



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



PROCESSING FORM FOR PROGRAMMATIC CATEGORICAL EXCLUSIONS
NON MAJOR FEDERAL ACTIONS

Project ID P041238

Route SC 49 (Cross Keys Highway)

County Union

Part 1 - Project Description

Include the Project Name/Description

SC 49 (Cross Keys Highway) Bridge Replacement over Fair Forest Creek

SCDOT proposes to replace the SC 49 (Cross Keys Highway) Bridge over Fair Forest Creek in Union County. The purpose of this project is to correct the load restriction placed on it as well as restore all bridge components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge is currently open to traffic and would remain open to traffic during construction.

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

It is anticipated that minor amounts of right of way will be required for the replacement of this structure. The minor amount of right of way needed will include temporary and/or permanent strips. Existing right of way is approximately 66' along the roadway and 150' in the area of the bridge. Given the rural location new acquisitions are not anticipated to have negative effects to resources or landowners and will be within the existing project study area.

Part 2 - PCE Type

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

23 CFR 771.117(c) Bridge rehabilitation, reconstruction, or replacement or railroad crossing improvements

23 CFR 771.117(d)

Part 3 - Thresholds

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

1.	Involves any unusual circumstances as described in <u>*23 CFR Part 771.117(b)</u>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2.	The acquisition of more than <u>*minor amounts</u> of temporary or permanent strips of right-of-way	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
3.	Involves acquisitions that result in residential or non-residential displacements	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
4.	Involves any adverse impacts to EJ populations	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Part 3 - Thresholds Continued

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

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

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

Part 4 - Threshold Definitions

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

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

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

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

Major Traffic Disruptions:

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

Changes in Access Control:

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

Environmental Commitments: (Check all that apply)

- | | | |
|---|--|---|
| <input type="checkbox"/> USTs/Hazardous Materials | <input checked="" type="checkbox"/> General Permit | <input type="checkbox"/> Right of Way |
| <input checked="" type="checkbox"/> Water Quality | <input type="checkbox"/> Individual Permit | <input checked="" type="checkbox"/> Floodplains |
| <input checked="" type="checkbox"/> Migratory Bird Treaty Act | <input type="checkbox"/> Essential Fish Habitat | <input type="checkbox"/> Lead Based Paint |
| <input checked="" type="checkbox"/> Stormwater | <input checked="" type="checkbox"/> Cultural Resources | |
| <input type="checkbox"/> Coast Guard Permit Exclusion | <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Non-Standard Commitment (see below) |

Part of CLRB 2022-1 DB Package 17

Impacts to jurisdictional waters will be less than thresholds outlined in the USACE approved GP for SCDOT projects.

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

Approved By:

Date

6/28/23

Primavera:

☒ Yes

☐ No

NEPA Start Date:

June 21, 2023

Does the project contain additional commitments?: (if Yes attach to form) ☒ Yes

☐ No

Date: 06/21/2023

SCDOT
NEPA ENVIRONMENTAL COMMITMENTS FORM



Project ID : P041238 County : Union District : District 4 Doc Type: PCE Total # of Commitments: 8

Project Name: SC 49 (Cross Keys Highway) Bridge Replacement over Fair Forest Creek

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

CONTACT NAME: Michael Pitts

PHONE #: (803) 737-2566

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Water Quality

NEPA Doc Ref:

Responsibility:

CONTRACTOR

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

☐ Special Provision

Migratory Bird Treaty Act

NEPA Doc Ref:

Responsibility:

CONTRACTOR

The federal Migratory Bird Treaty Act, 16 USC § 703-711, states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The South Carolina Department of Transportation (SCDOT) will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests.

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

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

☐ Special Provision

Stormwater


NEPA Doc Ref:

Responsibility:

CONTRACTOR

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


☐ Special Provision


Project ID : <input type="text" value="P041238"/>	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	
ENVIRONMENTAL COMMITMENTS FOR THE PROJECT		

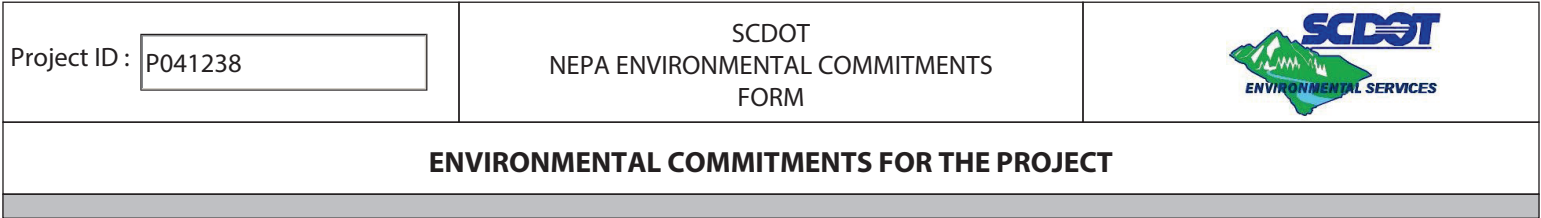
General Permit	NEPA Doc Ref: <input type="text"/>	Responsibility: <input type="text" value="CONTRACTOR"/>
<p>Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under SCDOT's General Permit (GP). The required mitigation for this project will be determined through consultation with the USACE and other resource agencies.</p>		
<input type="checkbox"/> Special Provision		

Cultural Resources	NEPA Doc Ref: <input type="text"/>	Responsibility: <input type="text" value="CONTRACTOR"/>
<p>The contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Archaeologist directs otherwise.</p>		
<input type="checkbox"/> Special Provision		

Floodplains	NEPA Doc Ref: <input type="text"/>	Responsibility: <input type="text" value="CONTRACTOR"/>
<p>The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator.</p>		
<input type="checkbox"/> Special Provision		

Project ID : <input type="text" value="P041238"/>	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	
ENVIRONMENTAL COMMITMENTS FOR THE PROJECT		
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Non-Standard Commitment	NEPA Doc Ref:	Responsibility:	CONTRACTOR
<div>NavGP</div> <div> <p>Within Union County, the Fairforest Creek is considered a navigable waterway. The project would require a Navigable Waters General Permit (NavGP) from the South Carolina Department of Health and Environmental Control (SCDHEC).</p> <div> <input type="checkbox"/> Special Provision </div> </div>			

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<input type="checkbox"/> Special Provision

Non-Standard Commitment	NEPA Doc Ref: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	Responsibility: <div style="border: 1px solid black; padding: 2px 5px;">CONTRACTOR</div>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">USCG Permit Exclusion</div> <div style="border: 1px solid black; padding: 10px; min-height: 200px;"> <p>Upon completion of the project, please submit photographs and as-built drawings of both plan and elevation views of the bridge. Plans should be in the standard 8.5 x 11 inch format. The drawings, along with the Completion Report Form (4599), must indicate the vertical clearance from ordinary high water to the lowest portion of the bridge and horizontal clearance, pier face to pier face, or bank to bank, in the main navigation span.</p> <div style="text-align: right; padding-top: 20px;"> <input type="checkbox"/> Special Provision </div> </div>		

Non-Standard Commitment	NEPA Doc Ref: <div style="border: 1px solid black; width: 150px; height: 25px; display: inline-block;"></div>	Responsibility: <div style="border: 1px solid black; width: 100px; height: 25px; display: inline-block; text-align: center;">CONTRACTOR</div>
<div style="border: 1px solid black; width: 600px; height: 40px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; padding: 10px; min-height: 200px;"> <p>USCG Permit Exclusion</p> <p>Upon completion of the project, please submit photographs and as-built drawings of both plan and elevation views of the bridge. Plans should be in the standard 8.5 x 11 inch format. The drawings, along with the Completion Report Form (4599), must indicate the vertical clearance from ordinary high water to the lowest portion of the bridge and horizontal clearance, pier face to pier face, or bank to bank, in the main navigation span.</p> <div style="text-align: right; padding-top: 20px;"> <input type="checkbox"/> Special Provision </div> </div>		

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	NEPA Doc Ref:	Page: XX Paragraph: XX	Responsibility:	
<div><input type="checkbox"/> Special Provision</div>				

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<div><input type="checkbox"/> Special Provision</div>				

	NEPA Doc Ref:	Page: XX Paragraph: XX	Responsibility:	
<div><input type="checkbox"/> Special Provision</div>				

Attachment A – Cultural Resources Short Form

Attachment B – Natural Resources Tech Memo

Attachment C – Bridge Replacement Scoping Risk Assessment Form

Attachment D – Floodplain Checklist

Attachment E – De Minimis Coordination

Attachment F – USCG Permit Exemption

Attachment A – Cultural Resources Short Form

WV 10
34675
NAE



South Carolina
Department of Transportation

April 11, 2023

Ms. Elizabeth Johnson
Director, Historical Services, D-SHPO
State Historic Preservation Office
SC Department of Archives & History
8301 Parklane Road
Columbia, SC 29223

RE: Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project, Union County, South Carolina

Dear Ms. Johnson:

Please find attached a copy of the above referenced report that describes cultural resources investigations conducted for the replacement of the SC 49 bridge over Fairforest Creek in **Union County**, South Carolina.

The South Carolina Department of Transportation (SCDOT) proposes to replace the SC 49 (Cross Keys Highway) bridge over Fairforest Creek. Minor amounts of new right-of-way (ROW) will be required for the replacement. The project area extends 100 feet from either side of the road centerline (200 feet wide total) and 1,500 feet from either end of the bridge. The Area of Potential Effects (APE) consists of the project area and a 300-foot viewshed beyond the project area. The archaeological survey examined the project area, while the architectural survey examined the entire APE.

One new archaeological resource was identified in the survey. Site 38UN1859 consists of two stone bridge piers and a portion of roadbed from a pre-1937 alignment of SC 49. This site was assessed as **not eligible** for the National Register of Historic Places (NRHP).

One new aboveground resource, SHPO Site No 1441, was identified during the architectural survey. SHPO Site No 1441 is the 10-span concrete Tee beam bridge carrying SC 49 over Fairforest Creek. It was originally built in 1931 and reconstructed (widened) in 1964. This resource was assessed as **not eligible** for the NRHP.

One previously identified aboveground resource is located within the project APE. SHPO Site No 0488 is a historic area that includes the 1923 Emslie Nicholson Mansion and surrounding grounds. This resource was found **eligible** for listing on the NRHP in 2005. Although the historic area is located within the project's area of direct effects, the dwelling is located 670 feet south of SC 49. It is surrounded by mature vegetation and is not visible from the roadway. Project planners have designed the project to minimize ROW acquisitions from the parcel containing SHPO Site No 0488. The ROW acquisition, which totals 0.4 acres of the 13-acre parcel, is needed to facilitate grading along the roadway. It extends 730 feet and varies in width from 8 to 32 feet along the roadside on the northern end of the parcel. The small size of the ROW acquisition, which is also visually isolated from the mansion, will not impact the integrity or character-defining features of the historic property. Therefore, SCDOT recommends that the proposed undertaking will have **no adverse effect** on SHPO Site No 488.



Per the terms of the Section 106 Programmatic Agreement executed on October 6, 2017, the Department is providing this information on behalf of the Federal Highway Administration. It is requested that you review the enclosed material, and, if appropriate, indicate your concurrence in the Department's findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,



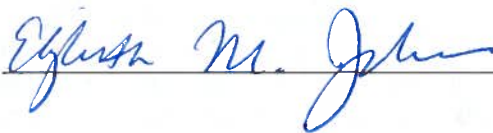
Rebecca Shepherd
Chief Archaeologist

RES:res

Enclosures: Cultural resources survey report

I (~~do not~~) concur in the above determination.

Signed:



Date:

4/19/2023

ec: Shane Belcher, FHWA
Russell Townsend, Eastern Band of Cherokee Indians
Stephen J. Yerka, Eastern Band of Cherokee Indians
Elizabeth Toombs, Cherokee Nation
LeeAnne Wendt, Muscogee (Creek) Nation
Acee Watt, United Keetoowah
Whitney Warrior, United Keetoowah

cc: Wenonah G. Haire, Catawba Nation
Keith Derting, SCIAA

From: [Acee Watt](#)
To: [Shepherd, Rebecca E.](#)
Subject: RE: SCDOT P041238 Cultural Resources Survey of the SC 49 over Fairforest Creek Bridge Replacement Project, Union Co, SC
Date: Friday, May 19, 2023 11:12:35 AM

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Good morning,

I apologize for the late correspondence it has been a very busy spring in our office. Thank you for consulting with the UKB, and after review we are in concurrence with the report's determination of "no adverse effect on historic properties".

All the best,

Acee Watt (he/him)
Tribal Historic Preservation Officer
Office of Historic Preservation
918.871.2852
awatt@ukb-nsn.gov
ukbthpo@ukb-nsn.gov



This communication is confidential | Destroy if received in error and please let me know | Unauthorized use, copying or distribution is prohibited.

From: Shepherd, Rebecca E. <ShepherdRE@scdot.org>
Sent: Tuesday, April 11, 2023 10:21 AM
To: rc@scdah.sc.gov
Cc: Belcher, Jeffery - FHWA <Jeffrey.Belcher@dot.gov>; russtown@nc-chokeee.com; syerka@nc-chokeee.com; elizabeth-toombs@chokeee.org; Section106@muscogeenation.com; Acee Watt <awatt@ukb-nsn.gov>; Office of Historic Preservation <ukbthpo@ukb-nsn.gov>
Subject: SCDOT P041238 Cultural Resources Survey of the SC 49 over Fairforest Creek Bridge Replacement Project, Union Co, SC

All,

Attached is the transmittal letter and report for a cultural resources survey completed for SCDOT for the replacement of the SC 49 (Cross Keys Highway) bridge over Fairforest Creek in Union County, South Carolina. Please let me know if you have any comments or questions.

