S-23-102 (Keeler Mill Road) Bridge Replacement over Armstrong Creek

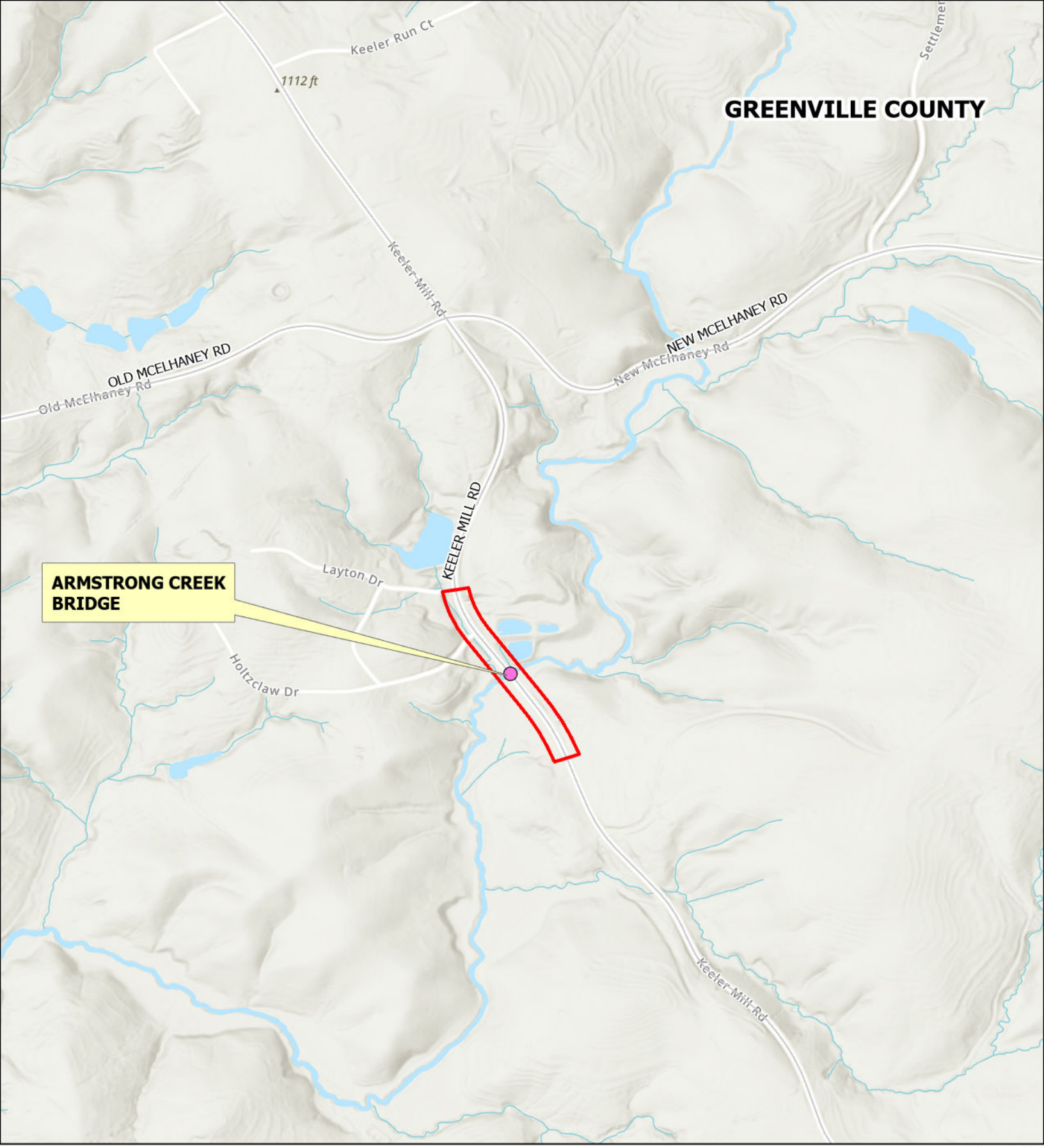
Project ID: P041161

Project Description:

South Carolina Department of Transportation (SCDOT) proposes to replace the S-23-102 (Keeler Mill Road) Bridge over Armstrong Creek in Greenville County.

The purpose of this project is to correct the load restriction placed on the bridge and restore all components to good condition. The existing bridge is posted for load restrictions and has one or more components in poor condition. The bridge was built in 1960. According to the SCDOT Structure Inventory and Appraisal Report from August 2022, the bridge has a sufficiency rating of 21.4. An off-site detour may be utilized during construction. The bridge is currently open to traffic.

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



Legend

Study Area

Bridge

Layer

Local Road

SC Route

N

0 0.15 0.3 Mile

HNTB

Figure 1.
Vicinity Map
Replacement of SC Bridge 3308
on Keeler Mill Road
over Armstrong Creek
in Greenville County, SC

Sources: SCDOT, ArcGIS ESRI Basemap. 2023.

Figure 2.
Study Area Map
Replacement of SC Bridge 3308
on Keeler Mill Road
over Armstrong Creek
in Greenville County, SC

Sources: SCDOT, ArcGIS ESRI Basemap. 2023.

S-102 Bridge Replacement Appendices

Appendix A: Cultural Resources Screening Reports

Appendix B: Natural Resources Technical Memorandum

Appendix C: Bridge Scope and Risk Assessment Form

Appendix D: Floodplain Checklist

Appendix E: Public Comments

Appendix A: Cultural Resources Screening Form

CULTURAL RESOURCE FIELD REPORT

SCDOT ENVIRONMENTAL SECTION

TITLE: Phase I Cultural Resources Survey of Proposed Replacement of the S-23-102 Bridge over Armstrong Creek

DATE OF RESEARCH: 8/3/23 **ARCHAEOLOGIST:** Lauren Christian, MA, RPA

ARCHITECTURAL HISTORIAN: Sean Stucker, MHP; Katie Quinn, MSHP

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

F. A. No.: **File No.** **PIN**: P041161

DESCRIPTION:

The South Carolina Department of Transportation (SCDOT) proposes to replace various closed or load-restricted bridges, including the S-23-102 (Keeler Mill Road) bridge over Armstrong Creek in Greenville County, South Carolina. The project area is defined as that area within 75 feet of either side of the proposed roadway centerline and extending 1,300 feet roughly centered on the bridge. The archaeological survey covered the entire project area, while the architectural survey examined all above-ground resources with sightlines to the bridges. This cultural resource survey was performed under contract with HNTB.

LOCATION:

The project is about 3.3 miles southwest of Travelers Rest in northeastern Greenville County, South Carolina (Figure 1).

USGS QUADRANGLE: Paris Mountain, SC **DATE:** 2014 **SCALE:** 1:24000

UTM: NAD83 **ZONE:** 17N **EASTING:** 363696 **NORTHING:** 3867618

ENVIRONMENTAL SETTING:

The project area is in the Piedmont physiographic region, characterized by rolling hills formed from extensive weathering of ancient mountain ranges. The topography in the project area ranges from 935 feet above mean sea level (amsl) at the northern terminus to 915 feet amsl in the vicinity of Armstrong Creek. The surrounding landscape is rural with some residential development set back from the road outside the project area. Vegetation in most of the project area consists of mixed pines and hardwoods with a moderately dense understory, and there is a fallow field in the southern portion of the project area.

NEAREST RIVER/STREAM AND DISTANCE:

Armstrong Creek bisects the project area and flows into the Saluda River (Hydrological unit code [HUC] 03050109) approximately 1.75 miles southwest of the project area (South Carolina Department of Health and Environmental Control (SCDHEC) 2023).

SOIL TYPE:

Soils in the project area were formed from alluvium or residuum weathered from granite, gneiss, and/or diorite. Most of the soils are well drained, with only 29 percent identified as somewhat poorly drained. The Natural Resource Conservation Service maps one soil type in the project area that is moderately eroded (32.4 percent of the project area) (Table 1; Figure 2).

Table 1. Soils Mapped in the Project Area

Map Unit	Map Name	Drainage Class	Notes	Acres in Project Area	Percent of Project Area
Cb	Cartecay and Toccoa soils	Somewhat Poorly Drained		1.3	29.0
CeD	Cecil-Cataula complex	Well Drained	10–15% slopes, moderately eroded	1.5	32.4
PcE	Pacolet sandy loam	Well Drained	15–25% slopes	1.2	25.9
PcF	Pacolet sandy loam	Well Drained	25–40% slopes	0.6	12.7
Total				4.6	100

REFERENCE FOR SOILS INFORMATION:

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

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

CURRENT VEGETATION:

The project area's vegetation consists of mixed pines and hardwoods with a moderately dense understory and sections of dense shrubs. Additionally, there is a fallow field in the southern portion of the project area (Figures 3–5).

INVESTIGATION:

BACKGROUND RESEARCH

New South Associates, Inc. (NSA) conducted background research prior to fieldwork using the ArchSite GIS database maintained by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH). The background research identified one historic structure within the 0.5-mile search radius (Figure 6). There are no known cultural resources located in the project area itself.

The Z.P. Batson Mill is located on New McElhaney Road, northeast of the project area. A Preliminary Information Form (PIF) completed in 2004 recommended the circa 1837 mill as eligible for the National Register of Historic Places (NRHP), and the notes on ArchSite state that it is a “good example of a mill, with mill [operational] with wheel, mill dam, race canal, etc.” A revisit was not conducted since it is located outside of both the project area and the APE. However, Google Earth imagery suggests that the site has been altered and is no longer operational.

Table 2. Previously Recorded Cultural Resources

SHPO Site No.	Type	Temporal Affiliation/Build Date	NRHP Recommendation	Reference
N/A	Z.P. Batson Mill	19th Century/1837	Eligible	PIF for Z. P. Batson Mill, SC SHPO, 2004

SURVEY RESULTS

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

ARCHAEOLOGY

The Phase I Archaeology Survey was conducted on August 3, 2023. Lauren Christian, MA, RPA, served as Field Director and was assisted in the field by Archaeological Technician John Tomko. The archaeological investigation included a pedestrian walkover of the entire project area and the excavation of shovel tests at 30-meter (100-foot) intervals within the project area. Shovel tests were placed along a single transect parallel to either side of Keeler Mill Road. Soil profiles were recorded for all excavated shovel tests, and location data was recorded for all investigated shovel tests using handheld GPS instruments.

Twenty-eight shovel test locations were plotted at 30-meter intervals across the project area. However, shovel tests that occurred on steep slopes or in more poorly drained soils were not excavated. All other areas were documented by shovel test excavation or by examining exposed subsoil. Nine shovel tests were excavated (Figure 7). Approximately 39 percent of the project area is steeply sloping, with the northeast quadrant being heavily terraced. Closer to the creek, there is a residence and outbuilding. Ponds which are associated with the occurrence of somewhat poorly drained soils occur adjacent to the creek. In the southeast quadrant, the terrain is excessively sloped until an open field is encountered. Shovel tests 13 and 14 were excavated here. On the opposite side of the road in the southwest quadrant, STs 16 to 21 were excavated in an open field. These all exhibited subsoil just beneath the surface. In the northwest quadrant, the soils became somewhat poorly drained from ST 22 to ST 24 and are sloped from ST 25 to 27. Shovel test 28 was in a relatively level area and was excavated.

One soil profile was noted, consisting of approximately 6 centimeters of brown (10YR 4/3) sandy loam Ap horizon overlying 8 centimeters of very compact light yellowish brown (10YR 6/4) sandy clay subsoil, beneath which is an impassible layer of asphalt pieces mixed with black (10YR 2/1) sandy clay (Figure 8). The location of this shovel test was in an overgrown grassy field next to the bridge with an old, paved turn-out, and was likely an old work area. No new or previously recorded archaeological sites were identified in the project area.

ARCHITECTURAL SURVEY

On August 30, 2023, Architectural Historian Sean Stucker, MHP, conducted the architectural survey of the APE, which was defined as all above-ground resources 50 years of age or older with sightlines to the bridge. Such resources were documented with South Carolina State Survey forms and photography and assessed for NRHP eligibility in accordance with the *South Carolina State Historic Preservation Office (SHPO) Survey Manual: South Carolina Statewide Survey of Historic Places*. Two architectural resources were recorded, but the bridge itself, constructed in 1960, was not evaluated per the exemptions associated with the FHWA's Post-1945 Bridges Program Comment (U.S. Department of Transportation, Federal Highway Administration 2012). This bridge (ID 03308) is of a common type, with a concrete-slab substructure, a precast-concrete deck structure, and a bituminous decking surface (Figure 9). Newly identified resources are listed in Table 3 and are depicted in Figure 10, and they are discussed below.

Table 3. Newly Recorded Architectural Resources

Site No.	Address	Style/Type	Build Date	NRHP Recommendation
6406	3 Layton Drive	Bungalow	c. 1954	Not Eligible
6406.01	3 Layton Drive	Outbuilding	c. 1954	Not Eligible
6406.02	3 Layton Drive	Outbuilding	c. 1970	Not Eligible
6406.03	3 Layton Drive	Outbuilding	c. 1970	Not Eligible
6407	2185 Keeler Mill Road	Forrester Grist Mill	c. 1926	Eligible
6407.01	2185 Keeler Mill Road	Bungalow	c. 1930	Not Eligible
N/A	2185 Keeler Mill Road	Gatehouse	c. 1980s	Not Assessed
N/A	2185 Keeler Mill Road	Dependency	c. 1990s	Not Assessed

SHPO Site Numbers 6406-6406.03 – 3 Layton Drive

Facing east from its site on the west bank of Armstrong Creek, SHPO Site Number 6406 is a modified laterally gabled bungalow. The house faces towards the creek and Keeler Mill Road but has a Layton Drive address. Greenville County tax records do not list a construction date. The house is not present in 1948 aerial imagery but appears in 1955, and the Real Property Card on file with the tax assessor shows a deed transfer in July of 1953. The house is assumed, therefore, to have been built circa 1954 (NETRonline 2024). SHPO Site Number 6406.01 appears in the 1955 imagery and is assumed to have been built along with the house, while SHPO Site Numbers 6406.02 and 6406.03 both seem to appear in 1976 imagery, so a circa 1970 build date is assumed for both (NETRonline 2024).

The one-and-a-half story frame bungalow has a nearly rectangular historic core and a slightly projecting cross-gabled section centered on the façade. This section contains the primary entrance in its southern bay and a square picture window in the north bay. The door and entry stoop are sheltered by a secondary projecting gable, and a similar picture window is in the south bay of the core facade, while the north façade bay is obscured by the foliage that blocks much of the house from public view. Laterally gabled wings are appended to both side elevations; the north wing contains a secondary entrance and interior space, while the south wing is a screened porch (Figure 11). Various window types are visible on the façade and other elevations, though their details are obscured by the heavy surrounding foliage. The windows and doors seem to be vinyl and metal replacements, and wide lap siding (possibly cementitious fiberboard) that seems to be of replacement material covers the exterior. Roofs are all clad with composition shingles, and the foundation is faced with brick veneer and has embedded vents visible across the façade. Two brick chimneys are visible in the front roof slope.

