

Attachments

Attachment A- Cultural Resources Project Screening Form

Attachment B- Natural Resources Technical Memorandum

Attachment C- Bridge Replacement Scoping Risk Assessment Form

Attachment D- Floodplain Checklist

Attachment E - Public Involvement

Attachment A- Cultural Resources Project Screening Form



Cultural Resources Project Screening Form

File Number: PIN: Route: County:

Project Name:

Type 1: Resurfacing, installation of fencing, signs, pavement markings, traffic signals, passenger shelters, railroad warning devices, installation of rumble strips, and landscaping

Project Type

Type 2: Bridge replacements on alignment, construction of bicycle/pedestrian facilities, and intersection improvements

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

Comments

This project replaces the bridge carrying S-20 (Camp Welfare Road) over Hogfork Branch. The bridge will be replaced on alignment and it is anticipated that minor amounts of new right-of-way (ROW) will be required. The archaeological project area is 75 feet from the road centerline (150 feet total) and extends 1,500 feet from either side of the bridge. The architectural survey examined all above-ground resources with sightlines to the bridge. New South Associates conducted background research and a cultural resources field survey in May 2023 and created a short form report detailing the project. The survey consisted of a pedestrian reconnaissance of the entire archaeological APE augmented by the excavation of shovel test pits (STPs). A total of 62 STP locations were investigated. Six STPs were not excavated due to slope and heavy tree fall. The remaining 56 STPs were negative for cultural material. The current bridge to be replaced (Asset ID 03647) is a one-span, concrete stinger bridge constructed in 1961. Although it is over 50 years of age, it was not formally recorded and evaluated for inclusion on the NRHP because it qualifies for streamlined review under the Federal Highway Administration's Post-1945 Bridges Program Comment. No other above ground resources are located within the APE. No historic properties will be affected by this project. No additional cultural resources investigations are recommended.

Effect Determination:

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

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

Prepared by:

Review Date:

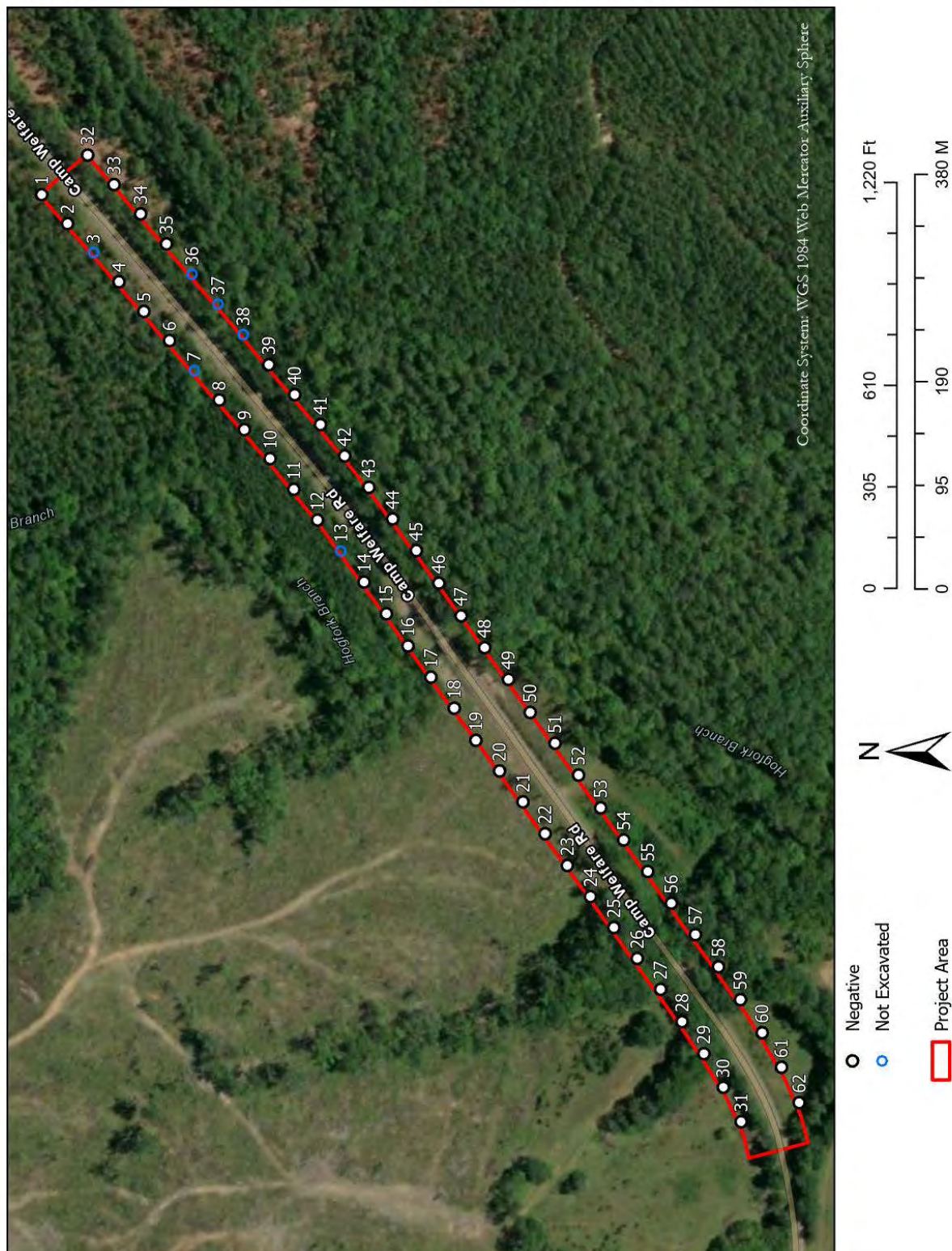


Figure 6.
Shovel Test Map

Basemap: ESRI Resource Data

**CULTURAL RESOURCE FIELD REPORT
SCDOT ENVIRONMENTAL SECTION**



TITLE: Phase I Cultural Resources Survey of Proposed Improvements to the S-20 Bridge over Hogfork Branch

DATE OF RESEARCH: 5/17/23

ARCHAEOLOGIST: Kelly Higgins, MA, RPA

ARCHITECTURAL HISTORIAN: Sean Stucker, MHP and Katie Dykens Quinn, MSHP

COUNTY: Fairfield

PROJECT: Closed and Load Restricted Bridge Replacements- Package 20

F. A. No.:

File No.

PIN: PO41958

DESCRIPTION:

The South Carolina Department of Transportation (SCDOT) proposes to replace various closed or load-restricted bridges including the S-20 (Camp Welfare Road) bridge over Hogfork Branch in Fairfield County, South Carolina. The project area is defined as that area within 75 feet of either side of the proposed roadway centerline and extending 1,500 feet from the bridge. The archaeological survey covered the entire project area, while the architectural survey examined all above-ground resources with sightlines to the bridge. This cultural resource survey was performed under contract with HNTB.

LOCATION:

The project area is located in the northeastern portion of Fairfield County, approximately two kilometers (one mile) east of I-77 (Figure 1).

USGS QUADRANGLE: Flint Hill, SC

DATE: 1971 **SCALE:** 1:24000

UTM: NAD83 **ZONE:** 17N

EASTING: 502625

NORTHING: 3815832

ENVIRONMENTAL SETTING:

The project area is located in the Piedmont physiographic region. The topography in this region is gently rolling, and elevations within the project area range from 250 feet above mean sea level (amsl) along Hogfork Branch to 300 feet amsl at the northeastern terminus of the project area. This portion of Fairfield County is rural, containing forest and open fields for agriculture or pasture.

NEAREST RIVER/STREAM AND DISTANCE:

Hogfork Branch bisects the project area. This creek joins the Big Wateree Creek approximately 350 meters south of the project area. Big Wateree Creek flows into Wateree Lake, formed by impounding the Wateree River, approximately seven kilometers (five miles) southeast of the project area. The Wateree River joins with the Congaree River at the tripoint formed by Calhoun, Sumter, and Richland counties to form the Santee River.

SOIL TYPE:

A review of the Natural Conservation Resource Service's Web Soil Survey identified three soil types in the project area: the Somewhat Poorly Drained and frequently flooded **Chewacla loam**, with 0–2 percent slopes; and the Well-Drained **Wilkes sandy loam**, with 15–40 percent slopes, and **Winnsboro sandy loam**, with 6–10 percent slopes. These soils were formed from alluvium or clayey residuum weathered from hornblende schist, gneiss, diorite, or gabbro. The well-drained soils account for almost 90 percent of soils in the project area.

