



U.S. Department
of Transportation
**Federal Highway
Administration**

South Carolina

July 17, 2023

1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201
803-765-5411
803-253-3989

In Reply Refer To:
HDA-SC

Mr. Chad Long
Director Environmental Services Office
South Carolina Department of Transportation (SCDOT)
955 Park Street, P.O. Box 191
Columbia, South Carolina 29202

Dear Mr. Long:

The South Carolina Department of Transportation (SCDOT) recently submitted for FHWA's approval, a Categorical Exclusion (CE) to replace the existing SC 49 (Cross Keys Highway) bridge over the Tyger River in Union County, South Carolina (Federal Project Number P041237). The FHWA finds that the project will not induce significant impacts and will not adversely affect threatened or endangered species or cause adverse impacts to historic resources. Therefore, a CE determination under 23 CFR § 771.117(c)(28) is appropriate for this project. Enclosed is the approved CE for the project.

SCDOT is authorized to proceed with further project development. Please ensure that the project commitments made during the NEPA process are included in the project construction proposal and ultimately carried out. Please address any questions to Mr. J. Shane Belcher at jeffrey.belcher@dot.gov or 803-253-3187.

Sincerely,

(for) Emily O. Lawton
Division Administrator

Enclosure

cc: Will McGoldrick, SCDOT Alternative Delivery NEPA Coordinator



NON-PROGRAMMATIC CATEGORICAL EXCLUSION

Project No. P041237

County: Union
Date: May 8, 2023

To: Federal Highway Administration

From: Will McGoldrick, Alternative Delivery NEPA Coordinator, SCDOT

Project: Proposed SC 49 Bridge Replacement Over Tyger River

Project Description: The South Carolina Department of Transportation (SCDOT) proposes to replace the SC Route 49 bridge over the Tyger River in Union County, SC (Figure 1). SC 49 is a two-lane rural highway that connects the small communities of Cross Keys and Cross Anchor to the Town of Union, South Carolina. The existing bridge was constructed in 1931 and improved in 1972; the facility includes a 524-foot long bridge consisting of a two-lane roadway with 12-foot travel lanes and 1-foot outside shoulders. Existing right-of-way along the facility is 75 feet along the roadway and 150 feet around the bridge.

The scope of the project includes replacing the existing 524' x 47' bridge over the Tyger River with a new bridge. The proposed project would include a new two-lane bridge that would include two 12-foot travel lanes with 10-foot shoulders on both sides. It is anticipated that the new bridge will be located adjacent to the existing alignment to maintain traffic on SC 49 during construction. The existing Meadow Woods Rd (S-44-33) will need to be relocated due to the close proximity to the proposed bridge and necessary sight distance requirements. In addition, due to the significant grade change of the road, a new alignment will be necessary to maintain existing traffic along the roadway during construction.

Purpose and Need: 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. The existing bridge is considered structurally deficient due to the deteriorating integrity of the bridge structure. Traffic count data indicates that the 2021 average daily traffic (ADT) in the project area was 2,900 vehicles per day (vpd) and is expected to increase to 4,300 vpd by 2044.

Non-Programmatic CE

Project Funding: Funding for the proposed project is included in SCDOT’s 2021-2027 State Transportation Improvement Program (STIP) which identifies \$2,050,000 for preliminary engineering and \$55,691,000 for construction.¹ This bridge replacement project is one of many included in SCDOT’s CLRB bridge bundle package 17.

Findings: The Department’s environmental review has determined the effects of this project are as described in the “Programmatic Agreement Between the Federal Highway Administration, South Carolina Division and the South Carolina Department of Transportation Regarding Approval of Actions Classified as Categorical Exclusions for Federal-Aid Highway Projects” dated April 26, 2021, and is in compliance with the required findings reflected below. The proposed project has been assessed for possible effects on the human and natural environment with a determination that no significant environmental impact will occur. The class of action and impact determination documented by this statement would qualify this project as a categorical exclusion under 23 CFR 771.117(c), bridge replacement.

A determination along with the field observations conclude that there is low potential for the presence of any federally protected species due to the lack of suitable habitat and scope of improvements. The proposed study has been evaluated with regard to the Farmland Protection Policy Act (FPPA) of 1981. Based on NRCS Form CPA-106, the total points for the land evaluation and the site assessment scores for the project is 140, which is less than the affect threshold of 160, as defined in the Act and therefore, no alternatives for avoidance of farmlands need to be considered. In consultation with the State Historic Preservation Officer (SHPO), as appropriate, the proposed project will not adversely affect, with conditions, any properties identified as being on or eligible for inclusion in the National Register of Historic Places (NRHP) under 36 CFR 800. No Section 4(f) or Section 6(f) properties were identified within the project boundaries. Based on preliminary design, the project would impact jurisdictional waters of the U.S., and a Section 404 Individual Permit will be required.

It is not anticipated that the project would result in any displacements. If displacements are found to be necessary based on final design, all acquisitions and relocations would be conducted in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and all relocation resources will be made available without discrimination.

7/17/23

Date

Will McGoldrick Digitally signed by Will McGoldrick
Date: 2023.07.17 11:13:22 -04'00'

Alternative Delivery
NEPA Coordinator

7/17/2023

Date

Federal Highway Administration

¹ SCDOT, STIP – Bridge, http://206.74.144.42/ESTIP/downloads/Union.html?_id=1676907679428
accessed February 20, 2023.

Date: 06/20/2023

SCDOT
NEPA ENVIRONMENTAL COMMITMENTS FORM



Project ID : P041237 County : Union District : District 4 Doc Type: PCE Total # of Commitments: 8

Project Name: SC 49 (Cross Keys Highway) Bridge Replacement over Tyger River

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: Page 2, Paragraph 3

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: Page 4, Paragraph 4

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: Page 2, Paragraph 2

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="P041237"/>	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	
ENVIRONMENTAL COMMITMENTS FOR THE PROJECT		

Non-Standard Commitment	NEPA Doc Ref: <input type="text" value="Page 2, Paragraph 1"/>	Responsibility: <input type="text" value="CONTRACTOR"/>
<input type="text" value="Section 404 Permit"/>		
<p>Based on impacts associated with the preliminary design, a USACE Individual Permit is anticipated. As the design progresses under a design build contract, it may be possible to further avoid and/or minimize stream impacts, allowing a SCDOT Regional General Permit to be pursued.</p>		
<input type="checkbox"/> Special Provision		

Cultural Resources	NEPA Doc Ref: <input type="text" value="Page 3, Paragraph 3"/>	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" value="Page 2, Paragraph 1"/>	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 : P041237	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	
ENVIRONMENTAL COMMITMENTS FOR THE PROJECT		

Non-Standard Commitment	NEPA Doc Ref: Page 2, Paragraph 2	Responsibility: CONTRACTOR
<div>NavGP</div> <div>Within Union County, the Tyger River 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).</div> <div><input type="checkbox"/> Special Provision</div>		

Non-Standard Commitment	NEPA Doc Ref: USCG Coordination	Responsibility: CONTRACTOR/SCDOT
<div>USCG Permit Exclusion - NA/144c</div> <div>Upon completion of the project, SCDOT will 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.</div> <div><input type="checkbox"/> Special Provision</div>		

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

SUPPORTING DOCUMENTATION

Alternatives Analysis

Various alternatives were evaluated for the project that included typical section variations, construction staging scenarios, and bridge structure options. Alternatives were assessed for constructability, impacts to the public, construction costs, construction duration, environmental impacts, and impacts to existing utilities. Based on the evaluations, a preferred alternative was identified.

No-Build Alternative

The no-build alternative would maintain existing conditions and would not correct the current load restrictions and or the components of the bridge structure that are in poor condition. Therefore, the no-build alternative would not meet the purpose and need of the project.

Build Alternatives

Build alternatives considered for the project included shifting the bridge onto new alignment to each side of the bridge, as well as construction staging methods.

Preferred Alternative

Based on the evaluations, the preferred alternative for the project is to construct the new bridge to the southeast, approximately 52 feet downstream of the existing structure. The bridge would consist of two 12-foot travel lanes with 10-foot shoulders on both sides of the bridge. To meet current design standards, the grade of the proposed bridge will be raised by approximately 10 to 12 feet, which will cause the intersection of SC 49 and Meadow Woods Road to be relocated approximately 200 feet to the east so that the road can be tied into the new grade. The existing Meadow Woods Rd (S-44-33) will need to be relocated due to the close proximity to the proposed bridge and necessary sight distance requirements. In addition, due to the significant grade change of the road, a new alignment will be necessary to maintain existing traffic along the roadway during construction.

Noise Analysis

Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), and the SCDOT Traffic Noise Abatement Policy dated February 24, 2023 (Noise Policy), contain the FHWA and SCDOT traffic noise standards for completing noise analysis on transportation projects. It is anticipated the bridge will be replaced adjacent to the existing alignment. The closest noise receptor is approximately 785 feet to the northwest. Per the Noise Policy, a noise study is not required if the project does not result in a substantial horizontal alteration where the project halves the distance between the traffic noise source and the closest receptor between the existing condition and build condition. In addition, the project will not substantially change the vertical alignment or add additional travel lanes. Therefore, a detailed noise analysis is not warranted as the project is essentially replacing existing conditions, and not expected to result in any potential traffic noise impacts.

Air Quality/Mobile Source Air Toxics (MSATs)

The Clean Air Act Amendments (CAAA) of 1990 require that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by FHWA be in conformity with the State Implementation Plan (SIP). The proposed project is not located in a nonattainment area, so conformity does not apply.

The purpose of this project is to correct the load restriction placed on it, as well as restore all bridge components to good condition . This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project would not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.²

Wetlands/Permits

The project area was evaluated to determine the potential presence of wetlands and streams. This evaluation included a review of available data, specifically the National Wetland Inventory (NWI) maps, soil surveys, USGS topographic quadrangles and field reconnaissance. The Tyger River, two additional streams and two wetland features were identified within the study area. Approximately 315 linear feet of Stream 2 and 285 linear feet of Stream 3 would be impacted by the project. The proposed project will be designed to avoid and minimize impacts to wetlands and streams to the extent possible. Permits will be obtained from the appropriate state and federal agencies for any proposed impacts to jurisdictional waters of the U.S. (WOUS). A Department of the Army Individual Permit is anticipated at this time. However, if changes to the alignment occur, impacts may be reduced, and a general permit may apply. A Natural Resource Technical Memo can be found in Appendix B.

Within Union County, the Tyger River is considered a navigable waterway. The project would require a Navigable Waters General Permit (Nav GP) from SCDHEC. A U.S. Coast Guard (USCG) Permit Exclusion Checklist is included in Appendix G.

Water Quality/Floodplains

Based on a study of the Flood Insurance Rate Maps (FIRM) #45087C0200D, effective 08/02/2011. The Tyger River is designated as a Special 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. The project would be developed to comply with all appropriate floodplain regulations and guidelines. The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local county Floodplain Administrator.

Stormwater from the bridge would be conveyed to the Tyger River through a series of drainage structures that could potentially introduce additional contaminants to this system. However, the resulting runoff would not be anticipated to be significantly different than existing conditions.

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

² FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis, http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm, last accessed September 16, 2016.

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. A Bridge Replacement Scoping Risk Assessment Form and Floodplain Checklist can be found in Appendices C and D, respectively.

Cultural Resources

An intensive cultural resources survey of the proposed SC 49 bridge replacement over Tyger River was completed in February 2023. The archaeological area of potential effect (APE) is 100 feet from the road centerline (200 feet total) and 1,500 feet from either end of the bridge. The architectural APE extends 300 feet outside of the archaeological APE. The fieldwork for both surveys was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (Appendix A).

Archaeological Resources

Background research was conducted on ArchSite in January 2023 to identify resources within the Area of Potential Effect (APE) that were previously recorded, listed on the NRHP, or eligible for listing on the NRHP. No previously identified archaeological sites or historic architectural resources are located near the project area.

An intensive archaeological survey was conducted in February 2023, which identified one archaeological site (Site 38UN1858). This site contains a portion of the remnants of the old alignment of SC 49 and two bridge piers from the former bridge across the Tyger River. An approximately 750-foot long portion of the former roadbed is visible in the southeast quadrant of the archaeological APE. The old roadbed, which is approximately 15 feet wide from base of bank to base of bank, is cut into the hillside. Two stone bridge piers are present to the west of the current bridge. The piers are constructed of both cut and natural granite stones joined together with concrete and smaller stones chinking.

Site 38UN1858 was considered for the NRHP under Criterion C. Site 38UN1858 reflects a common road and bridge type in South Carolina. The only remaining materials of the road and bridge are the two stone bridge support piers. Site 38UN1858 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. It is recommended not eligible for inclusion on the NRHP under Criterion C. Site 38UN1858 was also considered for the NRHP 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. Site 38UN1858 is recommended not eligible for the NRHP under Criterion A. Site 38UN1858 is not known to be associated with any significant person, and therefore is recommended not eligible under Criterion B.

Architectural Resources

Investigators conducted the architectural resources survey on February 15, 2023 and recorded one historic-age (50 years of age or older; constructed in 1973 or before) architectural resource (SHPO Survey Site Number 1442; Figure 11 through Figure 16 in Appendix A). A Statewide Survey of Historic Properties survey form was completed for the newly recorded architectural resource. The recorded resource is a transportation resource (highway bridge) originally built in 1937 and was widened in 1971 using a cast-in-place concrete deck. A steel through truss that spanned the river was replaced. The original structure was supported by cast-in-place concrete piers with pointed arch openings and decorative scoring (horizontal bands). When the structure was widened in 1972, the piers supporting the new portions of the concrete Tee beam spans (on the east side of the 1937 structure) included concrete caps on steel I-beams with cast

concrete piers with a different design. The bridge is recommended not eligible for listing in the NRHP due to a lack of historic and/or engineering significance under Criteria A–D.

No other historic-age architectural resources were present in the architectural APE.

Section 4(f) Properties

No Section 6(f) properties were identified within the project boundaries.

Section 6(f) Properties

No Section 6(f) properties were identified within the project boundaries.

Threatened and Endangered Species

Pursuant to Section 7 of the Endangered Species Act of 1973, the project area was evaluated for the potential presence of any federally protected species currently listed for Union County. A list of protected species for Union County was obtained from the U.S. Fish and Wildlife Service. In addition, the S.C. Rare, Threatened, and Endangered Species Inventory was evaluated to determine any previous known occurrences of protected species within the project area. Lastly, field observations were conducted within the project area during the various extensive field investigations in January 2023. The Biological Assessment can be found in Appendix B.