SHPO Site Number 6406.01 is a front-gabled concrete block outbuilding that is sited about 100 feet northwest of the house, while SHPO Site Number 6406.02 is a front-gabled frame garage building sited on the south side of the older outbuilding. Both are one-story rectangular, and the concrete slab that separates the two buildings leads to a doorway into a large metal-clad frame addition appended to the rear of SHPO Site Number 6406.02. The east-facing façade of SHPO Site Number 6406.01 has lap siding that matches the house and brick veneer columns at the corners. It is punctuated by a six-over-six sash window in the north bay and a double-leaf Dutch door covered by a small metal awning in the south bay. The side elevations are unfenestrated concrete block. SHPO Site Number 6406.02 has a mix of wood weatherboard and novelty siding. Its east-facing façade is punctuated by a double-leaf side-hinged garage door in the north bay and a doorway with a replacement metal door in the south bay. A wooden louvered vent is centered in the gable peak, and a continuous brick foundation is visible on both side elevations. Both buildings have composition shingle roofs (Figures 12-13). SHPO Site Number 6406.03 is a rectangular concrete block outbuilding with a hipped composition shingle roof. Most of the building is obscured by the heavy surrounding foliage, though a double-leaf side-hinged garage door is visible on the elevation that faces Layton Drive (Figure 14).

Although SHPO Site Number 6406 is a circa 1950 bungalow, it is not a distinctive or noteworthy example of this commonplace South Carolina house type. Furthermore, its integrity is impacted by both the additions and the substantial amount of replacement materials. SHPO Site Number 6406.01 is a non-distinctive example of a similarly common building type, and it too has mostly modern materials. SHPO Site Number 6406.02 appears to have more original materials but also has a massive addition appended to its rear. Finally, SHPO Site Number 6406.03 is also a typical example of a similarly common building type. None of these buildings were found to embody the distinctive characteristics of a style, period, or method of construction nor to possess significance for their engineering or materials. They are not known to be associated with events or persons significant in the past. Therefore, these resources are recommended as not individually eligible for the NRHP under Criteria A, B, or C.

SHPO Site Numbers 6407 and 6407.01 – FORRESTER GRIST MILL (2815 Keeler Mill Road)

SHPO Site Number 6407, the Forrester Grist Mill, is a mixed-material frame building whose façade presents the appearance of a rural commercial building. The building appears on a 1938 USGS Greenville Quadrangle Topographic map, but not on a 1921 USGS Soil Survey map of Greenville County, and was constructed in circa 1926. The roof is clad in V-crimp metal panels. Other than the weatherboard siding in the front and rear gables, the exterior wall cladding is corrugated metal. The double-leaf entrance on the façade has doors built of horizontal flushboards and a paired set

of horizontally oriented six-pane windows. A pent shed roof covers the wooden entry stoop (deck), and the building footprint to the left of the entrance runs at a diagonal and directly faces the road, suggesting that it may have contained the original entrance. A secondary entry with a similar vernacular wooden door is located on the west elevation, which also contains a paired set of six-pane windows that are vertically oriented. The east elevation has a similar set of paired windows, and a small gabled wing extending from the rear elevation has a single window on its west side. The purlins are visible on the gable end elevations with exposed rafter tails on the lateral sides, and the remnants of decorative vergeboards with a curvilinear design are extant in the front gable. The foundation on the east elevation reveals a mixture of materials, including fieldstones, tapered concrete piers that match the waterwheel foundation piers, and poured concrete sill beams with pocketed joists (Figures 15-16). All the windows are covered from the inside. The building's appearance has changed little in the past 15 years, based on Google Streetview imagery, and it appeared equally vacant in 2008 imagery. Appended to the building's east elevation is a massive undershot waterwheel whose axle rod extends through the wall and into the building and steel support structure. It is anchored into tapered concrete foundations that flank the wheel. The base of the wheel is buried in the earth of the stream bed. Historic topographic maps suggest that the path of Armstrong Creek shifted between 1957 and 1983, moving southward and bypassing the mill site (Figure 17).

There are several other buildings and structures on the property, although most are modern. SHPO Site Number 6407.01 is a modified front-gabled bungalow that faces southeast from its site atop a bluff on the east bank of Armstrong Creek and the east side of Keeler Mill Road. Greenville County tax records do not list a construction date, and the house does not appear on the 1921 Greenville County soil survey map. It is visible on the earliest aerial photograph (1948) and is represented on the earliest available topographical map (1935), so a build date of circa 1930 is assumed (NETRonline 2024; United States Department of Agriculture 1921; United States Geological Survey 1935). SHPO Site Number 6407.01 is a front-gabled frame building oriented diagonally to the road at the base of the steep driveway leading to the house.

The one-story frame bungalow has a rectangular historic core, a composition shingle roof, and a gable roof appended across the southern half of the façade that projects forward to cover the raised entry porch. Square wooden posts support the roof overhang, and the porch has simple wooden railings and balusters. The house is clad in vinyl siding with a novelty siding profile, and all observable windows (single and paired) are six-over-six sash of indeterminate material with storm windows and faux shutters. Satellite imagery shows a shed roof extending from the north slope of the core that runs the full length of the house. This roof structure overhangs the façade several feet to create a covered patio on the north half of the façade (Figures 18-19). A gable roof extending from the core's rear is supported by square wooden posts and is appended across the house's southern half. It seems to be visible by the 1976 aerial imagery and has a combination of interior space and a covered patio beneath it. The foundation is stucco-parged masonry with openings for foundation vents, though the visible openings do not contain actual vents. A triangular louvered vent is centered in the peak of the rear gable extension, but the front gable peak is obscured by the surrounding foliage.

The driveway leading to the house contains a gate/wall and gatehouse, but these elements do not appear in aerial imagery until the 1980s, so they were not assessed. A frame building that is about the same size as the main house is sited approximately 100 feet northwest of the house, but it does not appear in aerial imagery until the 1990s, so it was not assessed. At least four other buildings are also located on the property, but none are visible in aerial imagery prior to 1994, and none of them are visible from the public right-of-way, so they were not assessed.

The South Carolina Piedmont, including upper Greenville County and Travelers Rest, was the home to many grist mills during the nineteenth century. With its varied topography and many waterways, it is prime milling country. Farmers in Greenville County used the mills to grind grain crops that they produced, including wheat and corn. While some grist mills were large-scale commercial enterprises, most were smaller operations, called custom mills, which served a limited geographic area. Often a farmer would own and operate a mill and his neighbors would pay to use it, sometimes in a share of the grain (Braley and Gainey 2005). During the mid-nineteenth century, there were several such mills in the project vicinity, including the Z.P. Baston Mill, which was constructed in circa 1837 approximately 0.4 miles northeast of the project area (South Carolina Institute of Archaeology and Anthropology and South Carolina Department of Archives and History 2024). The map of Greenville District in the 1825 Mills Atlas shows Hunt's Mill on Armstrong Creek, roughly one mile southwest of the project area (Figure 20) (Mills 1980). The Hunt family also

established a bridge over the Saluda River in the early nineteenth century. Hunt's Mill was extant in 1921, when it was marked on a USGS Greenville County Soil Survey Map, but is not present today (United States Department of Agriculture 1921).

The number of grist mills in Greenville County peaked in the mid-nineteenth century before slowly trending downward. There were 41 mills shown on the Greenville District map in the 1825 Mill's Atlas. The 1860 Federal Census reported 56 grist mills in Greenville County, while in 1880 the census listed 47 (Braley and Gainey 2005:22). An 1882 map of Greenville County shows four mills in the project vicinity, including the Hunt's Mill (Figure 21) (Kyzer 1882). Mills were still in use and being constructed in the early twentieth century, however. Suber's Corn Mill, in Greer, was built between 1908 and 1912 (Howard 2012).

SHPO Site Number 6407 was constructed after the period during which most Greenville County grist mills were built, making it a late example of the type. The Hunt family, who constructed Hunt's Mill and Hunt's Bridge, owned the property until 1926. That year Frances Jane (Hunt) Whitmire, who had acquired the property after the death of her father, Warren Hunt, sold 40 acres to Mack Duffie Forrester (Greenville County Register of Deeds [GCROD], 113:89). Mac Duffie Forrester, Jr., was from the Piedmont but was raised in Pickens County rather than Greenville (1880 Federal Census). According to the Federal Census, by 1920, he was living in rural Greenville County and working at a power plant. The 1930 census indicated that he still did not live near the property in Travelers Rest. That year he was living in Greenville proper, operating the electric power plant there. His obituary and death notice from 1943 both indicate that he was the superintendent of the Saluda Power Plant, which was located to the south in Saluda County (Associated Gas and Electric System 1930; Staff Writer 1943) (Figure 22).

According to Baston's *Water-Powered Gristmills and Owners, Upper Part of Greenville County, South Carolina*, SHPO Site Number 6407 was known as the Forrester Mill and was constructed after 1900. Baston states it was built by Nute Forrester, a name not in census or genealogical records for the Forrester family in the South Carolina Piedmont (Baston 1996:84). It is possible that "Nute" is a nickname. Baston lists the mill operator as Nute Forrester's brother, Henry, a claim which census records support. Mack Duffie's older brother, Henry, was living in Paris Mountain Township on Keeler's Bridge Road in both 1930 and 1940, according to the census. His occupation was listed as "farmer" in 1930 but the 1940 census shows him as a miller running a grist mill. The 1940 General Highway and Transportation Map of Greenville County shows a grist mill in the location of the Forrester Mill (Figure 23) (South Carolina State Highway Department 1940).

Baston described the Forrester Mill as having an eight-foot flywheel of hewn oak with belts running directly to the waterwheel. He cited a newspaper article, which could not be relocated, which indicated that the mill was constructed with "fine, primitive workmanship." Baston also indirectly provides a possible motivation for the late construction of a "primitive" grist mill: the mill powered an electric dynamo which allowed for electric lights in the mill building and several surrounding houses (Baston 1996:84–85). Constructing the mill may have been something of a hobby activity for Mack Duffie, who put his mechanical skills to use building an old-fashioned wooden grist mill and using it to generate electricity as he did at work. Both Mack Duffie and Henry died in the mid-1940s after several years of declining health (Staff Writer 1943, 1944). Mack Duffie's wife, Mable, sold roughly 16 acres of the property to C.B. Watkins in 1944 (GCROD, 154:265).

Clem B. Watkins, Sr., was living in Paris Mountain Township by 1940, according to the census. He kept the mill in operation and established a general store on the property. Watkins sold the property to H.G. Carter in 1950 (GCROD 421:27). When Watkins died in 1962, his death notice listed his occupation as a grocery merchant at the "Watkins Gro. & Corn Mill," and his obituary references that he retired from the same, also saying that Watkins lived in the area for 25 years (Staff Writer 1962; State Board of Health, South Carolina 1962). Henry Grady Carter, who bought the property from Watkins, changed its name to "Carter's Corn Mill," and owned the property until he died in 1957 (Staff Writer 1957). His wife sold it shortly thereafter (Greenville County Register of Deeds 1950).

The property changed hands several times in the 1950s and 60s before being bought by McLain Hall, who held it for over a decade, until 1976. While Hall lived in South Carolina in the 1950s, he spent most of his life in North Carolina working in real estate development, and there is no sign that he operated the mill on the property (Staff Writer 2019).

At some point during this time, the path of Armstrong Creek shifted, and the mill would no longer be able to run even if it had been in good repair with a resident miller. In 1980, Shelton J. Rimer purchased the property, along with his wife, Dorothy (Greenville County Register of Deeds 1950). Baston indicated that Rimer refurbished the mill. The parcel is currently owned by a local entity, 168 Hours LLC. The property, which is still around 20 acres, is in use agriculturally and residentially. The mill is non-operational and the mill building is vacant.

SHPO Site Number 6407, the Forrester Mill, retains integrity in location, design, materials, workmanship, and feeling. Almost all materials are either historic or in-kind replacements. Portions of the corrugated metal siding appear modern, as do the poured concrete sections of the foundation. These changes may date to the Rimer-era refurbishment of the mill in the 1980s. Additionally, the shift of the path of Armstrong Creek to the south has affected integrity of setting and association. The setting remains rural, but the mill is no longer adjacent to the creek. However, this does not ultimately affect the resource's ability to convey its significance as a late example of a rural Piedmont grist mill. Additionally, other local mills appear to no longer be extant, including the Z.P. Baston Mill. SHPO Site Number 6407 is recommended as eligible for the NRHP under Criterion A: Industry on the local level with a period of significance from circa 1926, when Mack Duffie Forrester bought the property, until 1957, when the mill was last known to be operational. The proposed NRHP boundary follows the parcel boundary (Figure 24). The parcel is of an unusual shape. It extends narrowly to the northeast, where it has clearly been drawn to carve out as much of Armstrong Creek as possible from the surrounding land. This creek was an integral component of the milling operation and should be retained within the NRHP boundary. The size of the property is within one acre of its original, 1926 size, and the current boundaries are consistent with historic descriptions. The Forrester Mill was considered for the NRHP under Criterion C but the bar for integrity is higher under this criterion, and concerns such as the replacement siding preclude its eligibility for architecture.

There are several non-contributing buildings and structures on the parcel. SHPO Site Number 6407.01 is a circa-1930 bungalow. It is likely the house is associated with the Forrester Mill and would have been occupied by the miller and his family. Baston notes that the dynamo at the mill would have supplied this house with electricity, an oddity in the Piedmont in the 1920s. However, the house has several serious impacts to its overall integrity. The building has been added onto in ways that affect its appearance from the front elevation. Almost all visible materials, ranging from the siding to the windows to the porch supports, are modern replacements. It does not retain integrity of design, materials, workmanship, feeling, or association, and is not recommended as a contributing resource. Neither building is associated with persons significant in the past. Therefore, these resources are recommended as not eligible for the NRHP under Criteria B or C.

REMARKS AND RECOMMENDATIONS:

The survey identified no archaeological sites or isolated finds. Two new architectural resources with four subresources were recorded. One, the Forrester Mill (SHPO Site Number 6407), is recommended eligible for the NRHP. The Forrester Mill is located approximately 250 feet from the current bridge and the resource itself is not likely to be directly impacted by the bridge construction as the project is currently defined. However, the resource is located within 20 feet of the existing ROW. Additionally, the parcel and NRHP boundary extends to the creek itself, which is located directly adjacent to the bridge. Care should be taken to avoid impacts due to construction, and any taking from this parcel for the project would represent an adverse effect. The current bridge already dates to after the period of significance, and a replacement that is similar in size and scale would not represent an adverse effect to the property's viewshed. Finally, the area is rural with relatively low traffic. Increased traffic and construction noise should be kept to a minimum.

