



APPENDIX L. BISHOPVILLE TRUCK ROUTE PROJECT NATURAL RESOURCES TECHNICAL MEMORANDUM

**BISHOPVILLE TRUCK ROUTE
PROJECT
(S-69-08)
FINAL NATURAL RESOURCES**

Prepared for:

Federal Highway Administration
&
South Carolina Department of Transportation

November 2021

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The South Carolina Department of Transportation (SCDOT) is proposing the construction of a new truck route to reduce the volume of truck traffic traveling along U.S. 15 through the city of Bishopville, Lee County (**Figure 1** and **Figure 2**). The proposed project route is approximately 4.7 miles long. The typical cross section would consist of an arterial two-lane roadway with turning lanes at intersections and a general right-of-way width of 100 feet. The speed limit would be posted at 45 to 55 miles per hour.

1.2 METHODOLOGY

The existing natural resources within the study boundary were assessed to identify potential impacts to the natural environment that could occur as a result of the proposed project construction. The study boundary included the footprint of the 12 design alternatives developed for analysis, as indicated in the Environmental Impact Statement. The natural resources assessment included a desktop analysis of data from state and federal databases and site reconnaissance of the study boundary. This natural resource report includes information on habitats, water quality, wetlands and other waters of the United States, and federally listed threatened and endangered species.

This assessment of natural resources was conducted utilizing a review of available mapping and literature research, including, but not limited to U.S. Geological Survey (USGS) topographic quadrangles; U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey database; U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data; USFWS at-risk, candidate, threatened, and endangered species county listings; USFWS Information for Planning and Conservation (IPaC) site-specific resources lists; S.C. Department of Natural Resources (SCDNR) inventory of rare, threatened, and endangered species known to occur in Lee County; the S.C. Department of Health and Environmental Control (SCDHEC) watershed atlas; and, SCDHEC Integrated Report for 2018 Section 303(d) List of Impaired Waters. Additionally, a field review was conducted in the study boundary to ground truth NWI data and assess the potential for protected species habitat.

Figure 1: Site Location Map

SCDOT South Carolina
Department of Transportation

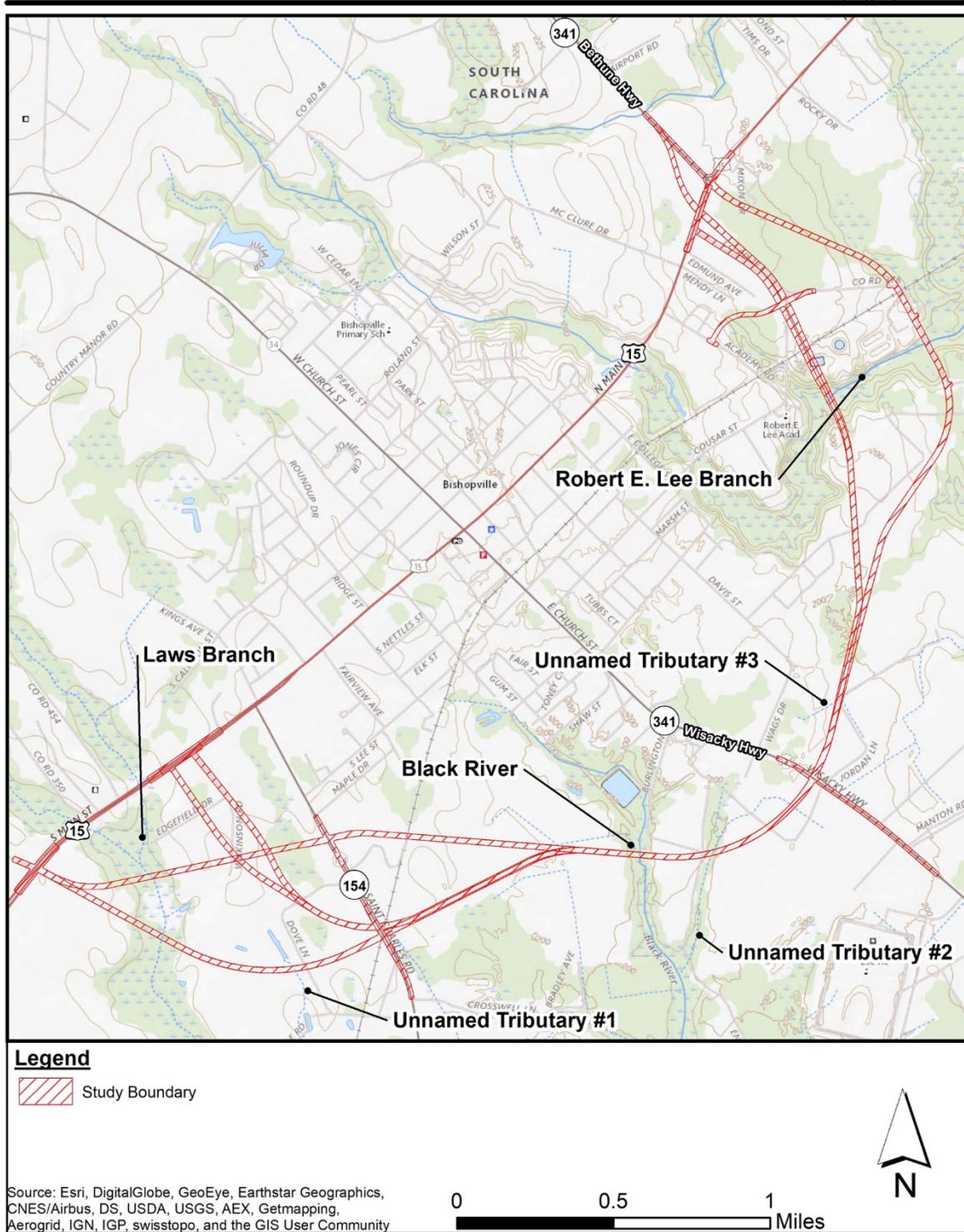
SCDOT Project #: S-69-08
Proposed Bishopville Truck Route Project
Lee County, South Carolina
Site Location Map



Figure 2: Topography of Study Boundary



SCDOT Project #: S-69-08
Proposed Bishopville Truck Route Project
Lee County, South Carolina
Site Topographic Map



2. PROJECT SETTING

The study boundary is in the Southeastern Plains ecoregion, which is an area between the Piedmont ecoregion to the northwest and the Middle Atlantic Coastal Plain ecoregion to the southeast. The Southeastern Plains ecoregion contains plains with broad interstream areas that have a mosaic of cropland, pasture, woodland, and forest (Griffith, et. al. 2002). Natural vegetation was mostly longleaf pine, with smaller areas of oak-hickory-pine. However, over the past three centuries naval stores or pine tar production; logging; open range cattle and feral hog grazing; agriculture; and, fire suppression removed almost all of the longleaf pine forests.

Elevations and relief in the study boundary are greater than in the Middle Atlantic Coastal Plain, but generally less than the more mountainous Blue Ridge. Streams in this area are relatively low-gradient and sandy-bottomed. The study boundary is within the Pee Dee River Basin. The South Carolina portion of the Pee Dee River Basin flows from the Piedmont and Sandhills regions of the state to the Upper and Lower Coastal Plain and Coastal Zone regions. The basin encompasses 45 watersheds (10-digit hydrologic unit) and 5,022,747 acres (SCDHEC 2020). The western portion of the study boundary is in the Headwaters Black River watershed (HUC 0304020502) and the eastern portion is in the Middle Lynches River watershed (HUC 0304020205).

Land use and land cover within the study boundary includes predominantly agricultural land. Natural habitats are located near stream and wetland areas. These features are mixed hardwood and mixed pine-hardwood areas that drain to the Lynches River to the east and southeast or to the Black River to the south. These features are typical of the inner coastal plain. The vast majority of habitats within the study boundary were manipulated by past land management practices to facilitate improved drainage for agricultural land uses. Streams were partially or fully channelized, which has eliminated or reduced the amount of adjacent wetland area.

2.1 HABITATS

Habitat types in the study boundary include mixed pine/hardwood forest, freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine (**Figure 3**). Habitat data were developed based on NWI data, field observations, and photointerpretation of aerial imagery.