REFERENCE FOR SOILS INFORMATION:

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

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

CURRENT VEGETATION:

Planted pine is present in the northeastern portion of the project area, north of the road, becoming mixed with hardwoods south of the road and around Hogfork Branch. Open fields caused by clear cutting are present in the southwestern portion of the project area, though small stands of hardwoods and pines are still present. In the stands of planted pine, the understory is light, consisting of small shrubs such as poison ivy. The understory becomes moderately dense in the other wooded portions, while secondary vegetation including blackberry and raspberry bushes are present in the cleared areas (Figures 2–4).

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). While there are no previously recorded cultural resources within the project area itself, three archaeological sites have been recorded approximately 250 meters to the northeast of the project's northeastern terminus (Figure 5). No previously recorded historic resources were recorded in the 0.5-mile search radius.

All three sites, 38FA18, 38FA19, and 38FA20, were recorded in 1970 by John Kelly as part of his master's thesis at the University of Wisconsin. Site 38FA18 is represented by a single argillite flake found in a recent cut. Site 38FA19 consists of lithic debris and historic ceramics found alongside the road. The final site, 38FA20, consists of quartz flakes noted during tree pulping activities. None of these sites have been evaluated for their NRHP eligibility.

SURVEY RESULTS

The cultural resources survey did not identify any new or previously recorded archaeological sites or isolated finds. Additionally, no previously recorded or new historic architecture resources were identified. The results of the survey are discussed in detail below.

ARCHAEOLOGY

The Phase I Archaeological Survey was conducted on May 17, 2023. Kelly Higgins, MA, RPA, served as Field Director and was assisted in the field by Archaeological Technicians John Tomko and Derrick Westfall. The archaeological investigation included a pedestrian walkover of the entire project area and the excavation of 30-centimeter 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 Camp Welfare 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 investigated during the survey, of which 56 were negative for cultural material. The remaining six shovel tests were not excavated due to slope exceeding 15 degrees and heavy tree fall (Figure 6). One soil profile was noted across the project area, consisting of approximately 15 centimeters of a yellowish brown (10YR 5/6) to strong brown (7.5YR 5/6) sandy loam Ap horizon overlying a strong brown (7.5YR 5/6) to yellowish red (5YR 4/6) sandy clay subsoil (Figure 7). No new or previously recorded archaeological sites were identified in the project area.

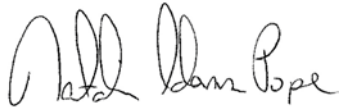
ARCHITECTURAL SURVEY

The architectural survey was conducted on May 18, 2023, by Architectural Historian Sean Stucker, MHP. No architectural historic resources were identified within the project area or its viewshed. The bridge carrying S-20 over Hogfork Branch, constructed in 1961, was not evaluated per the FHWA's Post-1945 Bridges Program Comment (U.S. Department of Transportation, Federal Highway Administration 2012). This bridge (ID 03647) is of a common type, with concrete T-beam stringers and wood piers with concrete caps and footings (Figure 8).

REMARKS AND RECOMMENDATIONS:

This Phase I Cultural Resource Survey identified no new or previously recorded archaeological sites or isolated finds, and no new architectural resources were recorded. The proposed project, as currently defined, would have no effects to historic properties.

SIGNATURE:

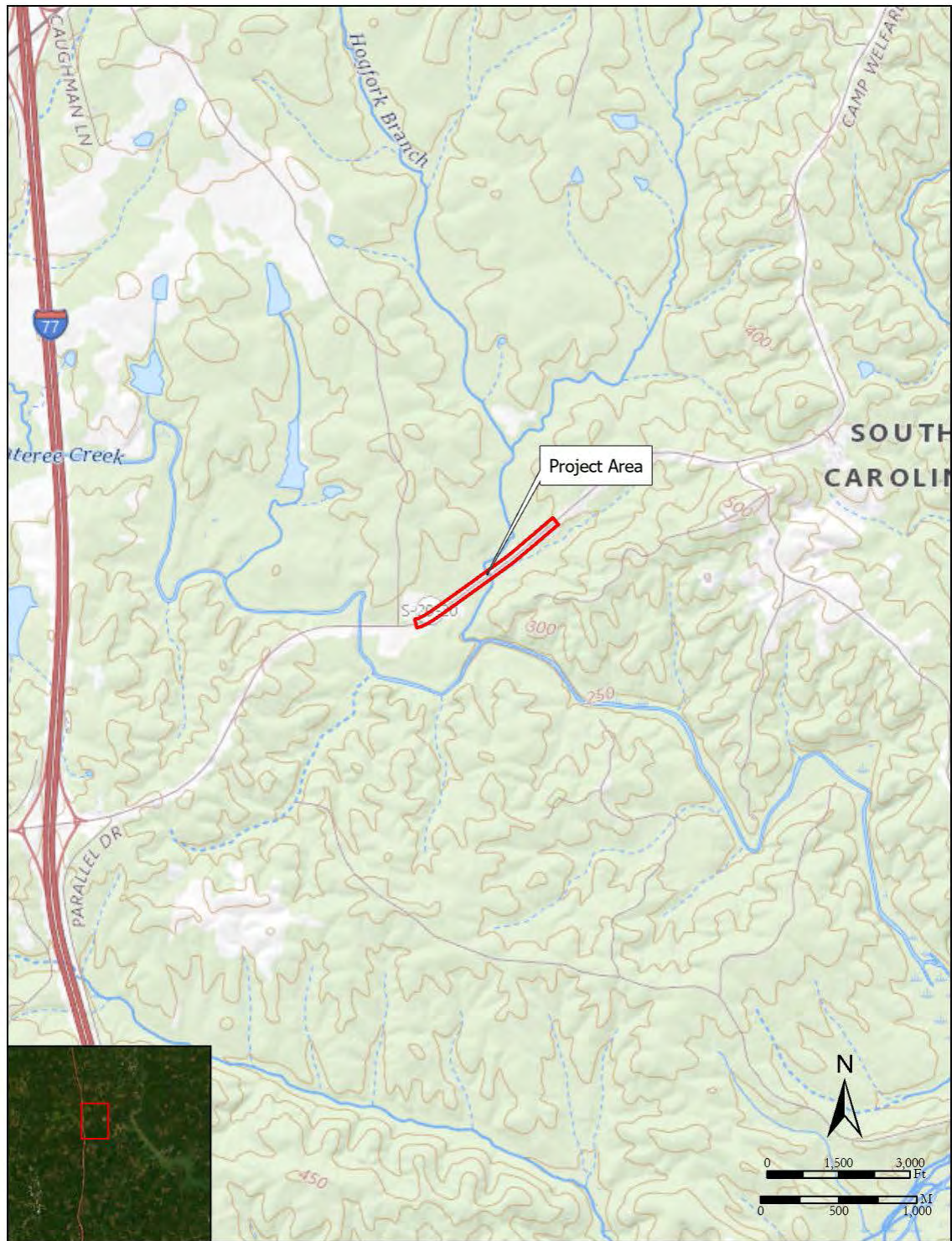
A handwritten signature in black ink, appearing to read "Nathaniel D. Pope". The signature is written in a cursive, flowing style.