According to the 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 USFWS Environmental Conservation Online System (ECOS), there are no records of federally listed species occurring in Union County, South Carolina and the range for northern long-eared bat does not extend into Union County. 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.

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 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 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 RCE at least four (4) weeks prior to the 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.

Socio-Economic

The U.S. Census data was evaluated to determine the demographic composition of the proposed project area. The census data is summarized in Table 1.

Table 1. Summary of US Census Data

Demographic Characteristic	South Carolina	South Carolina Percentage	Union County	Union County Percentage
Total Population	5,078,903		26,080	
White	3,334,961	65.7	17,714	64.9
Black/African American	1,328,691	26.2	8,184	30.0
Hispanic Origin	329,424	6.0	478	1.8
Population below Poverty Line	718,345	14.5	5,614	20.9

Source: U.S. Census Bureau (USCB) 2017-2021 American Community Survey 5-Year Estimates (2021 ACS)

Environmental Justice

The proposed project was evaluated in accordance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). As summarized in Table 1, the demographics of Union County include an approximate 35.1% total minority population as compared with 34.3% in South Carolina. While Union County as a whole has a higher percentage than SC for population living below the poverty line, the US Economic Development Administration Census Poverty Status Viewer does not identify the project area as a High Poverty Area or Possible High Poverty Area³. These findings are consistent with the field observations of the immediate project area. Therefore, the project is not expected to specifically benefit, harm, or disproportionately impact, any social group, including low-income, elderly, handicapped, non-drivers, minority, or ethnic groups.

The project is not expected to cause any relocations or change neighborhood or community cohesion, school districts, police and fire protection, emergency medical services, highway traffic and safety, minority or other social groups, or permanently affect existing travel patterns and accessibility. No minority or low-income populations have been identified that would be adversely impacted by the proposed project as determined above. Therefore, in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23A, no further environmental justice analysis is required.

Communities

³ [Census Poverty Status Viewer \(ACS19\)](#), accessed February 20, 2023

It is not anticipated that the proposed action would result in any appreciable change in local population and employment patterns in the area. Right-of-way acquisitions from adjacent properties will be minimal. Property owners would be compensated for any right-of-way acquired and any damages to remaining property, in accordance with SCDOT policy and the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended.

The contractor will be responsible for maintaining two-way traffic along SC 49 during construction of the new bridge. However, some minor impacts to the surrounding communities, residents and commuters could occur during construction. Overall construction of the project will last approximately 18 months. Access for emergency services will not be restricted by road closure(s) for any facility within the project area.

Displacements

There are no residential or commercial displacements anticipated. However, the project would require the relocation of existing utilities, including a waterline and telecommunications line. If the final design results in additional impacts, then all acquisition and relocation, if any, will be conducted in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and all relocation resources will be made available to displacees without discrimination.

Farmlands

The proposed study has been evaluated with regard to the Farmland Protection Policy Act (FPPA) of 1981. Farmland can be prime farmland, unique farmland, or farmland of statewide or local importance. Prime farmland soils are those that have characteristics favorable for economic production of sustained high yields of crops. These soils may or may not be presently used as cropland. Conversely, land that is presently used as cropland may or may not be prime farmland.

No soils classified as unique, state or locally important were found in the study area. Some soils in the area are classified as prime farmland, covering approximately 28% of the project area, however there are no active agricultural uses or farming activities within a mile of the project. Form NRCS-CPA-106 was completed for the proposed project with an assumed land evaluation value of 100. The total points for the land evaluation and the site assessment scores for the project is 140, which is less than the affect threshold of 160, as defined in the Act and therefore, no alternatives for avoidance of farmlands need to be considered. See NRCS-CPA-106 and soil mapping in Appendix F.

Land Use

The project is located in a rural, wooded area with very sparse residential and commercial development. Land use in the area is primarily wooded and natural. The project is anticipated to be constructed adjacent to the existing bridge, with only minor right of way acquisition; therefore, is not expected to modify existing land uses or change the timing or density of development in the area.

Phase I Environmental Site Assessment (ESA)

Due to the rural and remote location of the project, a Phase 1 ESA was not conducted.

Public Involvement

A certified letter was sent to residents within the limits of the project in August 2022, providing property owners notice of Eminent Domain for SCDOT personnel to complete engineering and environmental surveys taking place in the local area.

A [project website](https://scdot-environmental-project-site-scdot.hub.arcgis.com/pages/clrb-package-17) (<https://scdot-environmental-project-site-scdot.hub.arcgis.com/pages/clrb-package-17>) was developed which provided the location and description of the project, the need for the bridge replacement, contact information for specific project questions or concerns and a link to a comment form. A public comment period started February 3, 2023 and extended to March 7, 2023. Please see Appendix H, Public Involvement Materials.

Project postcards were mailed to 9 postal routes within the vicinity of the project, reaching approximately 3,986 homes. The postcard provided information on the project and a link to the project website.

Of the 8 comments that were submitted, all fell within five key themes. These themes included design comments, traffic impact questions, specific right-of-way concern, surrounding roadway concerns, and general recommended preferred alternative support. The comments were evenly spread across the topics. No comments were received showing concern regarding the general project design.

Appendix A: Cultural Resources Short Form Report

Appendix B: Natural Resources Tech Memo

Appendix C: Bridge Replacement Scoping Risk Assessment Form

Appendix D: Floodplain Checklist

Appendix E: NRCS Farmland Conversion Impact Rating Form

Appendix F: Delineated Waters of the US

Appendix G: USCG Permit Exclusion Checklist

Appendix H: Public Involvement Materials

Appendix A: Cultural Resources Short Form Report



Cultural Resources Project Screening Form

File Number: PIN: Route: County:

Project Name:

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

Project Type

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

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

Comments

This project replaces the bridge carrying SC 49 (Cross Keys Highway) over the Tyger River and realigning the intersection of Meadow Woods Rd (S-44-33) with SC 49. The archaeological area of potential effect (APE) is 100 feet from the road centerline (200 feet total) and 1,500 feet from either end of the bridge. The architectural APE extends 300 feet outside of the archaeological APE. HDR conducted background research and a cultural resources field survey in February 2023 and created a short form report detailing the project (attached). The survey consisted of a pedestrian reconnaissance of the entire archaeological APE augmented by the excavation of shovel test pits (STPs). A total of 21 STP locations were excavated. Thirty-nine STPs were not excavated due to slope, wetlands, manicured lawn, fenced pastures or ground disturbance. The archaeology APE surrounding Meadow Woods Rd was not investigated due to steep slope and an inaccessible fenced pasture. One archaeological site was identified within the archaeological APE. Site 38UN1858 contains the remnants of a portion of the old alignment of SC 49 and two stone piers from the former bridge over Tyger River. It is not eligible for the NRHP. This site is not eligible for the NRHP. One above ground historic resource was recorded. SHPO Site No. 1442 is the current bridge carrying SC 49 over Tyger River. The nine-span concrete Tee beam structure was built in 1931 and reconstructed (widened and steel through truss replaced) in 1972. This was a very common bridge design utilized in the early-20th century and it is not eligible for the NRHP. No historic properties will be affected by this project. No additional cultural resources investigations are recommended.

Effect Determination:

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

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

Prepared by:

Review Date:

ARCHAEOLOGICAL FIELD REPORT
SCDOT ENVIRONMENTAL SECTION



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

CONSULTANT: HDR

DATE OF RESEARCH: 2023

ARCHAEOLOGISTS: Joshua N. Fletcher and Miles Spenrath

ARCHITECTURAL HISTORIAN: Jessica Forbes

COUNTY: Union

PROJECT: SC 49 (Cross Keys Highway) over Tyger River Bridge Replacement Project

SCDOT PIN: P041237

DESCRIPTION: The South Carolina Department of Transportation (SCDOT) proposes to replace the South Carolina Highway (SC) 49 (Cross Keys Highway) over Tyger River in Union County, South Carolina. 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.

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 100 feet along the roadway and 150 feet within the bridge area. The archaeological area of potential effects (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 *Cross Anchor, SC*, and 1969 *Union West, SC*, quadrangles.

LOCATION: The project is located on SC 49, northeast of Cross Keys, South Carolina.

USGS QUADRANGLE: *Union West, SC*

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

PROJECT CENTERPOINT: **EASTING:** 432261 **NORTHING:** 3836230

ENVIRONMENTAL SETTING: The project is located to the east and west of SC 49. This road passes through moderately to steeply sloping topography, with lands sloping down toward the Tyger River within the center of the project area. Land use within the project vicinity includes residential, fenced pastureland, and forested upland areas with a bottomland hardwood forest riparian corridor.

NEAREST RIVER/STREAM AND DISTANCE: Tyger River at the center of the study area

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

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 east.

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. No historic architectural resources are located near the project area. No NRHP-eligible archaeological sites or architectural resources are located within 0.5 mile of the project area.

ARCHAEOLOGICAL SURVEY: Investigators conducted an intensive archaeological survey on February 13 and 14, 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, fenced pastures, 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 location of the project, identified cultural resources within the APE, and shovel test locations 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 feet from the road centerline. Shovel tests were excavated at 100-foot intervals along each transect, where possible. Investigators excavated a total of 21 shovel tests. The shovel tests were excavated to an average depth of 15 centimeters below surface (cmbs) and ranged from 15 to 200 cmbs deep. In nearly all shovel tests, compact subsoil was encountered by approximately 5 cmbs, if not at the ground surface. Shovel tests generally exposed a 2.5YR4/3 reddish brown clay loam from 0 to 10 cmbs, over a compact 2.5YR4/8 red clay subsoil at 10 to 20-plus cmbs. The fill from these tests was sifted through 0.25-inch (0.635-cm) mesh hardware cloth. Investigators recovered no cultural materials from the shovel tests but identified one archaeological site (Site 38UN1858).

Site 38UN1858

Site 38UN1858 contains a portion of the old alignment of SC 49 and two bridge piers from the former bridge across the Tyger River. An approximately 675-foot-long portion of the former roadbed is visible within the southeastern quadrant of the archaeological APE. The old roadbed, which is approximately 15 feet wide from base of bank to base of bank, is cut into the hillside. The old eastern road bank ranges from approximately 2 to 5 feet tall; most of the western bank was destroyed during construction of the current SC 49 alignment. No pavement remnants were visible within the area of the old roadbed. Based on light detection and ranging (LiDAR) imagery, the former roadbed appears to continue north of the northern stone bridge pier, but this portion is outside the current study area and was not investigated. Figure 5 presents a plan of Site 38UN1858. Figure 6 presents a view of the old roadbed.

Two stone bridge piers are present west of the current bridge. The piers are constructed of both cut and natural granite stones joined together with concrete and smaller stone chinking. The stone pier north of the Tyger River measures approximately 14 feet, 6 inches wide at the base and 4 feet thick at the base, with a slight taper as it rises in height. The northern stone pier is approximately 8 feet, 6 inches tall. One large, flat stone remains atop the pier; it appears that a second large, flat stone and the top corner of the pier is missing, likely damaged during the dismantling of the old bridge. The stone pier on the southern edge of the river is also approximately 14 feet, 6 inches wide at the base and 4 feet thick at the base. The northern face of the southern pier extends into the river. The southern stone pier is approximately 8 feet, 6 inches tall. One large, flat stone remains atop the pier; it appears that a second large flat stone and the top corner of the pier is missing, likely damaged during the dismantling of the old bridge. The northern pier is farther from the current road/bridge alignment than the southern pier, with the portion of the former roadbed south of the river swinging southeastward, as observed in the southeastern quadrant of the archaeological APE. Figures 7 through 9 present views of the old stone piers at Site 38UN1858.

The former road alignment is shown on the 1937 State of South Carolina State Highway Department plans for what was then called Route No. 92. A portion of this plan is shown in Figure 10. It is unclear when the stone bridge piers and former alignment were originally constructed; however, they obviously predate 1937.

Site 38UN1858 was considered for the NRHP under Criterion C. Site 38UN1858 reflects a common road and bridge type in South Carolina. The only remaining materials of the road and bridge are the two stone bridge support piers. Site 38UN1858 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. It is recommended not eligible for inclusion in the NRHP under Criterion C. Site 38UN1858 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. Site 38UN1858 is recommended not eligible for the NRHP under Criterion A. Site 38UN1858 is not known to be associated with any significant person; therefore, it is recommended not eligible under Criterion B. The road and bridge piers are unlikely to yield new information, nor answer important research questions about local, state, or national history; therefore, this site does not have significance under Criterion D. Therefore, Site 38UN1858 is not found to have significance under Criteria A through D and is recommended not eligible for listing in the NRHP.

ARCHITECTURAL SURVEY: Investigators conducted the architectural resources survey on February 15, 2023, and recorded one historic-age (50 years of age or older; constructed in 1973 or before) architectural resource (State Historic Preservation Office [SHPO] Survey Site Number 1442; Figures 11 through 16). Data from the Union County Assessor was consulted prior to the architectural resources survey to help identify historic-age architectural resources within the architectural APE. A Statewide Survey of Historic Properties survey form was completed for the newly recorded architectural resource (Attachment 1). This newly recorded resource, 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. No other historic-age architectural resources were present within the architectural APE.

Site Number 1442

The bridge carrying SC 49 over the Tyger River (SCDOT Structure Number 0004440004900100) was built in 1931 and reconstructed (widened and steel through truss replaced) in 1972. The nine-span concrete Tee beam bridge measures 524 feet long, with a maximum span length of 76 feet. The original 1931 structure was widened on its eastern side in 1972 using a cast-in-place concrete deck, and a steel through truss that spanned the river was replaced with two Tee beam spans. The modified structure, which carries two lanes, has a width between the curbs of 42.5 feet. The original 1931 structure was supported by cast-in-place concrete piers with pointed arch openings and decorative scoring (horizontal bands). When the structure was widened in 1972, piers supporting the new portions of the concrete Tee beam spans (on the eastern side of the 1931 structure) consisted of a concrete cap on a concrete pile, with a horizontal concrete beam at ground level. The caps and horizontal beams of the 1972 piers were attached to the eastern face of the 1931 piers to form continuous substructure units.