2.1.1 MIXED PINE/HARDWOOD FOREST

Mixed pine/hardwood forest are primarily located near stream and wetland areas within the study boundary. They consist of early-successional hardwood pine forest with canopy species of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), and water oak (*Quercus nigra*). Understory species include Carolina laurel cherry (*Prunus caroliniana*), American holly (*Ilex opaca*), southern magnolia (*Magnolia grandiflora*), and water oak. A limited amount of silvicultural production is also located in the vicinity of the study boundary.

2.1.2 FRESHWATER EMERGENT WETLAND

Freshwater emergent wetlands contain herbaceous graminoid and forbs species such as fall panic grass (*Panicum dichotomiflorum*) and soft rush (*Juncus effusus*).

Figure 3: Natural Habitats Map



2.1.3 FRESHWATER FORESTED/SHRUB WETLAND

Forested wetlands are located in the drainageways and adjacent to the streams in the study boundary. Common canopy species include red maple (*Acer rubrum*), sweetgum, and blackgum (*Nyssa sylvatica*). Common understory species include fetter-bush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), Chinese privet (*Ligustrum sinense*), and giant cane (*Arundinaria gigantea*).

2.1.4 FRESHWATER POND

A small pond is present within the study boundary in the mixed pine/hardwood forest in the northeast section.

2.1.5 RIVERINE

Perennial and intermittent channels are present in the study boundary. The streambed substrates are primarily clayey silts and sands, with gravel and cobble present. They have been channelized and contain steep, eroded banks. Further discussion of the streams is presented in Section 3.

2.2 SOILS AND GEOLOGY

The study boundary is located within the Piedmont Province, which sits between the Atlantic coastal plain and the Appalachian Mountains. The Piedmont is demarcated by the Atlantic Seaboard fall line to the east and the Blue Ridge Mountains to the west (USGS 1946). Sediment deposition in the Piedmont resulted primarily from the Mesoproterozoic Grenville orogeny, the Paleozoic Appalachian orogeny, and large-scale infilling of Mesozoic rifts during the break-up of Pangaea.

The study boundary's geology is characterized by Paleozoic-era crystalline rocks of the Six Mile Thrust Sheet. Rocks of this formation generally contain muscovite-biotite schist, biotite schist, silimanite-mica schist and gneiss, amphibolite, biotite gneisses including some that are porphyroblastic, felsic gneiss, and some manganese schist and metamorphosed manganese silicate (SCGS 2005). Lithology in the vicinity of the study boundary results in predominantly Ultisol surface soils.

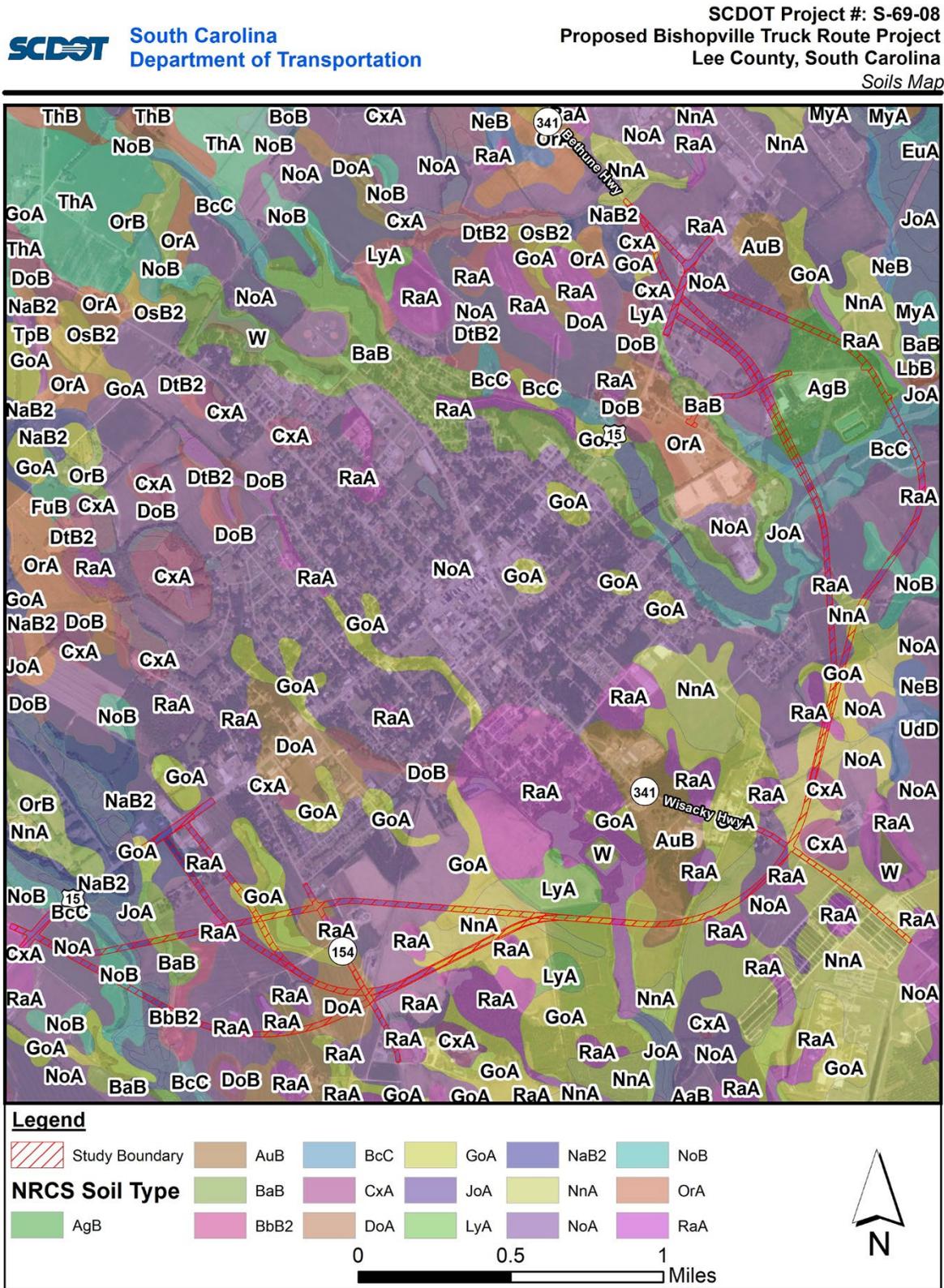
Surface soils in the study boundary's area have been classified by the USDA NRCS as primarily Cecil sandy loam with occasional clay, of varying slopes, and partially eroded (**Table 1** and **Figure 4**). Additionally, narrow strips of Cecil-Bethlehem complex sandy loam and sandy clay loam appear throughout the study boundary (USDA NRCS 2020).

Table 1: NRCS Soil Survey Mapping Units within the Study Boundary

Map Unit Symbol	Map Unit Name
AgB	Alaga sand, 0 to 4 percent slopes
AuB	Autryville sand, 0 to 4 percent slopes
BaB	Barnwell loamy coarse sand, 2 to 6 percent slopes
BbB2	Barnwell sandy loam, 2 to 6 percent slopes, moderately eroded
BcC	Barnwell-Cowarts-Troup complex, 6 to 10 percent slopes
CxA	Coxville sandy loam, 0 to 2 percent slopes
DoA	Dothan loamy sand, 0 to 2 percent slopes
GoA	Goldsboro sandy loam, 0 to 2 percent slopes
JoA	Johnston muck, 0 to 2 percent slopes, frequently flooded
LyA	Lynchburg sandy loam, 0 to 2 percent slopes
NaB2	Nankin sandy clay loam, 2 to 6 percent slopes, moderately eroded
NnA	Noboco-Goldsboro complex, 0 to 2 percent slopes
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
RaA	Rains sandy loam, 0 to 2 percent slopes

Note: U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey Custom Soil Resource Report for Lee County, South Carolina, March 25, 2020.

Figure 4: Soils Map



3. WATER QUALITY

3.1 GROUNDWATER

The project area is serviced by the city of Bishopville for its drinking water. The project area is within the Middendorf Aquifer, which supplies the majority of the Pee Dee region. Because of the depth of the aquifer, contamination due to the proposed project is not anticipated.