Thank you,

Rebecca Shepherd

Chief Archaeologist

South Carolina Department of Transportation

955 Park Street Columbia, SC 29201

Office: 803.737.1944

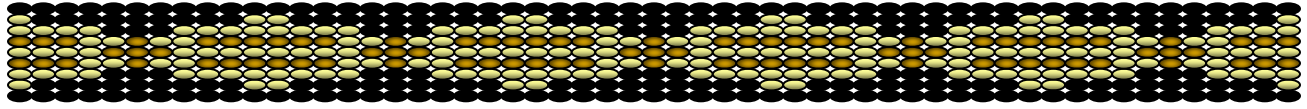
Cell: 803.543.9142

Email: ShepherdRE@scdot.org



Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791



May 12, 2023

Attention: Rebecca Shepherd
SCDOT
P.O. Box 191
Columbia, SC 29202

Re. THPO #	TCNS #	Project Description
2023-66-17		Cultural Resources Survey of the SC 49 (Cross Key Highway) over Fairforest Creek Bridge Replacement Project, Union Co., SC

Dear Ms. Shepherd,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Wenonah G. Haire
Tribal Historic Preservation Officer

ARCHAEOLOGICAL FIELD REPORT
SCDOT ENVIRONMENTAL SECTION



TITLE: Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project, Union County, South Carolina

CONSULTANT: HDR

DATE OF RESEARCH: 2023

ARCHAEOLOGISTS: Joshua N. Fletcher and Michael Inman

ARCHITECTURAL HISTORIAN: Jessica Forbes

COUNTY: Union

PROJECT: SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project

SCDOT PIN: P041238

DESCRIPTION: The South Carolina Department of Transportation (SCDOT) proposes to replace the South Carolina Highway (SC) 49 (Cross Keys Highway) over Fairforest Creek in Union County, South Carolina. The purpose of this project is to replace the bridge to correct the load restriction placed on it as well as restore all bridge components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge is currently open to traffic and would remain open during construction. The study area extends approximately 1,500 feet from either end of the bridge along SC 49. It is anticipated that minor amounts of right-of-way (ROW) will be required for the replacement of this structure. The minor amount of ROW needed will include temporary and/or permanent strips. Existing ROW is approximately 66 feet along the roadway and 150 feet within the bridge area. The archaeological area of potential effect (APE) is 100 feet from either side of the road centerline (200 feet wide total) and 1,500 feet from either end of the bridge. The architectural APE extends 300 feet outside the archaeological APE. Figure 1 presents the project location on the U.S. Geological Survey (USGS) 1969 *Union West*, SC quadrangle.

LOCATION: The project is located on SC 49, southwest of Union, South Carolina.

USGS QUADRANGLE: *Union West, SC*

DATE: 1969 **SCALE:** 7.5' **UTM:** **ZONE:** 17 **DATUM:** NAD27

PROJECT CENTERPOINT: **EASTING:** 437134 **NORTHING:** 3837979

ENVIRONMENTAL SETTING: The project is located to the east and west of SC 49. This road passes through fairly gently to moderately sloping topography, with lands sloping down toward Fairforest Creek within the center of the project area. Land use in the project vicinity includes commercial, light industrial, residential, and forested upland areas with a bottomland hardwood forest riparian corridor.

NEAREST RIVER/STREAM AND DISTANCE: Fairforest Creek is at the center of the study area.

SOIL TYPES: Cartecay-Toccoa complex, Madison and Pacolet soils (15 to 40 percent slopes), Madison sandy loam (6 to 10 percent slopes), Madison sandy clay loam (10 to 15 percent slopes, eroded), Mecklenburg sandy loam (2 to 6 percent slopes), and Mecklenburg sandy loam (6 to 10 percent slopes)

REFERENCE FOR SOILS INFORMATION: Natural Resources Conservation Service (NRCS). 2023. Soils Surveys for Union County, SC. (<https://websoilsurvey.nrcs.usda.gov/app/>). Accessed February 2023.

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

CURRENT VEGETATION: Habitat types within the project corridor consist of bottomland forested wetlands dominated by large canopy tree species, such as water oak and sycamore, with an understory dominated by herbaceous species, such as switchcane. The forested upland areas consist primarily of a dense mixed pine forest dominated by loblolly pine and sweetgum. In addition to the roadway embankment, a maintained powerline parallels SC 49 to the north.

INVESTIGATION: On January 17, 2023, the project archaeologist (Josh Fletcher) consulted the ArchSite program to determine if previously identified archaeological sites are located within the project vicinity. No archaeological sites are located near the project area. Also on January 17, 2023, Mr. Fletcher searched the National Register of Historic Places (NRHP) files of the South Carolina Department of Archives and History (SCDAH), using the ArchSite program to identify previous investigations and previously identified resources. One historic-age architectural resource (Resource 0487) is located near the project area. Site Number 0487 is a circa 1923 structure that has been determined not eligible for listing in the NRHP. A historical area, the Emslie Nicholson Mansion, is located within the southwestern quadrant of the project area. This historical area includes the house, which was constructed in 1923, as well as the surrounding land (13 acres). This resource has been found eligible for listing in the NRHP. The locations of these previously recorded resources are shown on Figure 1.

ARCHAEOLOGICAL SURVEY: Investigators conducted an intensive archaeological survey on February 9 and 10, 2023. The archaeological survey consisted of intensive shovel testing within upland areas. No shovel tests were excavated within areas with steep slopes (15 percent or greater), wetland areas, manicured yards, or obviously heavily disturbed areas. All shovel test locations were visited, and visual inspection was conducted within areas that displayed good ground surface visibility. Figure 2 presents the locations of the project, identified cultural resources within the APE, and shovel tests on a modern aerial photograph. Figures 3 and 4 present typical views of the project area.

Investigators traversed a total of four shovel test transects, one in each of the four quadrants surrounding the bridge. The transects were placed approximately 75 meters from the road centerline. Shovel tests were excavated at 100-foot intervals along each transect, where possible. Investigators excavated a total of 33 shovel tests. These shovel tests were excavated to an average depth of 15 centimeters below surface (cmbs) and ranged from 10 to 25 cmbs in depth. In nearly all shovel tests, compact subsoil was encountered by approximately 10 cmbs, if not at the ground surface. Shovel tests generally exposed a 2.5YR3/3 dark reddish brown clay loam from 0 to 10 cmbs, over a compact 2.5YR5/8 red clay subsoil at 10 to 20-plus cmbs. The fill from these tests was sifted through ¼-inch mesh hardware cloth. Investigators recovered no cultural materials from the shovel tests but identified one archaeological site (Site 38UN1859).

Site 38UN1859

Site 38UN1859 consists of two bridge piers from the former bridge across Fairforest Creek. The portion of the former roadbed within the archaeological APE was not apparent in the field and appears to have been destroyed by erosion and construction of the current SC 49 bridge and approaches. Figure 5 presents a plan of Site 38UN1859.

Two old bridge piers are present south of the current bridge. The stone pier east of Fairforest Creek measures approximately 17 feet wide and 5.5 feet thick at the base, with a slight taper as it rises in height. The eastern stone pier is approximately 11.5 feet tall. Two large, flat stones are atop the pier. The pier on the western edge of the creek is made of concrete and is approximately 17 feet wide and 6 feet thick at the base. The eastern face of the western pier extends into the creek. The western concrete pier is approximately 11.5 feet tall. The western concrete pier is partially underneath the current SC 49 bridge, whereas the eastern stone pier is approximately 25 feet south of the current bridge. Figures 6 through 9 present views of the old stone and concrete bridge piers at Site 38UN1859.

The old bridge piers are shown on the 1937 State of South Carolina State Highway Department plans for a new bridge. They are noted as being a “granite block pier” to the east of the creek and a “conc. masonry pier” to the west of the creek. A portion of this plan is shown in Figure 10. It is unclear when the old bridge piers and former road alignment were originally constructed, though it obviously predates 1937.

Site 38UN1859 was considered for NRHP eligibility under Criterion C. Site 38UN1859 reflects a common bridge type in South Carolina. The only remaining materials of the bridge are the stone and concrete bridge support piers. Site 38UN1859 was not found to embody the distinctive characteristics of a type, period, or method of construction, and does not possess significance for its engineering or materials; therefore, it is not significant under Criterion C. Site 38UN1859 was also considered for NRHP eligibility under Criterion A due to its association with patterns of transportation. The former road alignment, like modern-day SC 49, passes through rural areas interspersed with water crossings and is not unique; therefore, it is not significant under Criterion A. Site 38UN1859 is not known to be associated with any significant person; therefore, it is not significant under Criterion B. Site 38UN1859 is

unlikely to yield new information or answer important research questions about local, state, or national history; therefore, it is not significant under Criterion D. Because Site 38UN1859 is not found to have significance under Criteria A through D, it is recommended not eligible for listing in the NRHP.

ARCHITECTURAL SURVEY: Investigators conducted the architectural resources survey on February 15, 2023. One newly recorded historic-age (50 years of age or older; constructed in 1973 or before) architectural resource (State Historic Preservation Office [SHPO] Survey Site Number 1441) is located within the APE. This newly recorded resource (Site Number 1441), a transportation resource (highway bridge) originally built in 1931, is recommended not eligible for listing in the NRHP due to a lack of historic and/or engineering significance under Criteria A through D. One previously recorded historic-age resource (Site Number 0487) is also located within the APE. This previously recorded resource, a domestic dwelling, was originally surveyed in 2005 (more than 15 years ago) and was recommended not eligible for listing in the NRHP. Per guidance in the *Survey Manual: South Carolina Statewide Survey of Historic Properties* (SCDAH 2018), it requires a revisit. The boundaries of a second previously recorded resource (Site Number 0438, the Emslie Nicholson Mansion historic area) overlap the southwestern boundary of the architectural APE. The “historic area” consists of the tax parcel boundaries for the parcel containing the Emslie Nicholson Mansion. The dwelling itself, recommended eligible in 2005, is not visible from the APE. Because the boundary identified in ArchSite overlaps the APE, the historic property is included in this report and assessment of effects.

Data from the Union County Assessor were consulted prior to the architectural resources survey to help identify historic-age architectural resources within the architectural APE that had not been previously recorded. No additional historic-age architectural resources were identified. A Statewide Survey of Historic Properties survey form was completed for the newly recorded architectural resource (Site Number 1441) and previously recorded resource (Site Number 0487) (see Attachment 1).

Site Number 1441

The bridge carrying SC 49 over Fairforest Creek (SCDOT Structure Number 0004440004900200; Figures 11 through 15) was built in 1931 and reconstructed (widened) in 1964. The 10-span (3 main spans and 7 approach spans) concrete Tee beam bridge measures 375 feet long, with a maximum span length of 50 feet. The original 1931 structure was widened in 1964 using a cast-in-place concrete deck. The modified structure carries two lanes and has a width between the curbs of 32.2 feet. The 1931 structure is supported by cast-in-place concrete piers with square piles. The two piers within the river and two piers on the banks supporting the river spans are of a different design, with horizontal scoring and circular piles (and arched openings on bank piers). Piers supporting the 1964 portions of the bridge consist of concrete caps on square, concrete piles. What appears to be an abandoned gauging station is located on the western bank of the creek, south of the bridge. The cast-in-place concrete structure has a square footprint and is slightly taller than the bridge. A metal platform extending from the southern elevation of the bridge provides access to the upper chambers of the structure. A metal ladder is affixed to the western elevation of the structure, allowing access to the top of the structure from ground level.

Though the bridge has components built in 1964, the original 1931 structure was not removed when alterations were made in 1964. Therefore, the bridge does not qualify for streamlined review under the Federal Highway Administration’s Post-1945 Bridges Program Comment because a portion of the bridge predates the 1945 cutoff. According to a nationwide road bridge context, cast-in-place, reinforced concrete Tee beam bridges are “ubiquitous to America’s highways and byways,” with thousands constructed from the first decade of the twentieth century until the 1960s (Parsons Brinkerhoff 2005:3-85). The Tee beam was one of the earliest forms to be standardized by state highway departments, and character-defining features include the slab with integrated longitudinal beams; parapet or railing when integrated; and abutments, wingwalls, or piers (in some cases) (Parsons Brinkerhoff 2005:3-85).

While the bridge is a part of South Carolina’s highway infrastructure, as an individual resource, the SC 49 bridge over Fairforest Creek is not found to have made a significant contribution to the history of transportation within Union County or the state of South Carolina; therefore, it is not significant under Criterion A. The bridge is not known to have been associated with individuals that were historically significant; therefore, it is not significant under Criterion B. The concrete Tee beam bridge is not significant under Criterion C for its design or construction due to the use of common construction materials and building techniques. The bridge is of a common type. The

widening of the bridge in 1964—though completed with in-kind materials (concrete)—altered the original, pre-1964 appearance. As an example of a concrete Tee beam bridge modified in the 1960s, its design is spare. The bridge does not display exemplary engineering traits, nor does it solve a unique engineering problem. It is not considered the work of a master, nor are its engineering traits specific to the region or exemplary in any way. The bridge's common construction is unlikely to yield new information, nor answer important research questions about local, state, or national history; therefore, it does not have significance under Criterion D. Therefore, Site Number 1441 is not found to have significance under Criteria A through D and is recommended not eligible for listing in the NRHP.

Site Number 0487

Site Number 0487 (Figures 16 and 17) is a domestic single dwelling built circa 1925. Located at 1493 Lukesville Road (now 1245 Riley Road), the resource is a one-story building with a rectangular plan. The dwelling is oriented northeast-southwest on a parcel south of Lukesville Road, on a rise overlooking SC 49 to the south. The dwelling has a front-gabled roof covered with corrugated metal and a central brick chimney covered with a tarpaulin. Two full-width, shed roof porches are located on the dwelling, one on the façade (northeastern elevation) and one on the rear (southwestern) elevation. Porch supports consist of square wood posts. The dwelling is built partially off grade, and a wood staircase and deck provide access to the single-leaf door that serves as the front entry; a second single-leaf door is present on the rear elevation. The walls are clad in weatherboard siding, and visible windows are 2/2 metal sash. The building has a pier-and-beam foundation that employs precast concrete blocks. The dwelling was included in the 2005 countywide historical and architectural survey, and was determined not eligible for listing in the NRHP (Revels 2005).

Site Number 0488

Site Number 0488 is identified in ArchSite as Nicholson's Mansion. The dwelling is not located within the architectural APE; however, ArchSite also shows a boundary surrounding the dwelling, which is identified as a "historic area" titled Emslie Nicholson Mansion, located at 2403 Cross Keys Highway. The "historic area" consists of the tax parcel boundaries for the parcel containing the Emslie Nicholson Mansion (Union County Parcel Number 092-00-00-001 000). The dwelling itself, recommended eligible for listing in the NRHP in 2005, is not visible from the APE; it is located less than 0.2 mile (approximately 670 feet) south of SC 49. A blogpost dating to 2019 showed no major alterations to the exterior of the Tudor Revival dwelling at that time (Coldwell Banker Caine 2023). Mature vegetation surrounding the dwelling and along (south of) SC 49 obscure the view of the dwelling from the highway (Figures 18 through 20). The dwelling was included in the 2005 countywide survey, and SCDAAH determined Site Number 0488 eligible for listing in the NRHP under Criterion C in the area of Architecture (Revels 2005). The only structure associated with the dwelling that is located within the APE is a gate at the end of the paved drive, at the property line. The gate comprises two brick posts clad in stone and two side-hinged, metal gates with decorative scrollwork. Stone retaining walls are present on each side of the gate and abut the gate posts.