DATE: May 30, 2023

BIBLIOGRAPHY:

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: United States Geological Survey Topo

Figure 2.
Clearing and Secondary Brush, Facing Northeast



Figure 3.
Mixed Pines and Hardwoods, Facing Northeast



Figure 4.
Planted Pine, Facing Southwest



Figure 5.
Previously Recorded Cultural Resources within a 0.5-mile Radius of the Project Area



Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

Basemap: ESRI Resource Data

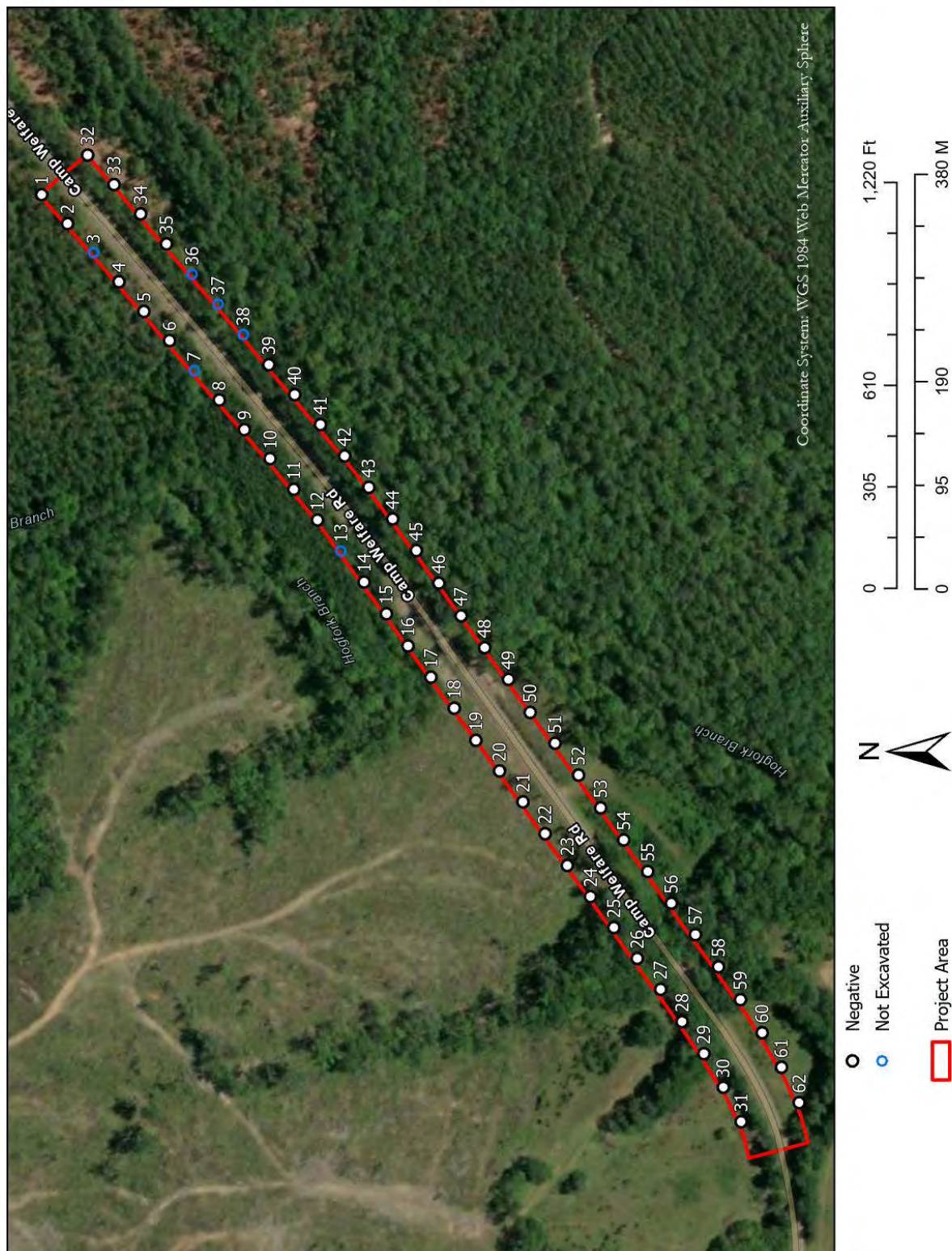


Figure 6.
Shovel Test Map

Basemap: ESRI Resource Data

Figure 7.
Typical Shovel Test Profile



Figure 8.
Bridge Carrying S-20 over Hogfork Branch



A. Contextual, Facing Southwest



B. Substructure

Attachment B- Natural Resources Technical Memorandum



Natural Resources Technical Memorandum

S-20 (Camp Welfare Road) Bridge Replacement
over Hogfork Branch

SCDOT Project ID: P041958

June 16, 2023



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& DEWITT**

Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace the S-20 (Camp Welfare Road) bridge over Hogfork Branch in Fairfield County, South Carolina. Specifically, the project is located approximately 9.72 miles northeast of the town of Winnsboro. The project is also located in the Wateree Watershed (03050104 8-digit Hydrologic Unit Code) and the Southern Outer Piedmont (45b) 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 13.80 acres in size and approximately 3,000 feet (0.57 mile) in total length, generally centered on Hogfork Branch in either direction. Furthermore, the PSA is 150 feet in total width, generally centered on the centerline of Camp Welfare 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 and 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 will 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>)
- South Carolina Department of Health and Environmental Control (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) – Flint Hill, 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 May 9, 2023. A summary of jurisdictional features identified in the PSA is provided in Tables 1 and 2.

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

Wetland	Latitude	Longitude	Area (acre)
Wetland A	34.483044	-80.973428	0.42
Total			0.42 acre

Table 2 - Summary of Delineated Streams and Non-Wetland Waters in the Project Study Area

Stream	Latitude	Longitude	Centerline Length (feet)	Area (acre)
Stream A	34.484194	-80.971461	208	0.12
Stream B	34.484186	-80.970861	402	0.07
Stream C	34.482694	-80.973428	166	0.02
Total			776 feet	0.21 acre

Permitting Considerations

Based on the conceptual bridge design, impacts to jurisdictional waters have been avoided; therefore, a Section 404/401 permit is not anticipated. 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 May 9, 21, and 26, 2023. 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. The only species currently federally protected in the project area is the bald eagle. Effect conclusions for the bald eagle are not required under the Endangered Species Act. However, the project is not anticipated to result in the mortality of any bald eagles or limit the ability of the species to adequately breed, feed, or shelter. 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 includes forestry and silviculture. The only natural community observed within the PSA was a small stream forest. 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, three Soil Map Units (SMU) are mapped within the PSA. Each SMU is included in Table 3 below.

Table 3 - Soil Map Units (SMU) in the Project Study Area

SMU	SMU Name	Area (acres)	Percentage of PSA
Cw	Chewacla loam, 0 to 2 percent slopes, frequently flooded	1.1	10.7%
WkF	Wilkes sandy loam, 15 to 40 percent slopes	5.0	48.7%
WnC	Winnsboro sandy loam, 6 to 10 percent slopes	4.2	40.6%