3.2 SURFACE WATERS

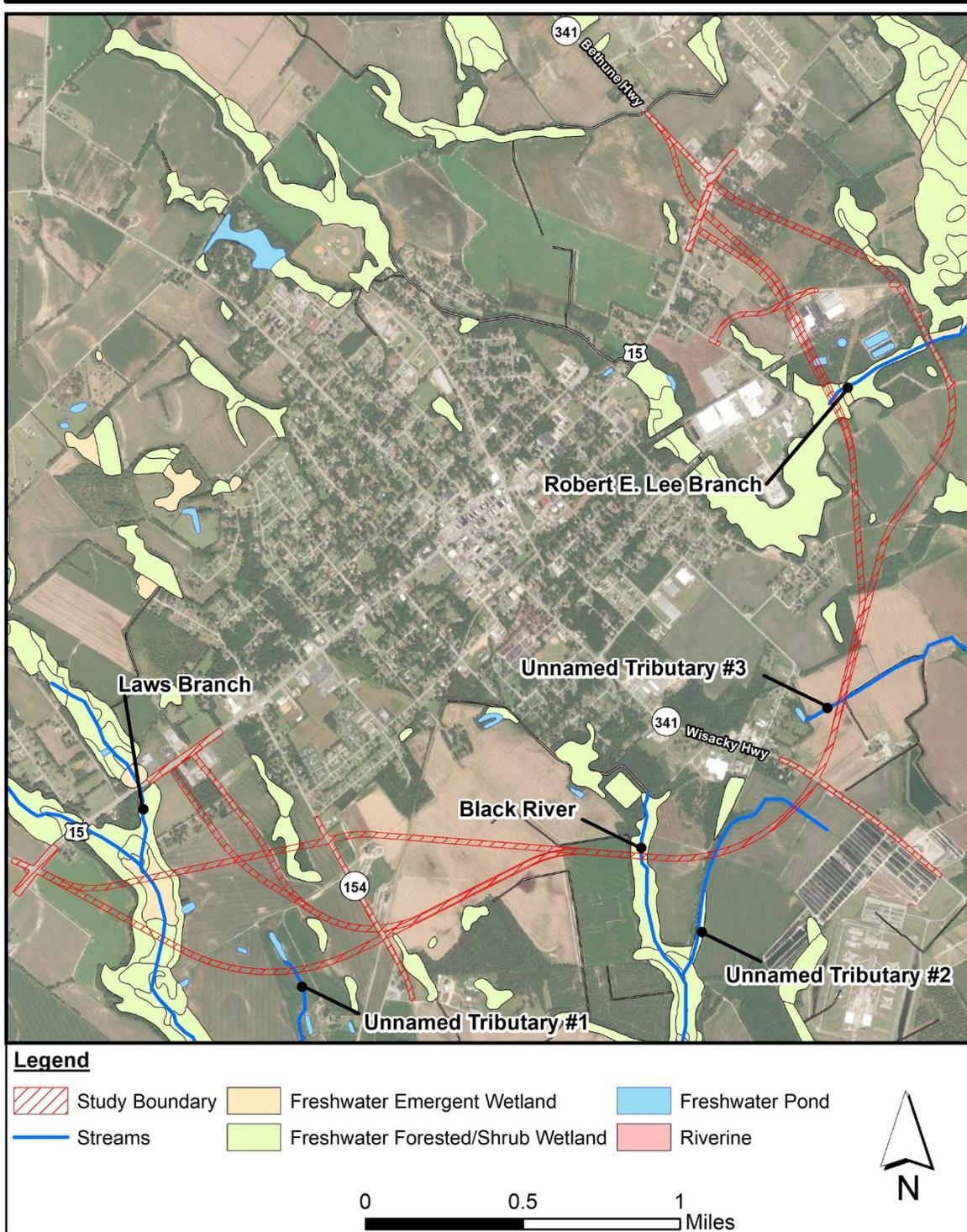
There are three major perennial streams and three intermittent streams within the study boundary (**Table 2; Figure 5**). The three perennial streams include Robert E. Lee Branch, Laws Branch, and Black River. The intermittent streams are channelized drainages related to agricultural practices. These features are incised and maintained for field drainage. Streams within the study boundary have beds of fine to medium grained alluvium.

Table 2: Stream Summary

Stream Name	Stream Type	303(d) Listed	USGS Blue-line
Laws Branch	Perennial	No	Yes
Unnamed Tributary #1	Intermittent	No	Yes
Black River	Perennial	No	Yes
Unnamed Tributary #2	Intermittent	No	Yes
Unnamed Tributary #3	Intermittent	No	Yes
Robert E. Lee Branch	Perennial	Yes	Yes

Pursuant to Section 303(d) of the Federal Clean Water Act (CWA) and Federal Regulation 40 CFR 130.7, the Section 303(d) list for the state of South Carolina (2018) was reviewed to determine if there are water bodies within the study boundary that do not meet state water quality standards. The Robert E. Lee Branch (Cousar Branch) of the Lynches River is listed on SCDHEC's Section 303(d) impaired waters list because the stream exceeds allowable limits for *Escherichia coli*, based on sampling at water quality monitoring station PD-112 (SCDHEC 2018). For the 2018 303(d) list, SCDHEC considered any water impaired for freshwater recreational use to be listed for *E. coli*. According to SCDHEC's *Watershed Water Quality Assessment: Pee Dee River Basin*, aquatic life uses are fully supported. However, there are significant decreasing trends in dissolved oxygen concentration and increasing turbidity trends. There is also a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions (SCDHEC 2015). The total maximum daily load (TMDL) for this stream is not established. The Black River, at water quality monitoring station PD-353, has a TMDL for fecal coliform approved in 2012. This stream was not included on the 303(d) list because the TMDL objectives and reductions recommended may result in satisfactory water quality standards for the pollutant of concern.

Figure 5: Wetland and Stream Map



The SCDHEC Bureau of Water is responsible for the National Pollutant Discharge Elimination System (NPDES) Permit Program for South Carolina. The city of Bishopville Wastewater Treatment Plant, located on McGuiert Road less than one mile from the study boundary, has a major sewerage system discharge NPDES permit for discharge into the Robert E. Lee Branch.

The proposed project route would cross the Robert E. Lee Branch between one-quarter and one-half mile upstream of the water quality monitoring station. Water quality could be impacted as a result of pollutant buildup in new areas of the project area from the increase in traffic volume. Because of rain, inorganic materials, volatile organic compounds (from petroleum products), dust from vehicle brakes and exhaust, and heavy metals can build up on roadways and run off into streams and wetlands. Grassed shoulders are proposed for the project to serve as a vegetated strip to filter pollutants from runoff. Grassed ditches would also provide opportunity for pollutants to settle out before reaching streams or other bodies of water. Any additional water quality treatments would be addressed during the NPDES permitting phase.

4. WETLANDS AND WATERS OF THE UNITED STATES

Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Jurisdictional wetlands are defined in the field as areas that display positive evidence of three environmental parameters, including dominance of hydrophytic vegetation, wetland hydrology, and hydric soils (Environmental Laboratory 1987). Jurisdictional waters of the U.S. are defined by 33 Code of Federal Regulations (CFR) 328.3(b) and regulated by Section 404 of the Clean Water Act (CWA) (33 United States Code [U.S.C.] 1344), which is administered and enforced by the United States Army Corps of Engineers (USACE). The term “waters of the U.S.” is defined in 33 CFR Part 328 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs 1 through 4 above;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1 through 6 above.

Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency (EPA). Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds, as defined in 40 CFR 123.11(m)) are not waters of the United States.

