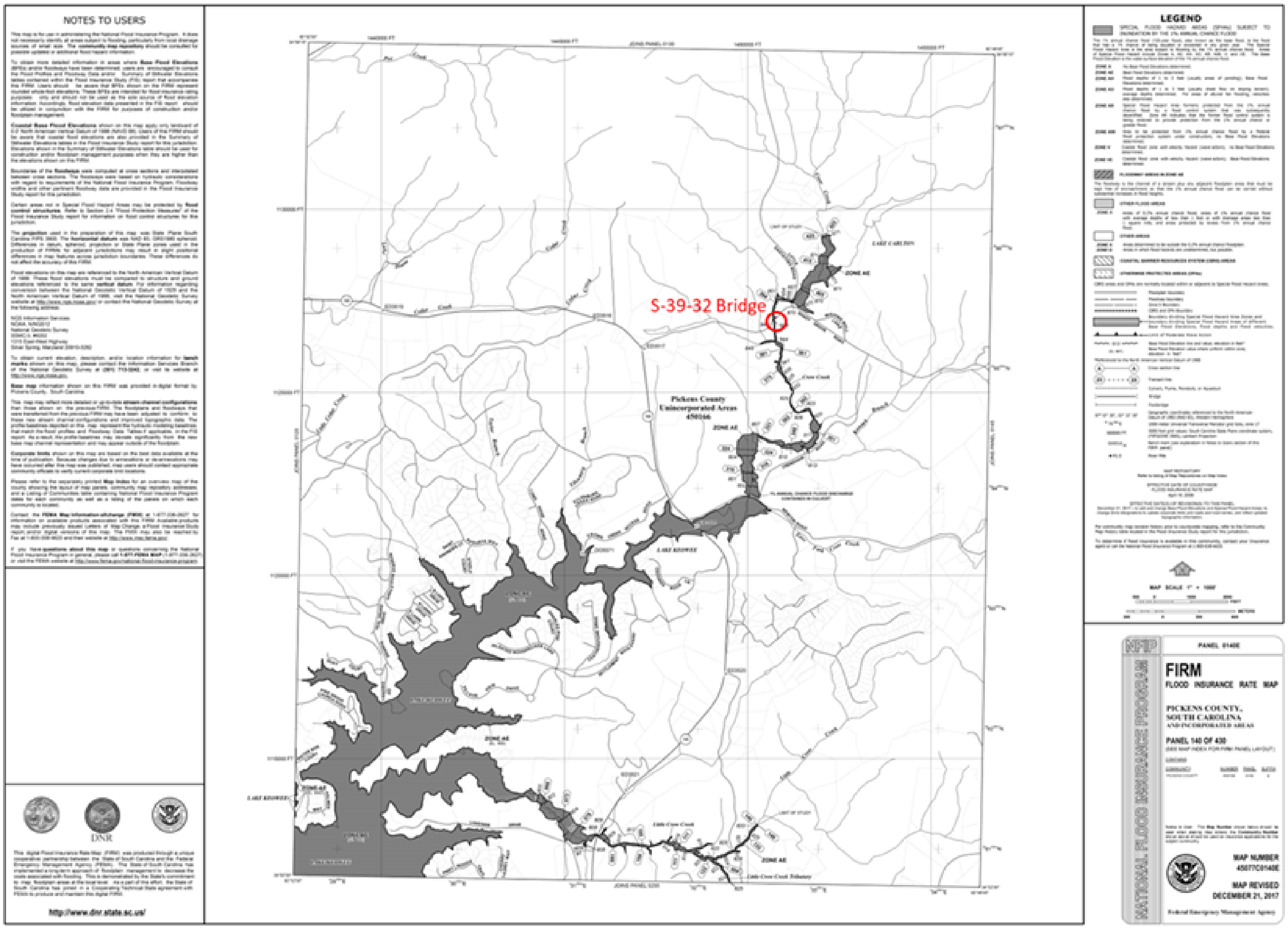
The impacts are not considered significant encroachments and would not support incompatible floodplain development. The proposed project will have no significant impact to base flood elevations along the stream and will not impact the potential for development within the floodplain

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 for the project was performed in accordance with SCDOT, FEMA, and local regulations. As the project progresses to final construction plans, the hydraulic modeling will be updated based on the final bridge layout

21 June 2023

SCDOT Hydraulic Engineer Date


NOTES TO USERS
S-39-32 Bridge
Pickens County
Unincorporated Areas
450166
ZONE AE
LAKE KEOWEE
LAKE CARLTON
Crow Creek
Little Crow Creek
LEGEND
MAP SCALE 1" = 1000'
http://www.dnr.state.sc.us/
DNR
PANEL 0140E
FIRM
FLOOD INSURANCE RATE MAP
PICKENS COUNTY,
SOUTH CAROLINA
AND INCORPORATED AREAS
PANEL 140 OF 430
NATIONAL FLOOD INSURANCE PROGRAM
MAP NUMBER
45077C0140E
MAP REVISED
DECEMBER 21, 2017
Federal Emergency Management Agency

Appendix E: Public Comments

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.
To: Amybrissey@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

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.

Thank you,

LEAD 2024 Facilitating SUCCESS

Michael E. Pitts, P.E., Assoc. DBIA
Alternative Delivery Program Manager
O 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org
955 Park Street, P.O. Box 191, Columbia, SC 29202-0191

From: Pitts, Michael E.
To: 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

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
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