REMARKS AND RECOMMENDATIONS HDR identified one archaeological site (Site 38UN1859) and a total of three historic-age architectural resources during the survey. Of the three architectural resources included in the survey, one is newly recorded (SHPO Survey Site Number 1441), and two are previously recorded (Site Numbers 0487 and 0488). Site Number 1441 is recommended not eligible for listing in the NRHP. Archaeological Site 38UN1859 is recommended not eligible for listing in the NRHP. Site Number 0487 was determined not eligible in 2005, and no change in the resource's eligibility status is recommended.

Site Number 0488, determined eligible for listing in the NRHP in 2005, is significant under Criterion C in the area of Architecture. The historic property includes the house as well as 13.00 acres of surrounding land comprising Union County Parcel Number 092-00-00-001 000. Project planners have designed the project to minimize ROW acquisitions from the parcel containing the Emslie Nicholson Mansion/Fairforest Plantation. A total of 0.4 acre of the 13.00-acre parcel will be required to facilitate grading along the roadside at the north side of the parcel, to ensure a safe roadside for vehicles traveling on the highway. The ROW acquisition will extend for a total of 730 feet (0.13 mile), with a width that varies from 8 to 32 feet. Given the distance away from the bridge site and lack of visibility between the historic property and project area, the replacement of the SC 49 over Fairforest Creek bridge would not create a visual impact that would affect the character-defining features of the property under Criterion C nor impact its ability to convey its historic significance. The ROW acquisition, amounting to approximately three percent of the parcel's total acreage, will also be visually isolated from the Emslie Nicholson Mansion, and will not impact the

integrity or character-defining features of the historic property. Considering these factors, HDR recommends a finding of no adverse effect for the project as proposed. No additional cultural resources investigations are recommended. If current proposed plans change, additional survey may be necessary.

SIGNATURE: 

DATE: March 20, 2023

SIGNATURE: 

DATE: March 20, 2023

REFERENCES CITED

- Coldwell Banker Caine. 2023. “#OnTheMarketMonday – 2403 Cross Keys Highway.” Published March 4, 2019. <https://www.coldwellbanker.com/coldwell-banker-caine-10985c/blog/buying-home-6/onthemarketmonday-2403-cross-keys-highway-16042>, accessed March 2023.
- Natural Resources Conservation Service (NRCS). 2023. *Soils Surveys for Union County, SC*. <https://websoilsurvey.nrcs.usda.gov/app/>, accessed February 2023.
- Parsons Brinckerhoff and Engineering and Industrial Heritage. 2005. *A Context for Common Historic Bridge Types*. NCHRP Project 25-25, Task 15. Prepared for the National Cooperative Highway Research Program, administer by the Transportation Research Board of the National Research Council, Washington, D.C.
- Revels, Jennifer. 2005. *Historical and Architectural Survey of Union County, South Carolina*. Palmetto Conservation Foundation, Columbia. <https://scdah.sc.gov/historic-preservation/historic-properties-research/historic-contexts-survey-reports>, accessed February 2023.

LIST OF FIGURES

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- Figure 5. Plan of Site 38UN1859.
- Figure 6. View of the eastern stone pier at Site 38UN1859, looking northwest.
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Figure 19. View from the APE toward Site Number 0488 (west of gate), facing southwest.

Figure 20. View toward the SC 49 bridge over the Fairforest Creek site from the western end of the APE, facing southeast.

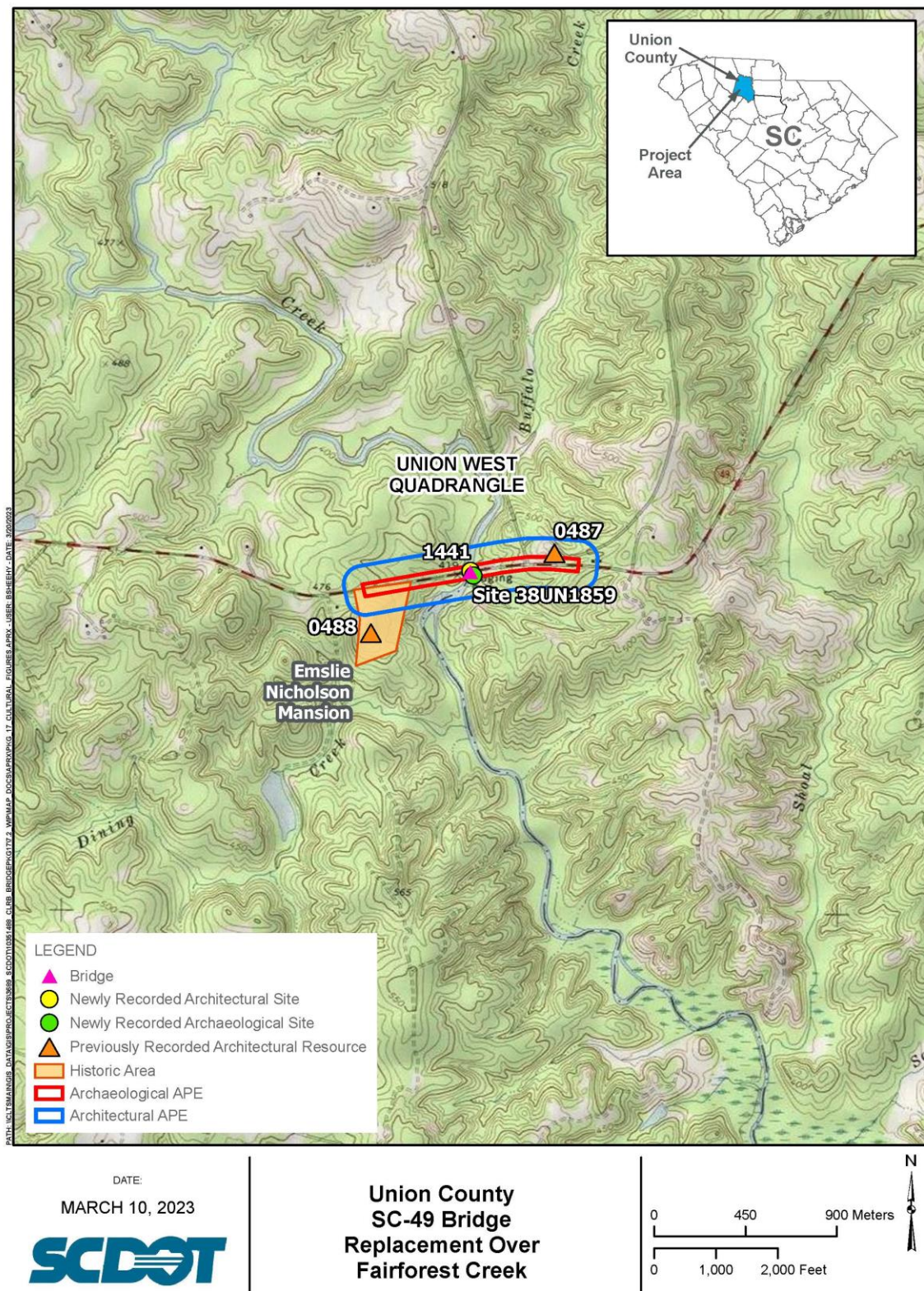


Figure 1. Location of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project and all recorded cultural resources.

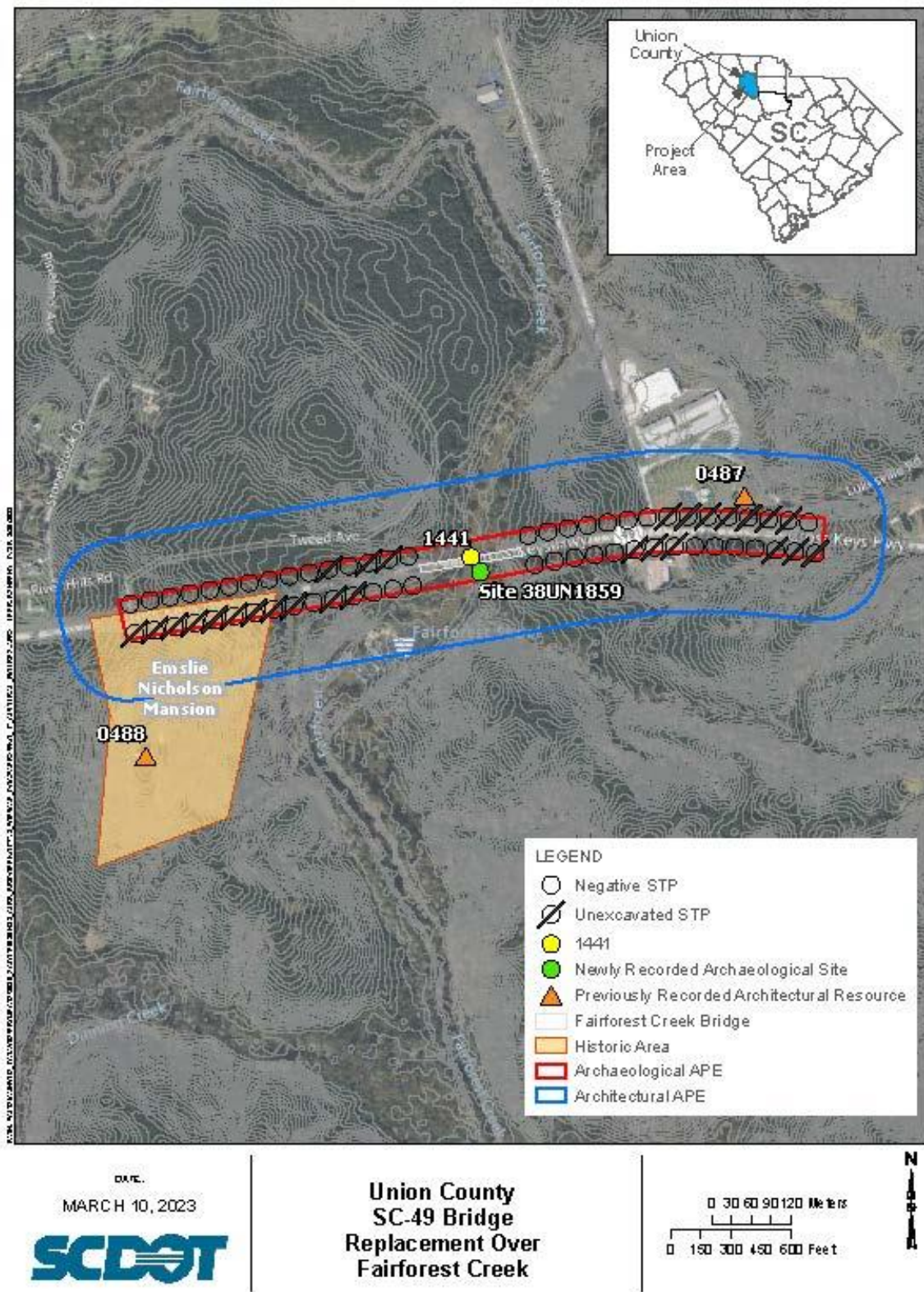


Figure 2. Aerial photograph showing shovel test locations and all recorded cultural resources.



Figure 3. View of the northeastern quadrant of the archaeological APE, looking west.



Figure 4. View of the southeastern quadrant of the archaeological APE, looking east.

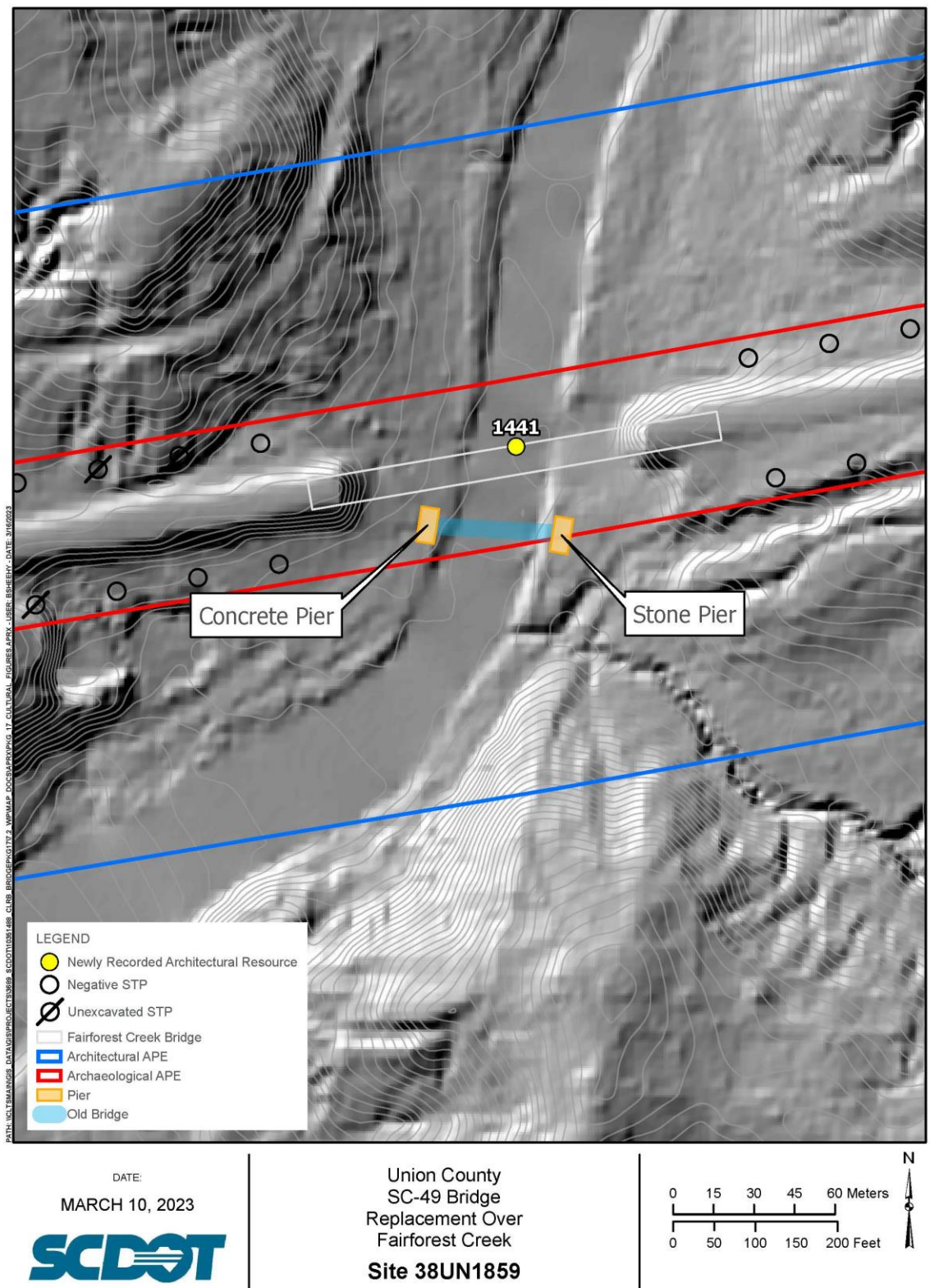


Figure 5. Plan of Site 38UN1859.