One method of assessing the value and function of wetlands is in terms of wildlife habitat. The U.S. Fish and Wildlife Service (USFWS) Resource Category criteria are outlined in the USFWS Mitigation Policy, 46 CFR 7644-7663. Resource categories and mitigation planning techniques are assigned based on the following criteria:

- Category 1 – Communities of one-of-a-kind high value to wildlife, unique and irreplaceable on a national or eco-regional basis, habitat is not replaceable in kind based on present-day scientific and engineering skills within a reasonable time frame.
- Category 2 – Communities of high value to wildlife, which are relatively scarce or are becoming scarce on a national, or eco-regional basis, habitat can be replaced in kind within a reasonable time frame based on present-day scientific and engineering skills.
- Category 3 – Community types of high to medium wildlife value which are relatively abundant on a national basis, out-of-kind replacement is allowable if a tradeoff analysis demonstrates equivalency of substituted habitat type and/or habitat values. These sites are often in conjunction with a replenishing source.
- Category 4 – Community types of low to medium wildlife value, generally losses will not have a substantial adverse effect on important fish and wildlife resources. These sites have often been affected by the present roadway or human disturbances and are usually isolated.

4.1 WETLANDS WITHIN THE STUDY BOUNDARY

The USFWS National Wetland Inventory database was assessed to determine the extent of wetlands and other waters of the U.S. within the study boundary. These wetlands were verified during the field reconnaissance. In general, wetlands within the study boundary include forested and emergent wetlands historically modified by human disturbance and land use practices including draining, clearing, and channelization of drainage ways. All wetlands within the study boundary are Category 4 wetlands because they were affected by human disturbances.

4.2 WETLAND PROTECTION AND MITIGATION

Executive Order 11990, Protection of Wetlands, requires federally supported projects to preserve wetlands and to avoid and minimize wetland impacts to the maximum extent practicable. Mitigation has been defined in NEPA regulations to include efforts which: a) avoid; b) minimize; c) rectify; d) reduce or eliminate; or e) compensate for adverse impacts to the environment (40 CFR 1508.20 [a-e]). Section 404(b) (1) Guidelines of the Clean Water Act and Executive Order 11990 stress avoidance and minimization as primary considerations for protection of wetlands. SCDOT would comply with Executive Order 11990 regarding protection of wetlands. The wetland impacts required for construction of the

project would be quantified and applied to the determination of required compensatory mitigation per the latest USACE Mitigation SOP.

4.3 WETLAND PERMITS

If the proposed project would impact wetlands or other waters of the United States, a Section 404 permit from USACE would be required for the placement of dredged or fill materials in waters of the U.S., including jurisdictional wetlands. Also, a Section 401 Water Quality Certification permit for discharges into wetlands and waters of the U.S. is required from SCDHEC. Certification ensures that discharges are in accordance with state water quality standards.

5. ALTERNATIVE IMPACTS

Impacts to the different habitats, wetlands, and streams in the study boundary are shown in **Table 3**. The 12 alternatives would impact between approximately one and five acres of wetlands, based on the NWI database (**Figure 6** through **Figure 17**). Wetland acreages were rounded to the nearest one-tenth acre. Therefore, wetland acreage presented on the figures sums to a different tenth of an acre than wetland acreages presented in the table for Alternatives 5, 6, and 7. Acreages presented in **Table 3** show the sum of unrounded individual wetland acreages for each alternative. The majority of wetlands within the study boundary are forested wetlands. The 12 alternatives would impact between 532 and 732 linear feet of stream.

Table 3: Alternative Impacts to Natural Habitats

Natural Resource Type	Alternative											
	1	2	3	4	5	6	7	8	9	10	11	12
Impacts to Habitats (acres)												
Mixed Pine/Hardwood Forest	8.0	4.7	4.8	3.5	3.7	3.6	8.9	4.6	9.1	4.9	7.9	3.6
Freshwater Emergent Wetland	<0.1	1.1	<0.1	0.0	0.0	0.0	1.1	1.1	<0.1	<0.1	<0.1	0.0
Freshwater Forested/ Shrub Wetlands	3.1	3.1	1.9	1.9	4.0	4.0	2.2	3.1	1.1	1.9	1.1	1.9
Freshwater Pond	0.0	0.1	0.3	0.3	0.1	0.3	0.0	0.3	0.0	0.1	0.0	0.1
Riverine	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1
Impacts to Wetlands (acres)												
Freshwater Emergent and Freshwater Forested/ Shrub Wetlands	3.1	4.1	1.9	1.9	4.0	4.0	3.3	4.1	1.1	1.9	1.1	1.9
Impacts to Streams (linear feet)												
Black River	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3
Laws Branch	96.6	103.2	0.0	0.0	96.6	96.6	103.2	103.2	0.0	0.0	0.0	0.0
Robert E Lee Branch	99.2	104.8	106.3	106.3	104.8	106.3	99.2	106.3	99.2	104.8	99.2	104.8
Unnamed Tributary #1	100.5	0.0	0.0	0.0	100.7	100.3	0.0	0.0	0.0	0.0	0.0	0.0
Unnamed Tributary #2	209.1	209.6	210.0	210.0	209.9	210.0	209.8	209.8	209.9	210.2	210.0	210.0
Unnamed Tributary #3	128.9	124.1	124.1	124.1	124.1	124.1	128.9	124.1	128.9	124.1	128.9	124.1
Total Stream Impacts	729.0	636.0	535.0	535.0	730.0	732.0	635.0	638.0	532.0	533.0	532.0	533.0
Impacts to 303(d) Listed Streams (# of crossings)												
303(d) Listed Streams (Robert E Lee Branch)	1	1	1	1	1	1	1	1	1	1	1	1