SIGNATURE:  Principal Investigator **DATE:** June 14, 2024

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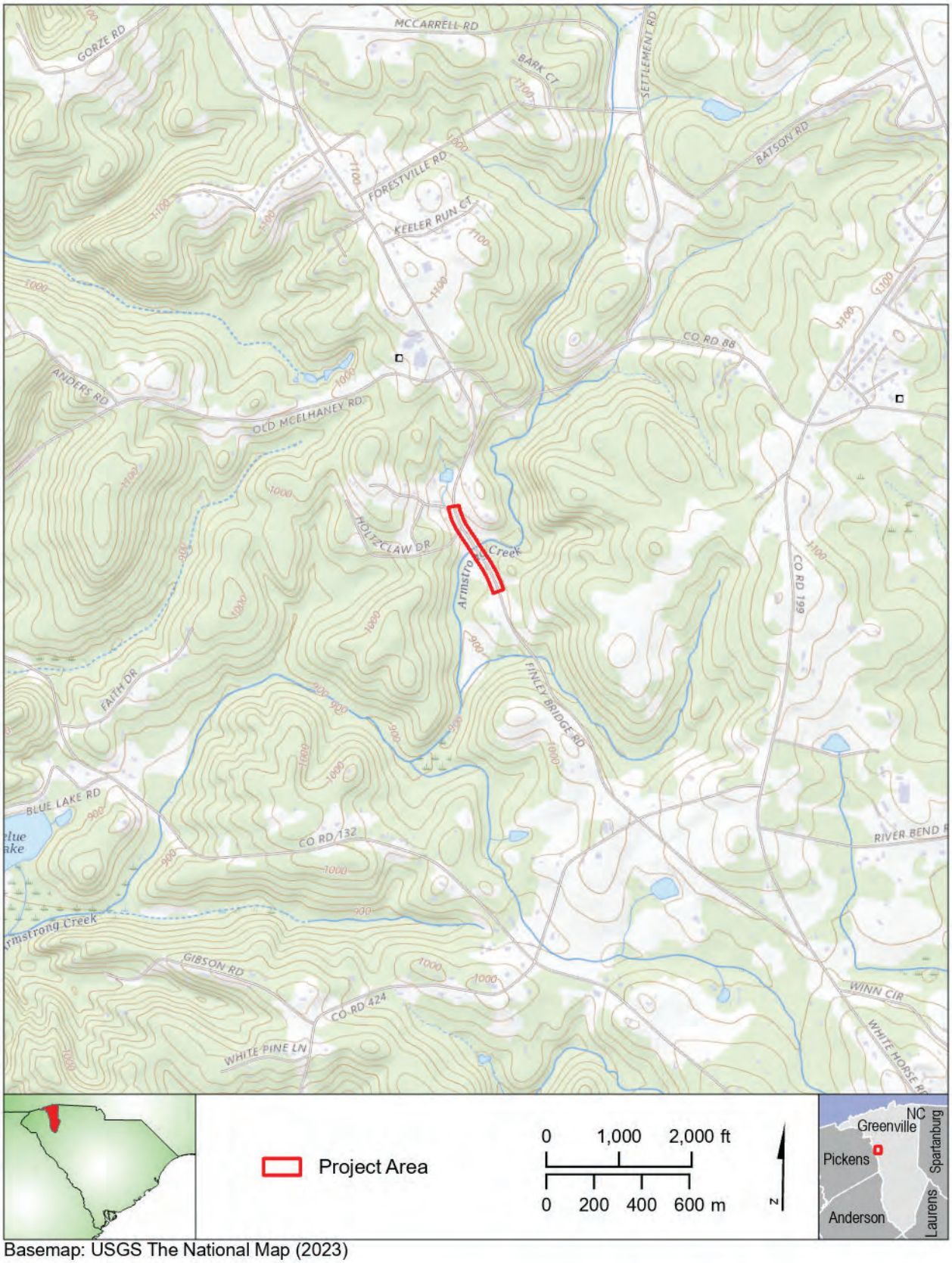
Figure 1.
Project Location Map



Basemap: USGS The National Map (2023)

Figure 2.
Soils within the Project Area

Basemap: NAIP (2021)

Figure 3.
Forested Portion of Project Area, Looking South

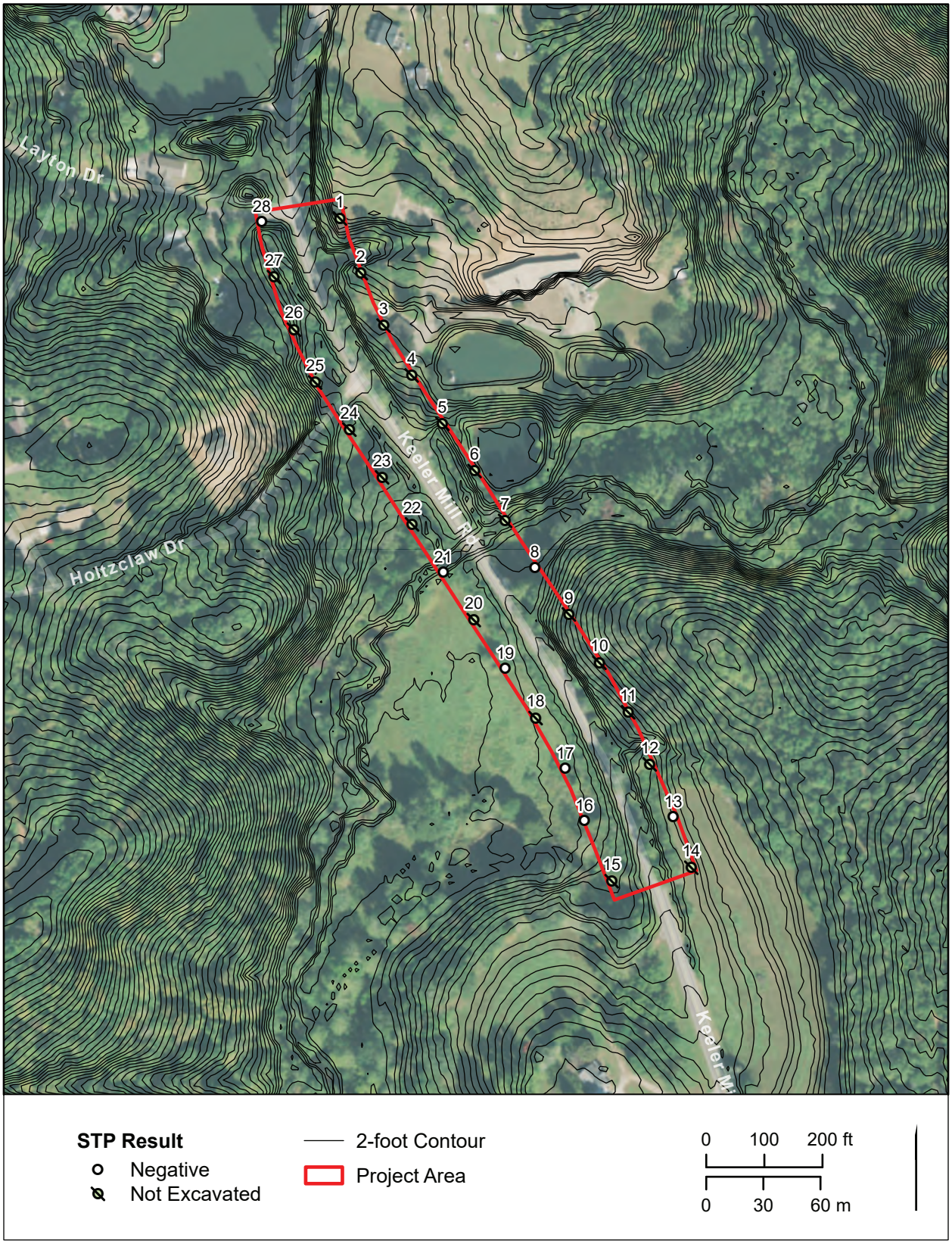
Figure 4.
Dense Shrubs along Side of Road in Project Area, Looking West

Figure 5.
Fallow Field in Southern Portion of Project Area, Looking North

Figure 6.
Previously Recorded Cultural Resources Map

Basemap: NAIP (2021)

Figure 7.
Shovel Test Results



Basemap: NAIP (2021), Contours derived from SCDNR Lidar: Greenville County (2013)

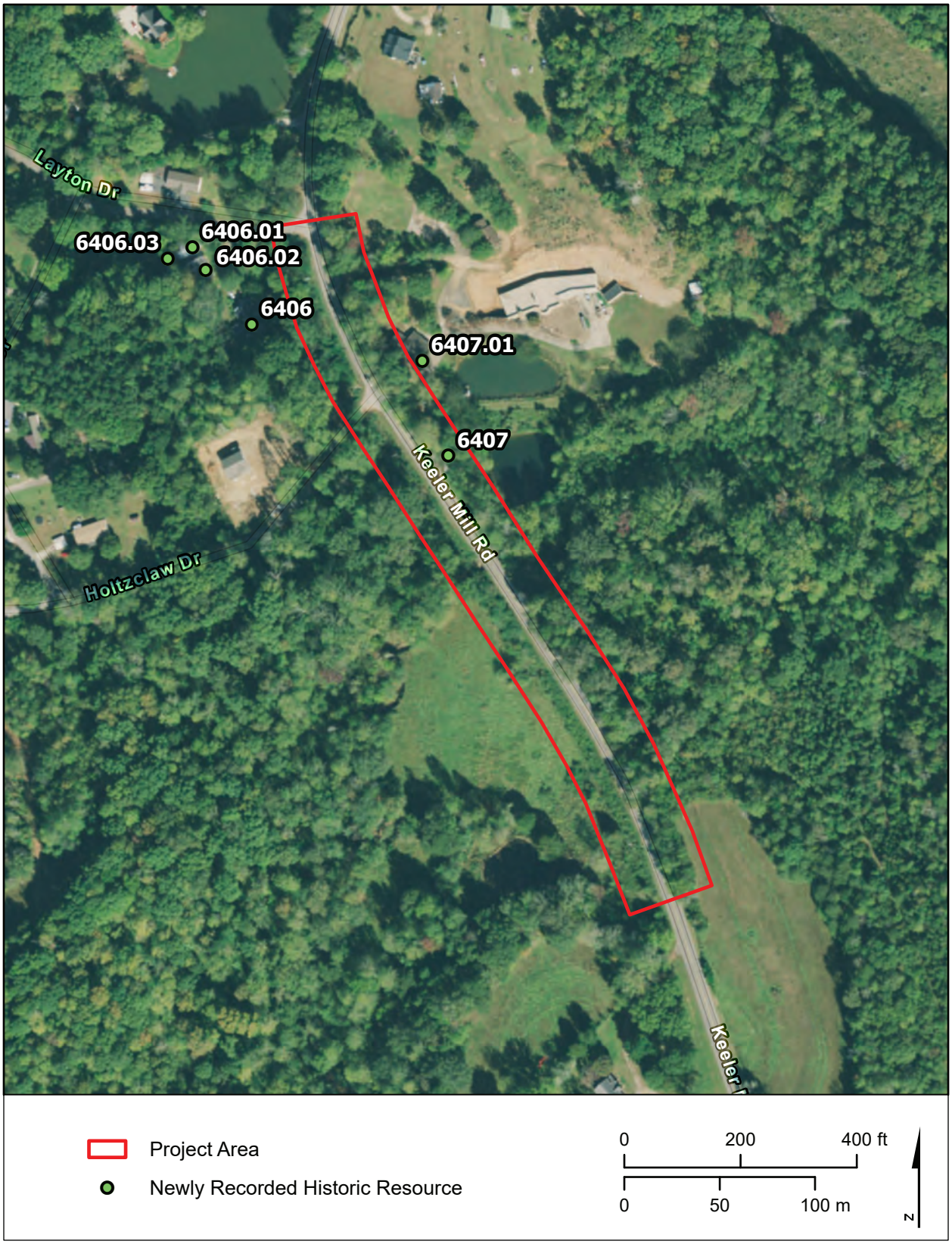
Figure 8.
Soil Profile of STP 8, Looking South

Figure 9.
S-23-102 Bridge over Armstrong Creek, Built 1960 and Not Assessed

A. Bridge Structure, Looking Northeast

B. Bridge Surface, Looking Northeast

Figure 10.
Newly Recorded Cultural Resources Map



Basemap: NAIP (2021)

Figure 11.
SHPO Site Number 6406 – 3 Layton Drive

A. Oblique, Looking Southwest

B. Façade, Looking West

C. Oblique, Looking Northwest

Figure 12.
SHPO Site Number 6406.01 – 3 Layton Drive

A. Façade, Looking West

B. Oblique Detail, Looking Southwest

Figure 13.
SHPO Site Number 6406.02 – 3 Layton Drive

A. Oblique Showing Rear Addition, Looking Southwest

B. Oblique Detail, Looking Southwest

Figure 14.
SHPO Site Number 6406.03 – 3 Layton Drive

A. Oblique, Looking South

B. Oblique Detail, Looking South

Figure 15.
SHPO Site Number 6407 – 2185 Keeler Mill Road - Forrester Mill, 1 of 2

A. Oblique, Looking Northwest

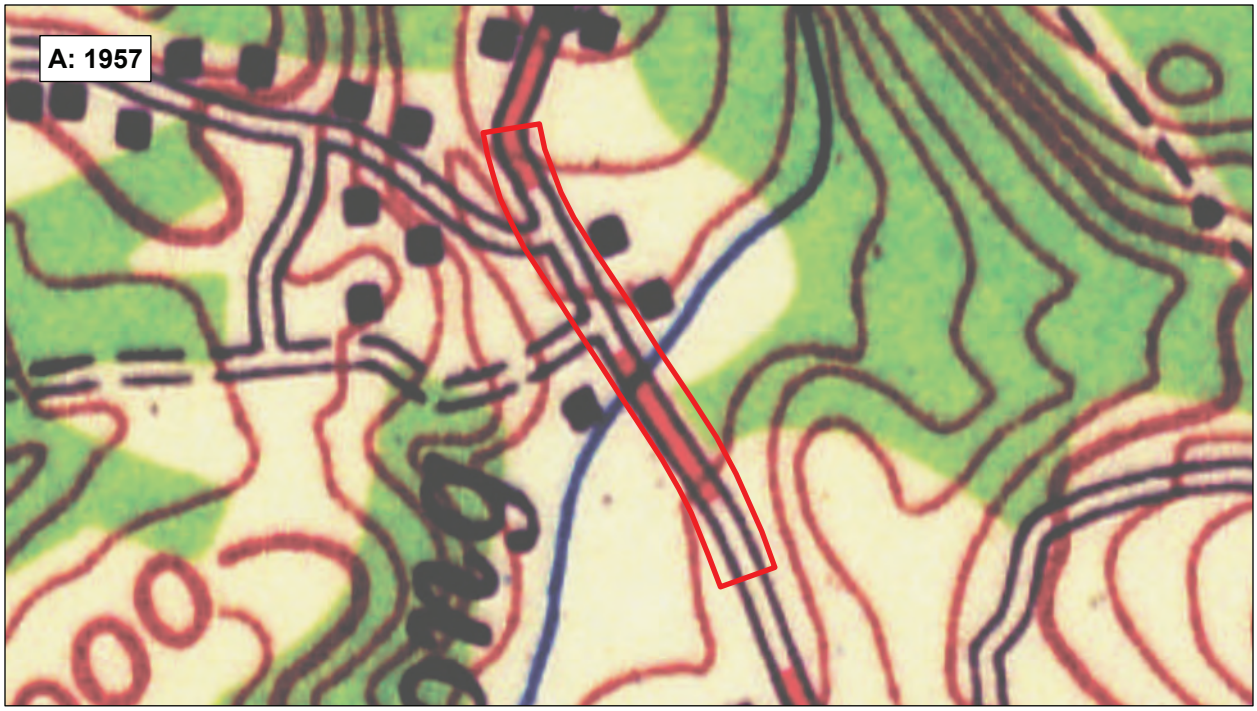
B. Façade, Looking North

Figure 16.
SHPO Site Number 6407 – 2185 Keeler Mill Road - Forrester Mill, 2 of 2