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



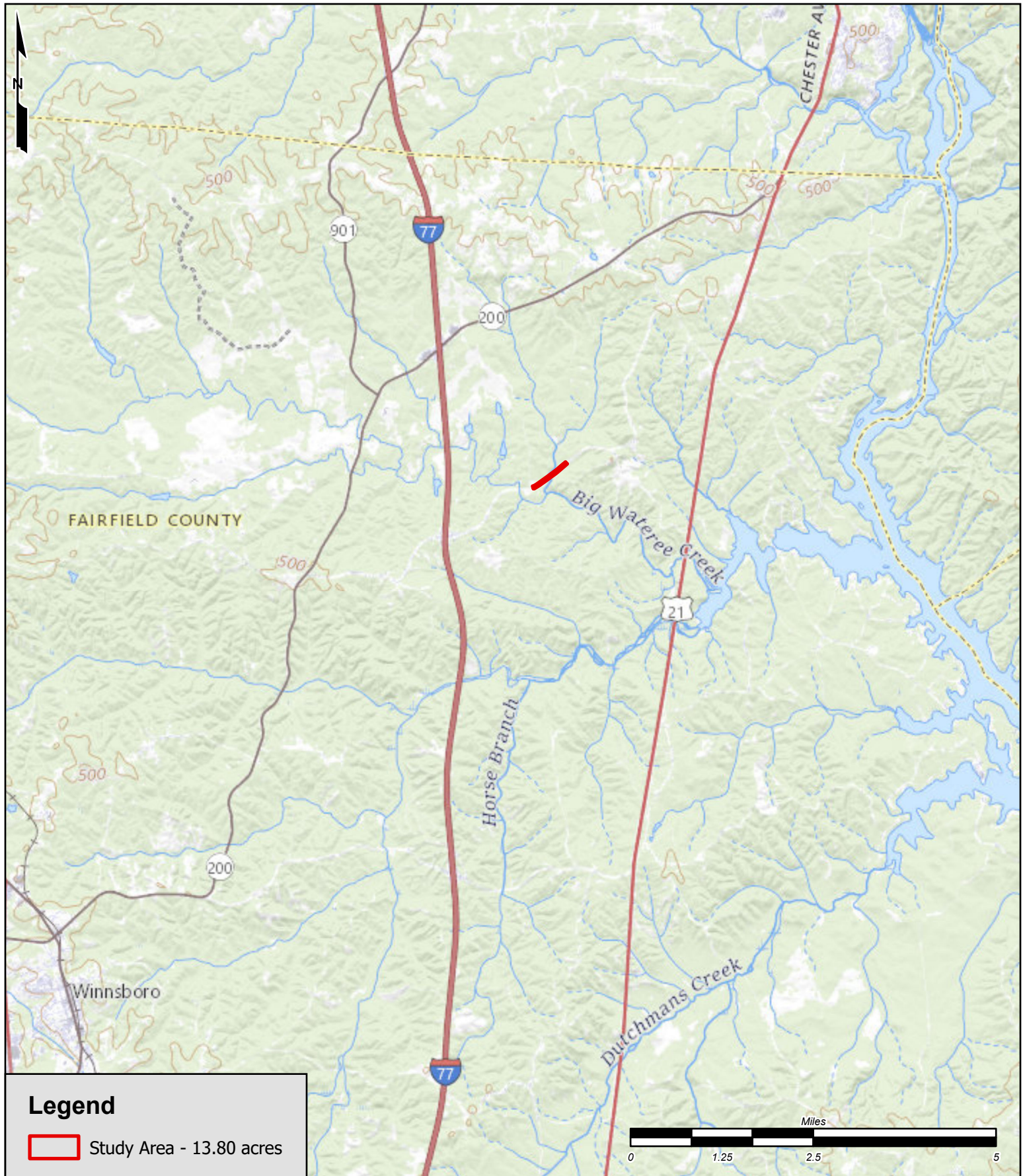
Matt DeWitt, AICP
Robbins & DeWitt, LLC

Attachment A

Figures



ROBBINS
& DEWITT



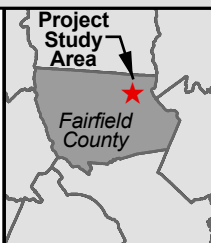
Legend

 Study Area - 13.80 acres



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S-20 BRIDGE REPLACEMENT OVER HOGFORK BRANCH PROJECT ID: P041958

FAIRFIELD COUNTY, SOUTH CAROLINA

Source: USGS National Map (2023); USGS Flint Hill Quadrangle (2020); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

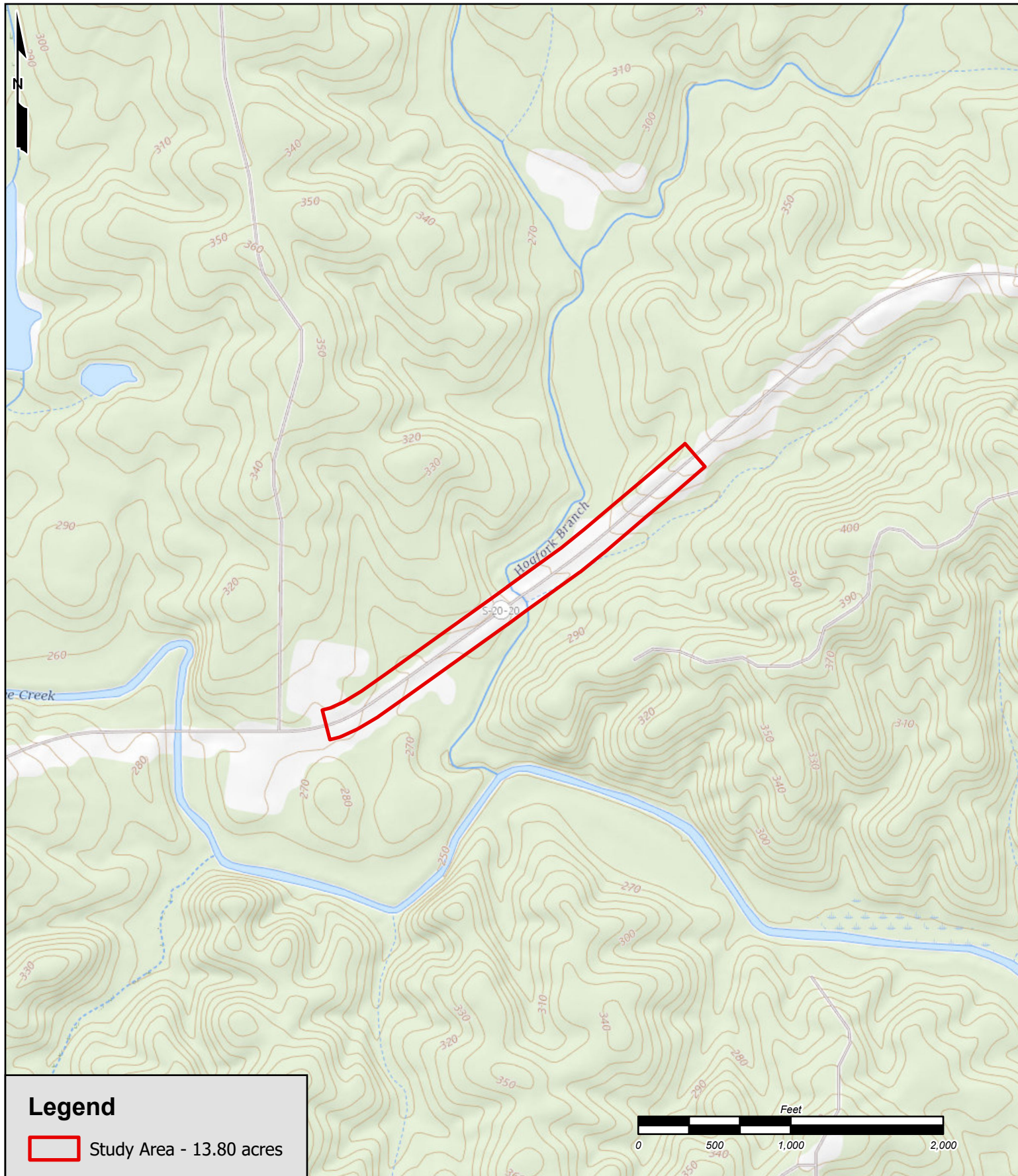


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DATE: 06/05/2023

PROJECT VICINITY

FIGURE 1



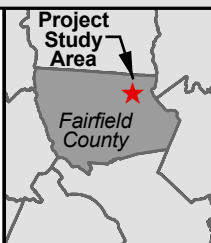
Legend

 Study Area - 13.80 acres



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S-20 BRIDGE REPLACEMENT OVER HOGFORK BRANCH PROJECT ID: P041958

FAIRFIELD COUNTY, SOUTH CAROLINA

Source: USGS National Map (2023); USGS Flint Hill Quadrangle (2020); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]