Figure 6: Wetland and Stream Impact Map – Alternative 1

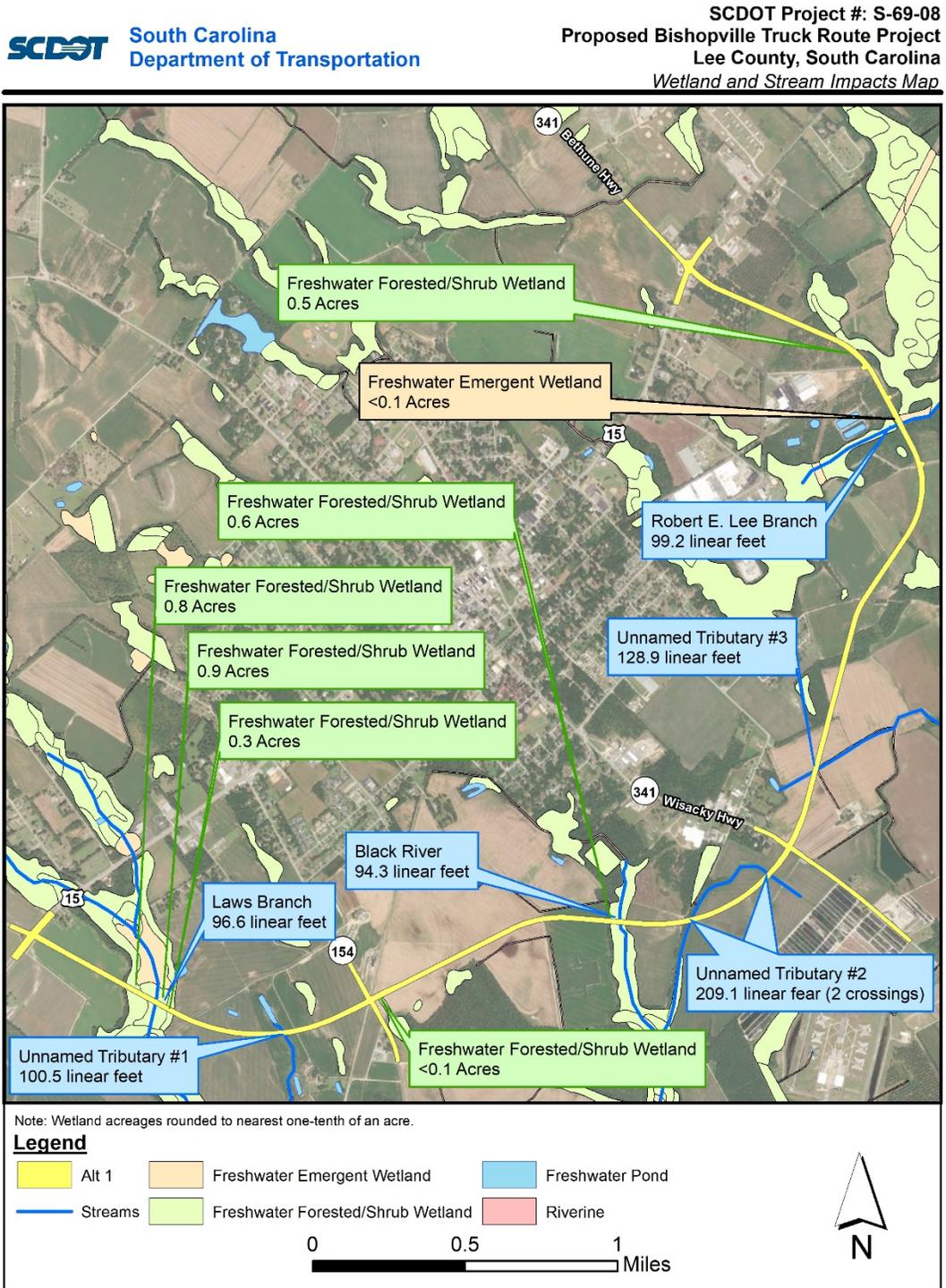


Figure 7: Wetland and Stream Impact Map – Alternative 2

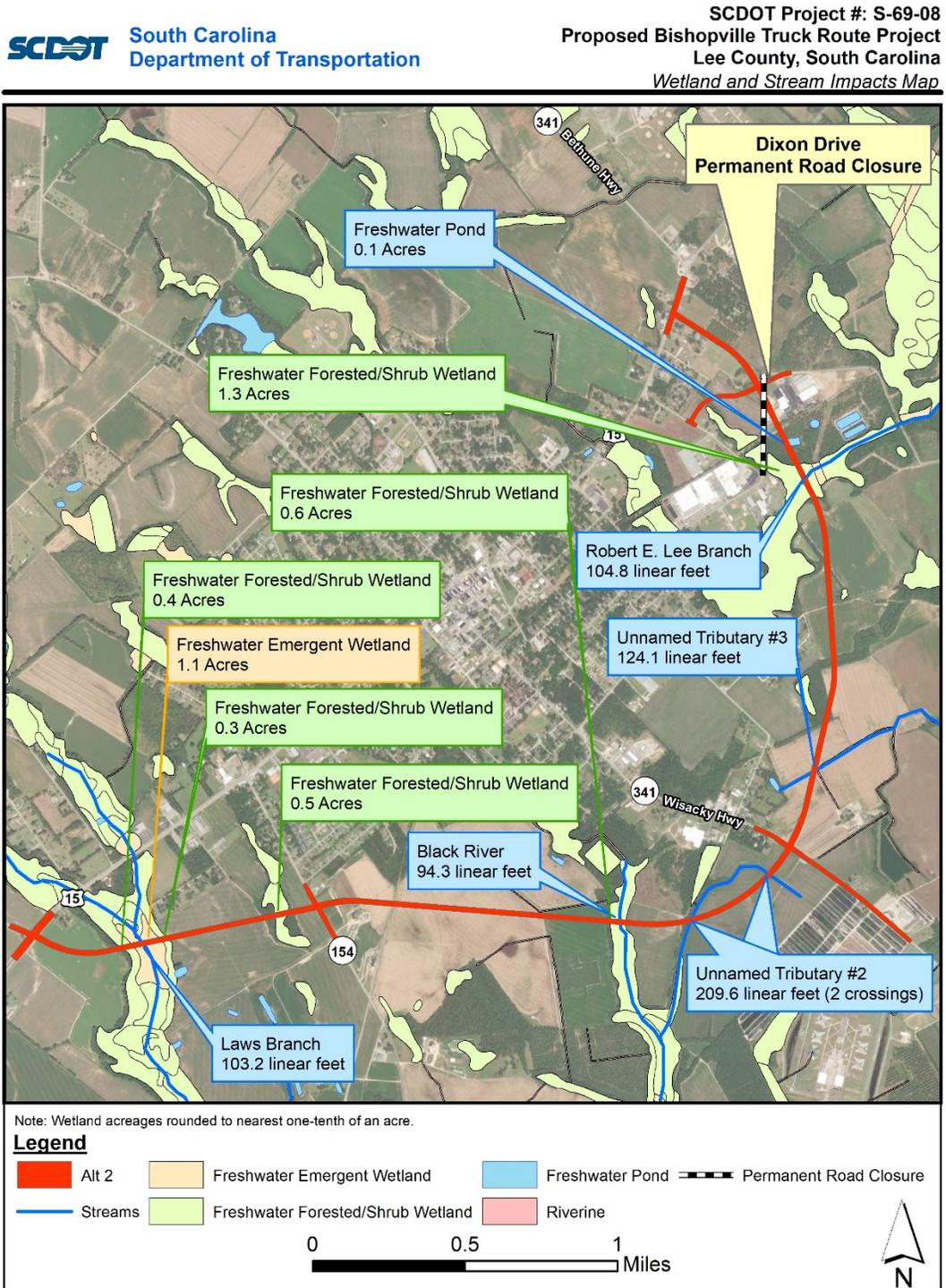


Figure 8: Wetland and Stream Impact Map – Alternative 3