Figure 6. View of the eastern stone pier at Site 38UN1859, looking northwest.



Figure 7. View of the eastern stone pier at Site 38UN1859, looking north.



Figure 8. View of the western concrete pier at Site 38UN1859, looking west.



Figure 9. View of the western concrete pier at Site 38UN1859, looking northeast.

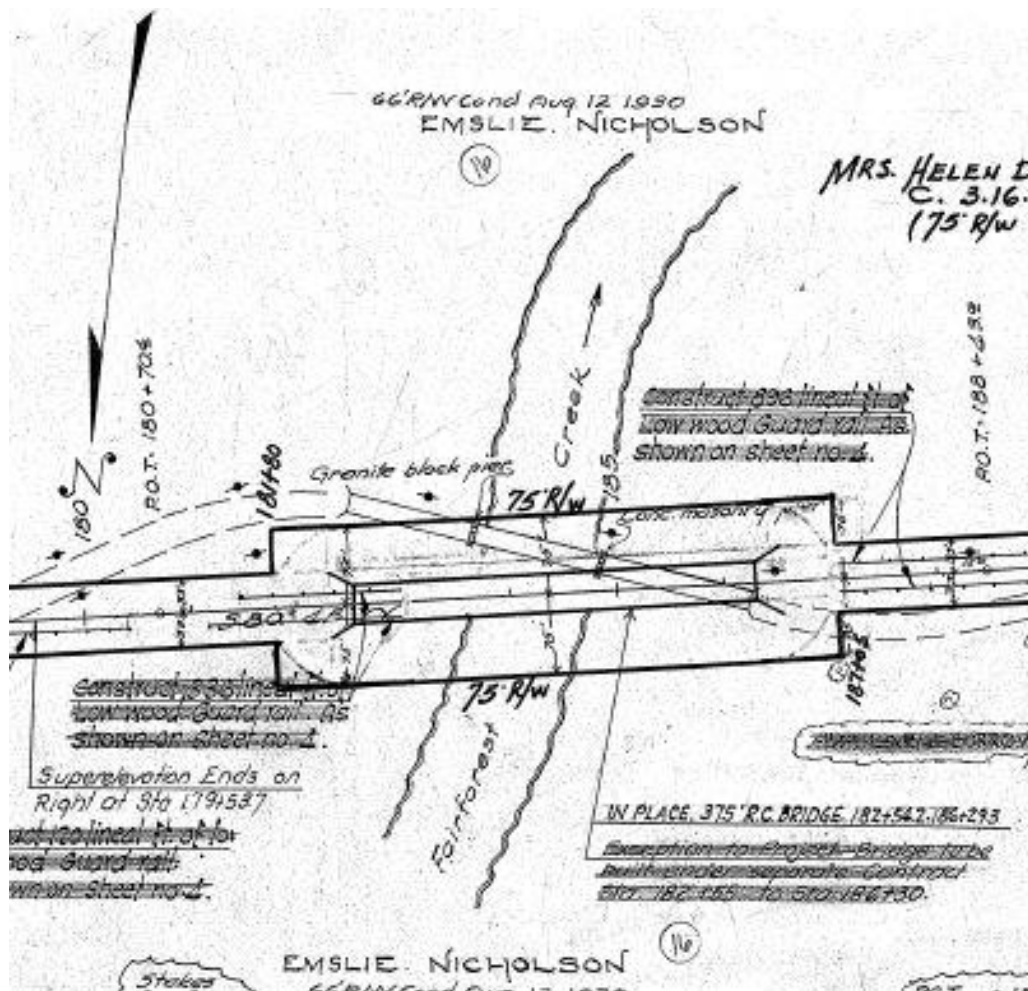


Figure 10. Portion of the 1937 construction plans (north is pointing down).



Figure 11. Site Number 1441, facing east.



Figure 12. Site Number 1441, facing west.



Figure 13. Site Number 1441, facing west.



Figure 14. Site Number 1441, facing east.



Figure 15. Site Number 1441, facing northeast.



Figure 16. Site Number 0487, facing northeast.



Figure 17. Site Number 0487, facing east.



Figure 18. View from the APE toward Site Number 0488, facing southwest.



Figure 19. View from the APE toward Site Number 0488 (west of gate), facing southwest.



Figure 20. View toward the SC 49 bridge over the Fairforest Creek site from the western end of the APE, facing southeast.

ATTACHMENT 1

Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905 (803) 896-6100

Site No. 0487 Status U Revisit ☒
Quadrangle Name: Union West
Tax Map No. 092-00-00-004 000

SURVEY FORM

Identification

Historic Name: House

Common Name:

Address/Location: 1493 Lukesville Rd (now 1245 Riley Rd)

City: Union Vicinity of County: Union

Ownership: Private Category: Building Other:

Historical Use: Domestic

Current Use: Domestic

SHPO National Register
Determination of Eligibility: Not Eligible

Property Description

Other:

Construction Date: c. 1925

Construction: Frame

Historic Core Shape: Rectangular

Exterior Walls: Weatherboard

Other:

Foundation: Concrete block

Commercial Form:

Roof Shape: Gable, end-to-front

Other:

Roof Material: Raised seam metal

Stories: 1 story

Porch Shape: Shed

Other:

Porch Width: Other

Facade & rear

Description/Significant Features:

The dwelling at 1493 Lukesville Rd (now 1245 Riley Rd) is a one-story with a rectangular plan. The dwelling is oriented northeast-southwest on a parcel south of Lukesville Rd/Riley Rd, on a rise. Built ca. 1925, the dwelling has a front-gabled roof covered with corrugated metal and a central brick chimney covered with a tarpaulin. Two full-width, shed roof porches are located on the dwelling, one on the facade (northeast elevation) and one on the rear (southwest) elevation. Porch supports consist of square wood posts. The walls are clad in weatherboard siding; visible windows are 2/2 metal sash. The building has a pier-and-beam foundation that employ precast concrete blocks.

Alterations (include date(s), if known):

Windows replaced and deck constructed across facade at unknown date.

Architect(s)/Builder(s):

Historical Information

Historical Information:

The dwelling was included in the 2005 countywide historical and architectural survey and determined not eligible for listing in the NRHP.

Source(s) of Information:

"Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project";
"Historical and Architectural Survey of Union County, South Carolina," 2005.

Digital Photo ID(s)

File Name:

00487001

00487002

00487003

00487004

View:

Facing Southeast

Facing Southwest

Facing Southeast

Facing Northeast

Other:

Program Management

Recorded by:

Jessica Forbes

Organization:

HDR

Date Recorded:

02/15/2023

Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905 (803) 896-6100

Site No. 0488 Status U Revisit ✓
Quadrangle Name: Union West
Tax Map No. 092-00-00-001 000

SURVEY FORM

Identification

Historic Name: Fairforest Plantation/Emslie Nicholson Mansion
Common Name: Nicholson's Mansion
Address/Location: 2403 Cross Keys Hwy
City: Union Vicinity of County: Union
Ownership: Private Category: Building Other:
Historical Use: Domestic
Current Use: Domestic
SHPO National Register Eligible
Determination of Eligibility:

Property Description

Construction Date: 1923 Construction:
Historic Core Shape: Irregular Exterior Walls:
Other: Foundation:
Commercial Form: Roof Shape:
Other: Roof Material:
Stories: Porch Shape:
Other: Porch Width:

Description/Significant Features:

The dwelling was not visible from the public ROW. A blogpost dating to 2019 showed no major alterations to the exterior of the Tudor Revival dwelling at that time (Coldwell Banker Caine 2023). The only structure associated with the dwelling that is located in the APE is a gate at the end of the paved drive, at the property line. The gate comprises two brick posts clad in stone and two side-hinged, metal gates with decorative scrollwork. Stone retaining walls are present on each side of the gate and abut the gate posts.

Alterations (include date(s), if known):

Architect(s)/Builder(s):

Robert & Co. of Atlanta

Historical Information

Historical Information:

The dwelling was included in the 2005 countywide historical and architectural survey and determined eligible for listing in the NRHP under Criterion C in the area of Architecture.

Source(s) of Information:

"Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project";
"Historical and Architectural Survey of Union County, South Carolina," 2005; Coldwell Banker Caine,
"#OnTheMarketMonday - 2403 Cross Keys Highway," posted March 4, 2019.

Digital Photo ID(s)

File Name:

00488001

00488002

00488003

00488004

View:

Facing Southwest

Facing South

Facing Southwest

Facing East

Other:

Marker on N side of SC49

Program Management

Recorded by:

Jessica Forbes

Organization:

HDR

Date Recorded:

02/15/2023

Statewide Survey of Historic Properties

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905 (803) 896-6100

Site No. 1441 Status U Revisit
Quadrangle Name: Union West
Tax Map No. N/A

SURVEY FORM

Identification

Historic Name:

Common Name: SC 49 at Fairforest Creek Bridge

Address/Location: SC 49 at Fairforest Creek

City: Union Vicinity of County: Union

Ownership: State Category: Structure Other:

Historical Use: Transportation

Current Use: Transportation

SHPO National Register Determination of Eligibility: Not Eligible

Property Description

Construction Date: 1931/1964 Construction: Other Other: Tee beam
Historic Core Shape: Rectangular Exterior Walls:
Other: Foundation: Other CIP Concrete
Commercial Form: Roof Shape:
Other: Roof Material:
Stories: Porch Shape:
Other: Porch Width:

Description/Significant Features:

The 10-span (3 main spans and 7 approach spans) concrete Tee beam bridge measures 375 feet long, with a maximum span length of 50 feet. The original 1931 structure was widened in 1964 using a cast-in-place concrete deck. The modified structure carries two lanes and has a width between the curbs of 32.2 feet. The 1931 structure is supported by cast-in-place concrete piers with square piles; the two piers in the river and two piers on the banks supporting the river spans are of a different design, with horizontal scoring and circular piles (and arched openings on bank piers). Piers supporting the 1964 portions of the bridge consist of concrete caps on square, concrete piles.

Alterations (include date(s), if known):

Bridge widened in 1964.

Architect(s)/Builder(s):

South Carolina State Highway Department

Historical Information

Historical Information:

The original portion of the concrete Tee beam bridge was built in 1931 and widened in 1964. According to a nationwide road bridge context, the Tee beam was one of the earliest bridge forms to be standardized by state highway departments. Thousands of cast-in-place, reinforced concrete Tee beam bridges were constructed throughout the country from the first decade of the twentieth century until the 1960s

Source(s) of Information:

Parsons Brinckerhoff and Engineering and Industrial Heritage, A Context for Common Historic Bridge Types, 2005;
"Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project"

Digital Photo ID(s)

File Name:	View:	Other:
01441001	Facing East	
01441002	Facing West	
01441003	Facing Northeast	
01441004	Facing East	
01441005	Facing Northeast	
01441006	Facing South	
01441007	Facing West	
01441008	Facing Southwest	
01441009	Facing Northeast	
01441010	Facing Northeast	

Program Management

Recorded by:
Jessica Forbes

Organization:
HDR

Date Recorded:
02/15/2023

Attachment B – Natural Resources Technical Memo



Memo

Date: April 5, 2023

Project: SC-49 Bridge Replacement over Fairforest Creek
SCDOT PIN # P041238

To: Will McGoldrick – SCDOT

From: Michael Inman – HDR
Paul Bright – HDR

Subject: **Natural Resources Survey Technical Memorandum**

HDR conducted a natural resources survey for the South Carolina Department of Transportation (SCDOT) SC-49 (Cross Keys Highway) Bridge Replacement over Fairforest Creek (Project) in Union County, South Carolina, on February 2, 2023. The purpose of the Project is to replace the bridge to correct the load restriction placed on it as well as restore all bridge components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge is currently open to traffic and will remain open to traffic during construction.

The Study Area is 100 feet from the road centerline (200 feet total) and extends 1,500 feet from either end of the bridge along SC-49. The Study Area encompasses approximately 16 acres and primarily consists of undeveloped forested lands, light industrial, commercial, and residential land use within existing road right-of-way (ROW) (Attachment 1, Figures 1 through 3). It is anticipated that minor amounts of ROW will be required for the replacement of the SC-49 bridge. The minor amount of ROW needed will include temporary and/or permanent strips. Existing ROW is approximately 66 feet along the roadway and 150 feet in the area of the SC-49 bridge.

This technical memorandum provides a summary of HDR's methods and findings from a desktop analysis and on-site natural resources survey. 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, HDR's biological assessment, and U.S. Fish and Wildlife Service (USFWS) Consistency Letter.

Desktop Analysis Methods

A desktop analysis was completed as part of an initial Study Area evaluation to identify key environmental resources to be considered for permitting and/or design. The potential resources identified in the desktop evaluation were field-verified by HDR to ensure that critical regulatory items will not adversely impact 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 Natural Resources (SCDNR) and South Carolina Natural Heritage Program (SCNHP) (<https://schportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program>)
- 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) Union West Quadrangle

Wetlands and Jurisdictional Waters of U.S.

On-site reconnaissance activities identified four streams and two wetlands within the Study Area (Attachment 1, Figure 4). A summary of jurisdictional waters of the U.S. is provided in Table 1.

Table 1. Summary of Delineated Waters of the U.S. within the Study Area

Feature Name	Coordinates (Decimal Degrees)	Type of Aquatic Resource	Cowardin et al. (1979) Classification ¹	Estimated Amount of Aquatic Resource in Study Area
Streams				
Stream 1 Fairforest Creek	34.68183 -81.686335	non-section 10 - non-wetland	R3UB2	Length: 216 lf Average Width: 100 ft
Stream 2	34.681443 -81.688361	non-section 10 - non-wetland	R4SB3/4	Length: 241 lf Average Width: 3 ft
Stream 3	34.681414 -81.688138	non-section 10 - non-wetland	R4SB4	Length: 65 lf Average Width: 3 ft
Stream 4	34.682444 -81.68106	non-section 10 - non-wetland	R4SB4	Length: 100 lf Average Width: 3 ft
Total Streams:				Length: 622 lf
Wetlands				
Wetland 1	34.682221 -81.685844	non-section 10 - wetland	PFO	PFO Area: 0.04 ac.
			PEM	PEM Area: 0.03 ac.
Wetland 2	34.682064 -81.681104	non-section 10 - wetland	PFO	Area: 0.02 ac.
Total Wetlands:				Area: 0.09 ac.