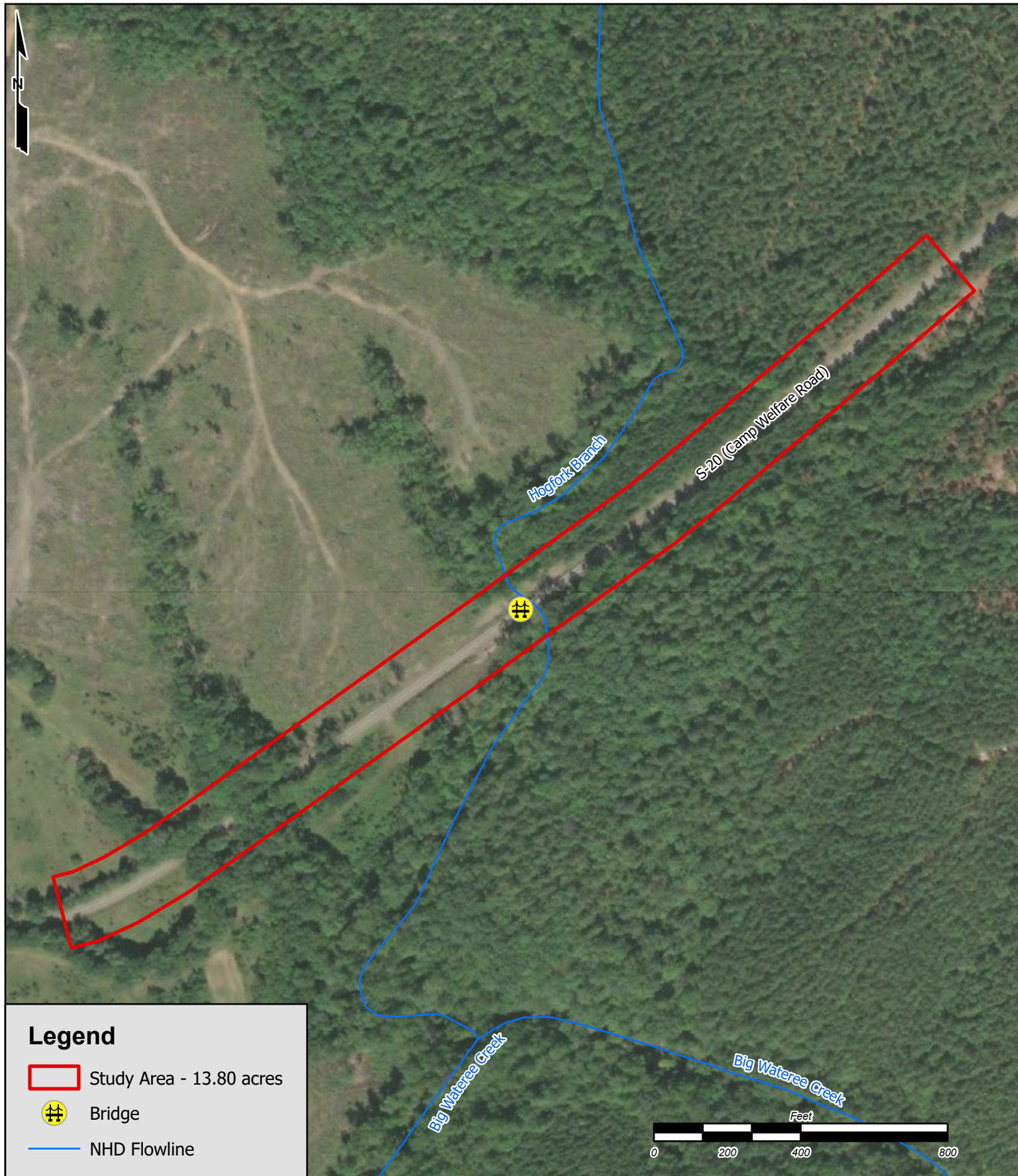
South Carolina Department of Transportation

DRAWN BY: TRC

DATE: 06/05/2023

USGS TOPOGRAPHIC MAPPING

FIGURE 2



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Project Study Area

Fairfield County

**S-20 BRIDGE REPLACEMENT
OVER HOGFORK BRANCH
PROJECT ID: P041958**

FAIRFIELD COUNTY, SOUTH CAROLINA

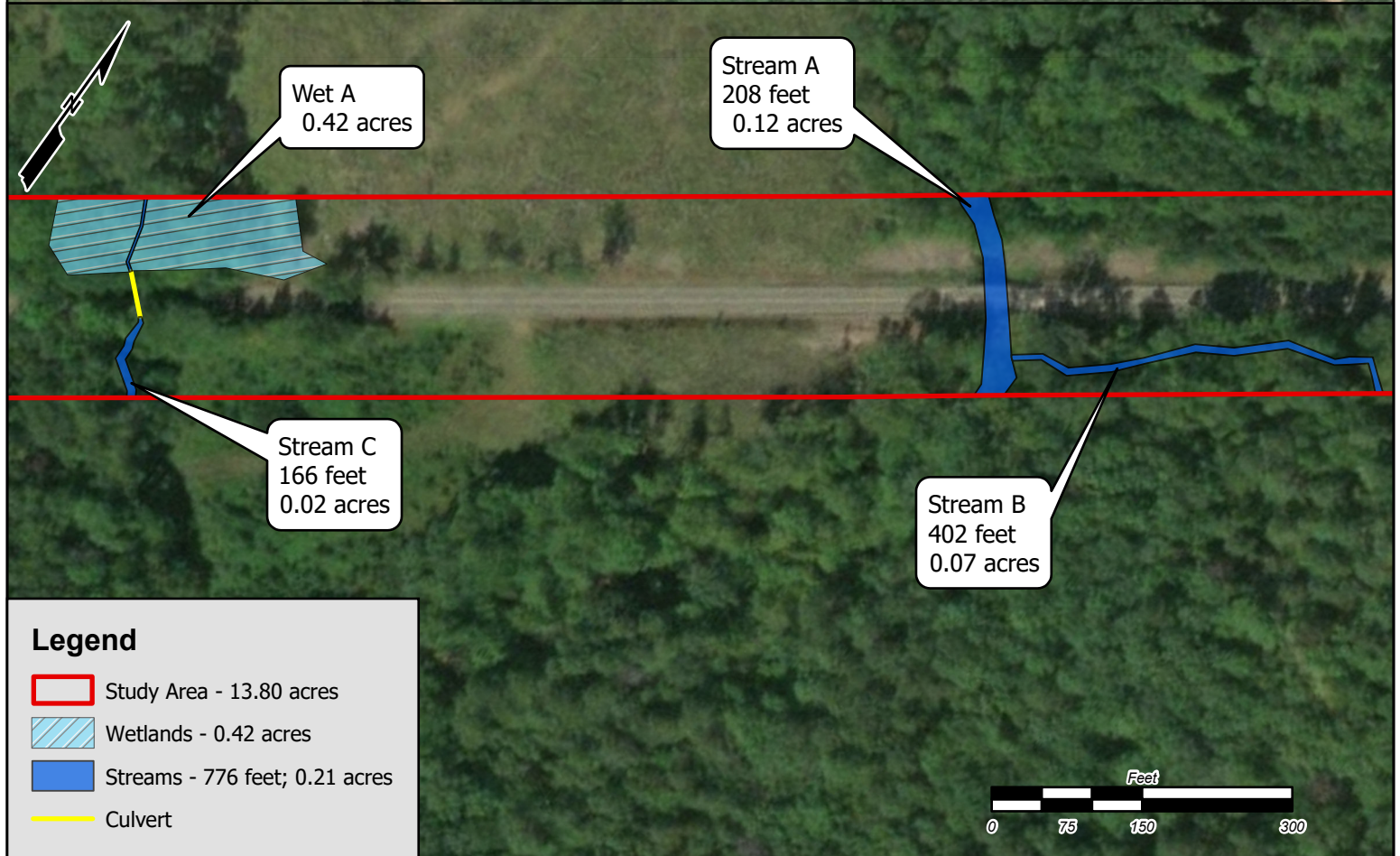
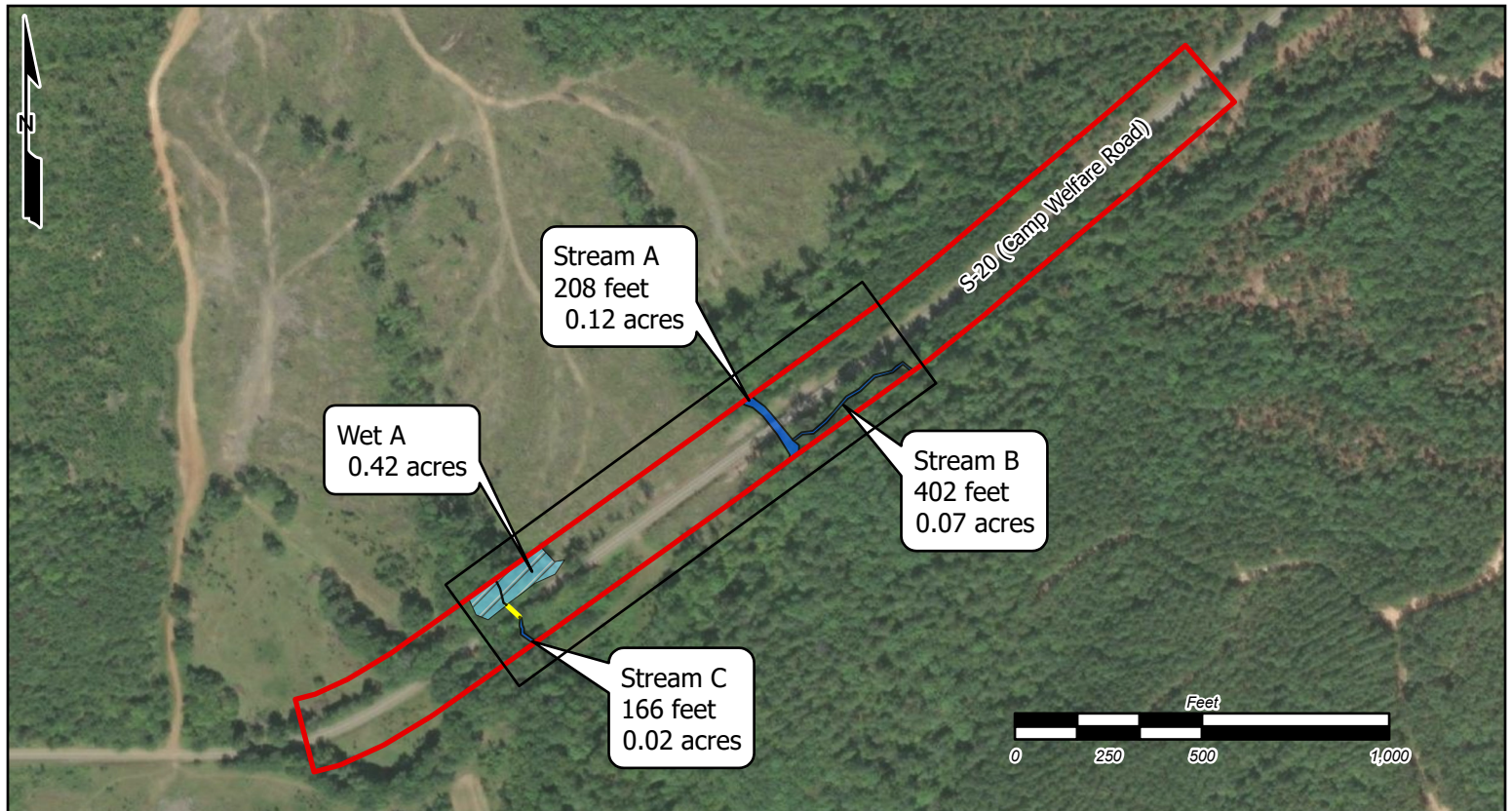
Source: SCDNR LiDAR DEM [Fairfield County, South Carolina (2008)]; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