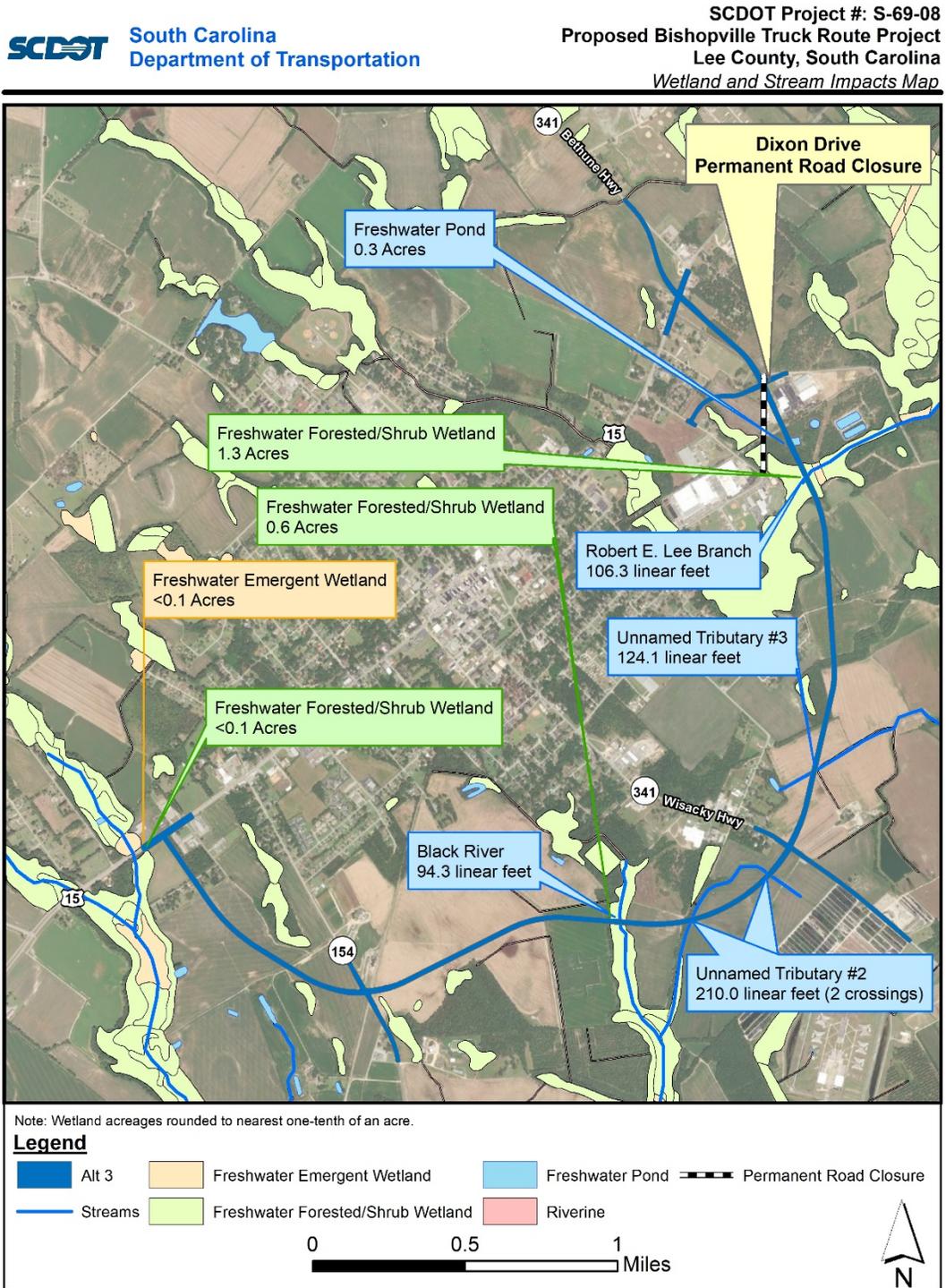


Figure 9: Wetland and Stream Impact Map – Alternative 4

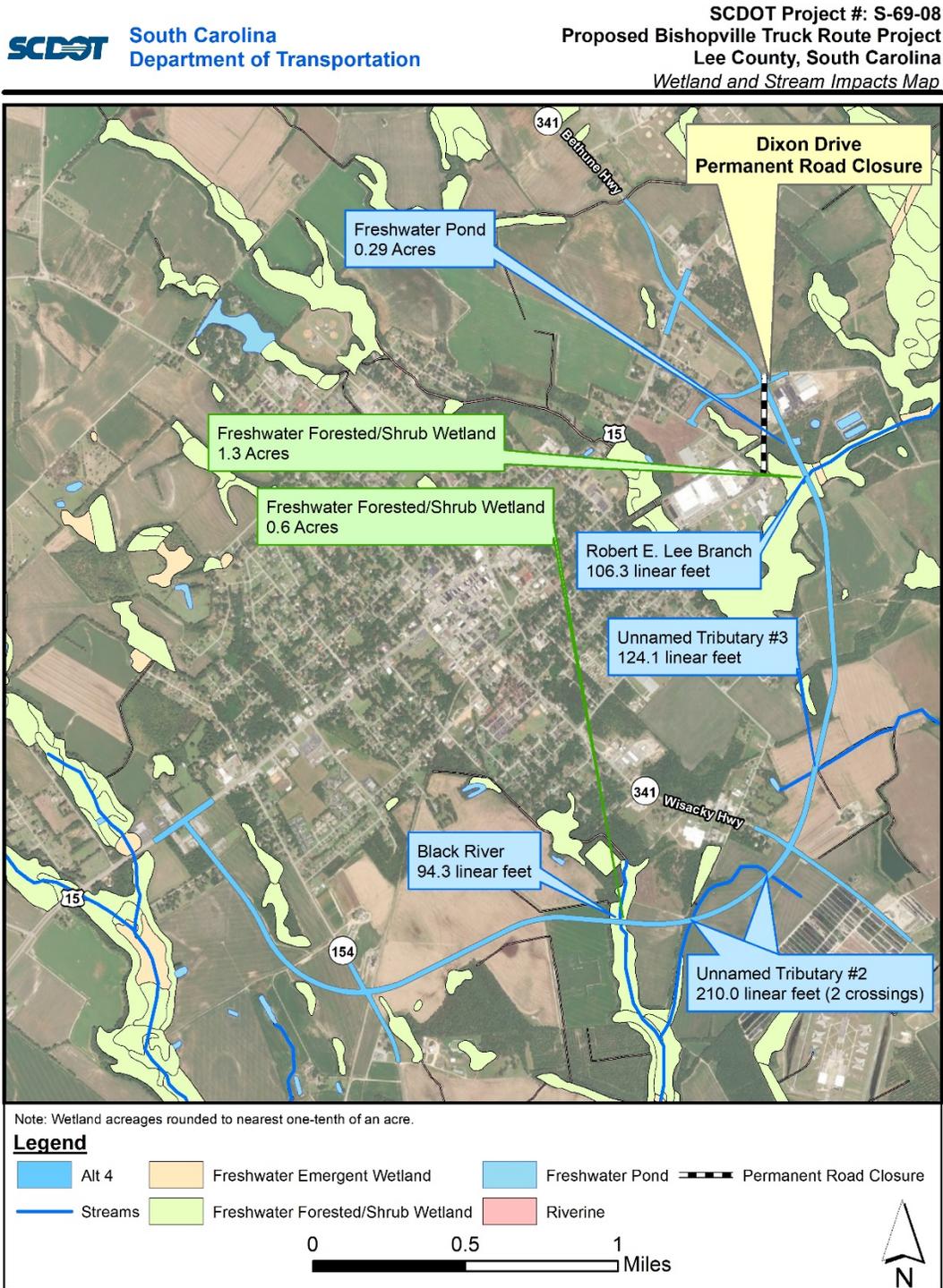


Figure 10: Wetland and Stream Impact Map – Alternative 5

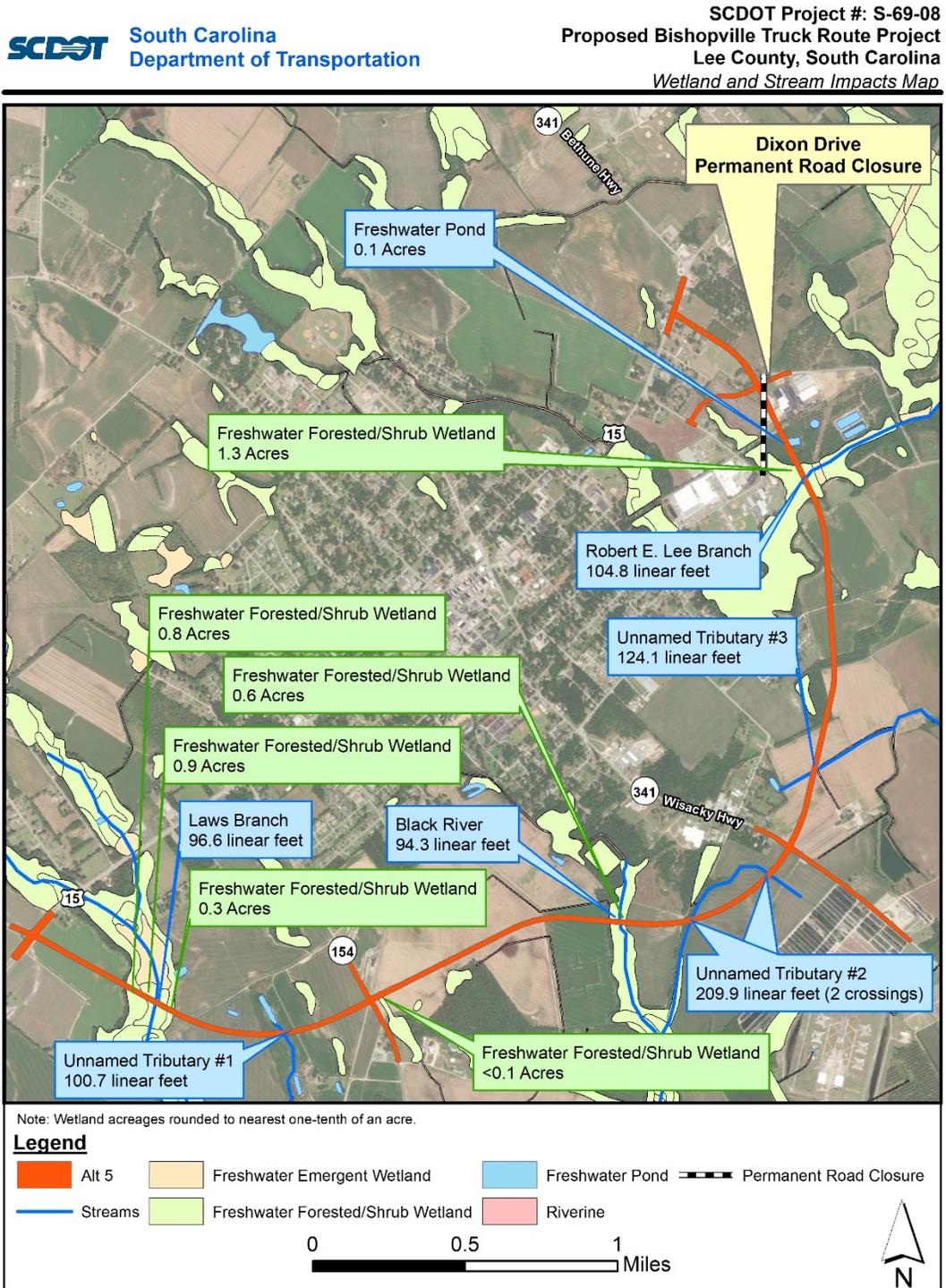