¹ R3UB2: Riverine, upper perennial, unconsolidated bottom, with a sand bottom
R4SB3: Riverine, intermittent, streambed, with cobble-gravel bottom
R4SB4: Riverine, intermittent, streambed, with sand bottom
PEM: Palustrine, emergent
PFO: Palustrine, forested

Based on the preliminary bridge design, impacts to jurisdictional waters may occur during construction but remain below U.S. Army Corps of Engineers (USACE) General Permit limitations. An SCDOT Permit Determination Form has been completed and is provided as Attachment 2, in addition to an SCDHEC Watershed and Water Quality Information Report.

A field survey was also conducted within the Study Area pursuant to Section 7 of the Endangered Species Act. Results are provided in HDR's biological assessment (Attachment 3). The USFWS IPaC and county species list were used to determine what potential federally protected species could occur on site.

Attachments

- Attachment 1 – Figures
- Attachment 2 – SCDOT Permit Determination Form and SCDHEC Watershed and Water Quality Information Report
- Attachment 3 – Biological Assessment
- Attachment 4 – USFWS NLEB Range Map
- Attachment 5 – SCDNR South Carolina Rare, Threatened and Endangered Species Inventory for Union County

References

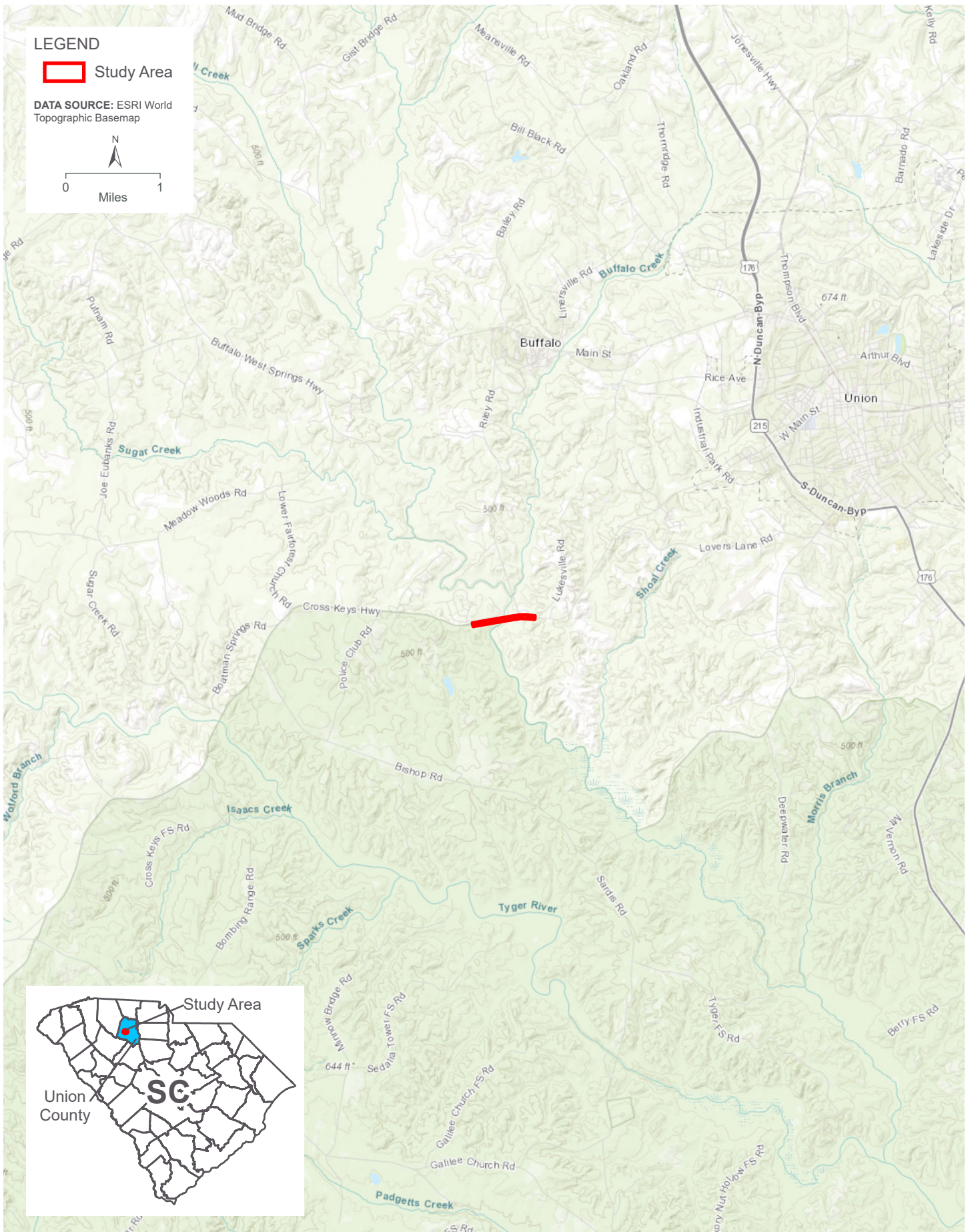
- Cowardin, L.M., Carter, V., Golet, F.C., and LaRoe, E.T. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, D.C.
- Federal Emergency Management Agency (FEMA). 2021. Special Flood Hazard Area Definition/Description. [Online] URL: <http://www.fema.gov/special-flood-hazard-area>. (Accessed October 2022).
- South Carolina Natural Heritage Program (SCNHP). 2022. Data Explorer database. [Online] URL: <https://schportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program>. (Accessed October 2022).