Though the bridge has components built in 1972, portions of the original 1931 structure were not removed when alterations were made in 1972. 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. The approaches to the river spans (which were bridged by a steel through truss, 1931–1972) are concrete Tee beam spans. 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).

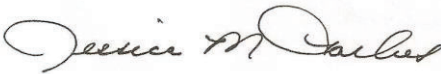
While the bridge is a part of South Carolina’s highway infrastructure, as an individual resource, the SC 49 Bridge over the Tyger River is not found to have made a significant contribution to the history of transportation in Union County or the state of South Carolina; therefore, it is not significant 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 slab 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 1971—though completed with in-kind materials (concrete)—included removal of a steel through truss and altered the original, pre-1955 appearance. As an example of a bridge employing concrete Tee beam spans modified in the 1970s, 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 or answer important research questions about local, state, or national history; therefore, it does not have significance under Criterion D. Therefore, Site Number 1442 is not found to have significance under Criterion A through D and is recommended not eligible for listing in the NRHP.

REMARKS AND RECOMMENDATIONS: HDR identified one archaeological resource (Site 38UN1858) and one historic-age architectural resource (SHPO Survey Site Number 1442) during the survey. Site 38UN1858 and Site Number 1442 are recommended not eligible for listing in the NRHP. No previously recorded historic properties are within the project area. Therefore, the project, as currently planned, will not affect any historic properties. If current proposed plans change, additional survey may be necessary.

SIGNATURE: 

DATE: March 29, 2023

SIGNATURE: 

DATE: March 29, 2023

REFERENCES CITED

- 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 (Parsons Brinckerhoff). 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.

LIST OF FIGURES

- Figure 1. Location of the SC 49 (Cross Keys Highway) over Tyger River Bridge Replacement Project.
- Figure 2. Aerial photograph showing shovel test locations and newly recorded cultural resources.
- Figure 3. View of slope within the northeastern quadrant of the archaeological APE, looking south.
- Figure 4. View from the southwestern quadrant of the archaeological APE, looking north.
- Figure 5. Plan of Site 38UN1858.
- Figure 6. View of the old roadbed at Site 38UN1858, looking north.
- Figure 7. View of the northern stone pier at Site 38UN1858, looking southeast.
- Figure 8. Detail of the northern face of the northern stone pier at Site 38UN1858.
- Figure 9. View of the southern stone pier at Site 38UN1858, looking northeast.
- Figure 10. Portion of the 1937 construction plans.
- Figure 11. Site Number 1442, deck and western elevation, facing south.
- Figure 12. Site Number 1442, western elevation, facing northeast.
- Figure 13. Site Number 1442, eastern elevation, facing southwest.
- Figure 14. Site Number 1442, piers north of Tyger River, facing northeast.
- Figure 15. Site Number 1442, river pier, facing south.
- Figure 16. Site Number 1442, pier and longitudinal beam detail, facing northeast.

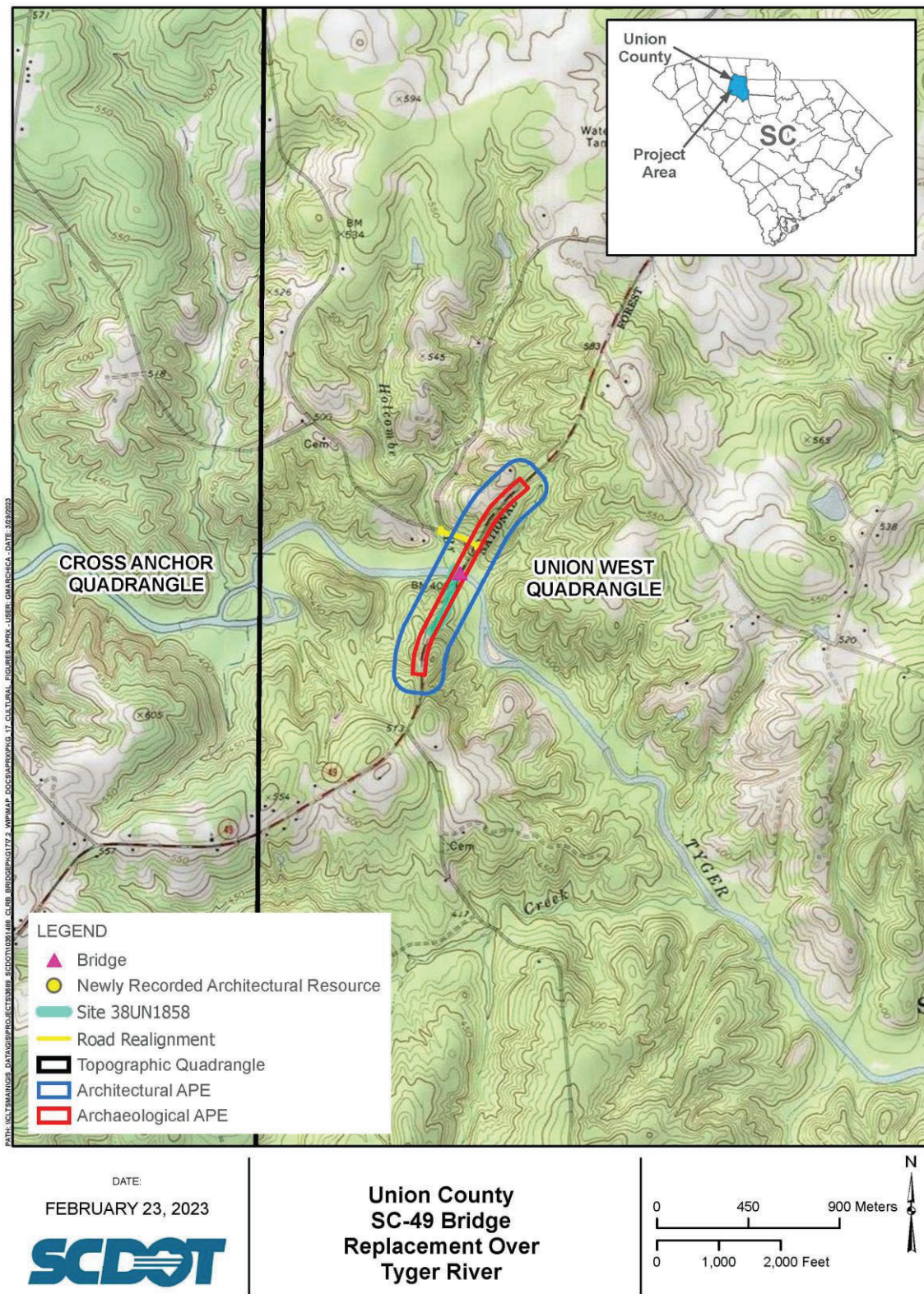


Figure 1. Location of the SC 49 (Cross Keys Highway) over Tiger River Bridge Replacement Project.

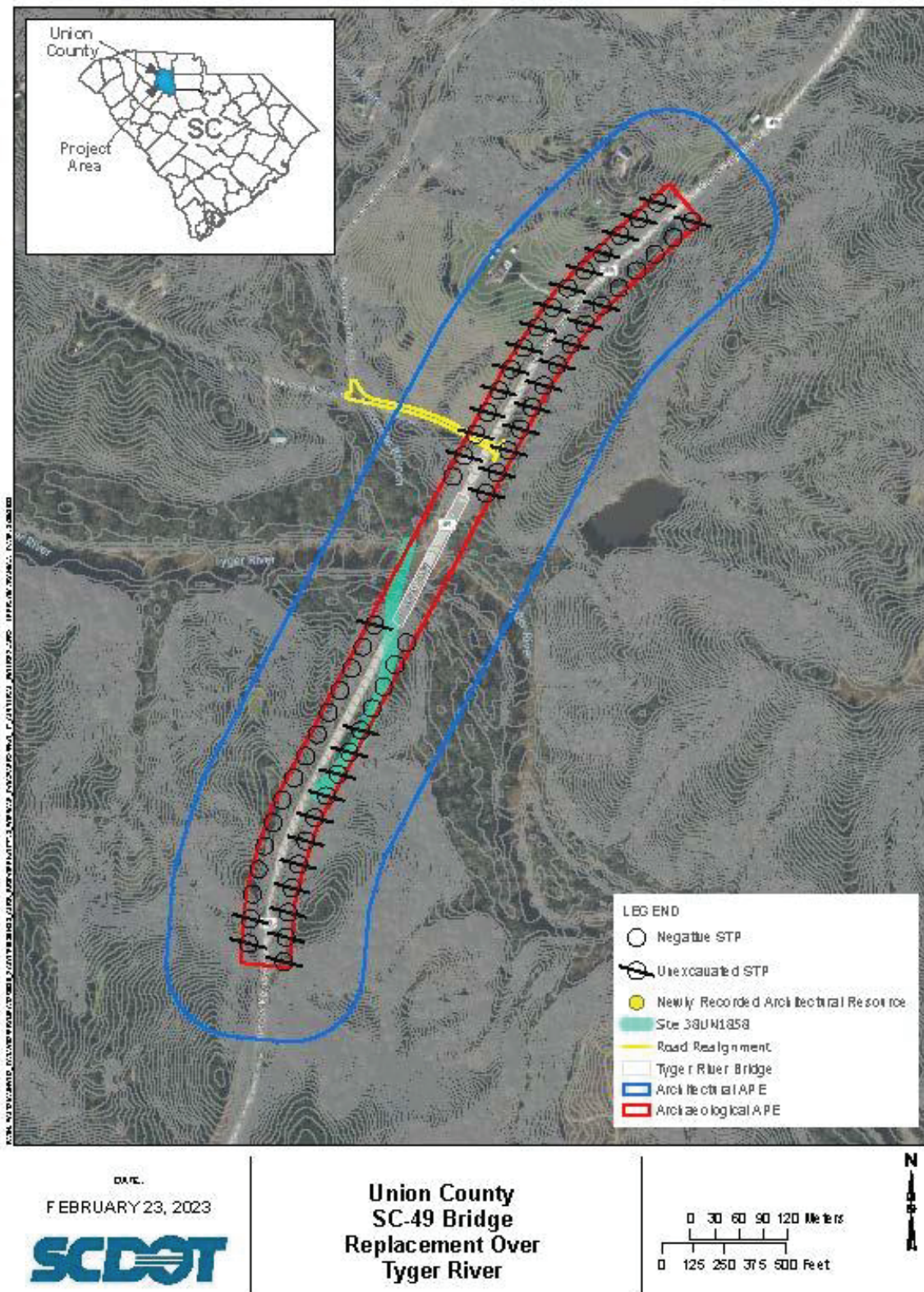


Figure 2. Aerial photograph showing shovel test locations and newly recorded cultural resources.



Figure 3. View of slope in the northeastern quadrant of the archaeological APE, looking south.



Figure 4. View from the southwestern quadrant of the archaeological APE, looking north.

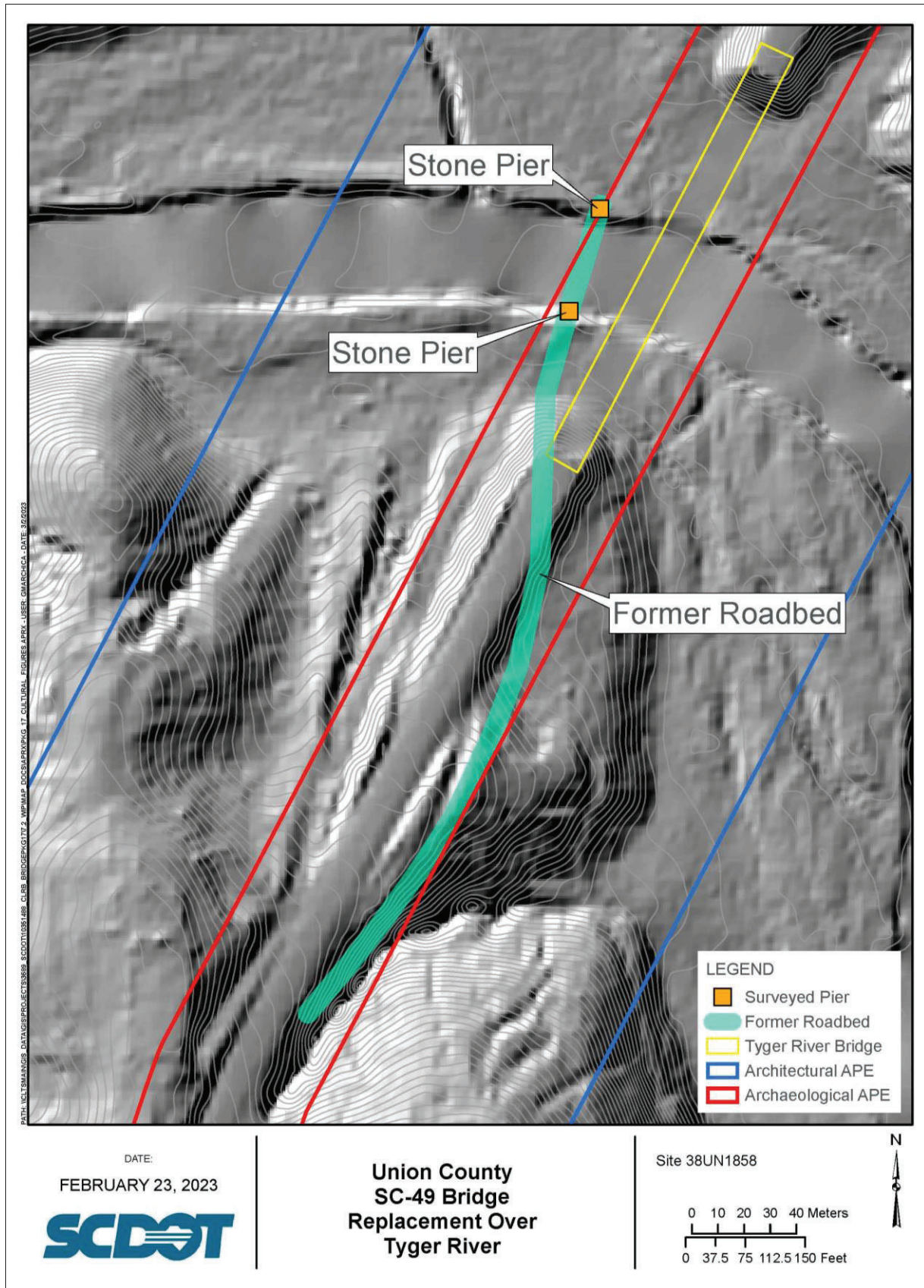


Figure 5. Plan of Site 38UN1858.