Figure 11: Wetland and Stream Impact Map – Alternative 6

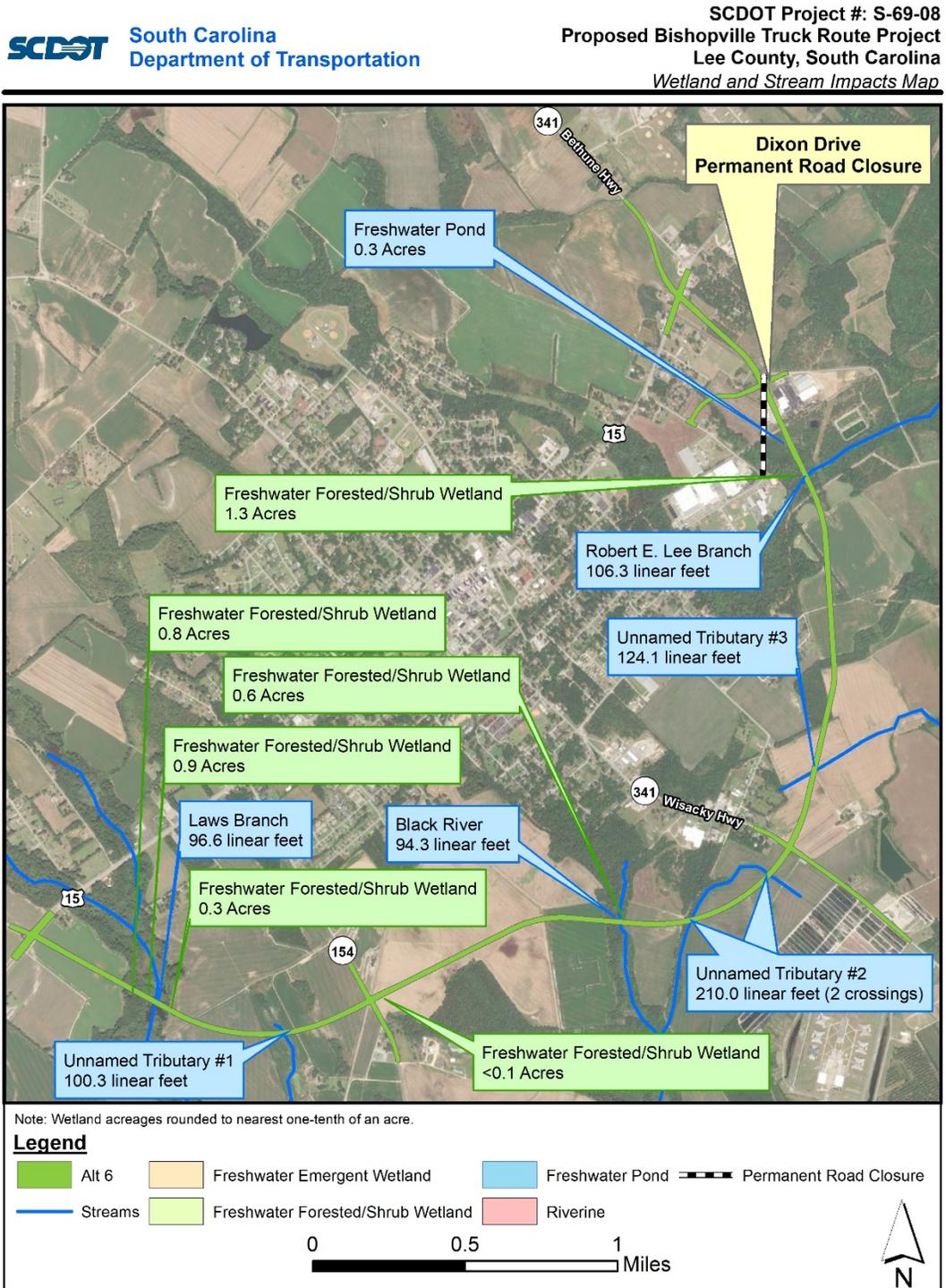


Figure 12: Wetland and Stream Impact Map – Alternative 7

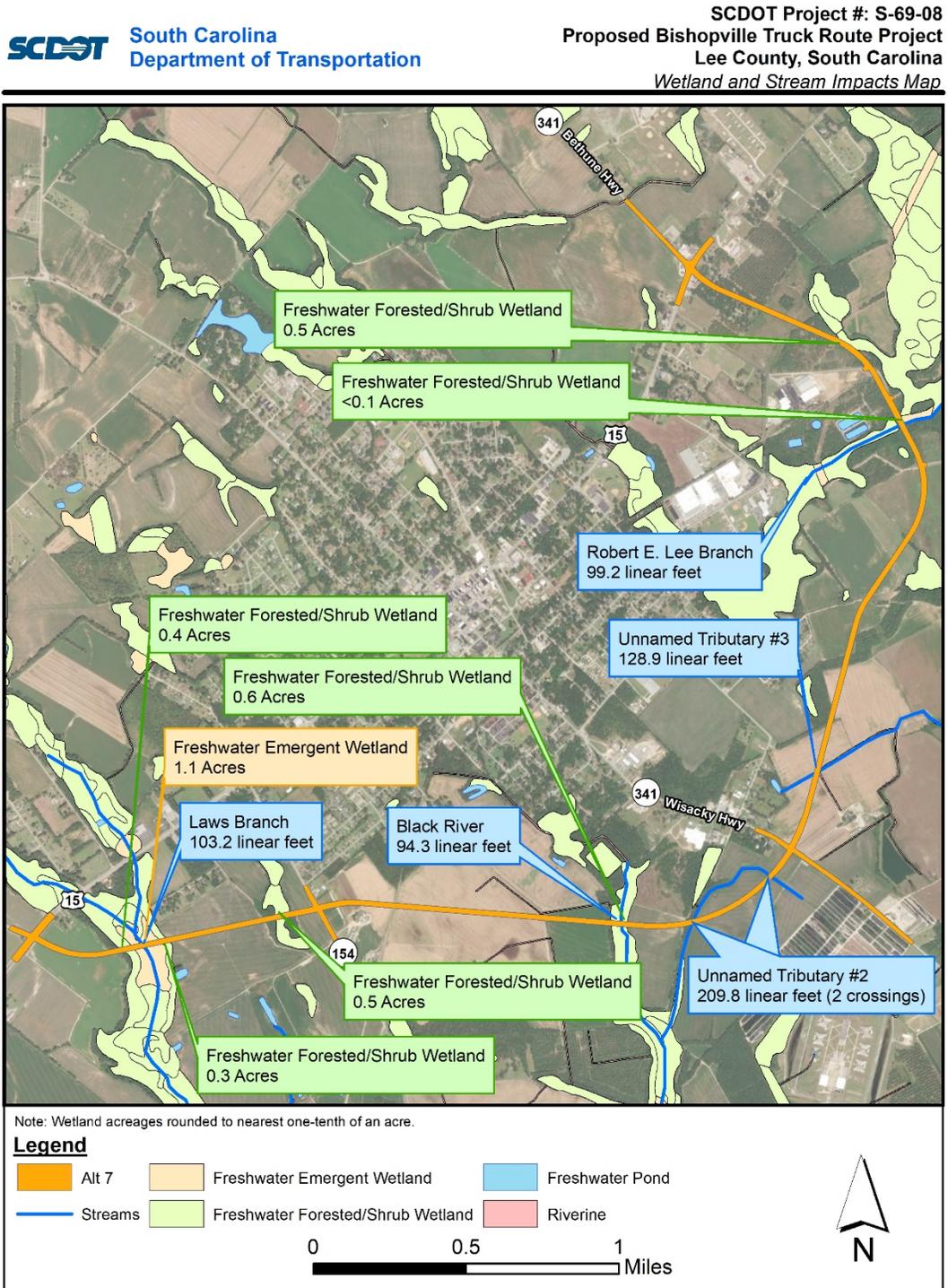