1

Figures

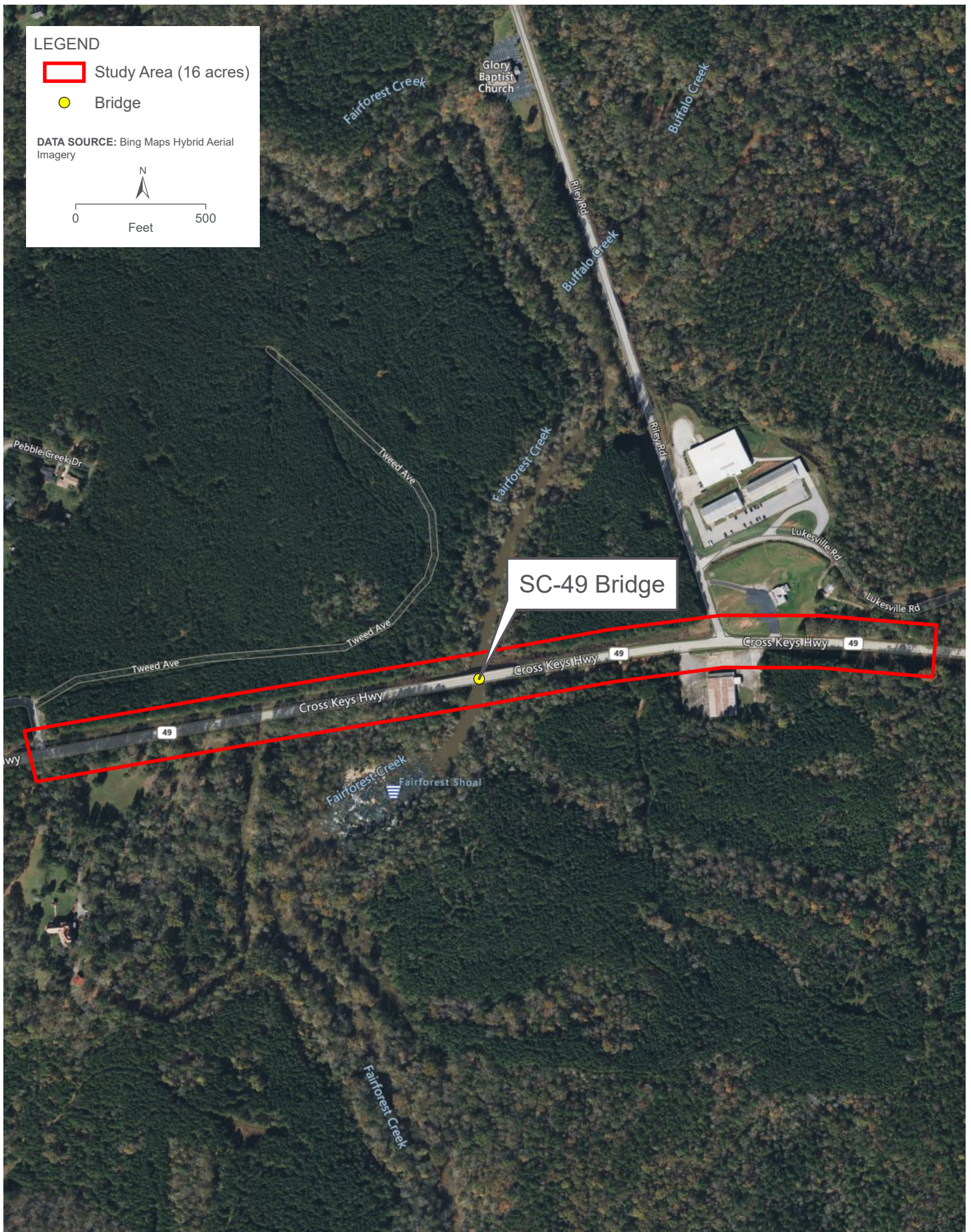




SC-49 BRIDGE REPLACEMENT OVER FAIRFOREST CREEK

PROJECT VICINITY

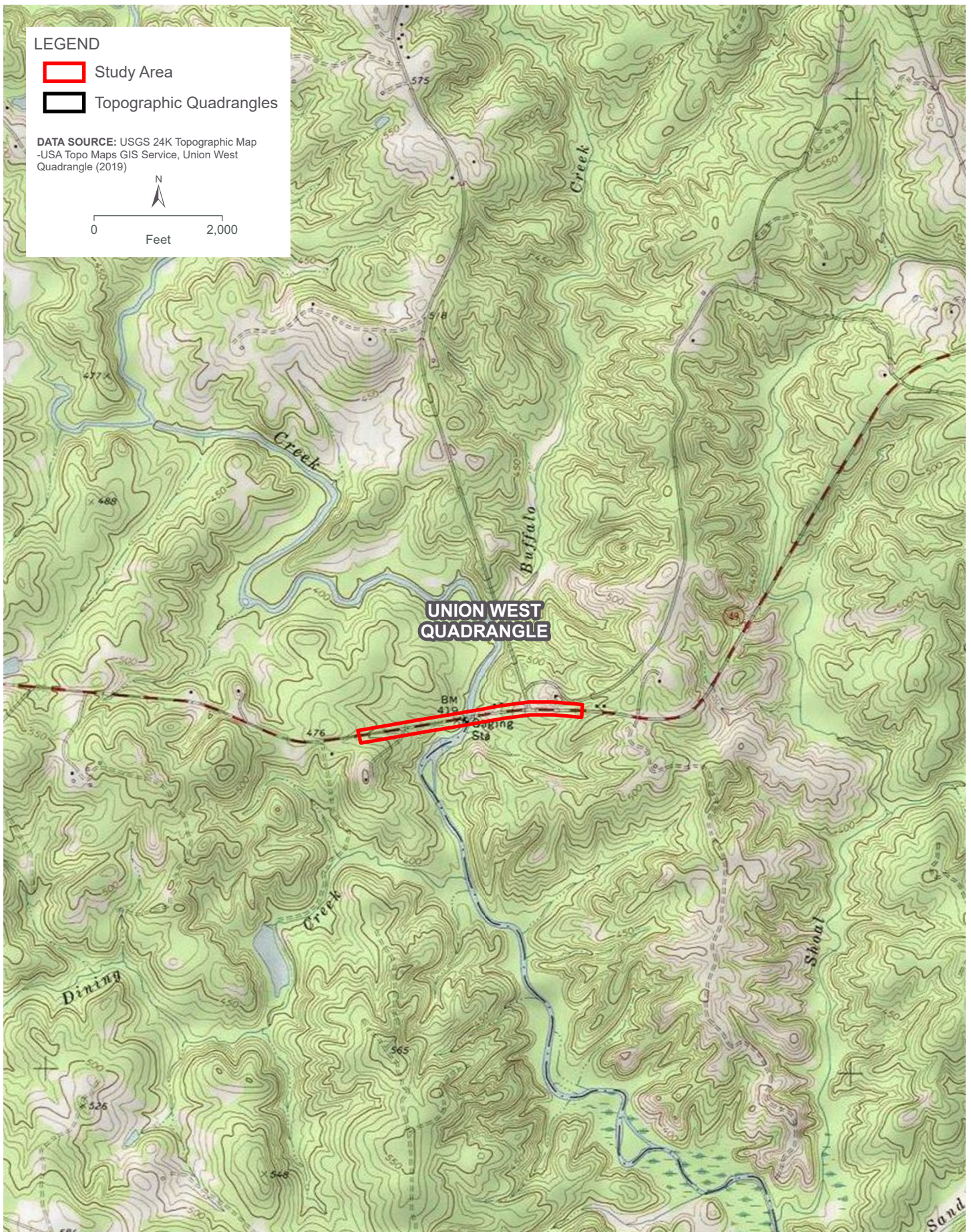
Figure 1



SC-49 BRIDGE REPLACEMENT OVER FAIRFOREST CREEK

PROJECT AERIAL

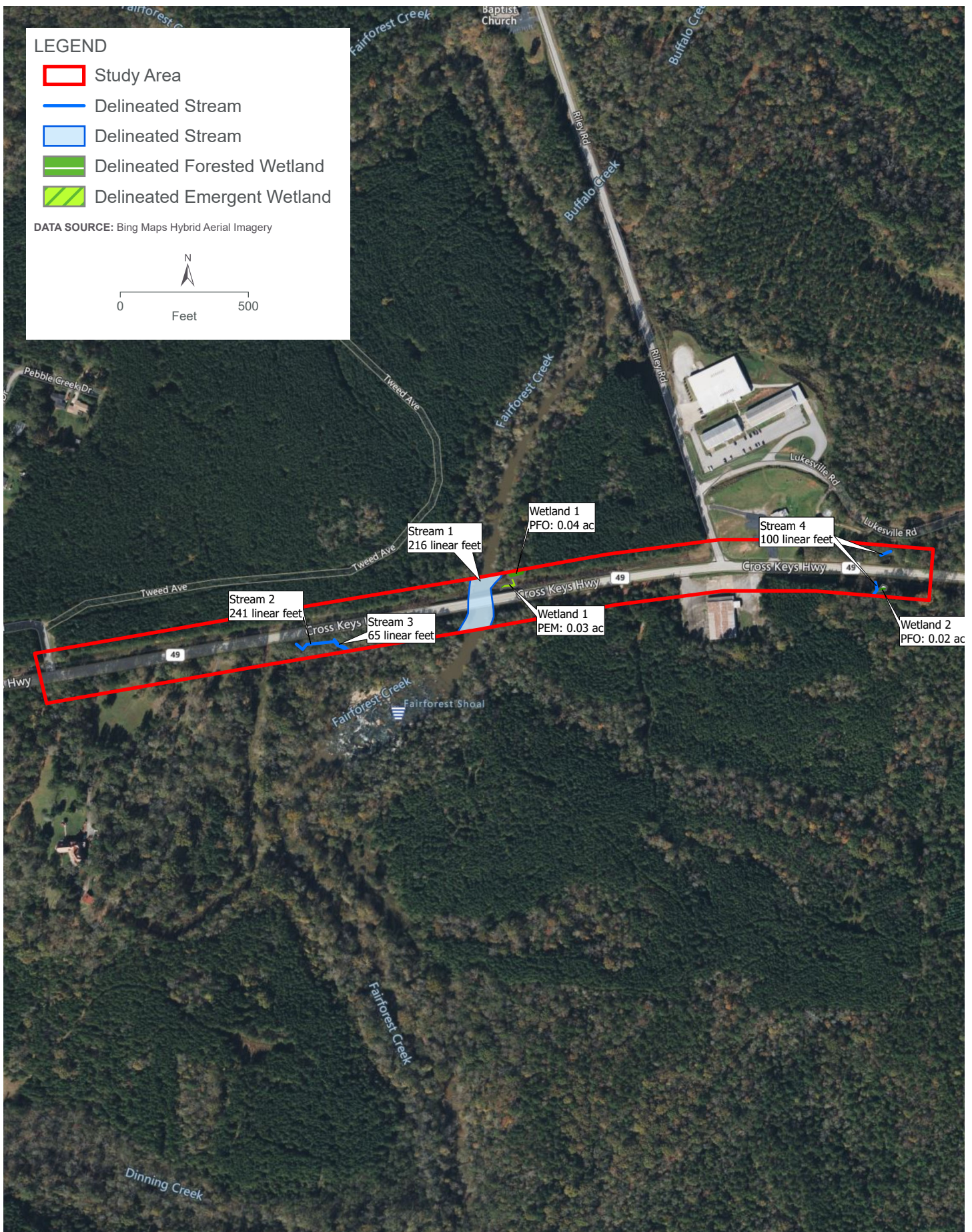
Figure 2



SC-49 BRIDGE REPLACEMENT OVER FAIRFOREST CREEK

USGS TOPOGRAPHIC QUADRANGLES

Figure 3





2

SCDOT Permit Determination Form and SCDHEC Watershed and Water Quality Information Report

Date: _____

PERMIT DETERMINATION

FROM _____ COMPANY _____

CONTACT INFO (phone and/or email) _____

SCDOT PROJECT ENGINEER _____

TO _____

Project Description _____

Route or Road No. _____ County _____

CONST. PIN _____ OTHER PINS or STRUCTURE # _____

RESPONSE:

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

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

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

USACE Permit ☐ GP ☐ IP ☐ 401 ☐ JD

OCRM Permit ☐ CAP ☐ CZC

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

Other _____

Water Classification: _____ *Print and attach the SCDHEC water quality report*

303(d) listed ☐ no ☐ yes, for * _____

TMDL developed ☐ no ☐ yes, for * _____

*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.

Biologist, SCDOT/Consultant

Date



Watershed and Water Quality Information

General Information

Applicant Name: SCDOT

Permit Type: Construction

Address: 2341 CROSS KEYS HWY,
BUFFALO, SC, 29379

Latitude/Longitude: 34.681883 / -81.686340

MS4 Designation: Not in designated area

Monitoring Station: BF-008

Within Coastal Critical Area: No

Water Classification (Provisional): FW

Waterbody Name: FAIRFOREST CREEK

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
BF-008	F	F	F	F	F	F	F	F	F	F	F	InTN	X	X	X	X	X	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)

ECOLI - Escherichia coli (Freshwaters)

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes

TMDL Site: BF-008

TMDL Report No: 021-04

TMDL Parameter: Fecal

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

Report Date: February 14, 2023



3

Biological Assessment

Biological Assessment of the
SC-49 Bridge Replacement over Fairforest Creek
Union County, SC
SCDOT PIN # P041238
April 5, 2023

Pursuant to Section 7 of the Endangered Species Act, a field survey was conducted within the Study Area. The following list of federally protected species was obtained from the U.S. Fish and Wildlife Service (USFWS), and the South Carolina Rare, Threatened and Endangered Species Inventory for Union County. This includes bat species for which federal guidance is currently being updated:

Mammals

Northern long-eared bat (*Myotis septentrionalis*) – E
Tricolored bat (*Perimyotis subflavus*) – Proposed Endangered

Insects

Monarch butterfly (*Danaus plexippus*) – C (candidate)

Methods

The Study Area was examined by GIS and field reconnaissance methods on February 2, 2023. Habitats surveyed were determined by the species' ecological requirements.

Results

The Project consists of replacing a bridge and associated road work on SC-49 over Fairforest Creek in Union County, South Carolina. Land use in the vicinity of the Study Area includes commercial, light industrial, residential, and forested upland areas with a bottomland hardwood forest riparian corridor. Habitat types within the Study Area consist of bottomland forested wetlands dominated by large canopy tree species such as water oak (*Quercus nigra*) and sycamore (*Platanus occidentalis*) with an understory dominated by herbaceous species such as switchcane (*Arundinaria tecta*).

Bottomland hardwoods are typically found on floodplains of rivers and streams and can occur in the Piedmont as well as the Coastal Plain. Typical tree species found in bottomland hardwood communities include sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), hackberry (*Celtis laevigata*), overcup oak (*Quercus lyrata*), water oak, willow oak (*Q. phellos*), laurel oak (*Q. laurifolia*), swamp chestnut oak (*Q. michauxii*), cherrybark oak (*Q. falcata* var. *pagodafolia*), white ash (*Fraxinus americana*), sycamore, American holly (*Ilex opaca*), and American elm (*Ulmus americana*). Typically, there is a subcanopy of young canopy species and many tall shrubs including southern arrowwood (*Viburnum dentatum*) and blackhaw (*V. prunifolium*). Vine species are typically common and can include poison ivy (*Toxicodendron radicans*), summer grape (*Vitis aestivalis*), and crossvine (*Bignonia capreolata*). The herb layer contains false nettle (*Boehmeria cylindrica*), cardinal flower (*Lobelia cardinalis*), royal fern (*Osmunda regalis*), and eastern marsh fern (*Thelypteris palustris*).

The forested upland areas consist primarily of a dense mixed pine forest dominated by loblolly pine and sweetgum. In addition to the roadway embankment, there is a maintained powerline that parallels SC-49 to the north.

Fairforest Creek is classified as a perennial, unconsolidated bottom, riverine system. The creek is somewhat incised with areas of minor bank erosion, and it appears that it occasionally leaves its banks during heavy rain events. Most of the bank erosion was found along de-stabilized areas underneath and near the SC-49 bridge.

According to the South Carolina Department of Natural Resources (SCDNR) Heritage Trust database of endangered, threatened, and rare species, there are no occurrences of any federally listed species in the vicinity of the Study Area. The open grass areas, and road and transmission rights-of-way offers a variety of flowering plants for nectar, which could include plants from the milkweed genus (*Asclepias* spp.). Potential habitat for the monarch butterfly was identified within the Study Area for migrating and breeding adults; however, neither Section 7 of the Endangered Species Act nor the implementing regulations for Section 7 contain requirements for federal agencies in relation to candidate species. No individuals of monarch butterflies were observed within the Study Area during the field survey. Tricolored bat and northern long eared bat habitat was surveyed and identified within the forested areas on site as well as under the SC-49 bridge; however, there was no evidence of bat use. A formal survey for tricolored bat and northern long eared bat was not conducted.

According to the SCDNR Rare, Threatened and Endangered Species Inventory, there are no records of federally listed species occurring in Union County, South Carolina. While this inventory list does include northern long-eared bat, the current range for northern long-eared bat does not extend into Union County. A map of the northern long-eared bat range in South Carolina (USFWS 2023) is attached to this report.

Based on the lack of suitable habitat and/or no observations of the listed species in the vicinity of the Study Area, results of the threatened and endangered species study indicate that the proposed action will not affect any threatened or endangered species or critical habitats currently listed by the USFWS.

Submitted by:

A handwritten signature in blue ink, appearing to read 'Michael Inman'.

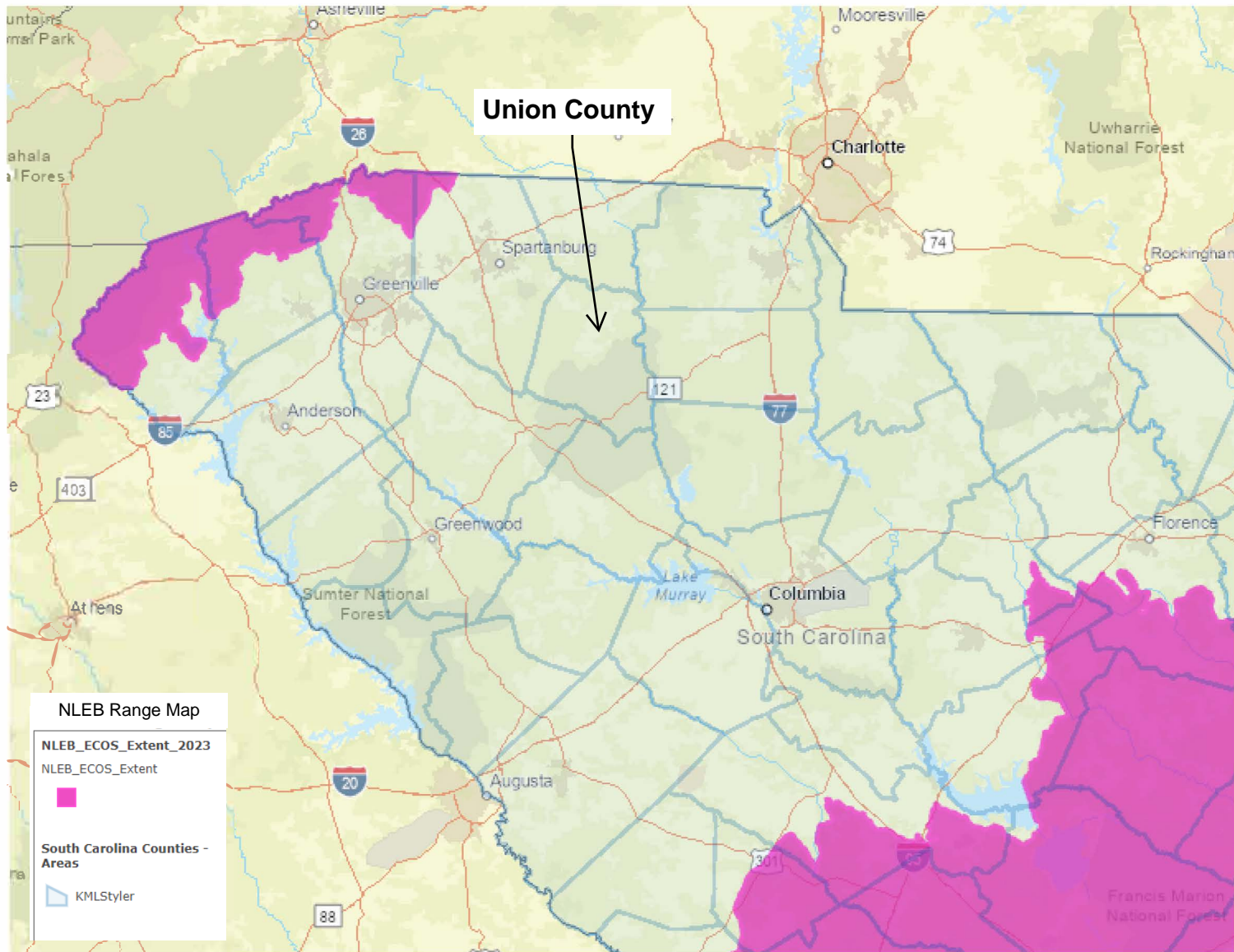
Michael Inman
HDR Environmental Scientist
4/5/2023



4

USFWS NLEB Range Map

NLEB Range Map





5

SCDNR South Carolina Rare, Threatened and Endangered Species Inventory for Union County

UNION COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
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	Northern long-eared bat (T)	<i>Myotis septentrionalis</i>	Year round	Winter surveys not as successful
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, bird, crustacean, mollusk, and reptile family categories.

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: _____ 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.)