South Carolina Department of Transportation

DRAWN BY: TRC	DATE: 06/05/2023
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AERIAL IMAGERY

FIGURE 3



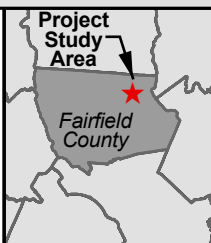
Legend

- Study Area - 13.80 acres
- Wetlands - 0.42 acres
- Streams - 776 feet; 0.21 acres
- Culvert



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S-20 BRIDGE REPLACEMENT OVER HOGFORK BRANCH PROJECT ID: P041958

FAIRFIELD COUNTY, SOUTH CAROLINA

Source: Approximate boundaries of WOTUS were delineated on May 9, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]



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DATE: 06/05/2023

APPROXIMATE BOUNDARY OF WOTUS

FIGURE 4

Attachment B

SCDOT Permit Determination Form & Water Quality Information Report



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Date: 06/16/2023

PERMIT DETERMINATION

FROM Russell Chandler COMPANY Robbins & DeWitt

CONTACT INFO (phone and/or email) russell.chandler@robbins-dewitt.com

SCDOT PROJECT ENGINEER Michael Pitts

TO Will McGoldrick - Design Build Coordinator

Project Description S-20 over Hogfork Branch

Route or Road No. S-20 County Fairfield

CONST. PIN P041958 OTHER PINS or STRUCTURE # _____

RESPONSE:

☒ It has been determined that no permits are required because:

Preliminary design avoids impacts to WOTUS

☐ The following permit(s) is/are necessary:

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

USACE Permit ☐ GP ☐ IP ☐ 401 ☐ JD

OCRM Permit ☐ CAP ☐ CZC

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

Other _____

Water Classification: FW

Print and attach the SCDHEC water quality report

303(d) listed ☒ no ☐ yes, for * _____

TMDL developed ☐ no ☒ yes, for * TURBIDITY, ECOLI

*List all that apply using the SCDHEC abbreviations

Comments: _____

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

T Russell Chandler
Biologist, SCDOT/Consultant

06/16/2023
Date



Watershed and Water Quality Information

General Information

Applicant Name: SCDOT

Permit Type: Construction

Address: 3968 CAMP WELFARE RD,
FAIRFIELD, SC, 29180

Latitude/Longitude: 34.484195 / -80.971146

MS4 Designation: Not in designated area

Monitoring Station: CW-251

Within Coastal Critical Area: No

Water Classification (Provisional): FW

Waterbody Name: HOGFORK BRANCH

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
CW-251	F	F	F	F	F	F	F	F	F	F	WnTN	WnTN	X	X	X	X	X	X	X	X
CW-072	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X
RL-18083	A	A	A	A	A	A	A	A	A	A	A	A	X	X	F	F	F	X	X	X
RL-08035	A	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	X	X	X
RL-12056	A	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	X	X	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)

TURBIDITY - Turbidity

ECOLI - Escherichia coli (Freshwaters)

Fish Consumption Advisory

Waters of Concern (WOC)

CW-251

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes

TMDL Site: CW-251 (2)

TMDL Report No: 007-04_008-04

TMDL Parameter: Fecal_Turbidity

TMDL Document Link: https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl_bwater_fc.pdf

Report Date: May 30, 2023

Attachment C

Biological Evaluation - Section 7 of the Endangered Species Act



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Introduction

The proposed project consists of replacing the S-20 (Camp Welfare Road) bridge over Hogfork Branch, and associated road work, in Fairfield 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 review of the USFWS South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species, dated March 29, 2022, identifies one (1) federally protected species known to occur or to have formerly occurred in Fairfield County. A Resource List was also requested from the USFWS Information for Planning and Consultation (IPaC) in June 2023 to detail protected species under USFWS jurisdiction that are known or expected to be on or near the project area. Table 1 below includes the species that appear on at least one of these resources.

Federally Protected Species

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

Table 1: Threatened and Endangered Species

Category	Common Name	Scientific Name	Protection Status
Bird	Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Insect	Monarch butterfly	<i>Danaus plexippus</i>	Candidate
Mammal	Tri-colored bat	<i>Perimyotis subflavus</i>	Proposed Endangered

Methodology

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on May 9, 21, and 26, 2023. 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 composed of forestry/silviculture. The only natural community observed within the PSA consisted of small stream forest.

The small stream forest consists of an open to dense understory or shrub layer and a sparse to dense herb layer. The canopy has a mixture of bottomland and mesophytic trees including river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), American elm (*Ulmus americana*), hackberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), and red maple (*Acer rubrum*). Vine species are typically common and can include poison

ivy (*Toxicodendron radicans*), summer grape (*Vitis aestivalis*), and crossvine (*Bignonia capreolata*). The subcanopy consists of young canopy species and many tall shrubs including pawpaw (*Asimina triloba*) and blackhaw (*V. prunifolium*). The herb layer contains cardinal flower (*Lobelia cardinalis*), longleaf lobelia (*L. elongata*), Nepalese browntop (*Microstegium vimineum*), netted chainfern (*Woodwardia areolata*), royal fern (*Osmunda regalis*), and eastern marsh fern (*Thelypteris palustris*).

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.

Suitable habitat for tri-colored bat exists in the PSA. Roosting habitat exists under the existing Hogfork Branch bridge and in cavities and crevices of trees within the PSA. A structure survey of the existing Hogfork Branch 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. However, adjacent properties beyond the PSA have been recently clearcut and provide extensive roosting and foraging habitat. Due to the proximity of these silviculture activities to the project, tri-colored bat may utilize portions of the PSA for foraging. A Structures Survey Data Sheet and Habitat Assessment Data Sheet are included in Attachment D.

Conclusions

The only species currently federally protected in the project area is the bald eagle. Effect conclusions for the bald eagle are not required under the Endangered Species Act. However, the project is not anticipated to result in the mortality of any bald eagles or limit the ability of the species to adequately breed, feed, or shelter.

The project team will re-evaluate the project's effect on tri-colored bats at the time the species is formally listed under the ESA, and, if necessary, initiate consultation at that time.