A. Rear Oblique, Looking Southeast

B. Foundation Detail on East Elevation

Figure 17.
Armstrong Creek within Project Vicinity, 1957 and 1983



Georeferenced Basemap: USGS 15-Minute Quadrangle, Greenville (1957)

Georeferenced Basemap: USGS 7.5-Minute Quadrangle, Greenville (1983)

Project Area

0 500 1,000 ft
0 100 200 300 m

Figure 18.
SHPO Site Number 6407.01 – 2185 Keeler Mill Road - House, 1 of 2

A. Oblique, Looking North

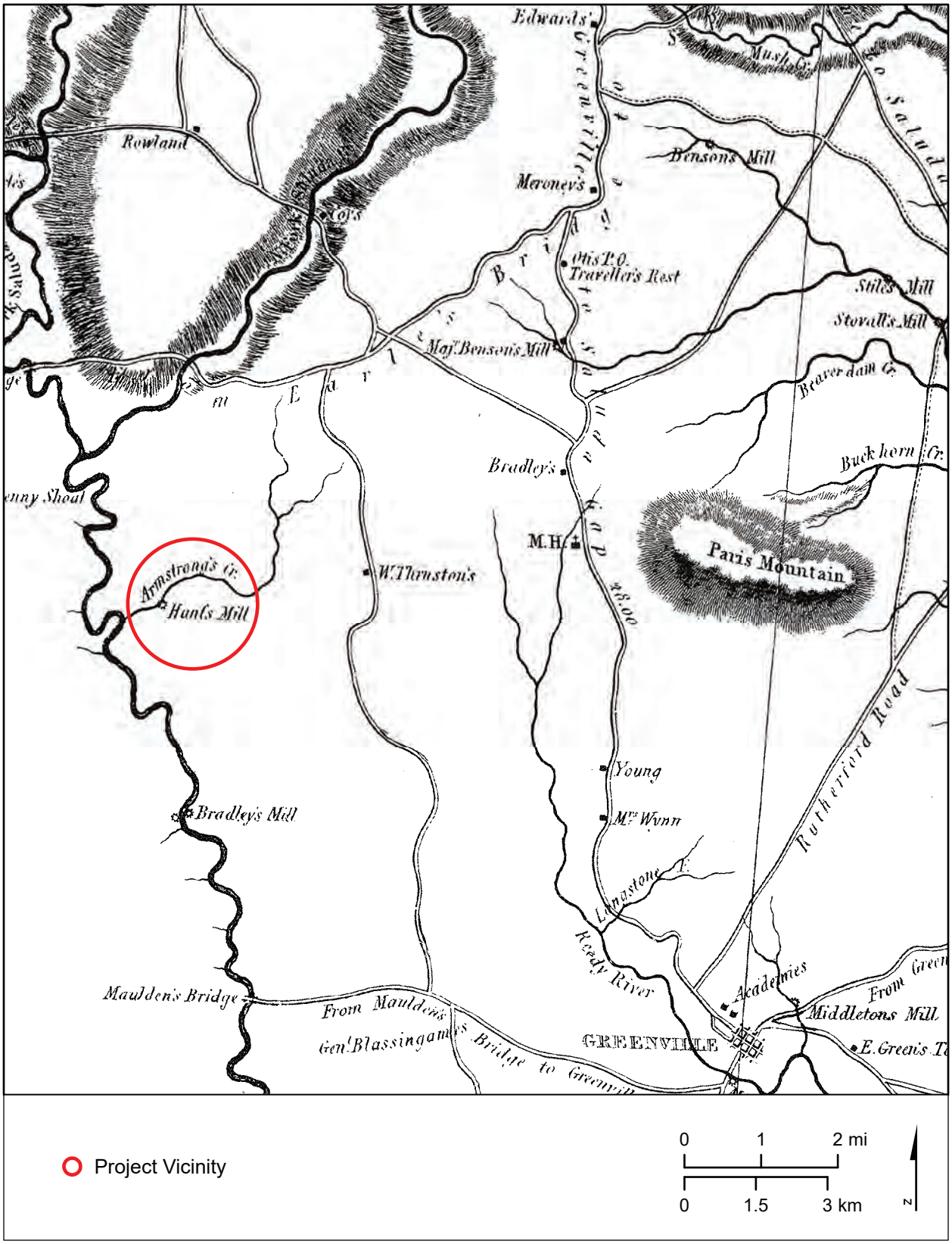
B. Rear Oblique, Looking Southeast

Figure 19.
SHPO Site Number 6407.01 – 2185 Keeler Mill Road - House, 2 of 2

A. South Elevation, Looking Northeast

B. Foundation Detail on South Elevation

Figure 20.
Project Vicinity on Greenville District Map, 1825 Mills' Atlas



Basemap: Mills (1825)