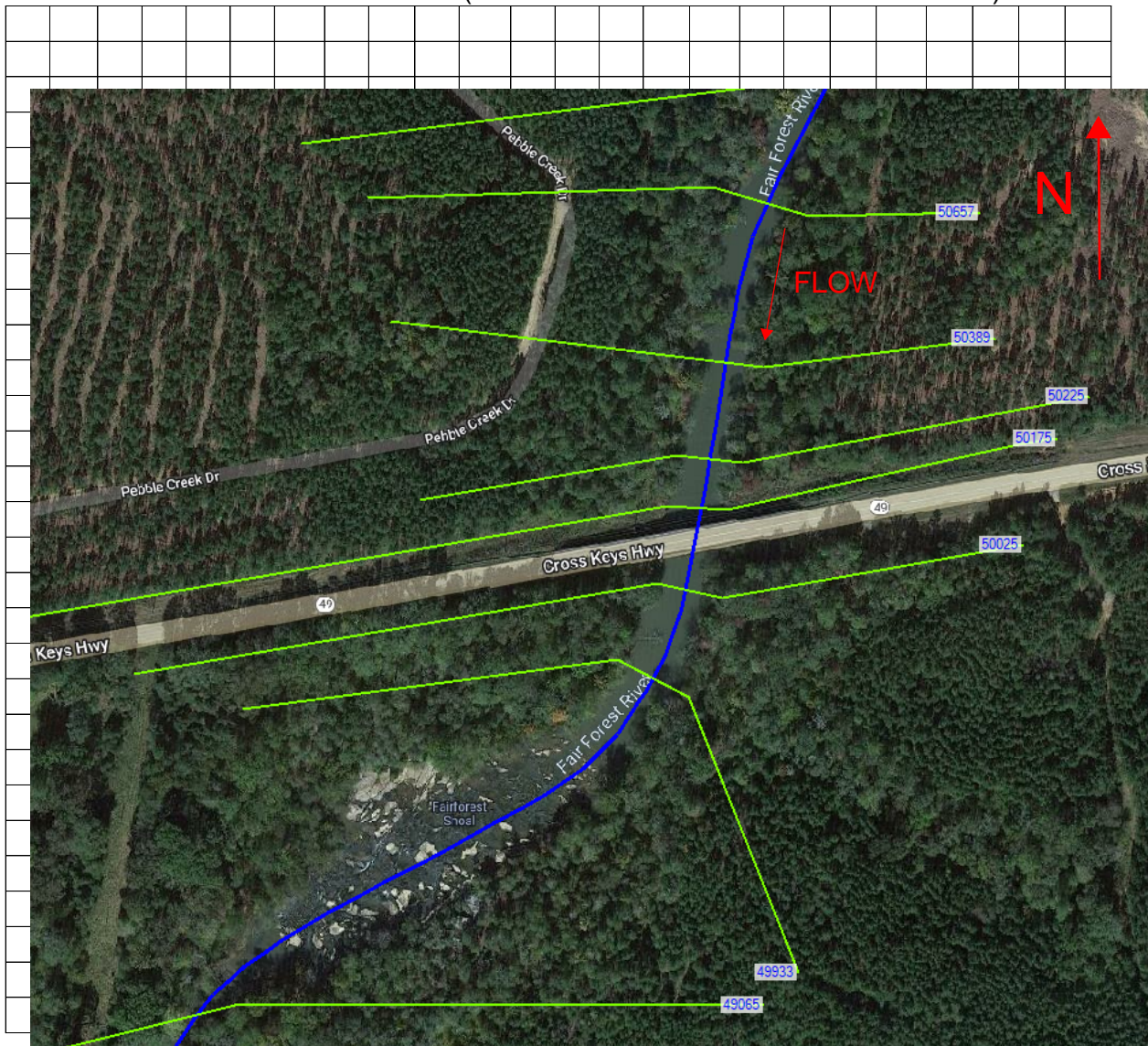
A. Proposed Bridge Recommendation:

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

Span Arrangement: _____

Notes: _____

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



Performed By: _____

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 South Carolina Department of Transportation (SCDOT) proposes to replace the load restricted bridge crossing of Fairforest Creek along S.C. Route 49 (Cross Keys Hwy) in Union County.

The proposed improvement would replace the bridge and include associated roadway improvements to accommodate the proposed bridge.

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 to correct the load restriction placed on it as well as restore all bridge components to good condition. Roadway improvements are limited to those associated with accommodating the new structure.

The project crosses Fairforest Creek which is shown on the Flood Insurance Rate Map (FIRM) Panel 45087C0200D. Fairforest Creek is designated as a 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 project will utilize larger spans within the bridge section and 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.

Multiple alternatives including staged construction and full realignment upstream and downstream of the existing structure were studied. Impacts from realignments include multiple impacts to residential properties including homes as well as impacts to adjacent roadways. Staged construction does not eliminate impacts to residences. The selected alternative reduces impacts to residential properties.

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 negligible 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?

The proposed bridge is of similar length and uses larger spans reducing the number of interior bents/piers within the floodplain.

- 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.

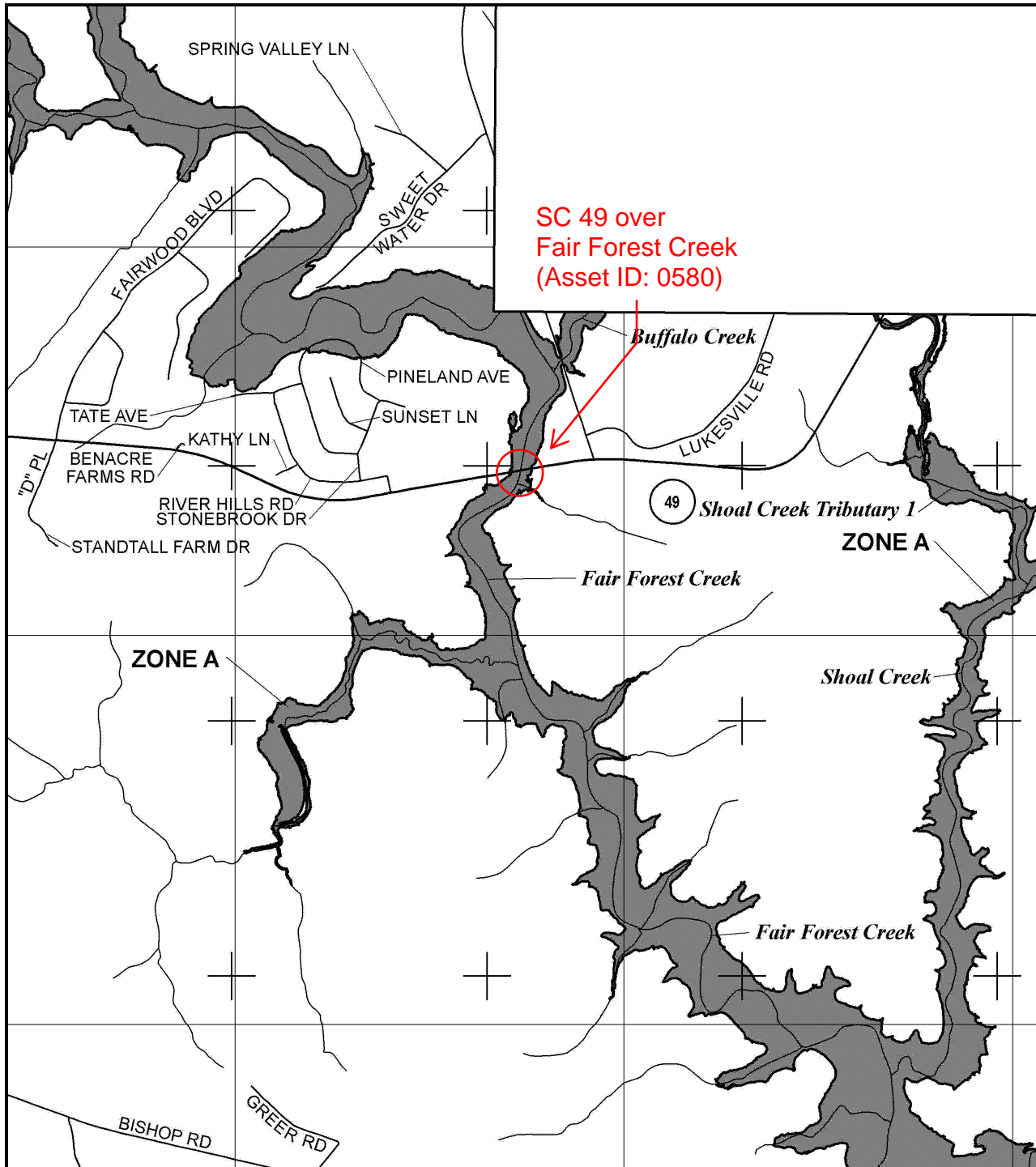
As the project progresses to final construction plans, the hydraulic modeling will be updated based on the final bridge layout.

____Thomas Miller____

SCDOT Hydraulic Engineer

____3-3-2023____

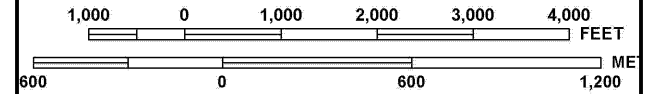
Date



SC 49 over
Fair Forest Creek
(Asset ID: 0580)



MAP SCALE 1" = 2000'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0200D

FIRM

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

PANEL 200 OF 400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
UNION COUNTY	450185	0200	D

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



**MAP NUMBER
45087C0200D**

**EFFECTIVE DATE
AUGUST 2, 2011**

Federal Emergency Management Agency

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

Attachment E – De Minimis Coordination



FHWA South Carolina Division
Determination of Section 4(f) *De minimis* Use

State File #	P041238	Fed Project #		PIN	P041238	Date	3/22/23	County	Union
--------------	---------	---------------	--	-----	---------	------	---------	--------	-------

Project Description	SC 49 (Cross Keys Highway) Bridge Replacement over Fair Forest Creek
---------------------	--

Form Purpose: This form is based on FHWA regulations regarding Section 4(f) found at 23 CFR 774. The form is to be used when a determination of *de minimis* use is to be made for a Section 4(f) property.

Form Instructions: Fill out the form completely based on type of impact and attach the approval from the agency with jurisdiction over the Section 4(f) resource to the form. When multiple 4(f) properties are impacted by a project and a *de minimis* finding is to be made for each property, a separate form must be filled out for each property affected.

Document Type: ☐ EIS ☐ EA ☒ CE

Description of the Section 4(f) Resource:

Fairforest Plantation/Emslie Nicholson Mansion is located at 2403 Cross Keys Highway. The property was recommended eligible for listing in the NRHP in 2005, but is not visible from the APE. It is located less than 0.2 mile (approximately 670 feet) south of SC 49. The dwelling was included in the 2005 countywide survey, and SCDAH determined the resource eligible for listing in the NRHP under Criterion C in the area of Architecture. The only structure associated with the dwelling that is located within the APE is a gate at the end of the paved drive, at the property line. The gate is comprised of two brick posts clad in stone and two side-hinged, metal gates with decorative scrollwork. Stone retaining walls are present on each side of the gate and abut the gate posts.

Brief Description of Project Scope:

SCDOT proposes to replace the SC 49 (Cross Keys Highway) Bridge over Fair Forest Creek in Union County. The purpose of this project is to correct the load restriction placed on it as well as restore all bridge components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge is currently open to traffic and would remain open to traffic during construction. Existing right of way is approximately 66' along the roadway and 150' in the area of the bridge.

Applicability Determination:

(to be applicable answers to all questions must be "yes")

I. For Public Parks, Recreation Areas, and Wildlife and/or Waterfowl Refuge:

1. Does the project involve a minor take of land from the resource? ☐ Yes ☐ No

a. Identify the total acreage of the resource: Acres

- b. Describe the use of the land from the resource and identify amount of the resource to be used (acres):

2. Does the project not adversely affect the qualities, activities, features, or other attributes of the resource that qualify it for protection under Section 4(f)? ☐ Yes ☐ No

3. Has the agency with jurisdiction over the resource concurred in writing with the FHWA's and/or SCDOT's determination that the project will not adversely affect the resource and is the concurrence attached? ☐ Yes ☐ No

- a. Identify the agency with jurisdiction:

4. Has the agency with jurisdiction over the resource been informed of FHWA's and/or SCDOT's intent to make a *de minimis* finding? ☐ Yes ☐ No

- b. If yes, attach the correspondence. Correspondence attached? ☐ Yes ☐ No

5. Has the public been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the resource? ☐ Yes ☐ No

- a. Identify the opportunity for public comment:

II. For Historic Properties:

1. Does the project have a "No Adverse Effect" or a "No Historic Properties Affected" on the historic property as defined by Section 106 of the National Historic Preservation Act and its regulations? ☒ Yes ☐ No

- a. Identify the effects determination for the resource:

No Adverse Effect

- b. Describe the use of land from resource and identify the amount of the resource to be used (acres):

Project planners have designed the project to minimize ROW acquisitions from the parcel containing the Emslie Nicholson Mansion/Fairforest Plantation. Grading will need to occur along the roadside in the area of the property to ensure a safe roadside for vehicles.

2. Has the SHPO and ACHP, if participating in the Section 106 consultation, concurred in writing with the effects determination? ☒ Yes ☐ No

- a. If so, attach the written concurrence. Concurrence attached? ☒ Yes ☐ No
(Receipt of the SHPO's concurrence with the FHWA's finding, or a non-response after the specific time qualifies as the necessary correspondence from the official with jurisdiction over Section 106 properties).
3. Has the SHPO and ACHP, if participating in the Section 106 consultation, been informed of FHWA's and/or SCDOT's intent to make a *de minimis* impact/no adverse finding based on their written concurrence in the Section 106 determination? ☒ Yes ☐ No
- a. If yes, attach correspondence. Correspondence attached? ☒ Yes ☐ No
4. Have the views of the consulting parties participating in the Section 106 consultation been considered? ☒ Yes ☐ No
- a. Attach any relevant correspondence and any necessary responses to consulting party comments. Correspondence attached? ☒ Yes ☐ No

III. Alternatives Analysis:

1. Summarize why the use of the property from the resource cannot be avoided.

☒ Project needs would not be met.

Explain:

Project planners have designed the project to minimize ROW acquisitions from the parcel containing the Emslie Nicholson Mansion/Fairforest Plantation. Grading will need to occur along the roadside in the area of the property to ensure a safe roadside for vehicles.

☐ Substantial impacts to other environmental/cultural/social resources would result.

Explain:

☐ Project complexity would increase resulting in greater construction and maintenance costs.

Explain:

☐ Other.

Explain:

2. Summarize the measures to minimize harm. This would include, if applicable, any mitigation measures.

To minimize impacts, SCDOT has designed the project to minimize ROW acquisitions from the parcel containing the Fairforest Plantation/Emslie Nicholson Mansion. Grading will need to occur along the roadside in the area of the property to ensure a safe roadside for vehicles. Due to the No Adverse Effect determination, mitigation is not required.

IV. Summary and Determination:

The project involves a *de minimis*/no adverse use on the Section 4(f) property as evidence with a "No Adverse Effect" finding from the SHPO or as evidence through the minimization of harm to a public park, recreation land or wildlife and waterfowl refuge as a result of mitigation to or avoidance of impacts to the qualifying characteristics and/or the functions of the resource.

Based on the scope of the undertaking; the fact that the undertaking does not adversely affect the function/qualities of the Section 4(f) resource on a permanent or temporary basis; and with agreement from the official with jurisdiction, the proposed action constitutes a *de minimis*/no adverse use and the alternatives analysis is considered satisfied.

Preparer: Jennifer Mathis

Date: 3/22/23

Program Manager:



Date: 06/14/2023

Environmental Manager:



Date: 6/14/23

FHWA:



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34675
NAE



South Carolina
Department of Transportation

April 11, 2023

Ms. Elizabeth Johnson
Director, Historical Services, D-SHPO
State Historic Preservation Office
SC Department of Archives & History
8301 Parklane Road
Columbia, SC 29223

RE: Cultural Resources Survey of the SC 49 (Cross Keys Highway) over Fairforest Creek Bridge Replacement Project, Union County, South Carolina

Dear Ms. Johnson:

Please find attached a copy of the above referenced report that describes cultural resources investigations conducted for the replacement of the SC 49 bridge over Fairforest Creek in **Union County**, South Carolina.