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**

FAIRFIELD COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Bird	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
Crustacean	Broad River spiny crayfish (ARS)	<i>Cambarus spicatus</i>	November-April	
Fish	Robust redhorse (ARS)	<i>Moxostoma robustum</i>	Late April-early May	Temperature dependent: 16-24°C
Insect	Monarch butterfly (C)	<i>Danaus plexippus</i>	August-December	Overwinter population departs; March-April
Mammal	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
Plant	Georgia aster (ARS*)	<i>Symphyotrichum georgianum</i>	Early October-mid November	

Note: There are no federally protected species found in this county in the amphibian, mollusk, and reptile family categories.

IPaC resource list

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

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

Location

Fairfield 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 species¹ 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 Fisheries²).

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
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

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

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.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation->

There are no migratory birds of conservation concern expected to occur at this location.

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

[R2UBH](#)

[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 tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

STRUCTURES SURVEY DATA SHEET

Investigator Names(s): A. CHANDLER

Date: 5/9/2023





County: FAIRFIELD

Lat Long/w3w: 34.48414, -80.97124

Project Name: S-20 (CAMP WELFARE RD) OVER HOGFORK BRANCH

SCDOT Structure ID: 03647

SCDOT Project No.: P041958

Structure Type:		Underdeck Material:
<input type="checkbox"/> Parallel Box Beam		<input checked="" type="checkbox"/> Concrete
<input checked="" type="checkbox"/> Pre-Stressed Girder		<input type="checkbox"/> Corrugated Steel
<input type="checkbox"/> Cast in Place		<input type="checkbox"/> Other:
		
	<input type="checkbox"/> Trapezoidal Box	
	<input type="checkbox"/> Other:	
Note: MAIN SPAN = GIRDERS, APPROACH SPANS = SLAB		
<input type="checkbox"/> Culvert - Box		
<input checked="" type="checkbox"/> Culvert - Pipe/Round [CONCRETE, ~280m SW OF BRIDGE]		

Road Type:			
<input type="checkbox"/> Interstate	<input type="checkbox"/> US Highway	<input checked="" type="checkbox"/> State Road	<input type="checkbox"/> County Road
		S-20	

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

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

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

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

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

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

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

Human Disturbance or Traffic Under Bridge or at Structure?		
<input type="checkbox"/> High	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> None

Areas Inspected (check all that apply):			
<input type="checkbox"/> Vertical Surfaces on I-Beams	<input checked="" type="checkbox"/> Vertical Surfaces between Concrete End Walls and Bridge Deck		
<input checked="" type="checkbox"/> Expansion Joints	<input checked="" type="checkbox"/> Rough Surfaces	<input checked="" type="checkbox"/> Guardrails	<input checked="" type="checkbox"/> Cervices
<input checked="" type="checkbox"/> Other: VERTICAL SURFACES ON CONCRETE GIRDERS			
Areas NOT Inspected because of Safety or Inaccessibility:			

Evidence of Migratory Birds Using the Structure?	
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

Additional Information:

BAT HABITAT ASSESSMENT DATA SHEET

Project Name: S-20 (CAMP WELFARE RD) OVER HOGFORK BRANCH

Date: 5/9/2023

County: FAIRFIELD

Lat Long: 34.48414, -80.97124

Surveyor: A. CHANDLER

Brief Project Description

Replacing the S-20 (Camp Wellfare Road) bridge over Hogfork Branch and associated roadway approach work.

Project Area

Project	Total Acres	Forest Acres	Open Acres
	13.8 acres	7.49 acres	6.31 acres
Proposed Tree Removal	Completely Cleared	Partially Cleared (Will Leave Trees)	Preserve Acres – No Clearing
	< 3 acres (anticipated)	None	> 4 acres (anticipated)

Vegetation Cover Types

Pre-Project	Post-Project
Small Stream Forest, Forestry/Silviculture, Maintained right-of-way	Small Stream Forest, Forestry/Silviculture, Maintained right-of-way

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, Clear Cut, Remote Residential and Commercial, Lake Wateree

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)?

Liberty Hill WMA - ~5 miles east of bridge; Lake Wateree - ~3 miles east/southeast of bridge

Sample Site Description

Sample Site No. (s): Project Study Area (13.8 acres)

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
		Stream B – 402 lf Stream C – 166 lf	Stream A – 208 lf
Pools/Ponds (# and size)	N/A	Open and accessible to bats?	
Wetland (approx. acres)	Permanent		Seasonal
	Wet A – 0.42 ac		
Describe existing condition of water sources: Hogfork Branch			
Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')
	5 (61-80%)	4 (41-60%)	4 (41-60%)
Dominant Species of Mature Trees	Pine, sweetgum, red maple, poplar, elm		
Exfoliating Bark (%)			
Size of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)
	2 (11-20%)	3 (21-40%)	2 (11-20%)
No. of Suitable Snags	5% – borescope used, no evidence of bat use		
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?

PSA is outside known range of NLEB

IS THE HABITAT SUITABLE FOR TRI-COLORED BATS?

Yes

Additional Comments:

See Attachment A, Figure 3 for an Aerial Photography Map, and Attachment C for description of forested habitat.

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: 5/9/2023

Taken by: A.Chandler

From Hogfork Branch
on north side of S-20,
facing south



Photograph 2

Date: 5/9/2023

Taken by: R. Chandler

Unnamed tributary to
Hogfork Branch,
parallel to S-20 on
southside



Photograph 3

Date: 5/9/2023

Taken by: M. DeWitt

Field Staff using a
borescope to inspect
snags and cavity trees



Photograph 4

Date: 5/9/2023

Taken by: A. Chandler

S-20 west of Hogfork
Branch, facing
southwest



Photograph 5

Date: 5/9/2023

Taken by: A. Chandler

On S-20 bridge over
Hogfork Branch facing
north, clear cut area to
the west



Photograph 6

Date: 5/9/2023

Taken by: A. Chandler

Wetland A facing clear
cut area to the
northeast



Photograph 7

Date: 5/9/2023

Taken by: A. Chandler

**Wetland A and clear cut
area**

Attachment C- Bridge Replacement Scoping Risk Assessment Form

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: _____

DATE: _____

ROAD #: _____

STREAM CROSSING: _____

Purpose & Need for the Project:

I. FEMA Acknowledgement

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

Panel Number: _____ Effective Date: _____ (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number _____ illustrates the existing 100 year flood:

- ☐ Passes under the existing low chord elevation.
- ☐ Is in contact with the existing low chord elevation.
- ☐ Overtops the existing bridge finished grade elevation.

III. No Rise/CLOMR Preliminary Determination

- ☐ Preliminary assessment indicates this project may be constructed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed to verify this assessment.

Justification:

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☐ Yes File No. _____ Sheet No. _____ (See Attached)
☐ No

b. Road Plans ☐ Yes File No. _____ Sheet No. _____ (See Attached)
☐ No

B. Historical Highwater Data

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

b. SCDOT/USGS Documented Highwater Elevations
☐ Yes Results: _____
☐ No

c. Existing Plans ☐ Yes See Above
☐ No

V. Field Review

A. Existing Bridge

Length: _____ ft. Width: 27.5 ft. Max. span Length: _____ ft.

Alignment: ☐ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☐ No Angle: _____

End Abutment Type: _____

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

Superstructure Type: _____

Substructure Type: _____

Utilities Present: ☐ Yes ☐ No

Describe:

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

Hydraulic Problems: ☐ Yes ☐ No

Describe:

BRIDGE REPLACEMENT SCOPING TRIP 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: _____ ft.

c. Distance from Low Steel to Normal Water Elev.: _____ 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:

g. Soil Type: _____

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.