Figure 6. View of the old roadbed at Site 38UN1858, looking north.



Figure 7. View of the northern stone pier at Site 38UN1858, looking southeast.



Figure 8. Detail of the northern face of the northern stone pier at Site 38UN1858.



Figure 9. View of the southern stone pier at Site 38UN1858, looking northeast.

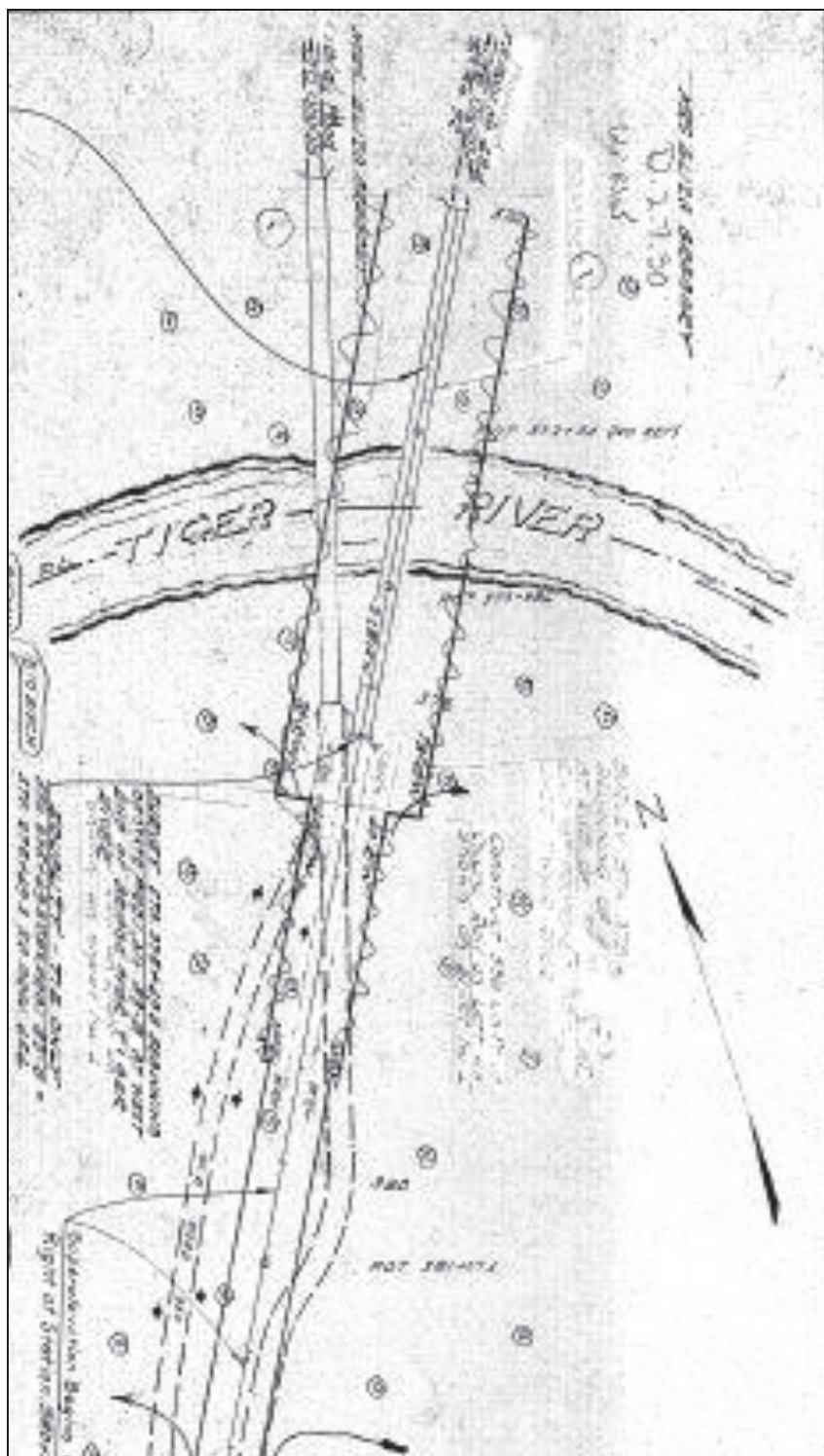


Figure 10. Portion of the 1937 construction plans.



Figure 11. Site Number 1442, deck and western elevation, facing south.



Figure 12. Site Number 1442, western elevation, facing northeast.



Figure 13. Site Number 1442, eastern elevation, facing southwest.



Figure 14. Site Number 1442, piers north of Tyger River, facing northeast.



Figure 15. Site Number 1442, river pier, facing south.



Figure 16. Site Number 1442, pier and longitudinal beam detail, facing northeast.

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. 1442 Status U Revisit
Quadrangle Name: Union West
Tax Map No. N/A

SURVEY FORM

Identification

Historic Name:

Common Name: SC 49 at Tyger River Bridge

Address/Location: SC 49 at Tyger River

City: Cross Keys 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: 1931/1972 Construction: Other Other: Concrete 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 9-span concrete Tee beam bridge is 524 feet long, with a maximum span length of 17 feet. The original 1929 structure was widened in 1972 on its eastern side using CIP Tee beam spans, and a steel through truss that spanned the river was replaced with Tee beam spans. The modified structure, which carries two lanes, has a width between the curbs of 42.5 feet. Concrete piers built in 1931 have pointed arch openings and decorative scoring (horizontal bands). Piers built in 1972 consist of a concrete cap on concrete piles, with a horizontal beam at ground level. The cap and horizontal beam are attached to the eastern face of the 1931 piers to form continuous substructure units.

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

Bridge widened and steel through truss replaced with concrete Tee beam spans in 1972.

Architect(s)/Builder(s):

South Carolina State Highway Department

Historical Information

Historical Information:

The original portions of the concrete Tee beam bridge that are still extant were built in 1931; the structure was widened in 1972. At the time the bridge was widened, the original steel through truss river span was replaced with two concrete Tee beam spans. 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 Tyger River Bridge Replacement Project"

Digital Photo ID(s)

File Name:	View:	Other:
01442001	Facing Northeast	
01442002	Facing Southwest	
01442003	Facing South	
01442004	Facing Northeast	
01442005	Facing South	
01442006	Facing South	
01442007	Facing Southeast	
01442008	Facing South	
01442009	Facing North	
01442010	Facing North	

Program Management

Recorded by:
Jessica Forbes

Organization:
HDR

Date Recorded:
02/15/2023

Appendix B: Natural Resources Tech Memo



Memo

Date: April 6, 2023

Project: SC-49 Bridge Replacement over Tyger River
SCDOT PIN # P041237

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 Tyger River and Meadow Woods Road (S-44-33) realignment (Project) in Union County, South Carolina, on February 2, 2023. The purpose of the 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 will remain open to traffic during construction. The existing Meadow Woods Rd will need to be relocated due to the close proximity to the proposed bridge and necessary sight distance requirements. In addition, due to the significant grade change of the road, a new alignment will be necessary to maintain existing traffic along the roadway 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 17 acres and primarily consists of undeveloped forested lands and residential land use with existing road right-of-way (ROW). The Meadow Woods Rd realignment extends approximately 600 feet from the western edge of SC-49 (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 100 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

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://schtpportal.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 three 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 Tyger River	34.66590 -81.739291	non-section 10 - non-wetland	R3UB2	Length: 206 lf Average Width: 150 ft
Stream 2	34.663404 -81.740656	non-section 10 - non-wetland	R4SB4	Length: 230 lf Average Width: 3 ft
Stream 3	34.667343 -81.737878	non-section 10 - non-wetland	R6	Length: 296 lf Average Width: 3 ft
Total Streams:				Length: 732 lf
Wetlands				
Wetland 1	34.665292 -81.739268	non-section 10 - wetland	PFO	Area: 0.01 ac.
Wetland 2	34.666337 -81.739395	non-section 10 - wetland	PFO	Area: 0.04 ac
Total Wetlands:				Area: 0.05 ac.

¹ R3UB2: Riverine, upper perennial, unconsolidated bottom, with sand
R4SB4: Riverine, intermittent, streambed, with sand bottom
R6: Ephemeral channel
PFO: Palustrine, forested

Based on the preliminary bridge design, impacts to jurisdictional waters may occur during construction and an individual permit may be required. 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

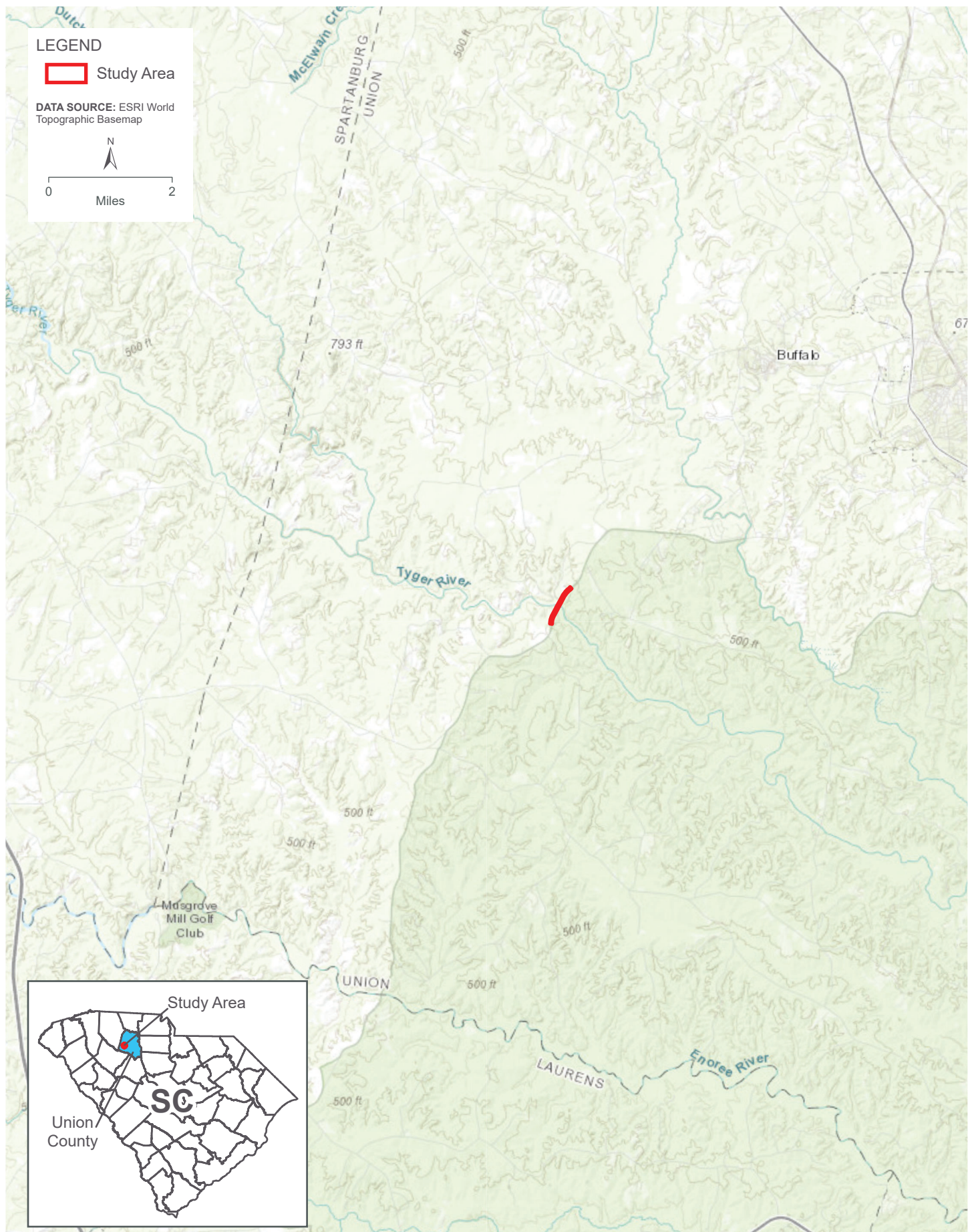
- Cowardin, L.M., Carter, V., Golet, F.C., and LaRoe, E.T. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, D.C.
- Federal Emergency Management Agency (FEMA). 2021. Special Flood Hazard Area Definition/Description. [Online] URL: <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