The South Carolina Department of Transportation (SCDOT) proposes to replace the SC 49 (Cross Keys Highway) bridge over Fairforest Creek. Minor amounts of new right-of-way (ROW) will be required for the replacement. The project area extends 100 feet from either side of the road centerline (200 feet wide total) and 1,500 feet from either end of the bridge. The Area of Potential Effects (APE) consists of the project area and a 300-foot viewshed beyond the project area. The archaeological survey examined the project area, while the architectural survey examined the entire APE.

One new archaeological resource was identified in the survey. Site 38UN1859 consists of two stone bridge piers and a portion of roadbed from a pre-1937 alignment of SC 49. This site was assessed as **not eligible** for the National Register of Historic Places (NRHP).

One new aboveground resource, SHPO Site No 1441, was identified during the architectural survey. SHPO Site No 1441 is the 10-span concrete Tee beam bridge carrying SC 49 over Fairforest Creek. It was originally built in 1931 and reconstructed (widened) in 1964. This resource was assessed as **not eligible** for the NRHP.

One previously identified aboveground resource is located within the project APE. SHPO Site No 0488 is a historic area that includes the 1923 Emslie Nicholson Mansion and surrounding grounds. This resource was found **eligible** for listing on the NRHP in 2005. Although the historic area is located within the project's area of direct effects, the dwelling is located 670 feet south of SC 49. It is surrounded by mature vegetation and is not visible from the roadway. Project planners have designed the project to minimize ROW acquisitions from the parcel containing SHPO Site No 0488. The ROW acquisition, which totals 0.4 acres of the 13-acre parcel, is needed to facilitate grading along the roadway. It extends 730 feet and varies in width from 8 to 32 feet along the roadside on the northern end of the parcel. The small size of the ROW acquisition, which is also visually isolated from the mansion, will not impact the integrity or character-defining features of the historic property. Therefore, SCDOT recommends that the proposed undertaking will have **no adverse effect** on SHPO Site No 488.



Per the terms of the Section 106 Programmatic Agreement executed on October 6, 2017, the Department is providing this information on behalf of the Federal Highway Administration. It is requested that you review the enclosed material, and, if appropriate, indicate your concurrence in the Department's findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,



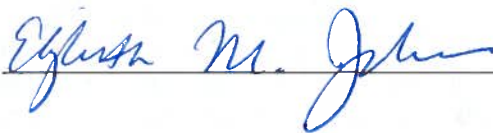
Rebecca Shepherd
Chief Archaeologist

RES:res

Enclosures: Cultural resources survey report

I (~~do not~~) concur in the above determination.

Signed:



Date:

4/19/2023

ec: Shane Belcher, FHWA
Russell Townsend, Eastern Band of Cherokee Indians
Stephen J. Yerka, Eastern Band of Cherokee Indians
Elizabeth Toombs, Cherokee Nation
LeeAnne Wendt, Muscogee (Creek) Nation
Acee Watt, United Keetoowah
Whitney Warrior, United Keetoowah

cc: Wenonah G. Haire, Catawba Nation
Keith Derting, SCIAA

Attachment F – USCG Permit Exemption

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Fourteenth Coast Guard District

909 SE 1st Ave. Ste 432
Miami, FL 33131-3028
Staff Symbol: (dpb)
Phone: (305) 415-6747
Fax: (305) 415-6763
Email: Omar.Beceiro@uscg.mil

16591/SC
June 21, 2023

Federal Highway Administration
Attn: Dr. Sandra Saint-Surin
1835 Assembly Street, Suite 1270
Columbia, SC 29201

Delivered via e-mail: sandra.saintsurin@dot.gov

Dear Dr. Saint-Surin:

In response to the 144c checklist received on June 21, 2023, regarding a U.S. Coast Guard bridge permit determination for the replacement of the SC 49 Bridge across Fairforest Creek, Union County, South Carolina, we concur with the findings that a Coast Guard bridge permit is not required.

Although this project will not require a bridge permit, we do require certain information to ensure we have accurate records for all bridges across this waterway. Please submit photographs and as-built drawings of both plan and elevation views of the bridge upon completion of the project. Plans should be in the standard 8 ½ x 11 inch format. The drawings, along with the enclosed Completion Report Form, must indicate the vertical clearance from ordinary high water to the lowest portion of the bridge and horizontal clearance, pier face to pier face, or bank to bank, in the main navigation span.

In addition, the requirement to display navigational lighting at the aforementioned bridge is hereby waived, per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at any time in the future should nighttime navigation through the proposed bridge be increased to a level determined by the District Commander to warrant lighting.

Should you have any questions concerning this determination, please contact my representative Mr. Omar Beceiro at (305) 415-6747 or by email at Omar.Beceiro@uscg.mil.

Sincerely,

A handwritten signature in blue ink, appearing to read "Randall D. Overton".

RANDALL D. OVERTON, MPA
Director, District Bridge Program
U.S. Coast Guard
By Direction

Enclosure: Completion Report Form

Assessment and Response Checklist and Flowchart for Applying 23 U.S.C. § 144(c)(2) exceptions to Coast Guard Bridge Permits

INSTRUCTIONS FOR USE

This form provides the process for FHWA's preliminary determination to make an exception under 23 U.S.C. § 144(c)(2) to Coast Guard bridge permitting authorities. It is recommended that State DOT and/or FHWA division offices complete this form.

Section V of the 2014 USCG-FHWA Memorandum of Agreement (MOA) provides that FHWA makes the preliminary exception determination, followed by Coast Guard review to identify issues or concerns with FHWA's preliminary determination. The preliminary determination shall be made at an early stage of project development (as soon as the information is available to the applicant) so that coordination with the local Coast Guard District Bridge Office (DBO) can be accomplished before or during environmental processing (23 CFR Part 650.805(a)).

If the DBO identifies issues or concerns with the determination of the FHWA Division Office, he/she will identify the area of concern by marking the appropriate answer in the **"DBO Concerns"** areas included in this checklist. The DBO will also include written comments **"DBO Comments"** and supporting documentation with this form and return it to the FHWA Division Office. Any disputes resulting from this exception determination process will be resolved in accordance with the Dispute Resolution Section of the 2014 USCG-FHWA MOA.

When both the DBO and FHWA Division Office agree that a 23 U.S.C. 144(c)(2) exception applies to a project, the DBO will provide written concurrence to the FHWA division office. In addition, the DBO will identify if the proposed bridge will require the establishment, maintenance, and operation of lights and signals as required by 14 U.S.C. § 85 and 33 CFR Part 118 at that time.

The use of 23 U.S.C. § 144(c)(2) exceptions cannot be delegated to state transportation agencies as part of a NEPA assignment agreement.

1. Name of waterway:

Fairforest Creek

2. Has the waterway at the project location determined to be navigable waters of the United States per 33 CFR Part 2.36?

☒ Yes ☐ No ☐ Do Not Know

(If "No", then no USCG jurisdiction. If you do not know, contact DBO for confirmation of waterway status.)

3. At proposed site, mileage along waterway measured from mouth or confluence:

7 miles

4. Waterway is a tributary of Tyger River at mile 14 miles (if applicable).

Assessment and Response Checklist and Flowchart for Applying 23 U.S.C. § 144(c)(2) exceptions to Coast Guard Bridge Permits

Geographical location (city, state, county): **Union, SC, Union County**

5. Lat-Long coordinates (if known, as precise as possible):

a. Latitude: **34° 40' 54.588" N** (N) (Example: 40° 48' 3.49" N)

b. Longitude: **-81° 41' 10.806" W** (W) (Example: -73° 47' 16.19" W)

6. Is there an existing bridge at, or near the above location?

☒ Yes ☐ No (if "Yes" please answer questions 7a-7b)

a. Does this bridge have a USCG or Army Corps of Engineers permit?

☐ Yes ☐ No ☒ Do Not Know

b. Please provide vertical and horizontal clearances at:

☐ Normal Pool ☐ Mean High Water ☒ Ordinary High Water

Vertical: **6** (feet)

Horizontal: **90** (feet) Datum: **NAD83**

7. Is the waterway tidal (As defined by the process outlined on pages 7-8)?

☐ Yes ☒ No **DBO Concerns** ☐ Yes ☐ No

DBO Comments:

8. Is the waterway used by recreational, fishing or other vessels greater than 21 feet in length?

☐ Yes ☒ No **DBO Concerns** ☐ Yes ☐ No

DBO Comments:

9. Is the waterway used to transport interstate or foreign commerce? (If Yes, permit might be required)

☐ Yes ☒ No ☐ Do Not Know **DBO Concerns** ☐ Yes ☐ No

DBO Comments:

10. Is the waterway susceptible for use in its natural condition or by reasonable improvement as a means to transport interstate or foreign commerce? (If Yes, permit might be required)

☐ Yes ☒ No **DBO Concerns** ☐ Yes ☐ No

DBO Comments:

11. Are there any Army Corps of Engineers permitted structures (piers, docks, dams,

Assessment and Response Checklist and Flowchart for Applying 23 U.S.C. § 144(c)(2) exceptions to Coast Guard Bridge Permits

powerlines) on the waterway?¹ (contact USCG and/or Army Corps of Engineers to verify] (if **yes**, please attach document with names + locations (mile #))

☐ Yes ☒ No ☐ Do Not Know **DBO Concerns** ☐ Yes ☐ No

DBO Comments:

Waterway information at proposed bridge site (if available/applicable)

12. Water depth at high tide (ft):

N/A

13. Water depth at normal pool (ft):

N/A

14. Water depth at MLW or MLLW (ft):

N/A

15. Tidal range MHW to MLW or MHHW to MLLW (ft):

N/A

16. Datum used for depths:

N/A

¹ This question seeks to determine whether the Army Corps of Engineers has asserted jurisdiction over the waterway or reach thereof by the issuance of a Jurisdictional Determination, or the issuance of permits of any type including those for structures under Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403), or through any other USACE permitting authority including the Clean Water Act § 404.

Assessment and Response Checklist and Flowchart for Applying 23 U.S.C. § 144(c)(2) exceptions to Coast Guard Bridge Permits

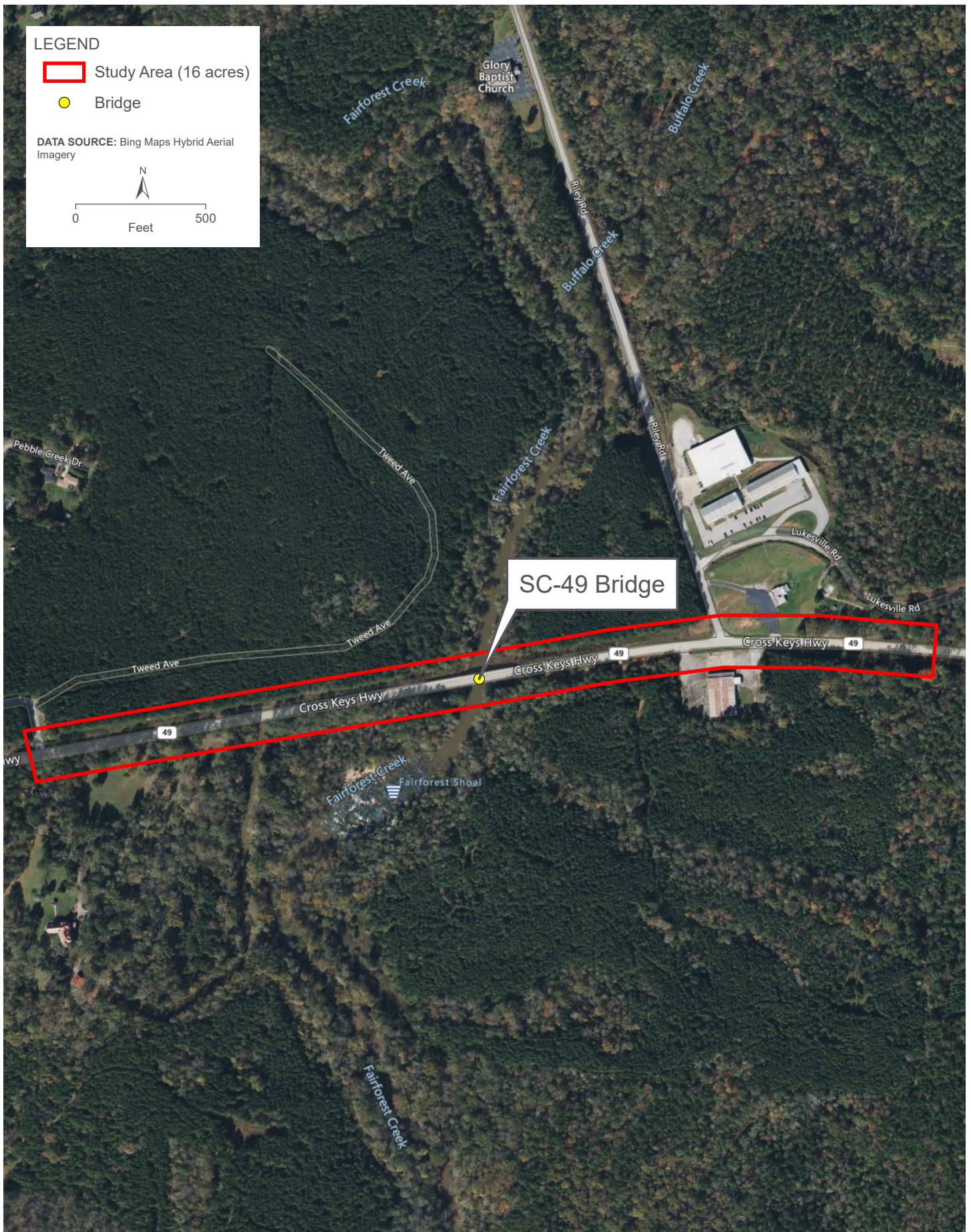
Additional Documentation

Please include the following information when submitting to the DBO:

- ☒ Location Map (8 ½" x 11")
- ☒ Photo of existing bridge (if any) or proposed bridge location taken from the prospective of the waterway

NEXT STEP:

When both the DBO and FHWA Division Office agree that the 144(c)(2) exception applies to a project, the DBO will write a letter to that effect to the FHWA Division Office, attaching the completed checklist. In addition, in that letter the DBO will identify if the proposed bridge will require the establishment, maintenance, and operation of lights and signals as required by 14 U.S.C. § 85 and 33 CFR Part 118.



SC-49 BRIDGE REPLACEMENT OVER FAIRFOREST CREEK

PROJECT AERIAL

Figure 2



Photograph 1 – SC-49 Bridge Over Stream 1 (Fairforest Creek)
Facing Northeast, Upstream



Photograph 2 – SC-49 Over Stream 1 (Fairforest Creek)
Facing Southeast, Downstream