Figure 21.
Mills within Project Vicinity on 1882 Kyzer Map of Greenville County

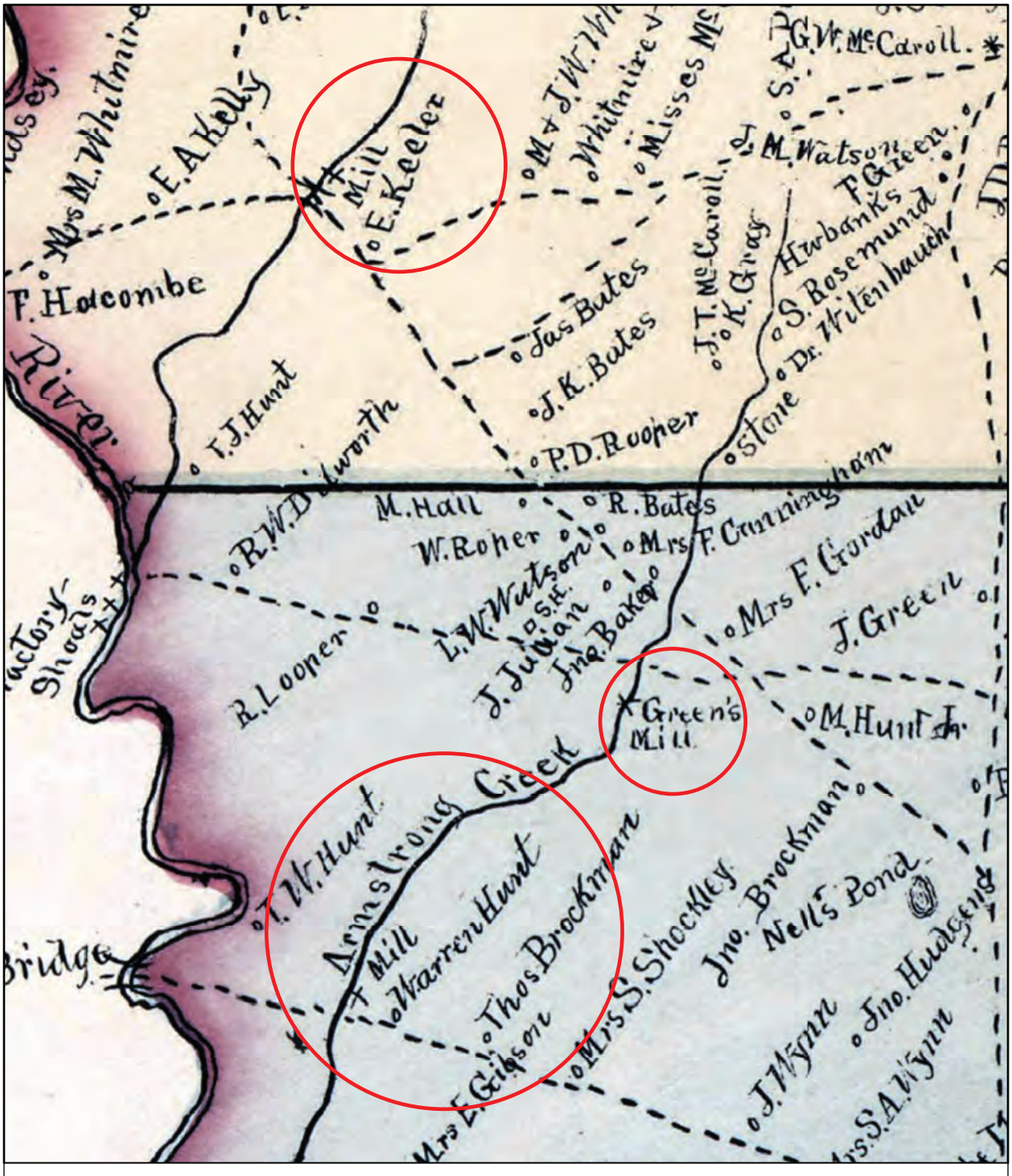


Figure 22.
Map of Saluda Hydro-Electric Development, circa 1930

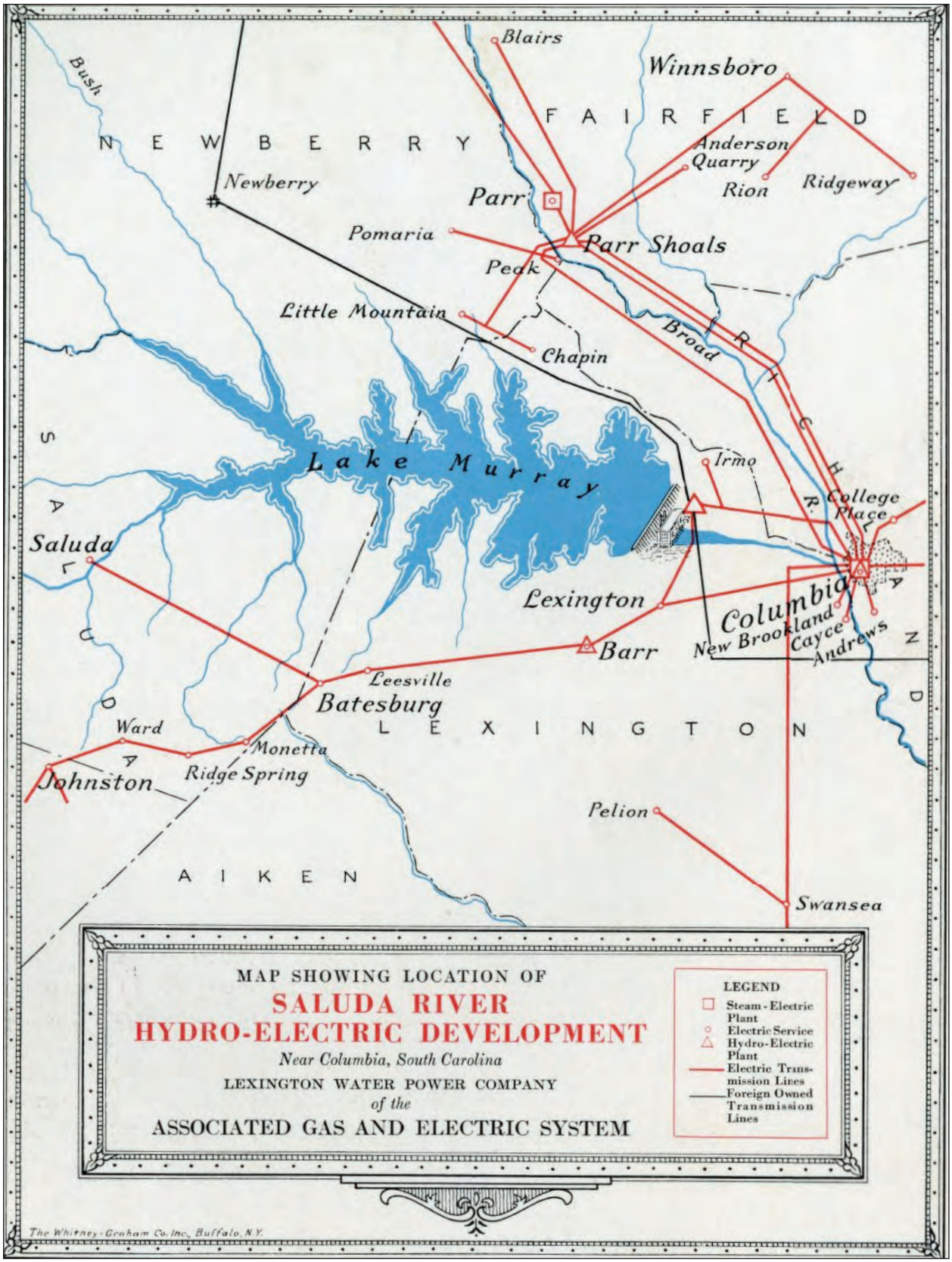
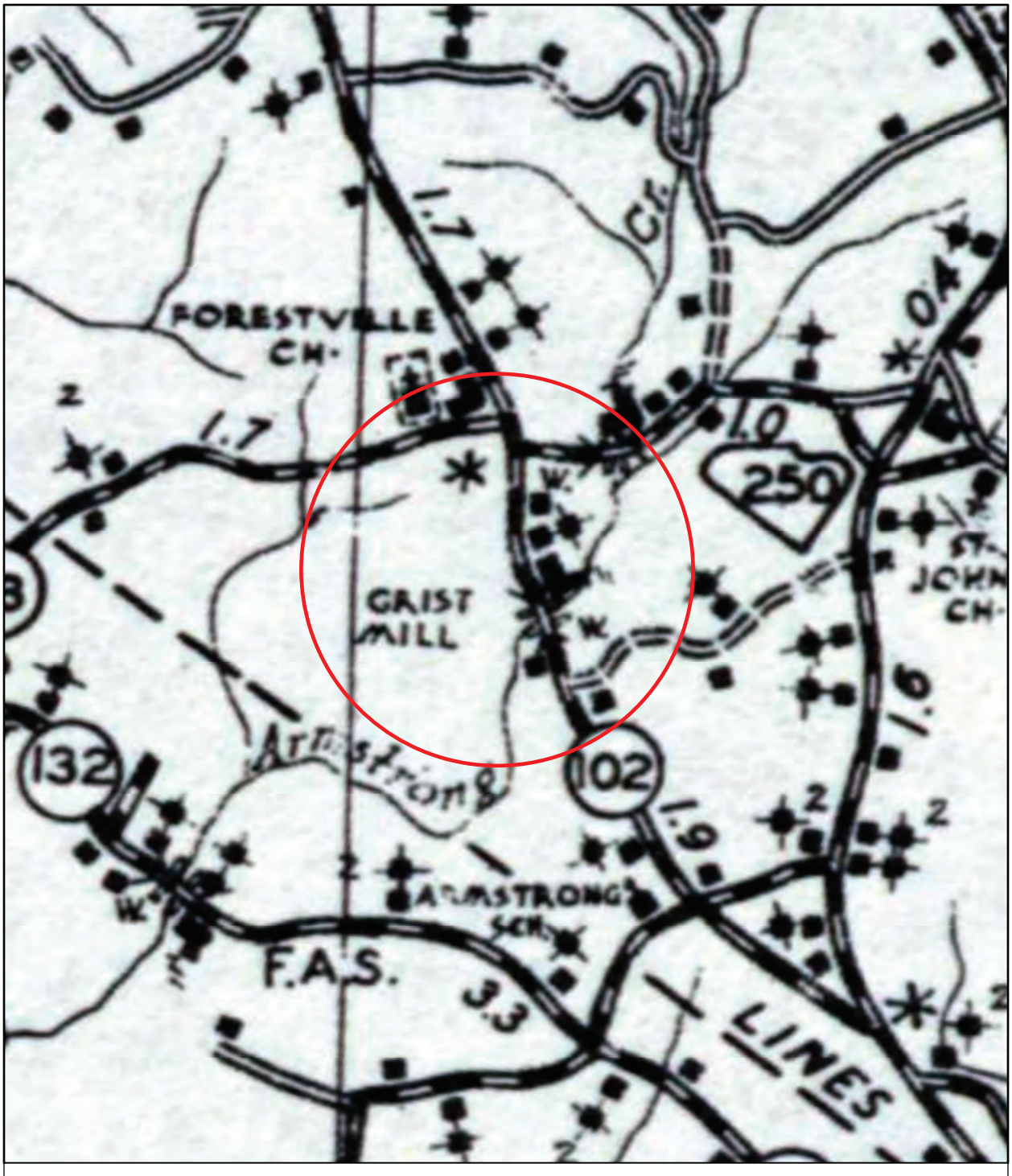
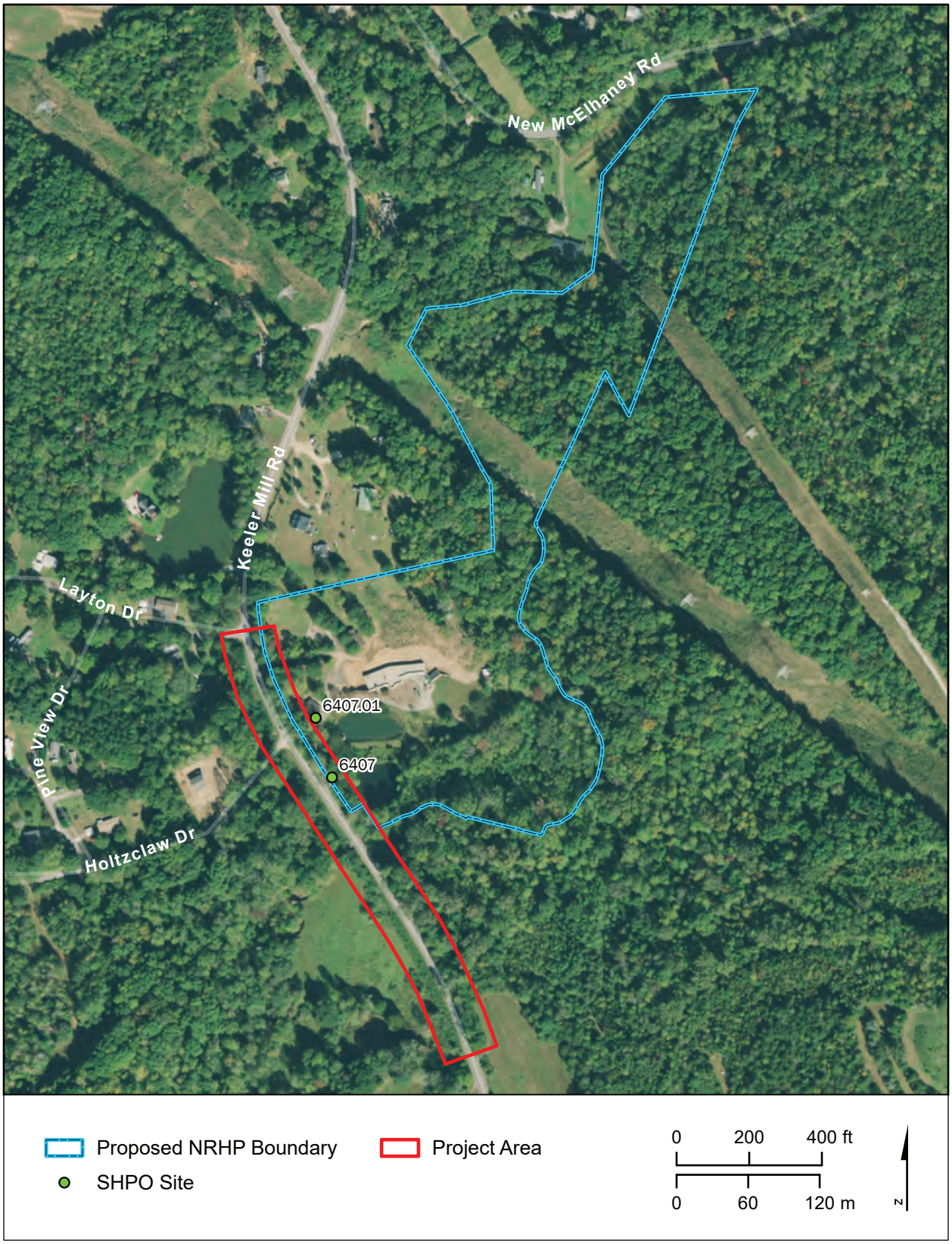


Figure 23.
Forrester Mill on 1940 General Highway and Transportation Map of Greenville County



Basemap: SCDOT Greenville County Highway Map (1940)

Figure 24.
Proposed NRHP Boundary for Forrester Mill, SHPO Site Number 7407



Basemap: USA NAIP Imagery (2021)

Appendix B: Natural Resources Technical Memorandum

Natural Resources Technical Memorandum

S-102 (Keeler Mill Road) Bridge Replacement over Armstrong Creek

SCDOT Project ID: P041161

ROBBINS & DEWITT

August 27, 2024

Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace the S-102 (Keeler Mill Road) bridge over Armstrong Creek in Greenville County, South Carolina. The project is approximately 7.5 miles northwest of the City of Greenville, SC. The project is located in the Saluda River Watershed (03050109 8-digit Hydrologic Unit Code) and the 45a Southern Inner Piedmont Level IV Ecoregion. Please see Attachment A, Figure 1 for a Site Location Map.

A Project Study Area (PSA) has been established, based on preliminary design, to encompass all potential impacts of the project. The PSA encompasses an area approximately 4.58 acres in size and approximately 1,300 feet (0.25 mile) in total length, generally centered on Armstrong Creek in either direction. Furthermore, the PSA is 150 feet in total width, generally centered on the centerline of Keeler Mill Road.

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

Desktop Analysis Methods

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

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

Jurisdictional Waters of the U.S.

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

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

Stream	Latitude	Longitude	Centerline Length (feet)	Area (acre)
Stream A	34.941909	-82.492622	151	0.06
Stream B	34.942663	-82.493336	598	0.04
Total			**749 feet**	**0.1 acres**

Permitting Considerations

Based on the conceptual bridge design, impacts to jurisdictional waters may occur during construction and are expected to exceed the SCDOT U.S. Army Corps of Engineers General Permit impact thresholds; therefore, an Individual Section 404 Permit is anticipated. A completed SCDOT Permit Determination Form and SCDHEC Watershed and Water Quality Information Report are provided in Attachment B.

Federally Protected Species

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on July 13, 2023 and April 16, 2024. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project. Based on the literature and field reviews it is determined that the proposed project will have a biological conclusion of 'no effect' on federally protected species. A Biological Evaluation is provided in Attachment C.

Migratory Birds

Certain bird species are protected under the Migratory Bird Treaty Act of 1918. The USFWS IPaC online database was reviewed for information pertaining to migratory bird species. Migratory birds were not observed nesting on the existing bridge.

Vegetation

Land use in the PSA includes pastureland, undeveloped forestland, and sparse residential development. Two natural communities were observed within the PSA, consisting of oak-hickory forest and small stream forest. Refer to the Biotic Communities section in Attachment C for a detailed description of vegetation observed in the PSA.

Soils

According to the (USDA-NRCS) Soil Survey Geographic (SSURGO) data, four Soil Map Units (SMU) are mapped within the PSA. Each SMU IS included in Table 2 below.

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

SMU	SMU Name	Area (acres)	Percentage of PSA
Cb	Cartecay and Toccoa soils	1.3	29.1%
CeD	Cecil-Cataula complex, 10 to 15 percent slopes, moderately eroded	1.5	32.3%
PcE	Pacolet sandy loam, 15 to 25 percent slopes	1.2	25.8%
PcF	Pacolet sandy loam, 25 to 40 percent slopes	0.6	12.7%