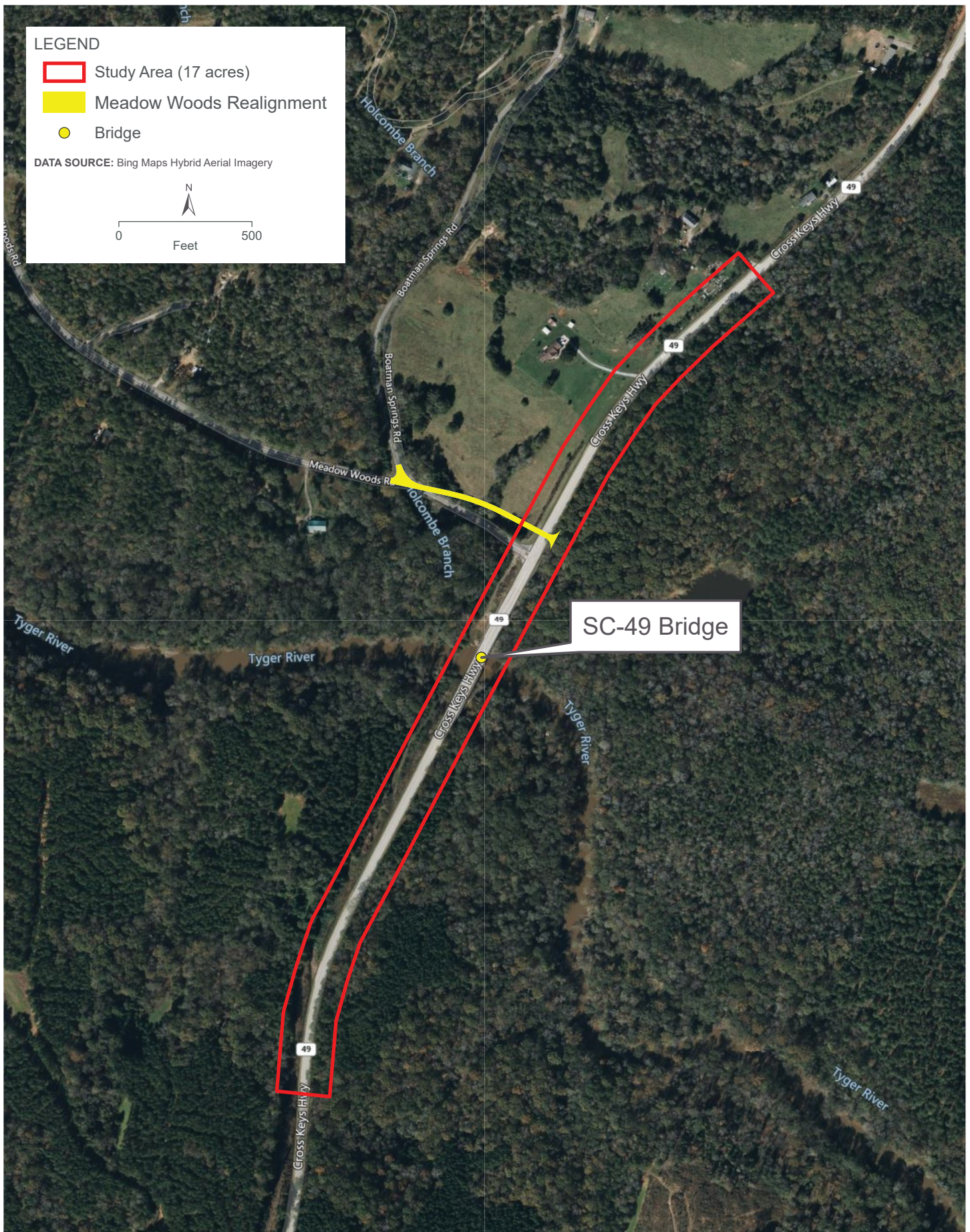


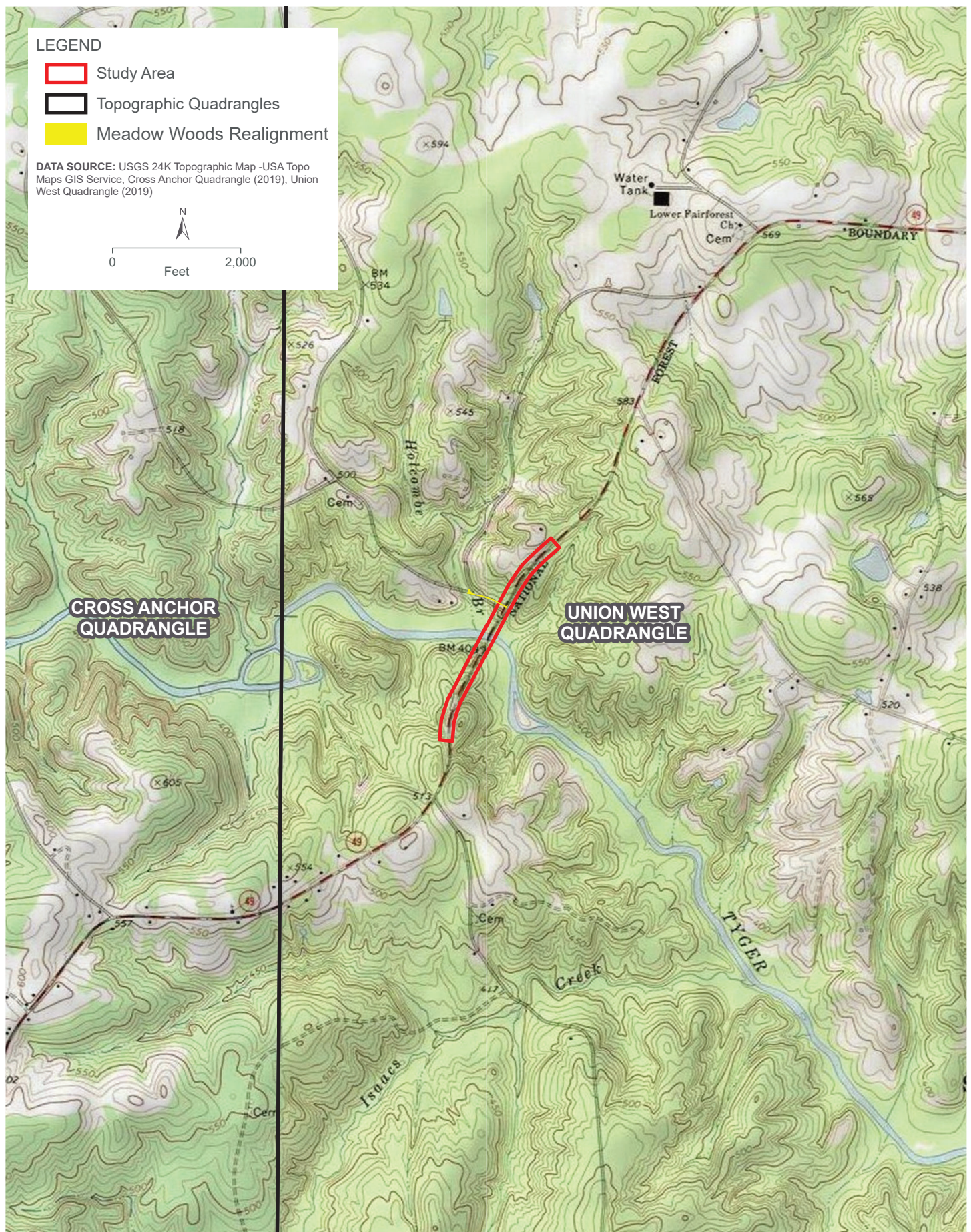


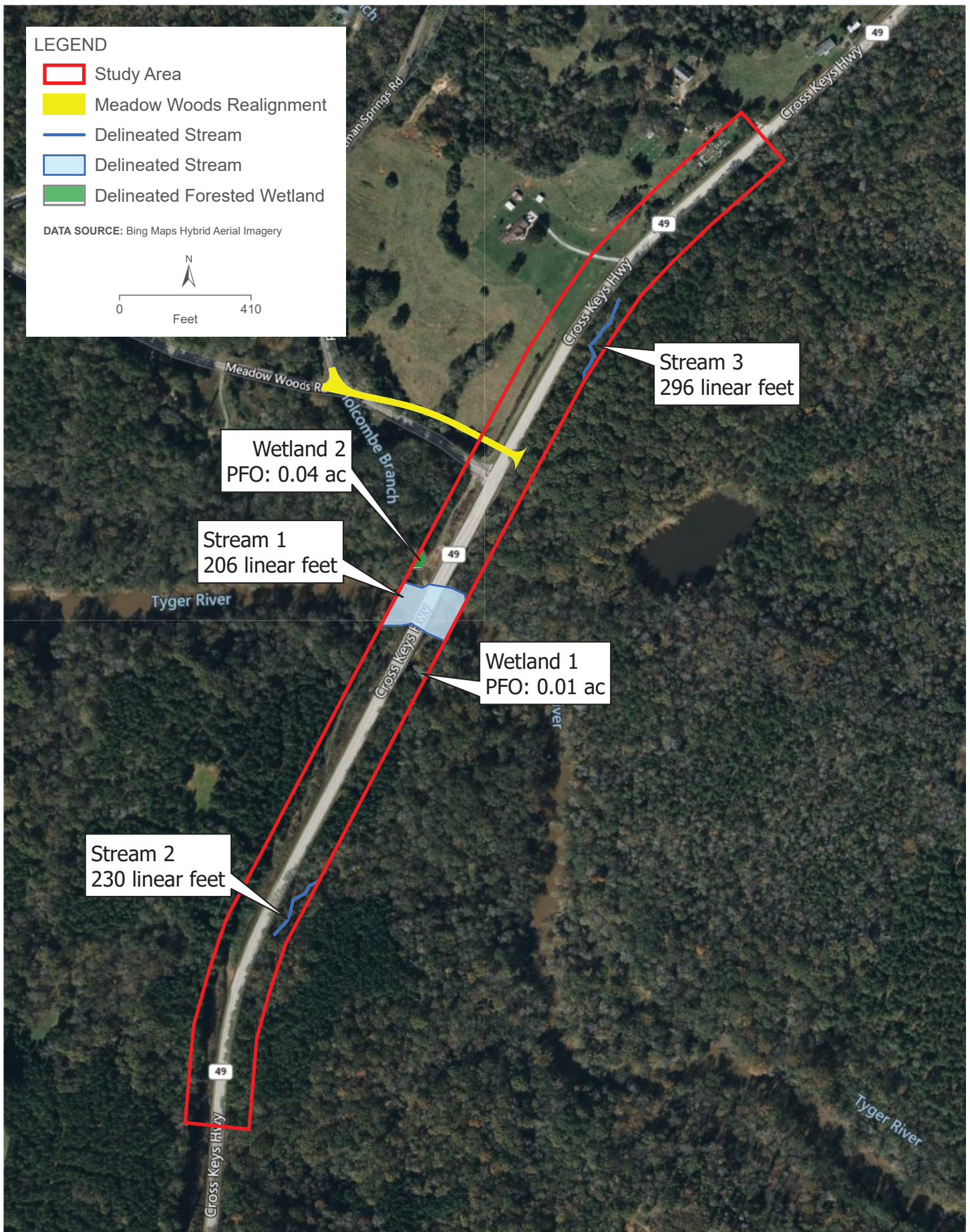
SC-49 BRIDGE REPLACEMENT OVER TYGER RIVER

PROJECT VICINITY

Figure 1









2

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


Date: 4/06/2023

PERMIT DETERMINATION

FROM Michael Inman COMPANY HDR Engineering, Inc.

CONTACT INFO (phone and/or email) michael.inman@hdrinc.com

SCDOT PROJECT ENGINEER Michael Pitts

TO Will McGoldrick - Design Build Coordinator 

Project Description Replacing SC-49 (Cross Keys Highway) Bridge over the Tyger River
in Union County, SC

Route or Road No. SC-49 County Union

CONST. PIN P041237 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: FW  *Print and attach the SCDHEC water quality report*

303(d) listed ☒ no ☐ yes, for *

TMDL developed ☐ no ☒ yes, for * Fecal Coliform

*List all that apply using the SCDHEC abbreviations

Comments: SC-49 is a bridge replacement project. Impacts to jurisdictional features
are anticipated, and the project is expected to require an individual permit.

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.

Inman, Michael Digitally signed by Inman, Michael
Date: 2023.04.06 17:15:42 -04'00'

Biologist, SCDOT/Consultant

4/6/2023

Date



Watershed and Water Quality Information

General Information

Applicant Name: SCDOT

Permit Type: Construction

Address: 215 MEADOW WOODS RD,
CROSS KEYS, SC, 29379

Latitude/Longitude: 34.665921 / -81.739273

MS4 Designation: Not in designated area

Monitoring Station: B-810

Within Coastal Critical Area: No

Water Classification (Provisional): FW

Waterbody Name: TYGER RIVER

Entered Waterbody Name:

Parameter Description

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

Impaired Status (downstream sites)

Station	NH3N	CD	CR	CU	HG	NI	PB	ZN	DO	PH	TURBIDITY	ECOLI	FC	BIO	TP	TN	CHLA	ENTERO	HGF	PCB
B-810	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	F	X

F = Standards full supported
N = Standards not supported

A = Assessed at upstream station
X = Parameter not assessed at station

WnTN = Within TMDL, parameter not supported
InTN = In TMDL, parameter not supported

WnTF = Within TMDL, parameter full supported
InTF = In TMDL, parameter full supported

Parameters to be addressed (those not supporting standards)

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes

TMDL Site: B-051

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 Tyger River
Union County, SC
SCDOT PIN # P041237
April 6, 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 Tyger River in Union County, South Carolina. Land use in the vicinity of the Study Area includes 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 east.

The Tyger River is classified as a perennial, unconsolidated bottom, riverine system. The river 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 destabilized 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'.

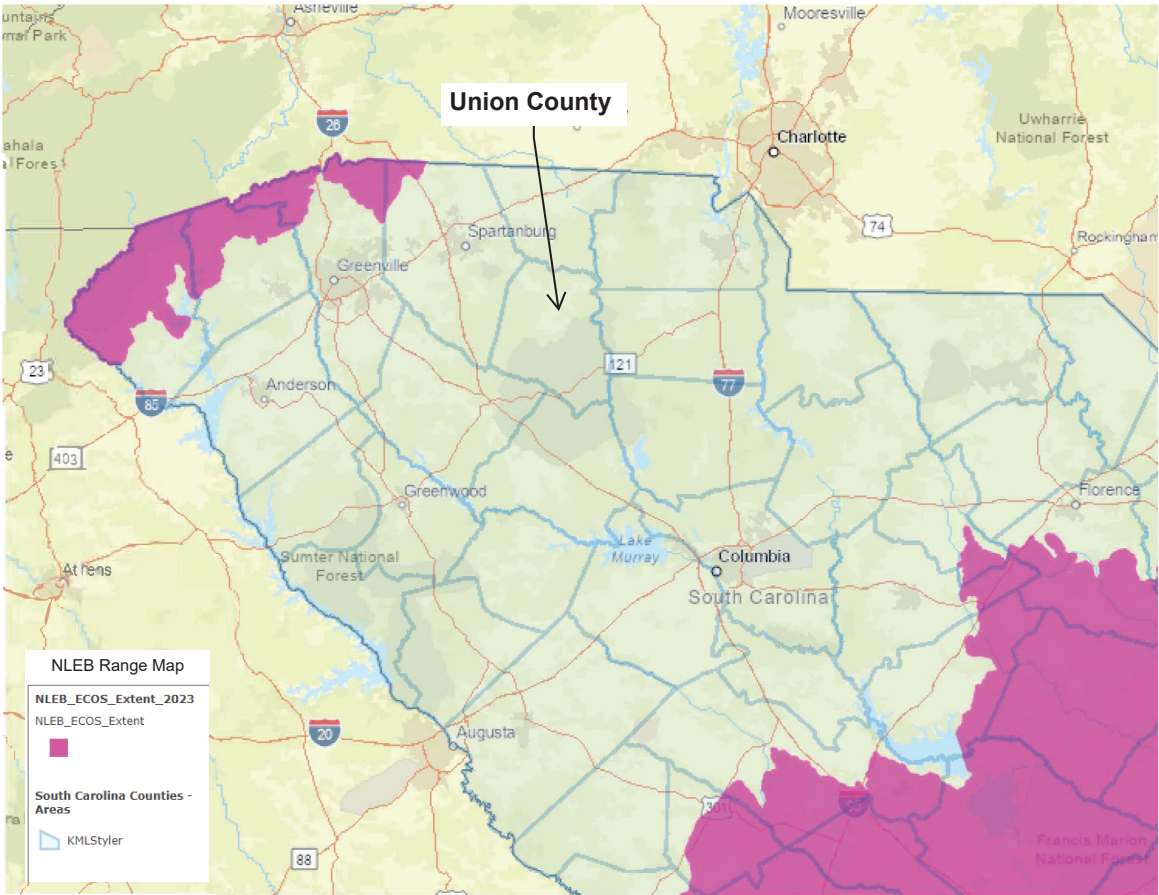
Michael Inman
HDR Environmental Scientist
4/6/2023



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.