C. Existing Roadway Geometry

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

☐ Yes ☐ No

Describe:

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

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

VI. Field Review (cont.)

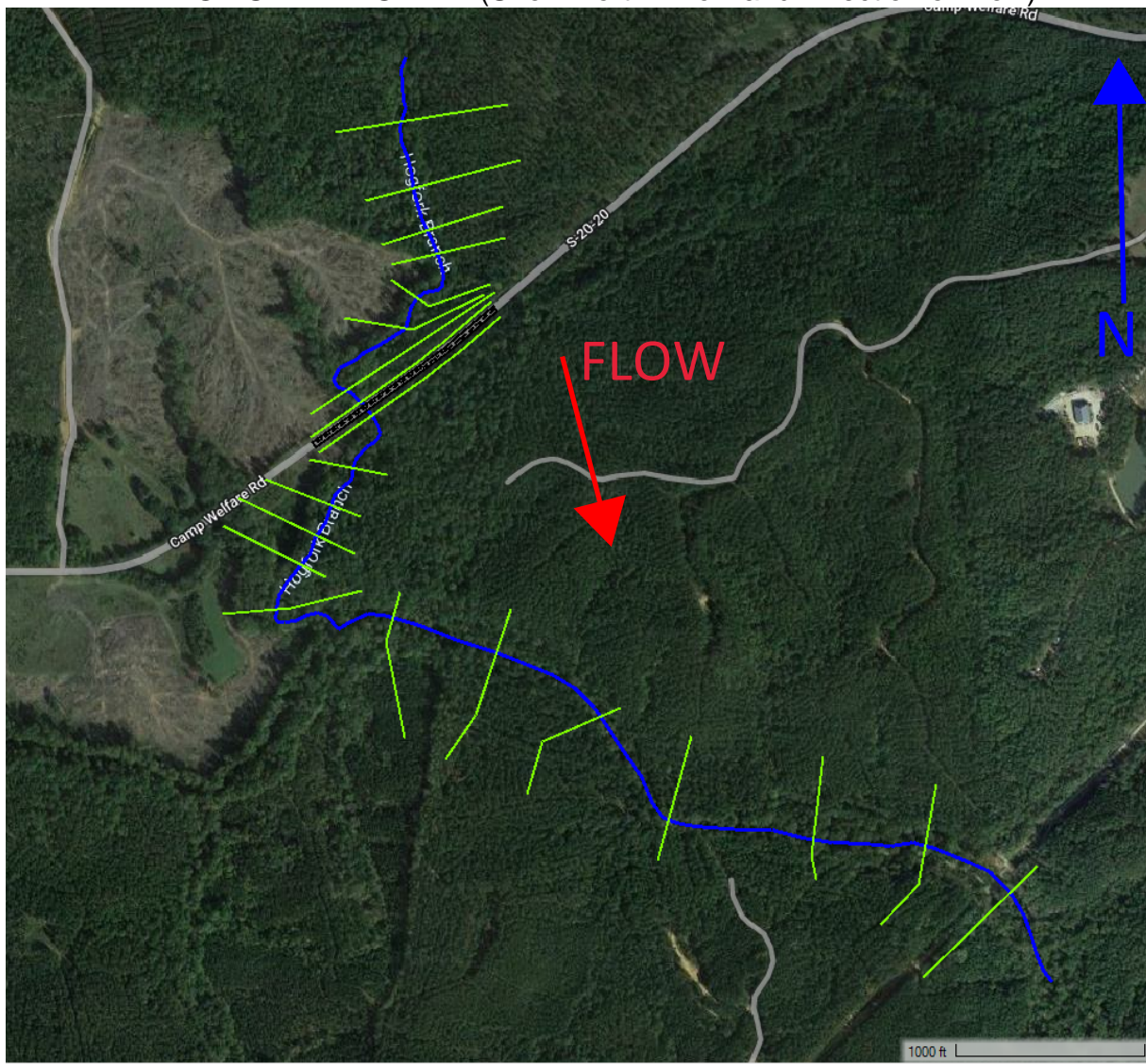
A. Proposed Bridge Recommendation:

Length: _____ ft. Width: 30 ft. Elevation: _____ ft.

Span Arrangement: _____

Notes: _____

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



Performed By: Sharon Jones

Title: _____

Attachment D- Floodplain 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:

The primary purpose of the project is to replace the bridge. Roadway improvements are limited to those associated with accommodating the new structure.

The project crosses Hogfork Branch which is shown on the Flood Insurance Rate Map (FIRM) Panel 45039C0230C. Hogfork Branch is within a designated Special Flood Hazard Area Zone A 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?

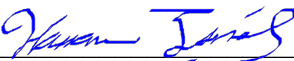
Not Applicable

- 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



SCDOT Hydraulic Engineer

21 June 2023

Date

Attachment E - Public Involvement

Public Outreach Summary:

Project: SCDOT Closed and Load Restricted Bridge Projects-
Package 19

Subject: Public Information Outreach

Package 20 Overview:

The South Carolina Department of Transportation (SCDOT) proposes to replace seven bridges in Package 20. The projects include replacing the existing bridge structures and constructing the roadway to meet current design and safety standards. The proposed facilities are comprised of two and four lane roadways with 12-foot travel lanes and paved shoulders. The seven proposed bridges are shown below (bridges with in-person public meetings are bolded):

S-46-998 (Robertson Road)	WILDCAT CREEK
S-29-292 (Plantation Road)	BEAR CREEK
S-46-1086 (Dacusville Rd)	BEAVERDAM CREEK
S-130 (Rudolph Sikes Road)	BR THOMPSON CR
S-20 (Camp Welfare Road)	HOGFORK BR
S-296 (Old Creek Road)	BLACKWELL MILL STREAM
S-531 (Henry Funderburk Road)	IRIS HILLS CK

The purpose of these projects is to correct the load restriction placed on the bridges as well as restore all bridge components to good condition. The proposed work involves replacing the current bridges with a new bridges.

Public Information Outreach Overview:

Public outreach for the entire package consisted of creating a publicly accessible website, individually mailed postcards, installation of informational yard signs, public meeting notification road signs, and public information meetings.

For this project, postcards were mailed to local residents identified through the US Postal Service's Every Door Direct application. Postcards provided basic information about the specific bridge project and provided a website address for the individual to visit to find more information and provide comments if desired. No comments were provided for this site.

The comment period for the projects began July 5 and ended on August 11, 2023. Information about the projects, including meeting displays, was available on the website throughout the duration of the comment period. A comment form was also available. The project website can be accessed at: https://scdotgis.online/CLRB_2022_Package20.

Public Outreach:

Leading up to the comment periods for all 7 bridges, the project team executed several outreach strategies to maximize public participation. The outreach activities completed are listed in the table below.

Bridge Project	Outreach Type	Number of Recipients	Type of Recipients	Date Sent
All Package 20 Bridges	Postcard	581	General Public Mailed via Every Door Direct Mail Service Sent to all postal routes surrounding the project areas.	July 1, 2023

Bridge Replacement Package 20

Design-Build Projects

Counties: Chesterfield, Fairfield, Lancaster and York

Share Your Feedback

Project Description

SCDOT proposes to replace seven existing bridge structures and constructing the roadway to meet current design and safety standards in Chesterfield, Fairfield, Lancaster and York counties. This card is to let you know about the bridge replacement near your residence or business. Please provide comments by phone, email, or by visiting the website. You can scan the QR code below or enter the address found on the reverse side of this postcard to access the website.



Scan QR code to visit
project web page.

Estimated Project Schedule

- Construction start: Early 2024
- Construction duration: ~24 Months

Project Manager

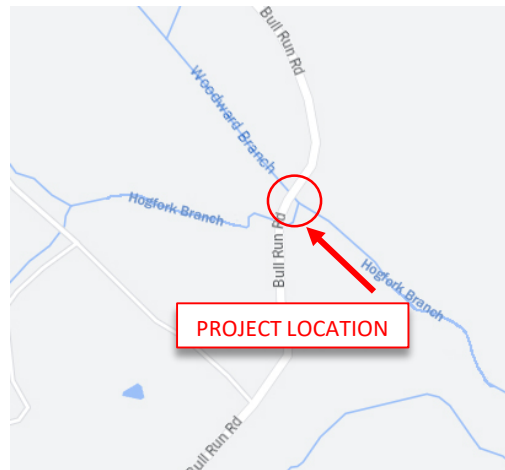
Michael Pitts, PE

Phone: 803-737-2566

Email: pittsME@scdot.org

Comments for S-20 proposed bridge replacement will be accepted until Aug. 11, 2023.

S-20 Hogfork Branch Project Area





South Carolina Department of Transportation



SCDOT is hosting a website with **online project information** for the Design-Build bridge replacement projects (Package 20).

Visit the Project Website to comment on S-20 over Hogfork Branch

Comment Period: 7/5/23 - 8/11/23

Contact Us!



803-737-2566



PittsME@scdot.org



www.scdotgis.online/CLRB_2022_Package20

PLACE
STAMP
HERE

SCDOT Environmental Services Offices

PO Box 191

Columbia, SC 29202