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

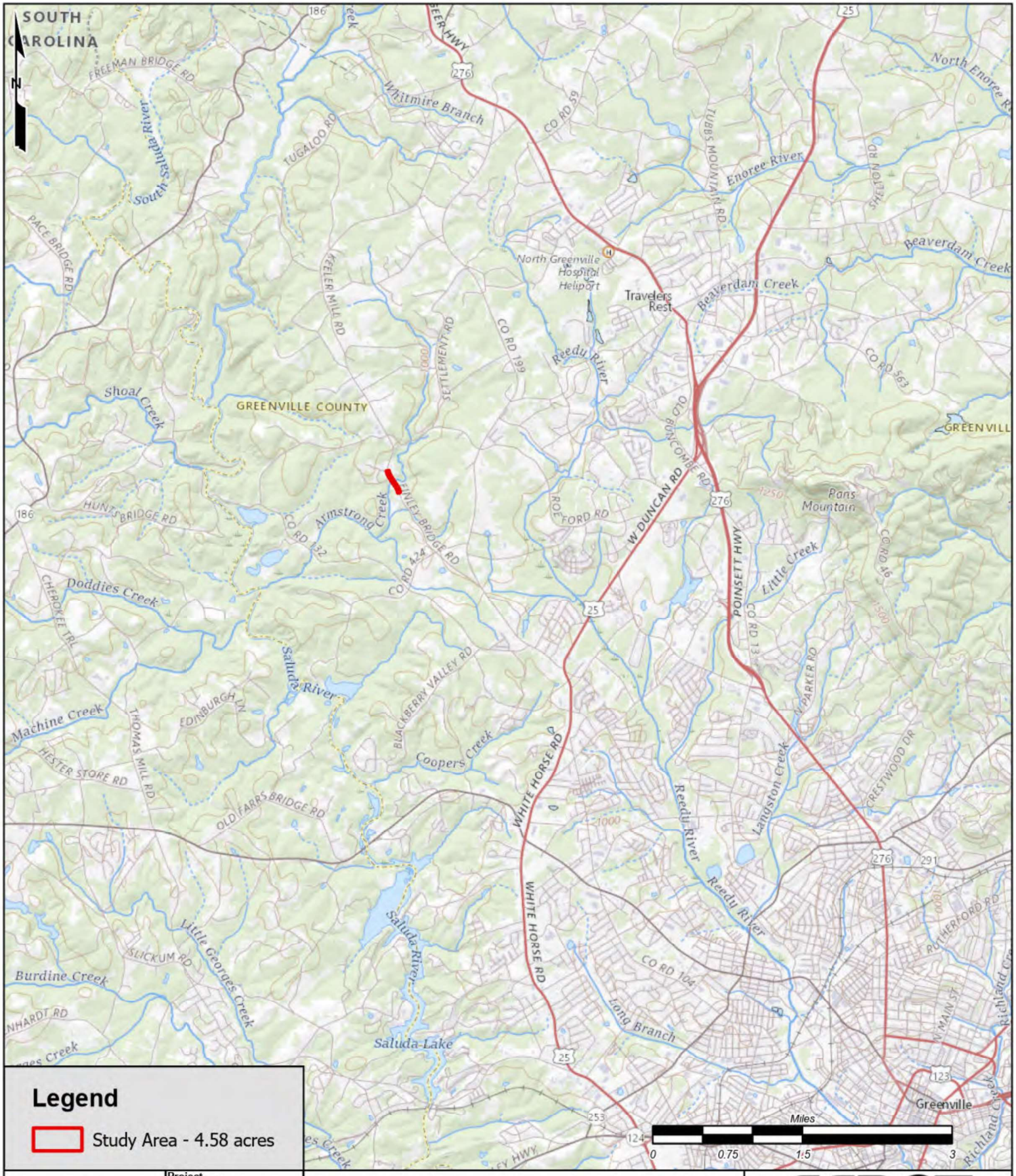
Respectfully Submitted

Matt DeWitt, AICP
Robbins & DeWitt, LLC

Attachment A

Figures

ROBBINS
& DEWITT



ROBBINS & DEWITT
www.Robbins-DeWitt.com

S-102 BRIDGE REPLACEMENT OVER ARMSTRONG CREEK
PROJECT ID: P041161

GREENVILLE COUNTY, SOUTH CAROLINA

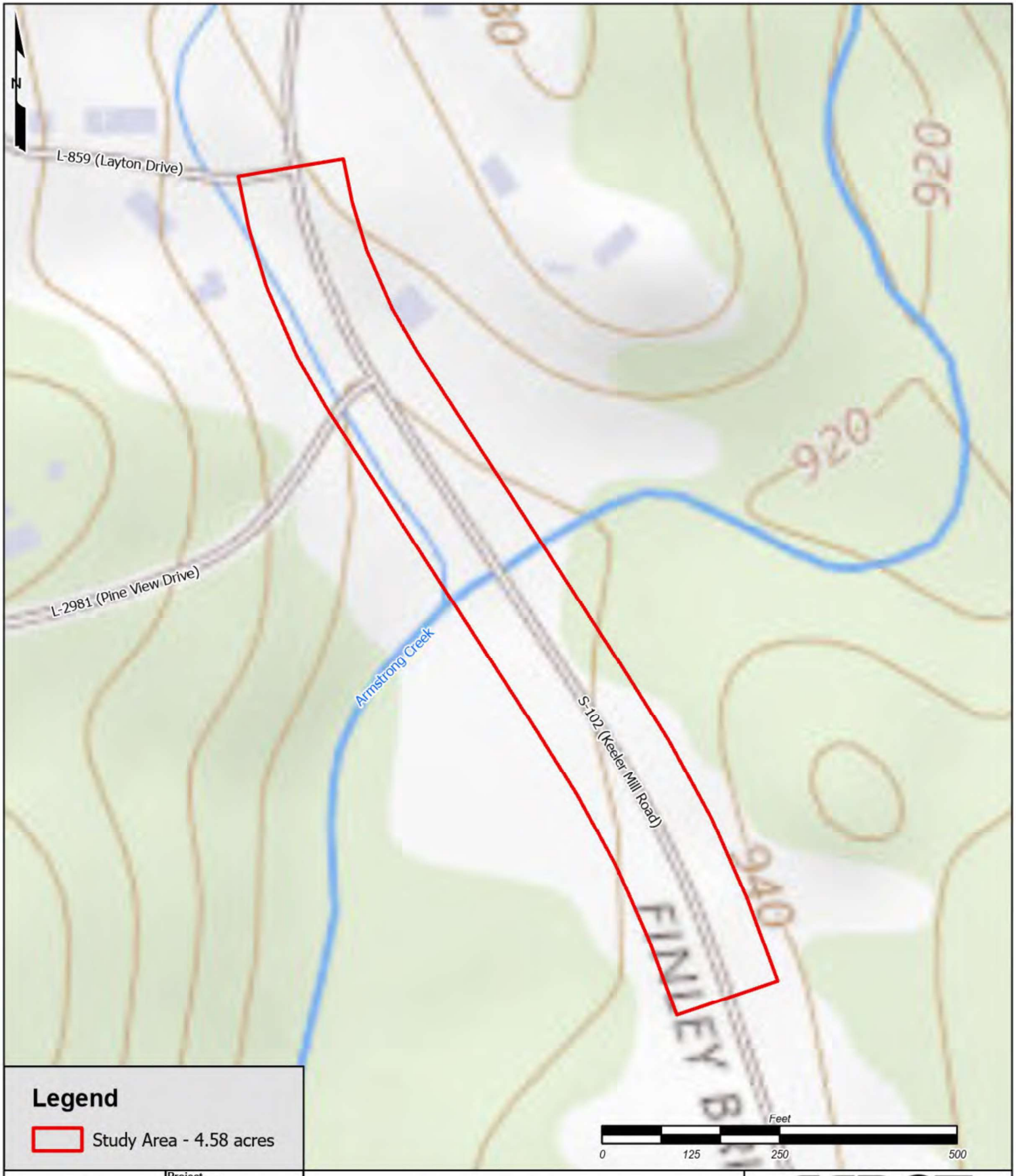
Source: USGS National Map (2023); USGS Paris Mountain, SC Quadrangle (2020)

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 10/30/2023

PROJECT VICINITY

FIGURE 1



ROBBINS & DEWITT
www.Robbins-DeWitt.com

S-102 BRIDGE REPLACEMENT OVER ARMSTRONG CREEK
PROJECT ID: P041161

GREENVILLE COUNTY, SOUTH CAROLINA

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

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 10/30/2023

USGS TOPOGRAPHIC MAPPING

FIGURE 2

ROBBINS & DEWITT
www.Robbins-DeWitt.com

S-102 BRIDGE REPLACEMENT OVER ARMSTRONG CREEK
PROJECT ID: P041161

GREENVILLE COUNTY, SOUTH CAROLINA

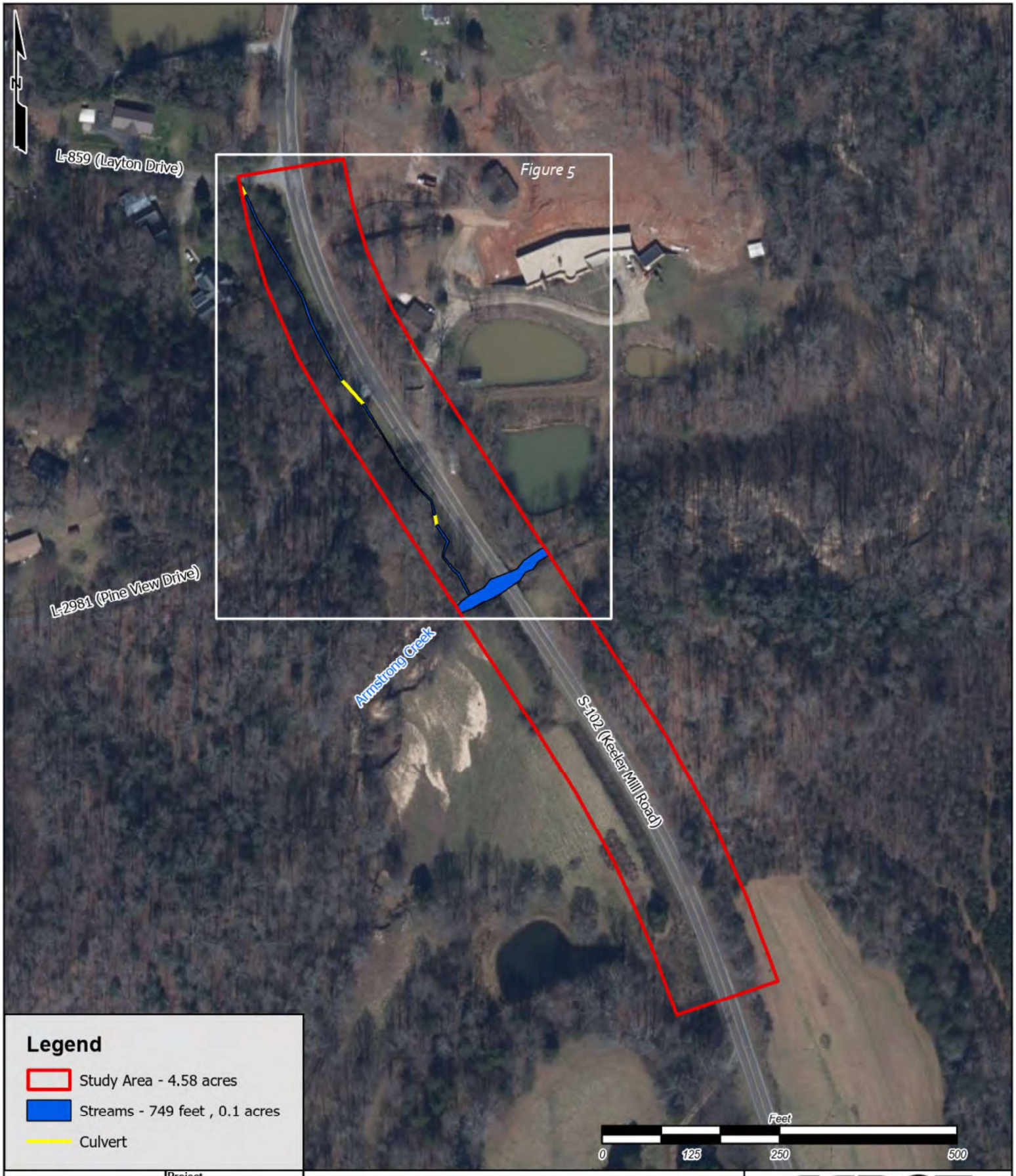
Source: USGS NHD Flowlines (2018); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC | DATE: 10/30/2023

AERIAL IMAGERY

FIGURE 3



ROBBINS & DEWITT
www.Robbins-DeWitt.com

S-102 BRIDGE REPLACEMENT OVER ARMSTRONG CREEK PROJECT ID: P041161

GREENVILLE COUNTY, SOUTH CAROLINA

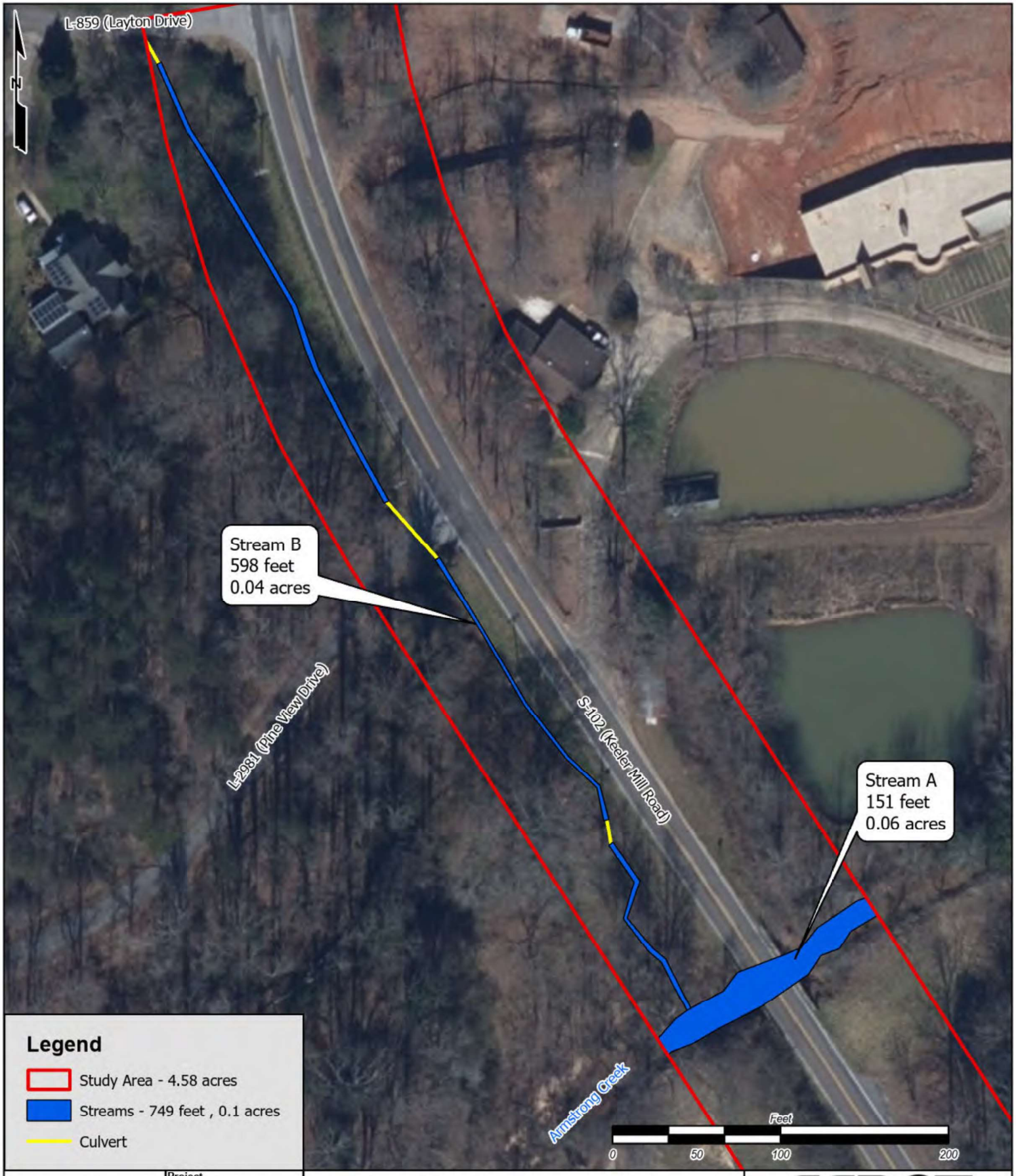
Source: Approximate boundaries of WOTUS were delineated on July 13, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC	DATE: 10/30/2023

APPROXIMATE BOUNDARIES OF WOTUS

FIGURE 4



ROBBINS & DEWITT
www.Robbins-DeWitt.com

S-102 BRIDGE REPLACEMENT OVER ARMSTRONG CREEK
PROJECT ID: P041161

GREENVILLE COUNTY, SOUTH CAROLINA

Source: Approximate boundaries of WOTUS were delineated on July 13, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]

SCDOT
South Carolina Department of Transportation

DRAWN BY: TRC	DATE: 10/30/2023

APPROXIMATE BOUNDARIES OF WOTUS

FIGURE 5

Attachment B

SCDOT Permit Determination Form & Water Quality Information Report

ROBBINS & DEWITT

PERMIT DETERMINATION

Date: Aug 29, 2024 Project ID: P041161

From: Matt DeWitt Company: Robbins & DeWitt

Contact Info (phone and/or email): (864) 201 8446, matt.dewitt@robbins-dewitt.com

Permit Manager: Will McGoldrick - Alternative Delivery Environmental Manager

Project Name: S-102 (Keeler Mill Rd) Bridge Replacement over Armstrong Creek

County: Greenville (Optional) Structure #: 03308

STUDY AREA:

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

PERMIT TYPE:

○ It has been determined that no permit is required because:

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

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

USACE Permit GP ☐ IP ☑ NWP ☐

OCRM Permit Individual CAP ☐ CAP GP ☐

Navigable Permit State NAV ☐ USCG ☐

408 PROJECT INFO:

Is it within a 408 Project: ○ YES ◉ NO

408 Project Name:

MITIGATION:

Mitigation Bank: ◉ YES ○ NO

Mitigation Bank Name: Corley Mill, Grove Creek, Saluda

Comments: Banks/Sites in primary service area.

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

Matt DeWitt Digitally signed by Matt DeWitt Date: 2024.08.30 15:53:52 -04'00'

Biologist, SCDOT/Consultant

8/30/2024

Date

Revised 04/2024

Healthy People Healthly Communities

Watershed and Water Quality Information

General Information

Applicant Name: SCDOT
Permit Type: Construction
Address: 2185 KEELER MILL RD, GREENVILLE, SC, 29617
Latitude/Longitude: 34.941962 / -82.492671
MS4 Designation: Medium MS4
Monitoring Station: S-250
Within Coastal Critical Area: No
Water Classification (Provisional): FW
Waterbody Name: ARMSTRONG CREEK
Entered Waterbody Name:

Parameter Description

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

Impaired Status (downstream sites)

Station	NH3N	CD	CR	CU	HG	NI	PB	ZN	DO	PH	TURBIDITY	ECOLI	FC	BIO	TP	TN	CHLA	ENTERO	HGF	PCB
S-250	X	X	X	X	X	X	X	X	X	X	F	InTN	X	X	X	X	X	X	X	X
RL-08056	X	X	X	X	X	X	X	X	X	X	A	A	X	X	X	X	X	X	X	X
S-007	X	F	F	F	F	F	F	F	F	F	A	A	X	X	X	X	X	X	X	X
S-315	X	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X
S-067	X	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X

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

Parameters to be addressed (those not supporting standards)

ECOLI - Escherichia coli (Freshwaters)

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes
TMDL Site: S-250
TMDL Report No: 023-04
TMDL Parameter: Fecal
TMDL Document Link: https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl_usaluda_fc.pdf

Report Date: October 19, 2023

Attachment C

Biological Assessment

Section 7 of the Endangered Species Act

ROBBINS & DEWITT

Introduction

The proposed project consists of replacing the S-102 (Keeler Mill Road) bridge over Armstrong Creek, and associated road work, in Greenville County, South Carolina.