Appendix C: Bridge Replacement Scoping Risk Assessment Form

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Union

DATE: 02/13/2022

ROAD #: SC-49

STREAM CROSSING: Tyger River

Purpose & Need for the Project:

SCDOT proposes to replace the SC-49 (Cross Keys Hwy) Bridge over Tyger River in Union County. The purpose of this project is to correct the load restriction placed on it as well as restore bridge components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition.

I. FEMA Acknowledgement

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

Panel Number: 45087C0200D Effective Date: 08/02/2011 (See Attached)

II. FEMA Floodmap Investigation

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

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

III. No Rise/CLOMR Preliminary Determination

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

Justification: The SC-49 bridge over Tyger River is located within a FEMA Special Flood Hazard Area Zone A. Bridge will be replaced with similar or slightly larger structure and maintain low chord.

- ☐ 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. 44.374 Sheet No. 7 (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: SCDOT Plans HW~398 (estimated)
☐ No

c. Existing Plans ☒ Yes See Above
☐ No

V. Field Review

A. Existing Bridge

Length: 524 ft. Width: 45 ft. Max. span Length: 76 ft.

Alignment: ☒ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☒ No Angle: _____

End Abutment Type: Spill-through

Riprap on End Fills: ☒ Yes ☐ No Condition: Poor Condition

Superstructure Type: Prestressed concrete T beams

Substructure Type: Square & Tapered-Round interior bents

Utilities Present: ☒ Yes ☐ No

Describe: Insulated waterline attached to underside of bridge.

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

Hydraulic Problems: ☒ Yes ☐ No

Describe: Some debris accumulation on center pier in river, but minimal affect to the hydraulics.

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: ☒ Yes ☐ No Location: Pier scour in right overbank

b. Distance from F.G. to Normal Water Elevation: ~32.5 ft.

c. Distance from Low Steel to Normal Water Elev.: ~27 ft.

d. Distance from F.G. to High Water Elevation: ~15 ft.

e. Distance from Low Steel to High Water Elev.: ~9.5 ft.

f. Channel Banks Stable: ☒ Yes ☐ No

Describe: Generally stable outside of bridge with vegetated banks.

g. Soil Type: silty sand

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.

One residence is located approximately 750 feet upstream in the left overbank. Based on the terrain the structure appears to be above the floodplain elevation. No other structures are present in the vicinity of the bridge.

C. Existing Roadway Geometry

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

☐ Yes ☒ No

Describe:

Adjacent roadways may not be used for detour allowing closure of the roadway for bridge construction without significant improvements to accommodate traffic.

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.)

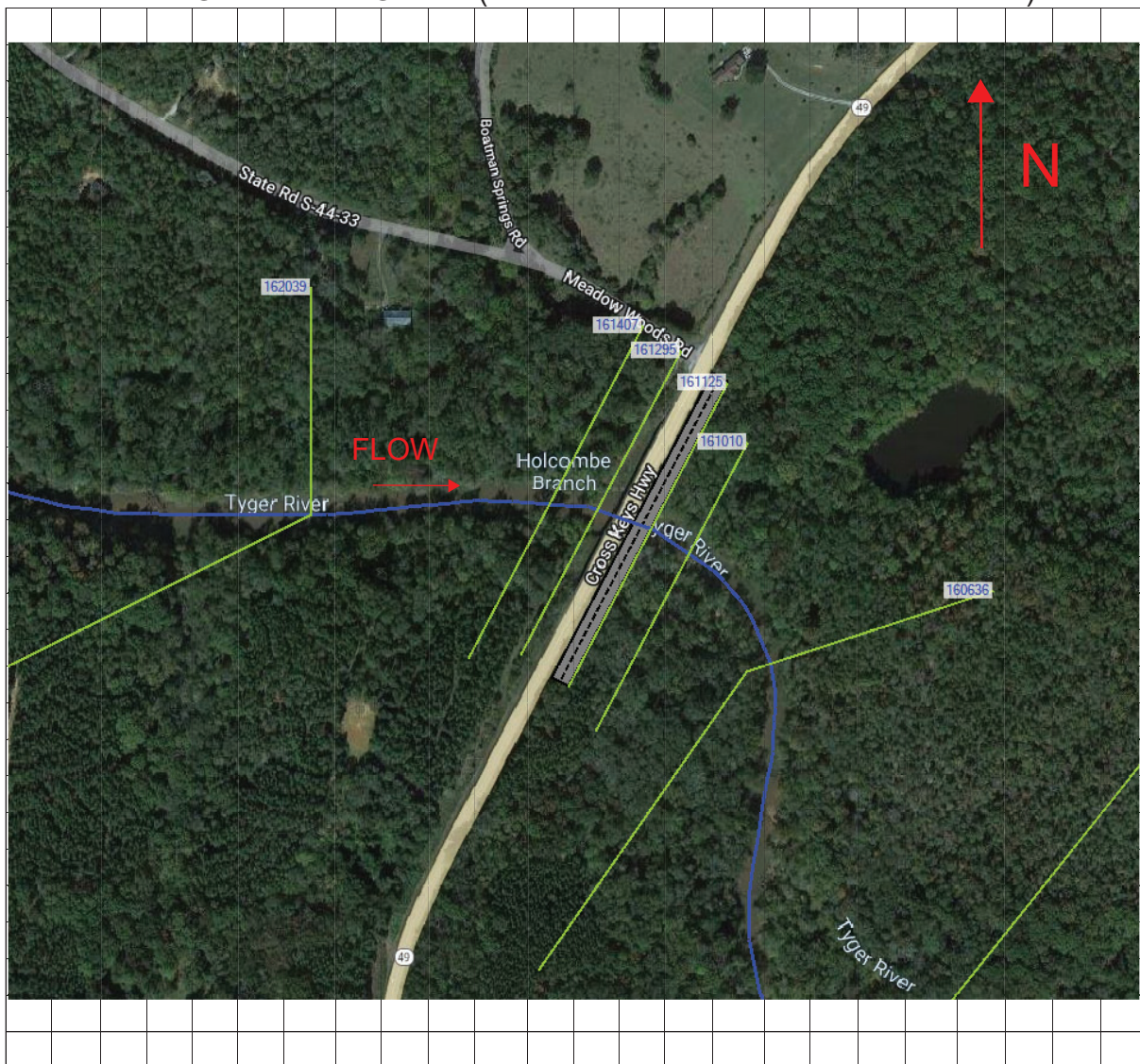
A. Proposed Bridge Recommendation:

Length: 564 ft. Width: 45 ft. Elevation: 825.47 ft.

Span Arrangement: 106'-106'-140'-106'-106'

Notes: The proposed bridge is aligned approximately 52' downstream of the existing bridge. One pier will be located within the channel based on the span limitations of concrete beams.

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



Performed By: Thomas Miller

Title: Hydraulic Engineer

Appendix 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 the Tyger River 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 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 Tyger River which is shown on the Flood Insurance Rate Map (FIRM) Panel 45087C0200D. Tyger River 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 existing profile will be raised to satisfy the roadway design criteria.

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

Multiple alternatives including staged construction and full realignment were studied. Staged construction is not feasible due to the change in roadway profile. Full realignment results in minor longitudinal encroachments.

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

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

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?

A similar bridge size with larger spans was used.

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.

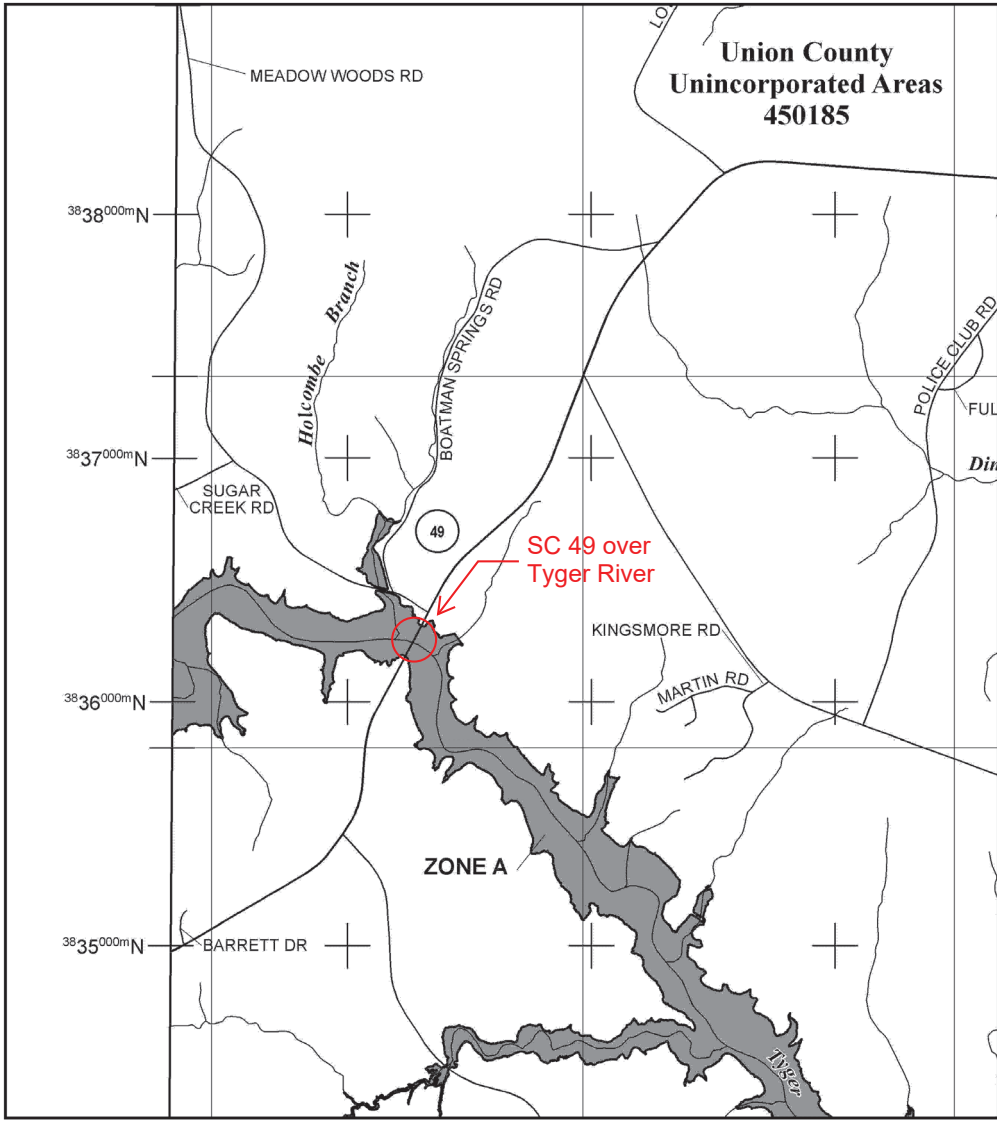
As the project progresses to final construction plans, the hydraulic modeling will be updated based on the final bridge layout.

____ Thomas Miller _____

SCDOT Hydraulic Engineer

____ 3-3-2023 _____

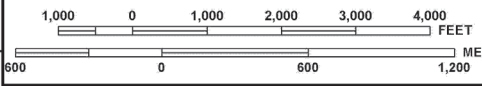
Date



**Union County
Unincorporated Areas
450185**



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>.

Appendix E: NRCS Farmland Conversion Impact Rating Form

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request	4. Sheet 1 of
1. Name of Project SC 49 bridge replacement over Tyger River		5. Federal Agency Involved FHWA	
2. Type of Project bridge replacement		6. County and State Union County, SC	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS	2. Person Completing Form Jennifer Pearson
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form).		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	4. Acres Irrigated Average Farm Size 0 0
5. Major Crop(s) none	6. Farmable Land in Government Jurisdiction Acres: 0 %		7. Amount of Farmland As Defined in FPPA Acres: 0 %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System		10. Date Land Evaluation Returned by NRCS

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	0	0	0	0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)				
--	--	--	--	--

PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	15			
2. Perimeter in Nonurban Use	10	10			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availability Of Farm Support Services	5	5			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25				
10. Compatibility With Existing Agricultural Use	10	10			
TOTAL CORRIDOR ASSESSMENT POINTS	160	40	0	0	0

PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)	100	100		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	140	0	0
TOTAL POINTS (Total of above 2 lines)	260	140	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project: 0	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
-----------------------	---	-----------------------	--

5. Reason For Selection:

Signature of Person Completing this Part: Jennifer Pearson	DATE 2/20/23
--	------------------------

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

- (1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

- (2) How much of the perimeter of the site borders on land in nonurban use?

More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

- (3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

- (4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected - 20 points
Site is not protected - 0 points

- (5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ?

(Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with \$1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

- (6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

- (7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

- (8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

- (9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

- (10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?

Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points


Soil Map—Union County, South Carolina



Soil Map—Union County, South Carolina

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot


 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, South Carolina

Survey Area Data: Version 20, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 2, 2020—Nov 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Cartecay-Toccoa complex	30.1	27.9%
EnC	Enon sandy loam, 6 to 10 percent slopes	8.2	7.6%
EnE	Enon sandy loam, 15 to 25 percent slopes	3.2	2.9%
MeD2	Madison sandy clay loam, 10 to 15 percent slopes, eroded	7.1	6.5%
MhF	Madison and Pacolet soils, 15 to 40 percent slopes	31.2	28.9%
W	Water	5.1	4.7%
WIF	Wilkes soils, 15 to 40 percent slopes	23.2	21.5%
Totals for Area of Interest		108.0	100.0%

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

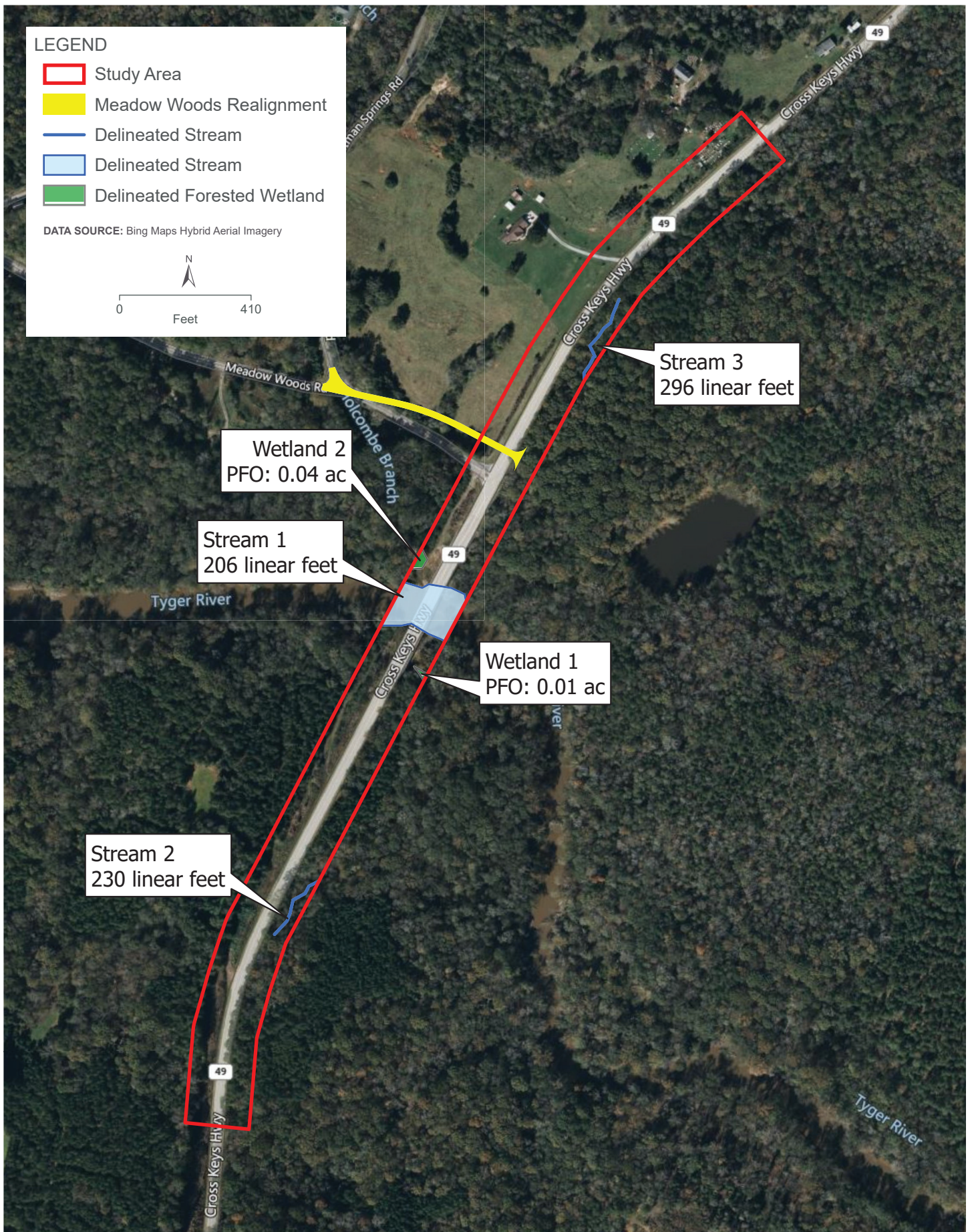
Prime and other Important Farmlands—Union County, South Carolina		
Map Symbol	Map Unit Name	Farmland Classification
Ca	Cartecay-Toccoa complex	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
EnC	Enon sandy loam, 6 to 10 percent slopes	Not prime farmland
EnE	Enon sandy loam, 15 to 25 percent slopes	Not prime farmland
MeD2	Madison sandy clay loam, 10 to 15 percent slopes, eroded	Not prime farmland
MhF	Madison and Pacolet soils, 15 to 40 percent slopes	Not prime farmland
W	Water	Not prime farmland
WIF	Wilkes soils, 15 to 40 percent slopes	Not prime farmland

Data Source Information

Soil Survey Area: Union County, South Carolina

Survey Area Data: Version 20, Sep 1, 2022

Appendix F: Delineated Waters of the US



Appendix G: USCG Permit Exclusion Checklist

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 20, 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 15, 2023, regarding a U.S. Coast Guard bridge permit determination for the replacement of the SC 49 Bridge across the Tyger River, 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:

Tyger River

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:

28 miles

4. Waterway is a tributary of Broad River at mile 43 (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° 39' 57.6" N** (N) (Example: 40° 48' 3.49" N)

b. Longitude: **-81° 44' 21.4" 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: **160** (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

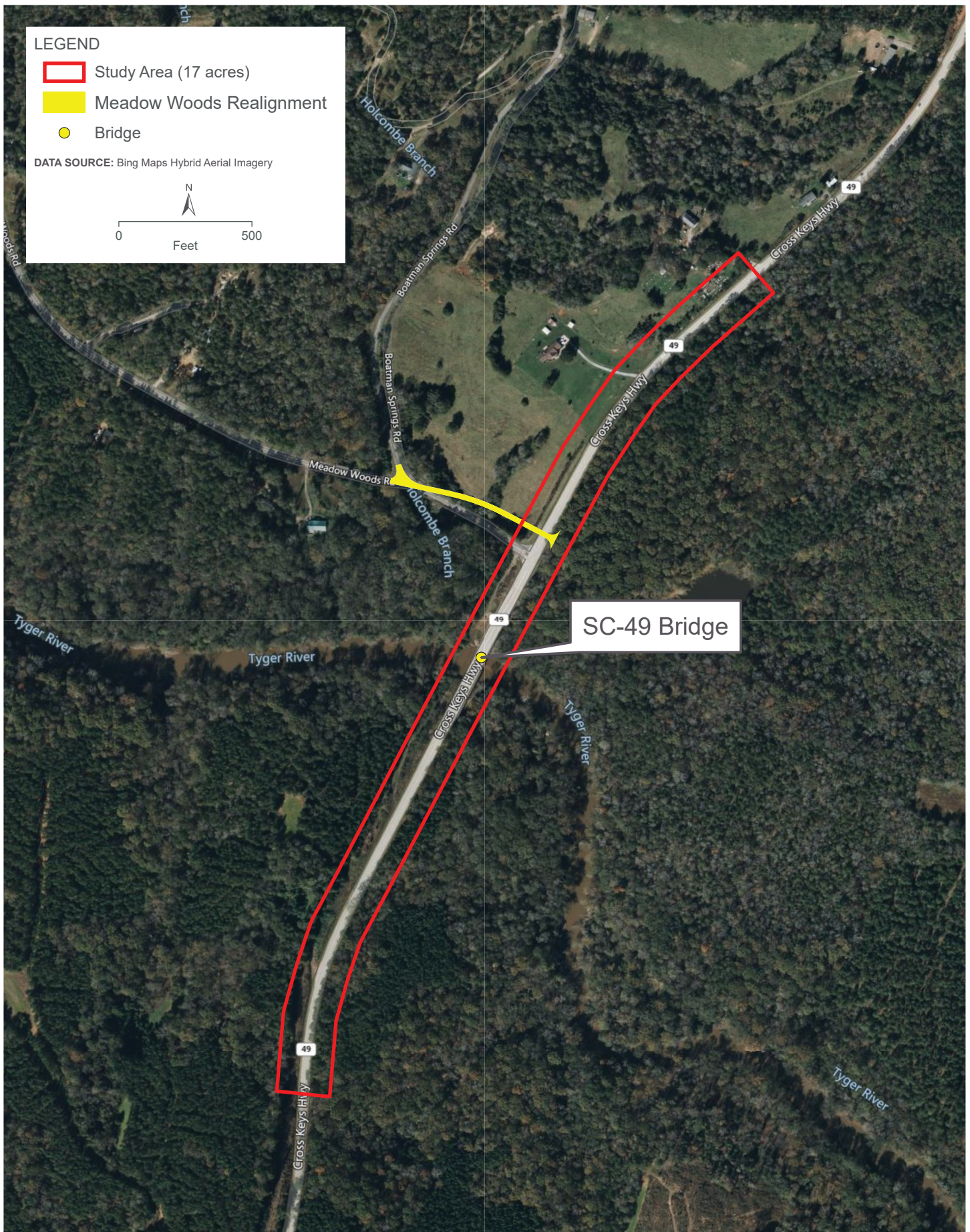
Additional Documentation

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.





Photograph 1 – Stream 1 (Tyger River), SC-49 Bridge
Facing West, Upstream



Photograph 2 – Stream 1 (Tyger River), SC-49 Bridge
Facing Northeast

Appendix H: Public Involvement Materials

[Sign In](#)



SCDOT Official Website



Bridge Replacement and Rehab Projects

Closed and Load Restricted Bridge Package 17

Union County

To learn more about each bridge, or to zoom in, click on the orange dot.

+

-



Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

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Project Description

The South Carolina Department of Transportation (SCDOT) proposes to replace six bridges in Union County. The projects include replacing the existing bridge structures and constructing the roadway to meet current design and safety standards. The existing facilities are comprised of two lane roadways with 12-foot travel lanes and paved shoulders.

The six bridges are:

1. **US 176 (Whitmire Highway) over Padgetts Creek**
2. **SC 72 (Carlisle Chester Highway) over Coxs Creek**
3. **SC 215 (Buffalo-West Springs Highway) over Fair Forest Creek**
4. **SC 49 (Cross Keys Highway) over Tyger Creek**
5. **SC 49 (Cross Keys Highway) over Fair Forest Creek**
6. **SC 114 (Bobby Faucette Road) over Sandy Run Creek**

Purpose and Need

The purpose of these projects is to replace the bridges to correct the load restriction placed on them as well as restore all bridge components to good condition. The existing bridges are posted for load restrictions and have one or more components in poor condition. The proposed repairs involve replacing the current bridges with a new bridge on existing or shifted alignments. All of the bridges are open to traffic and would continue to be open using staged construction.

[Sign In](#)



SCDOT Official Website

Project Materials

Public Engagement Materials

(Click on the links below to download)

- [Public Engagement Comment form](#)

Projects Schedule

Right of Way Acquisition - Late 2023

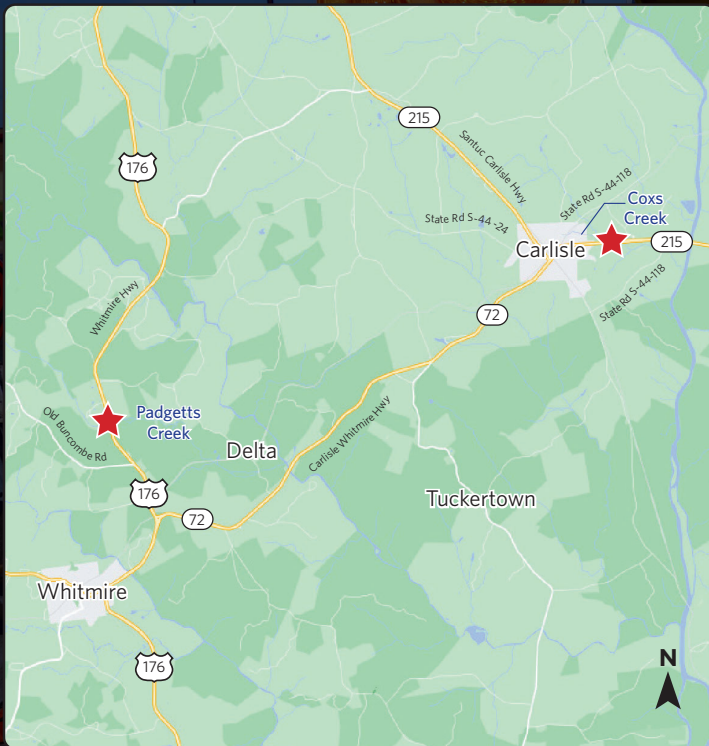
Construction - Spring 2024

Construction Duration ~ 3 years



PUBLIC ANNOUNCEMENT

Package 17 Closed and Load Restricted Bridge Replacements in Union County



The South Carolina Department of Transportation (SCDOT) proposes to replace the Package 17 bridges, including the SC 72 bridge over Cocks Creek and the US 176 bridge over Padgett's Creek in Union County. The existing bridges are load restricted and in poor condition. The proposed projects would replace the bridges to restore them to good condition and meet current design and safety standards.

SCDOT invites you to review the proposed projects and provide your comments. Please visit the project website below for more information.

www.scdotgis.online/CLRBPackage17_Union

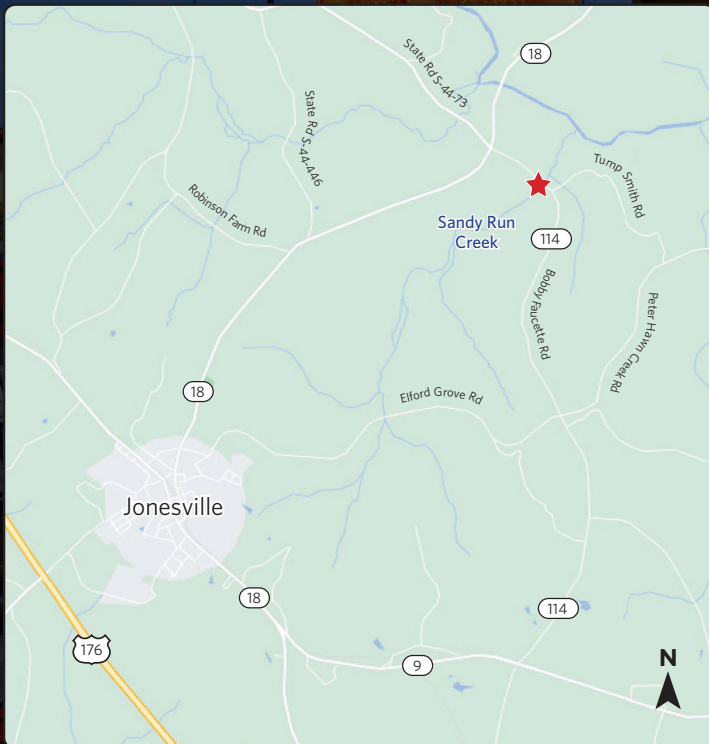
SCDOT will accept official public comments through 03/07/23.