Pursuant to Section 7 of the Endangered Species Act (ESA), a field survey was conducted within the Project Study Area (PSA) for the project. A Resource List was requested from the USFWS Information for Planning and Consultation (IPaC) in April 2023 (and updated in August 2024), to detail protected species under USFWS jurisdiction that are known or expected to be in or near the project area. Table 1 below includes the species that appear on the IPaC resource list.

Federally Protected Species

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

Table 1: Threatened and Endangered Species

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

Methodology

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on July 13, 2023 and April 16, 2024. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project.

Biotic Communities

Land use in the PSA includes pastureland, undeveloped forestland, and sparse residential development. Two natural communities were observed within the PSA, consisting of oak-hickory forest and small stream forest.

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

Small stream forests typically consist of an open to dense understory or shrub layer and a sparse to dense herb layer. The canopy contained a mixture of bottomland and mesophytic trees including river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), sweetgum (*Liquidambar styraciflua*), loblolly pine, and red maple. The understory species observed include samplings of the overstory species, as well as Chinese privet (*Ligustrum sinense*) and giant cane (*Arundinaria gigantea*). Groundcover observed was sparse and included grasses and other herbaceous species.

Results

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

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

Suitable habitat for tri-colored bat exists in the PSA. Roosting habitat exists under the existing S-102 bridge and in cavities and crevices of trees within the PSA. A structure survey of the existing S-102 bridge found no evidence of bat roosting. Additionally, a visual inspection and borescope review of cavities and crevices in trees within the PSA did not indicate the presence of any bat species. A Structures Survey Data Sheet and Habitat Assessment Data Sheet are included in Attachment D.

Conclusions

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

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

Respectfully Submitted

Matt DeWitt, AICP
Robbins & DeWitt, LLC

Attachment D

Biological Assessment Attachments

ROBBINS & DEWITT

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

IPaC resource list

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

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

Location

Greenville County, South Carolina

Local office

South Carolina Ecological Services

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

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

Endangered species

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

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

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

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

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

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

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

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

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

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

Mammals

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

Reptiles

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

Insects

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

Flowering Plants

NAME	STATUS
Bunched Arrowhead *Sagittaria fasciculata* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1720	Endangered
Dwarf-flowered Heartleaf *Hexastylis naniflora* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2458	Threatened

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

Small Whorled Pogonia Isotria medeoloides — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1890

Swamp Pink Helonias bullata — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4333

White Fringeless Orchid Platanthera integrilabia — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1889

Lichens

NAME	STATUS
Rock Gnome Lichen Gymnoderma lineare Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3933	Endangered

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

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

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

Additional information can be found using the following links:

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

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

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

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

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles" specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

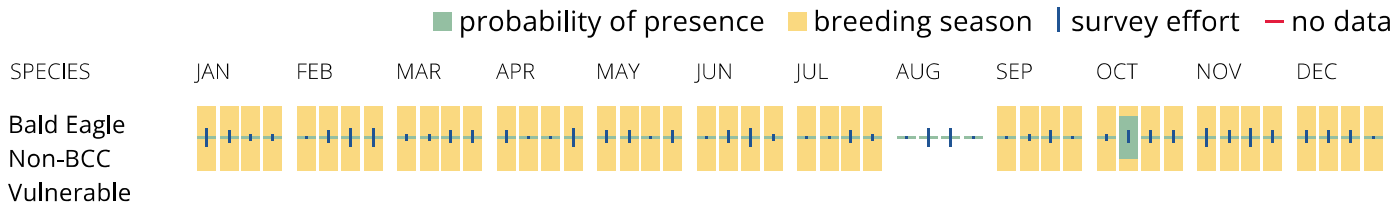
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

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

Survey Timeframe

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



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

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

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

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

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

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

What if I have eagles on my list?

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

Migratory birds

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

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

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

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

NAME	BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Grasshopper Sparrow *Ammodramus savannarum perpallidus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Kentucky Warbler *Geothlypis formosa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler *Setophaga discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles" specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
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To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

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

Survey Effort (|)

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

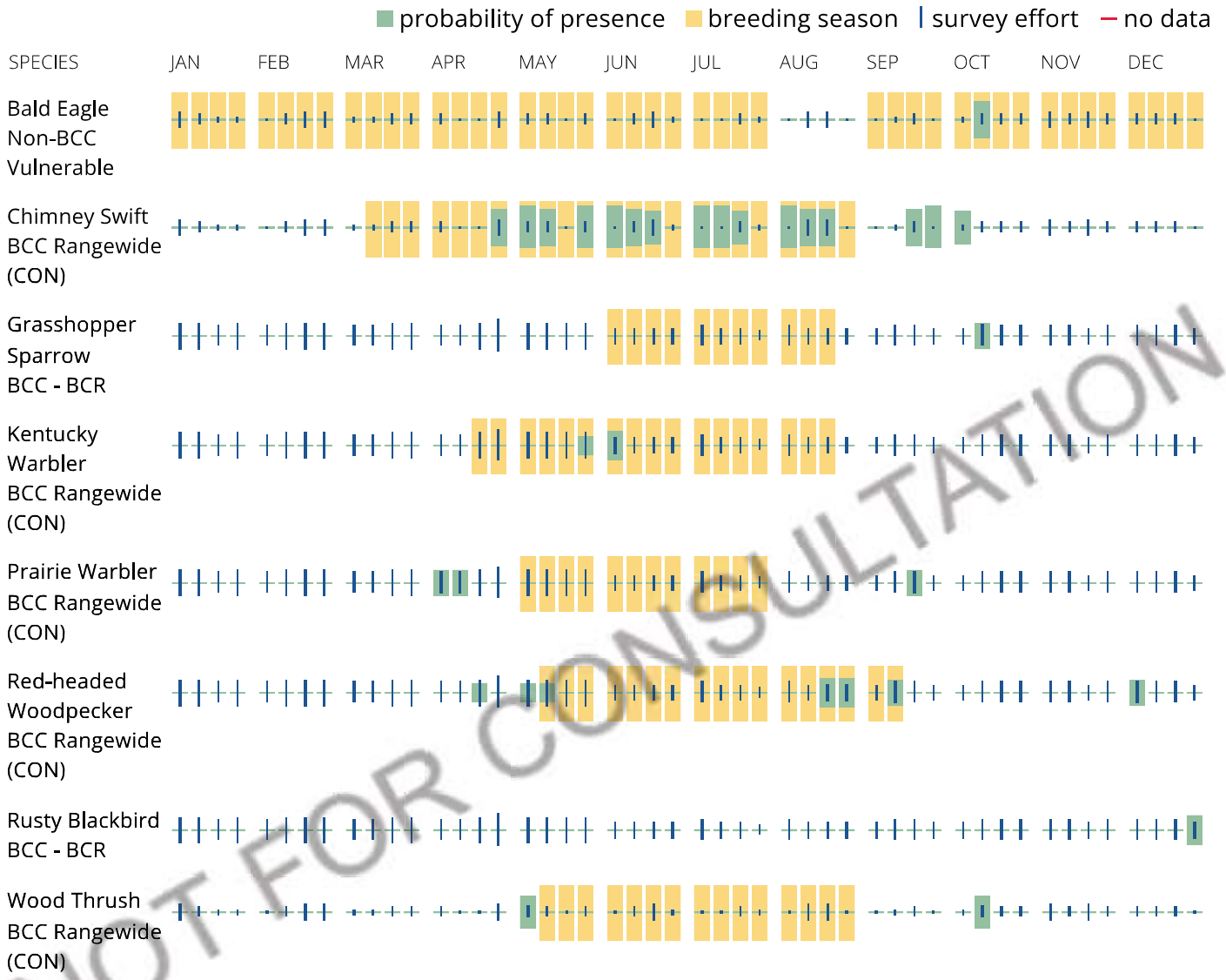
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

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

Survey Timeframe

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



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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

BAT HABITAT ASSESSMENT DATA SHEET

Project Name: S-102 (KEELER MILL RD) OVER ARMSTRONG CREEK

Date: 2023-07-13

County: GREENVILLE

Surveyor(s): A. CHANDLER, M. DEWITT, C. LEWIS

Lat Long: 34.94191, -82.4926

Brief Project Description
The South Carolina Department of Transportation (SCDOT) proposes to replace the S-102 (Keeler Mill Road) bridge over Armstrong Creek in Greenville County, South Carolina. The project is approximately 7.5 miles northwest of the City of Greenville, South Carolina.

Project Area			
Project	Total Acres	Forest Acres	Open Acres
	4.58	1.2	3.38
Proposed Tree Removal	Completely Cleared	Partially Cleared (Will Leave Trees)	Preserve Acres – No Clearing
	0.53	-	0.67

Vegetation Cover Types	
Pre-Project	Post-Project
Mixed woodland Agricultural fields Maintained right-of-way	Mixed woodland Agricultural fields Maintained right-of-way

Landscape within 5-mile Radius
Flight corridors to other forested areas?
Roadways, Streams, Utility Corridors
Describe Adjacent Properties (e.g., forested, grassland, developed, water sources)
Forested, Residential Development, Streams, Ponds

Proximity to Public Land
What is the distance from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?
Paris Mountain State Park: 4.1 miles east Causey Tract: 8.4 miles northwest Table Rock State Park: 12.2 Miles northwest

Sample Site Description	
Sample Site No. (s):	Project Study Area (4.58 acres)

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
			SA: 151 lf SB: 598 lf

Pools/Ponds (# and size)	Outside PSA	Open and accessible to bats?

Wetland (approx. acres)	Permanent	Seasonal
	N/A	N/A

Describe existing condition of water sources:

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')
	1 (1-10%)	3 (21-40%)	4 (41-60%)

Dominant Species of Mature Trees	Loblolly pine, Tulip poplar, Hickory, Sweetgum, Beech, Water oak, Red maple

Exfoliating Bark (%)	2%

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

No. of Suitable Snags	1%
Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.	

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

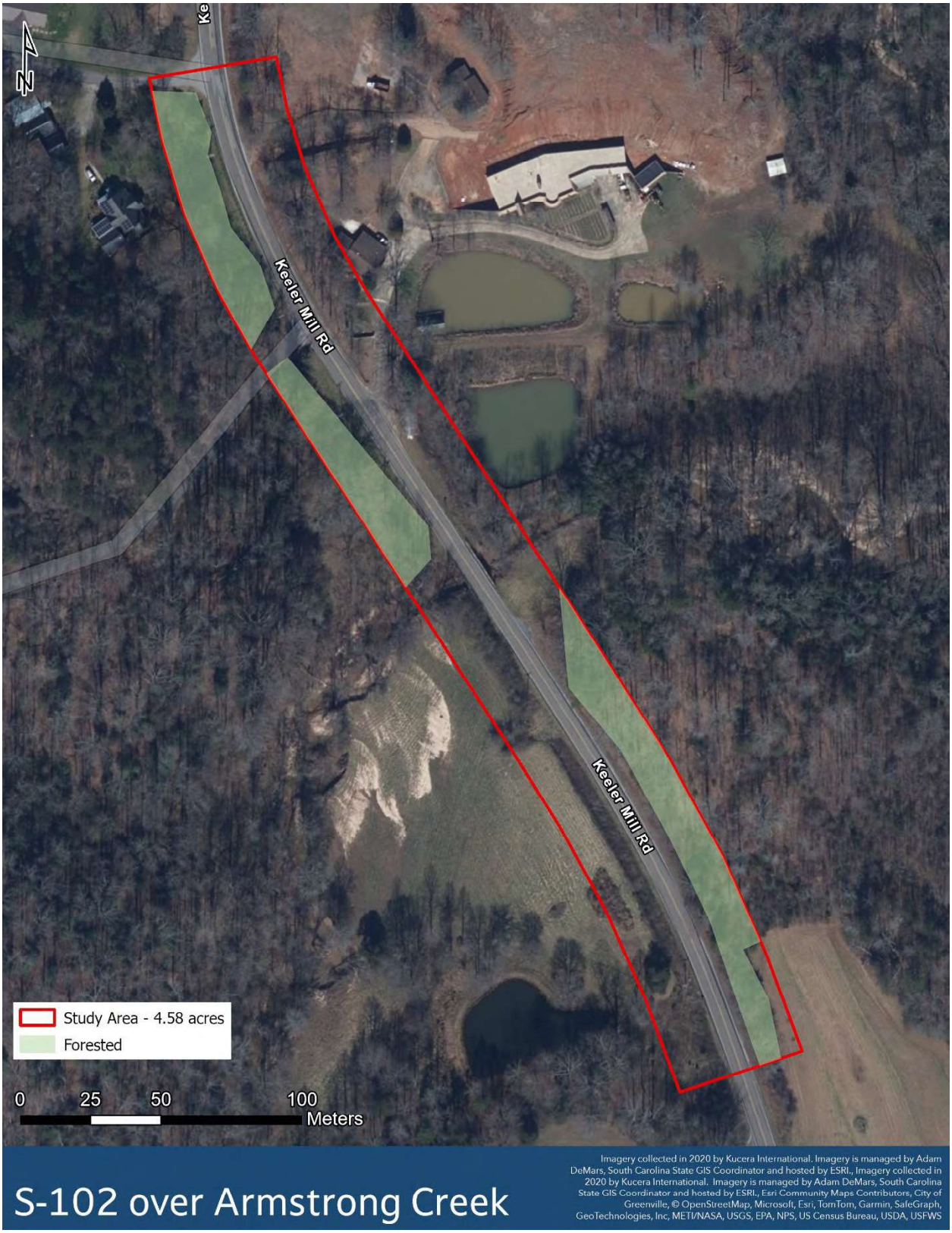
IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS? NO, OUTSIDE KNOWN RANGE

IS THE HABITAT SUITABLE FOR TRI-COLORED BATS? YES

Additional Comments:

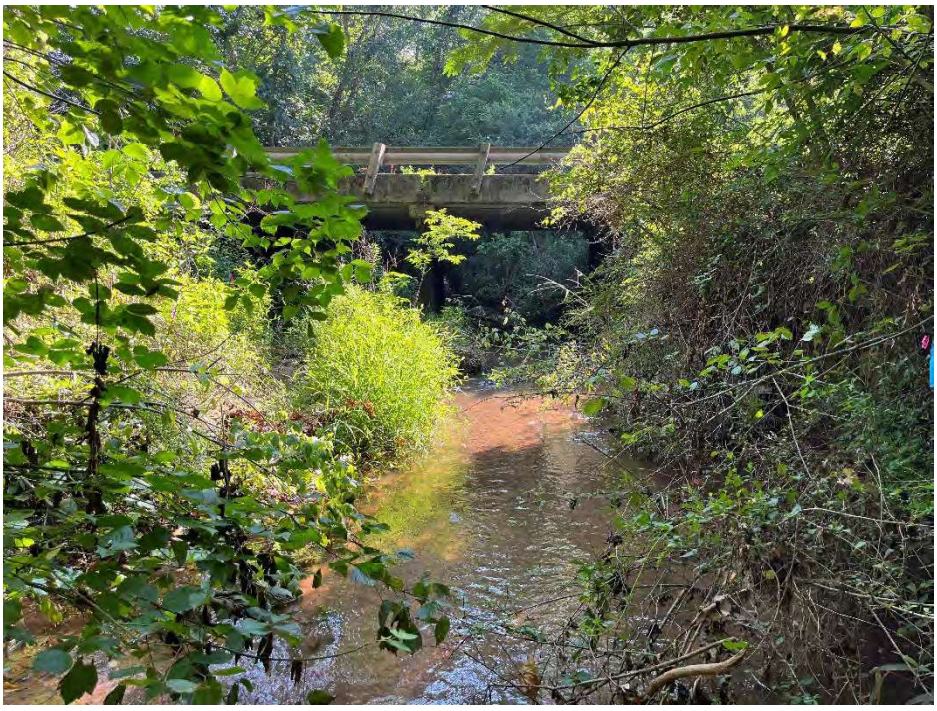
Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

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


N
Keeler Mill Rd
Keeler Mill Rd
Study Area - 4.58 acres
Forested
0
25
50
100
Meters
S-102 over Armstrong Creek
Imagery collected in 2020 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by ESRI., Imagery collected in 2020 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by ESRI., Esri Community Maps Contributors, City of Greenville, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Photograph 1
Date: 2023-07-13
Taken by: A. Chandler
S-102 roadway and bridge

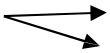
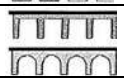
Photograph 2
Date: 2023-07-13
Taken by: A. Chandler
Field, south of bridge on west side of S-102

	Photograph 3 Date: 2023-07-13 Taken by: A. Chandler Under S-102 bridge
	Photograph 4 Date: 2023-07-13 Taken by: A. Chandler Stream A (SA) and S-102 bridge

Photograph 5
Date: 2023-07-13
Taken by: M. DeWitt
Stream B (SB)

STRUCTURES SURVEY DATA SHEET

Investigator Names(s): A. CHANDLER, M. DEWITT, C. LEWIS	
Date: 2023-07-13	County: GREENVILLE
Lat Long/w3w: 34.94191, -82.4926	
Project Name: S-102 (KEELER MILL RD) OVER ARMSTRONG CREEK	
SCDOT Structure ID: 03308	Project No.: P041161

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

Road Type:			
☐ Interstate	☐ US Highway	☒ State Road	☐ County Road
		S-102	

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

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

Bats Present:	
☐ YES	☒ NO

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

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

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

Roost Design (check all that apply):			
☐ Crack/Crevice/Expansion Joint: Under Bridge		☐ Crack/Crevice/Expansion Joint: Top of Bridge	
☐ Plugged Drain	☐ Under/Along Main Bridge Structure	☐ Rail	☐ Other:

Human Disturbance or Traffic Under Bridge or at Structure?		
☐ High	☒ Low	☐ None

Areas Inspected (check all that apply):			
☐ Vertical Surfaces on I-Beams	☒ Vertical Surfaces between Concrete End Walls and Bridge Deck		
☒ Expansion Joints	☒ Rough Surfaces	☒ Guardrails	☒ Cervices
☐ Other:			
Areas NOT Inspected because of Safety or Inaccessibility:			

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

Additional Information:

Photograph 1
Date: 2023-07-13
Taken by: A. Chandler
Underneath bridge

Photograph 2
Date: 2023-07-13
Taken by: A. Chandler
North end bent

Photograph 3
Date: 2023-07-13
Taken by: A. Chandler
South end bent

Photograph 4
Date: 2023-07-13
Taken by: M. DeWitt
S-102 bridge

Appendix C: Bridge Scope and Risk Assessment Form

BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: Greenville DATE: 06/18/2024

ROAD #: S-102 STREAM CROSSING: Armstrong Creek

Purpose & Need for the Project:

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

I. FEMA Acknowledgement

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

Panel Number: 45045C0303E Effective Date: 08/18/2014 (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number N/A illustrates the existing 100 year flood:

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

III. No Rise/CLOMR Preliminary Determination

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

Justification: Bridge is located in FEMA Zone A without a floodway established. Preliminary analysis indicates the proposed bridge will satisfy all SCDOT criteria for determine a finding of "No Impact".

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

Justification:

BRIDGE SCOPE AND RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 23.453.1 Sheet No. 9 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 23.453 Sheet No. 9 (See Attached)

B. Historical Highwater Data

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

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

c. Existing Plans ☑ Yes ☐ No See Above

V. Field Review

A. Existing Bridge

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

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: Spill Through

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

Superstructure Type: Concrete Deck

Substructure Type: RC Caps with Timber piles

Utilities Present: ☐ Yes ☑ No

Describe:

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

Percent Blocked Vertically: <5 %

Hydraulic Problems: ☐ Yes ☑ No

Describe:

BRIDGE SCOPE AND RISK ASSESSMENT FORM

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: ☐ Yes ☑ No Location: _____

b. Distance from F.G. to Normal Water Elevation: 9.0 ft.

c. Distance from Low Steel to Normal Water Elev.: 7.3 ft.

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

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

f. Channel Banks Stable: ☐ Yes ☑ No

Describe: heavy erosion on end bent embankment

g. Soil Type: Sand / Gravel

h. Exposed Rock: ☐ Yes ☑ No Location: _____

i. Give Description and Location of any structures or other property that could be damaged due to additional backwater.

There are some residential structures upstream of the bridge. The majority of the land in the vicinity is undeveloped or pasture.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

an adequate detour route is available

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 SCOPE AND RISK ASSESSMENT FORM

VI. Field Review (cont.)

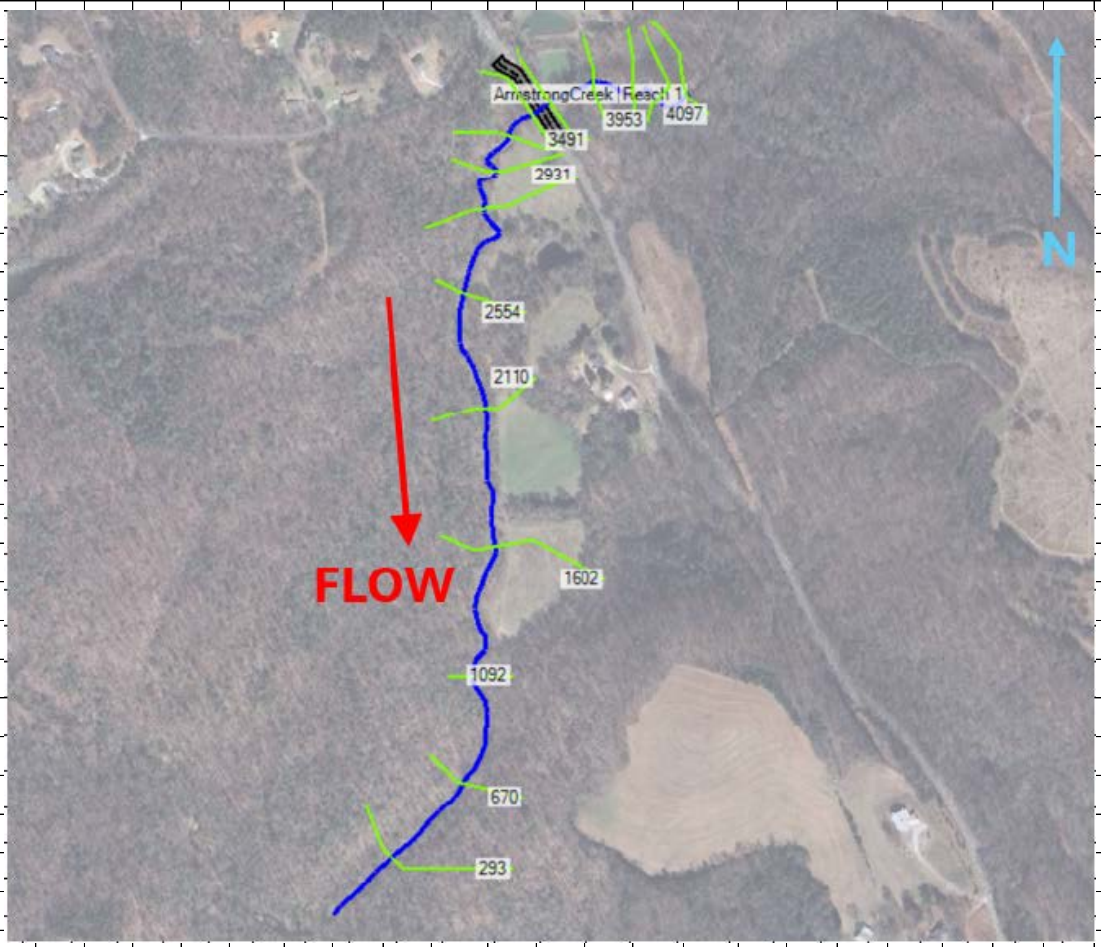
A. Proposed Bridge Recommendation:

Length: 100 ft. Width: 42 ft. Elevation: 916.59 ft.

Span Arangement: Single span

Notes: Proposed minimum low chord elevation is 916.59'. Proposed minimum profile/deck elevation is 920.41'. Proposed 36" deep box beam superstructure with asphalt surface course.

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



Performed By: Hassan Ismail

Title: Project Manager

Appendix D: Floodplains Checklist

South Carolina Department of Transportation
Location and Hydraulic Design of Encroachments on Floodplains Checklist

23 CFR 650, this regulation shall apply to all encroachments and to all actions which affect base floodplains, except for repairs made with emergency funds. Note: These studies shall be summarized in the environmental review documents prepared pursuant to 23 CFR 771.

I. PROJECT DESCRIPTION

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

A. Narrative Describing Purpose and Need for Project
   a. Relevant Project History:
   b. General Project Description and Nature of Work (attach Location and Project Map):
   c. Major Issues and Concerns:

The primary purpose of the project is to replace the bridge. Roadway improvements are limited to those associated with accommodating the new structure.
The project crosses Armstrong Creek which is shown on the Flood Insurance Rate Map (FIRM) Panel 45045C0303E. Armstrong Creek is within a designated Special Flood Hazard Area Zone A in the vicinity of the Project. The project is not expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an appreciable environmental impact on the base flood elevation. In addition, the project would be developed to comply with all appropriate floodplain regulations and guidelines.

B. Are there any floodplain(s) regulated by FEMA located in the project area?
   Yes☒ No☐

C. Will the placing of fill occur within a 100-year floodplain?
   Yes☒ No☐

D. Will the existing profile grade be raised within the floodplain?

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

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

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

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

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

Risks are minimal; the project will replace the existing bridge with larger bridge opening. The increased opening will have a minimal impact on the BFE's along the floodplain.

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

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

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

A similar bridge size will be used and constructed on the existing alignment.

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

Not Applicable

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

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

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

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

21 June 2023

SCDOT Hydraulic Engineer Date

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Lambert Conformal Conic State Plane South Carolina FIPS 3900. The **horizontal datum** was NAD83 HARN, GRS 1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NINGS210
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by Greenville County, South Carolina.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of communities participating in the National Flood Insurance Program and in each community as well as a listing of the panels on which each community is located.

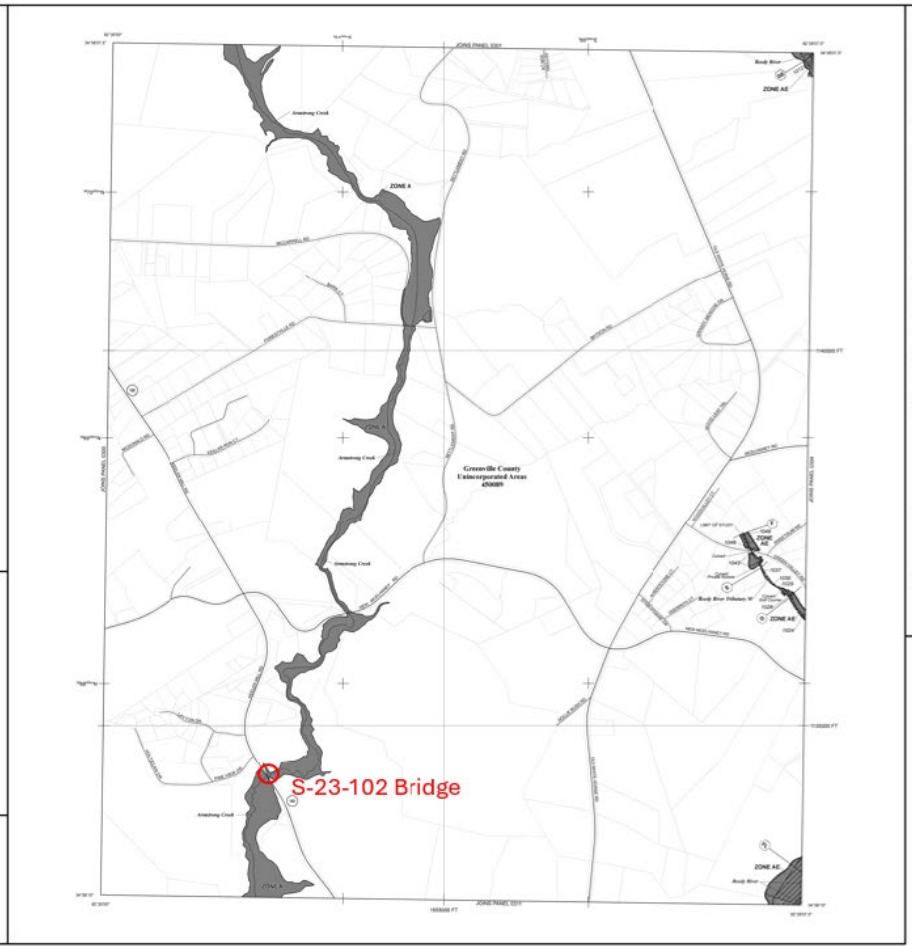
For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://www.msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

DNR

This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of South Carolina and the Federal Emergency Management Agency (FEMA). The State of South Carolina has implemented the Federal Program in order to reduce future flood losses and the costs associated with flooding. This is demonstrated by the State's commitment to map floodplain areas at the local level. As a part of this effort, the state of South Carolina has joined in a Cooperating Technical Sate agreement with FEMA to produce and maintain this digital FIRM.

http://www.dnr.state.sc.us/



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- (EL 987) — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 5000-foot grid values: South Carolina State Plane coordinate system, zone 3900 (FIPS zone 3900), Lambert projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
December 5, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
August 18, 2014 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations and Special Flood Hazard Areas, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0303E

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

PANEL 303 OF 625
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENVILLE COUNTY	450089	0303	E

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

MAP NUMBER
45045C0303E
MAP REVISED
AUGUST 18, 2014

Federal Emergency Management Agency

Appendix E: Public Information Meeting & Public Comments

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