Questions or concerns, please contact the SCDOT Project Manager: Michael Pitts at (803) 737-2566 or PittsME@scdot.org.



PUBLIC ANNOUNCEMENT

Package 17 Closed and Load Restricted Bridge Replacements in Union County



The South Carolina Department of Transportation (SCDOT) proposes to replace the Package 17 bridges, including the SC 114 bridge over Sandy Run Creek in Union County. The existing bridge is load restricted and in poor condition. The proposed project would replace the bridge to restore it to good condition and meet current design and safety standards.

SCDOT invites you to review the proposed project and provide your comments. Please visit the project website below for more information.

www.scdotgis.online/CLRBPackage17_Union

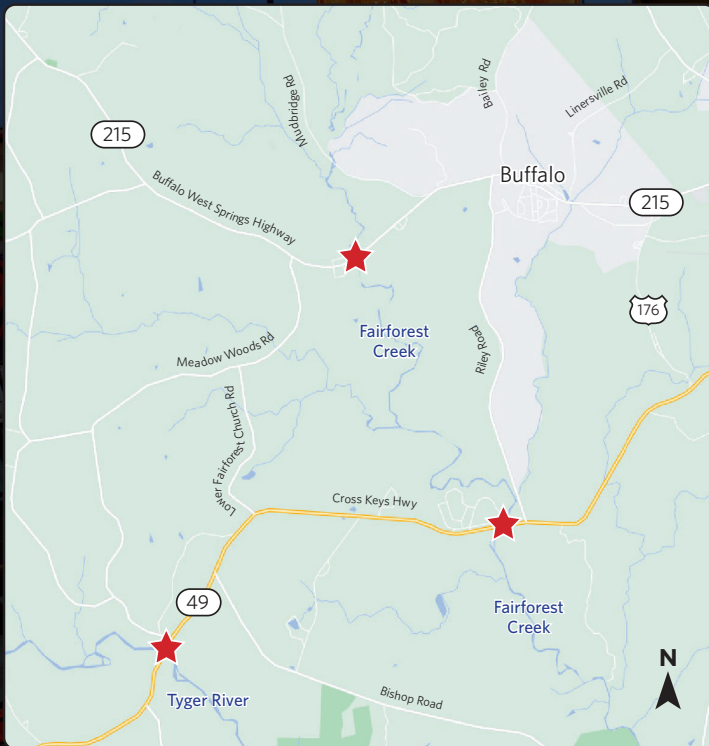
SCDOT will accept official public comments through 03/07/23.

Questions or concerns, please contact the SCDOT Project Manager: Michael Pitts at (803) 737-2566 or PittsME@scdot.org.



PUBLIC ANNOUNCEMENT

Package 17 Closed and Load Restricted Bridge Replacements in Union County



The South Carolina Department of Transportation (SCDOT) proposes to replace the Package 17 bridges, including the SC 215 bridge over Fairforest Creek, SC 49 bridge over Fairforest Creek, and SC 49 bridge over Tyger River in Union County. The existing bridges are load restricted and in poor condition. The proposed projects would replace the bridges to restore them to good condition and meet current design and safety standards.

SCDOT invites you to review the proposed projects and provide your comments. Please visit the project website below for more information.

www.scdotgis.online/CLRBPackage17_Union

SCDOT will accept official public comments through 03/07/23.

Questions or concerns, please contact the SCDOT Project Manager: Michael Pitts at (803) 737-2566 or PittsME@scdot.org.



**ENVIRONMENTAL SERVICES
OFFICE PO BOX 191
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To speak with an interpreter, please contact
SCDOT at (855) 467-2368
or (803) 737-1200.

Para hablar con un intérprete, comuníquese
con SCDOT al (855) 467-2368 número
gratuito ó (803) 737-1200.

*****ECRWSEDDM*****

Postal Customer

Comment ID	Date	Full Name	Email	Street Address	City	Zipcode	Do you wish to receive a response to this comment?	How would you like a response?	Comment	Response
1	2/7/2023 12:46	Tommy Grady	tgrady@ed.sc.gov	3915 Cross Keys Hwy	UNION	29379	Yes	By Email	Will the bridges on Hwy 49, over the Tyger River, and Fairforest Creek be used while a new bridge is built beside the existing one's.	Yes. The Hwy 49 over Tyger River and Fairforest Creek bridges will be constructed using staged construction with traffic utilizing the existing bridge until the new bridge is built.
2	2/8/2023 0:56	Jackson Hurst	ghostlightmater@yahoo.com	4216 Cornell Crossing	Kennesaw, GA	30144	Yes	By Email	I approve and support SCDOT's Closed and Load Restricted Bridge Package 17 Project. The aspect that I love about SCDOT's Closed and Load Restricted Bridge Package 17 Project is that the following bridges: US 176 (Whitmire Highway) over Padgett's Creek, SC 72 (Carlisle Chester Highway) over Cox Creek, SC 215 (Buffalo-West Springs Highway) over Fair Forest Creek, SC 49 (Cross Keys Highway) over Tyger Creek, SC 49 (Cross Keys Highway) over Fair Forest Creek, and SC 114 (Bobby Faucette Road) over Sandy Run Creek will be replaced with new bridges that are safer and up to current design standards.	Thank you for your comments.
3	2/8/2023 1:44	Jackie Johnson	jackiejohnson101861@gmail.com	687 GALILEE CHURCH RD	UNION	29379	Yes	By phone	W	Michael Pitts spoke to Ms. Johnson by phone on 2/24/23. He addressed her concerns, and she mentioned she was happy to hear the six Union County bridges being replaced.
4	2/8/2023 14:14	Tabetha James	April.james7@gmail.com	311 Spencer Rd	Jonesville	29353	No		The fact that we could possibly be saying "I wish we would have addressed the issue before someone had to die" makes the projects a no-brainer. Preservation of life should always take precedence.	Thank you for your comments.
5	2/8/2023 21:08	Philip D. Poole II	knightme38@yahoo.com	112 Fairforest Heights	Buffalo	29321	Yes	By Email	I own the property at the bridge on the left side if you where traveling towards Buffalo.I want to know if my land would be affected.I see flags on it way off the road?Would like to know what side of the bridge is the new one going to be?	Mr. Pitts discussed over the phone with Mr. Poole that the current conceptual design is shifting away from his property with no current right-of-way impacts. Conceptual designs are subject to change if a design-build contractor proposes a different design through the Alternative Technical Concept (ATC) process.

6	2/9/2023 14:16	Patricia McGinnis	Pjmcginnis76@gmail.com	2363 Buffalo west springs highway	Buffalo	29321	Yes	By_Email	Repairing these bridges would be fine but what you're going to do is just shut them all down and leave them close for long periods of time and when you do that you're going to basically be stranding union we can't get to I 26 now we won't be able to get to Lauren's or Greenville . We will either have to go through Chester or Spartanburg. You're going to be stranding an entire community of thousands of people know if you can shut down a bridge, fixed it and then moved on to another bridge that would be great but that's not what you do you just shut down the bridge and come back a couple years later if ever	The proposed bridge replacements will be constructed using staged construction with traffic utilizing the existing bridge until the new bridge is built. The bridges will not be closed during construction but will remain open to traffic until the new bridges are built with the exception of SC 114 which is being proposed with closing and detouring traffic to expedite construction.
7	2/14/2023 4:17	James Knight	Cliffknight69@gmail.com	801 Meadow Woods Road	Buffalo	29322	Yes	By_Email	I truly think this project is great and much needed, but as our bridges are in desperate need of repair so are the miles of roads around union . It just seems that regardless of what we as a community do (call,fill out form online) the roads are put on the back burner. I mean to put it in perspective my road has sub-base failure and also has a section of road that in the spring the grass needs to be cut coming out of the road in a 100' section. Again it's great the bridges are being repaired but that is a small section of roadway compared to the amount of roads in need of obvious repairs. Any clarity on this matter would be greatly appreciated.I have had to replace 2 rims due to the road conditions which are out of our control and can't get reimbursed due to the process of being denied because, o we didn't know about it so we can't be responsible.	Thank you for your comment. SCDOT is actively repairing the roadways as well. Please use SCDOT's Project Viewer to keep up to date on what roads are being repaired around you. https://www.scdot.org/business/projectviewer.aspx . For information regarding vehicular damage caused by our roadways, please use the website: https://www.scdot.org/travel/Travel-DamageClaims.aspx
8	2/21/2023 2:29	Don Sawyer	angusman914@gmail.com	1162 Meadow Woods Rd.	Buffalo	29321	No		If you intend to raise the bridges in the process, please consider raising the any adjacent roads as well, like Meadow Woods Rd. at Tyger River Bridge. Several years back, SCDOT raised the interstate bridges along I-385, but didn't raise the ramps, now you can't see over the bridge railings to see oncoming traffic pulling out of the stop sign at the ramps. SCDOT lowered the speed limit, but I'd rather see what's coming, than depend on someone going slow. If you don't understand the comment, take a low riding sedan for a southbound trip on I-385 and take exit 5 ramp, and turn left onto Hwy 49.	

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:51 AM
To: Cliffknight69@gmail.com
Subject: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
I truly think this project is great and much needed, but as our bridges are in desperate need of repair so are the miles of roads around union . It just seems that regardless of what we as a community do (call, fill out form online) the roads are put on the back burner. I mean to put it in perspective my road has sub-base failure and also has a section of road that in the spring the grass needs to be cut coming out of the road in a 100' section. Again it's great the bridges are being repaired but that is a small section of roadway compared to the amount of roads in need of obvious repairs. Any clarity on this matter would be greatly appreciated. I have had to replace 2 rims due to the road conditions which are out of our control and can't get reimbursed due to the process of being denied because, o we didn't know about it so we can't be responsible.	Thank you for your comment. SCDOT is actively repairing the roadways as well. Please use SCDOT's Project Viewer to keep up to date on what roads are being repaired around you. https://www.scdot.org/business/projectviewer.aspx . For information regarding vehicular damage caused by our roadways please use the website: https://www.scdot.org/travel/travel-DamageClaims.aspx

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

P 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org

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

LET 'EM WORK. LET 'EM LIVE.

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:49 AM
To: Pjmcginnis76@gmail.com
Subject: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
Repairing these bridges would be fine but what you're going to do is just shut them all down and leave them close for long periods of time and when you do that you're going to basically be stranding union we can't get to I 26 now we won't be able to get to Lauren's or Greenville . We will either have to go through Chester or Spartanburg. You're going to be stranding an entire community of thousands of people know if you can shut down a bridge, fixed it and then moved on to another bridge that would be great but that's not what you do you just shut down the bridge and come back a couple years later if ever.	The proposed bridge replacements will be constructed using staged construction with traffic utilizing the existing bridge until the new bridge is built. The bridges will not be closed during construction but will remain open to traffic until the new bridges are built with the exception of SC 114 which is being proposed with closing and detouring traffic to expedite construction.

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

P 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org

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

LET 'EM WORK. LET 'EM LIVE.

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:45 AM
To: knightme38@yahoo.com
Subject: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
I own the property at the bridge on the left side if you were traveling towards Buffalo. I want to know if my land would be affected. I see flags on it way off the road? Would like to know what side of the bridge is the new one going to be?	Mr. Pitts discussed over the phone with Mr. Poole that the current conceptual design is shifting away from his property with no current right-of-way impacts. Conceptual designs are subject to change if a design-build contractor proposes a different design through the ATC (Alternative Technical Concept) Process.

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

P 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org

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

LET 'EM WORK. LET 'EM LIVE.

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:38 AM
To: April.james7@gmail.com
Subject: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
The fact that we could possibly be saying “I wish we would have addressed the issue before someone had to die” makes the projects a no-brainer. Preservation of life should always take precedence.	Thank you for your comments.

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

P 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org

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

LET 'EM WORK. LET 'EM LIVE.

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:37 AM
To: Jackson Hurst
Subject: RE: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
I approve and support SCDOT's Closed and Load Restricted Bridge Package 17 Project. The aspect that I love about SCDOT's Closed and Load Restricted Bridge Package 17 Project is that the following bridges: US 176 (Whitmire Highway) over Padgetts Creek, SC 72 (Carlisle Chester Highway) over Coks Creek, SC 215 (Buffalo-West Springs Highway) over Fair Forest Creek, SC 49 (Cross Keys Highway) over Tyger Creek, SC 49 (Cross Keys Highway) over Fair Forest Creek, and SC 114 (Bobby Faucette Road) over Sandy Run Creek will be replaced with new bridges that are safer and up to current design standards.	Thank you for your comments.

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

P 803.737.2566 **M** 803.413.9316 **E** pittsme@scdot.org

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

LET 'EM WORK. LET 'EM LIVE.

Mathis, Jennifer

From: Pitts, Michael E. <PittsME@scdot.org>
Sent: Friday, May 26, 2023 7:35 AM
To: tgrady@ed.sc.gov
Subject: 4462250 SCDOT Bridge Package 17 - Union County

Good Morning –

Please see below to view the response to your comment submitted during the public comment period with regards to the Union county bridge replacements.

Comment	Response
Will the bridges on Hwy 49, over the Tyger River, and Fairforest Creek be used while a new bridge is built beside the existing ones.	Yes. The Hwy 49 over Tyger River and Fairforest Creek bridges will be constructed using staged construction with traffic utilizing the existing bridge until the new bridge is built.

Thank you for your comment and please continue to check the project website for updates.



Michael E. Pitts, P.E., Assoc. DBIA

Alternative Delivery Program Manager

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LET 'EM WORK. LET 'EM LIVE.