Figure 13: Wetland and Stream Impact Map – Alternative 8

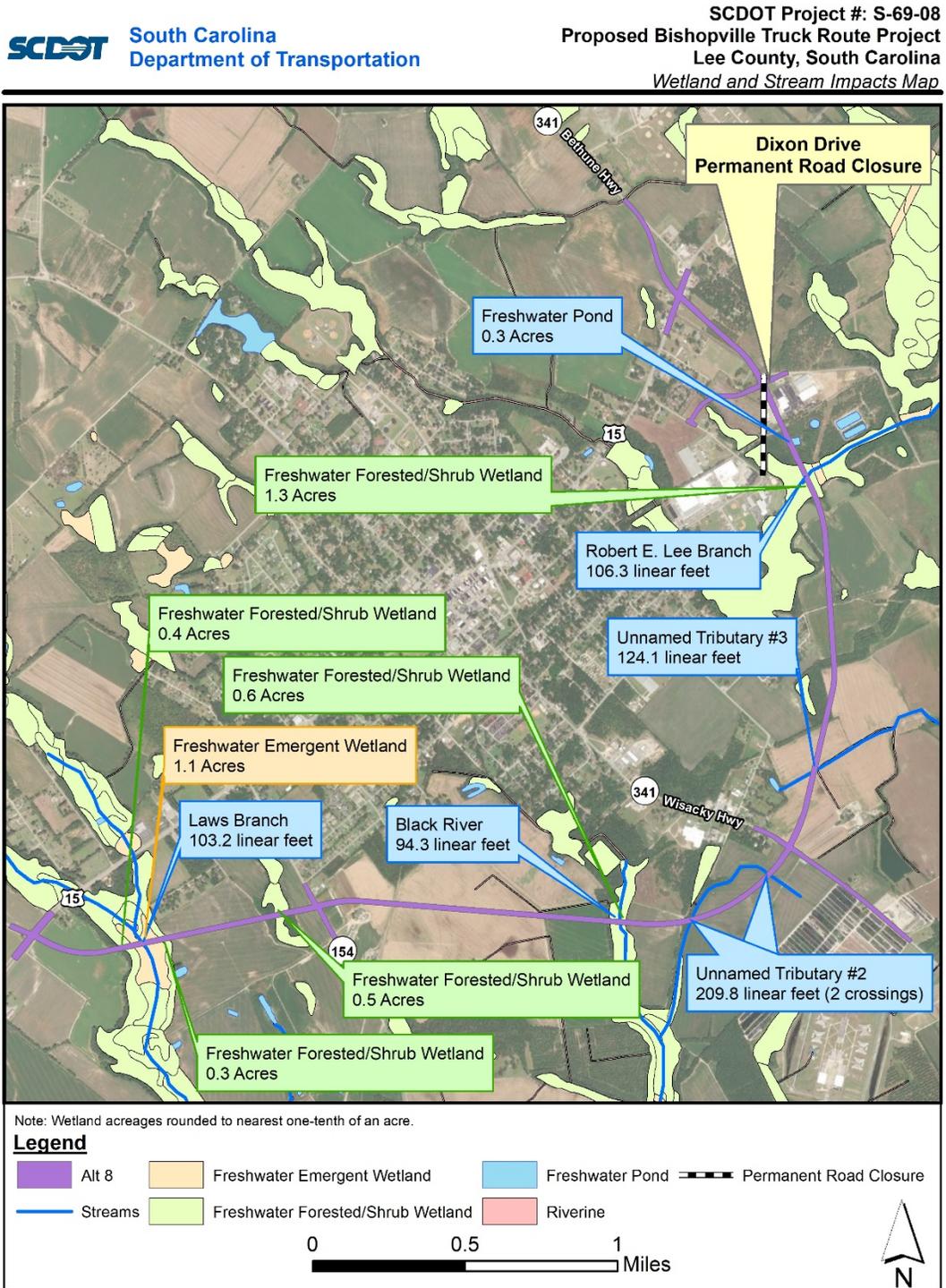


Figure 14: Wetland and Stream Impact Map – Alternative 9

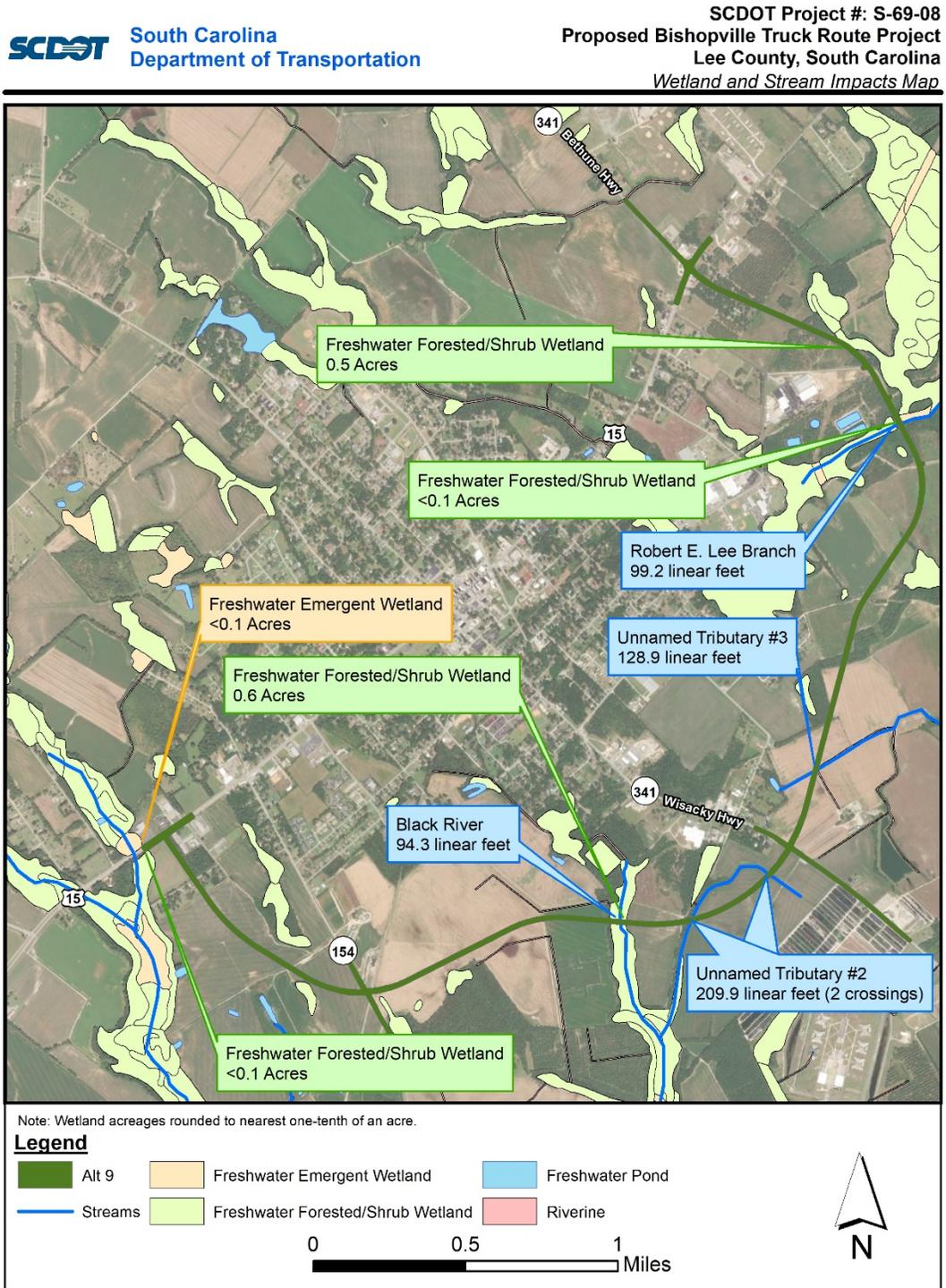


Figure 15: Wetland and Stream Impact Map – Alternative 10

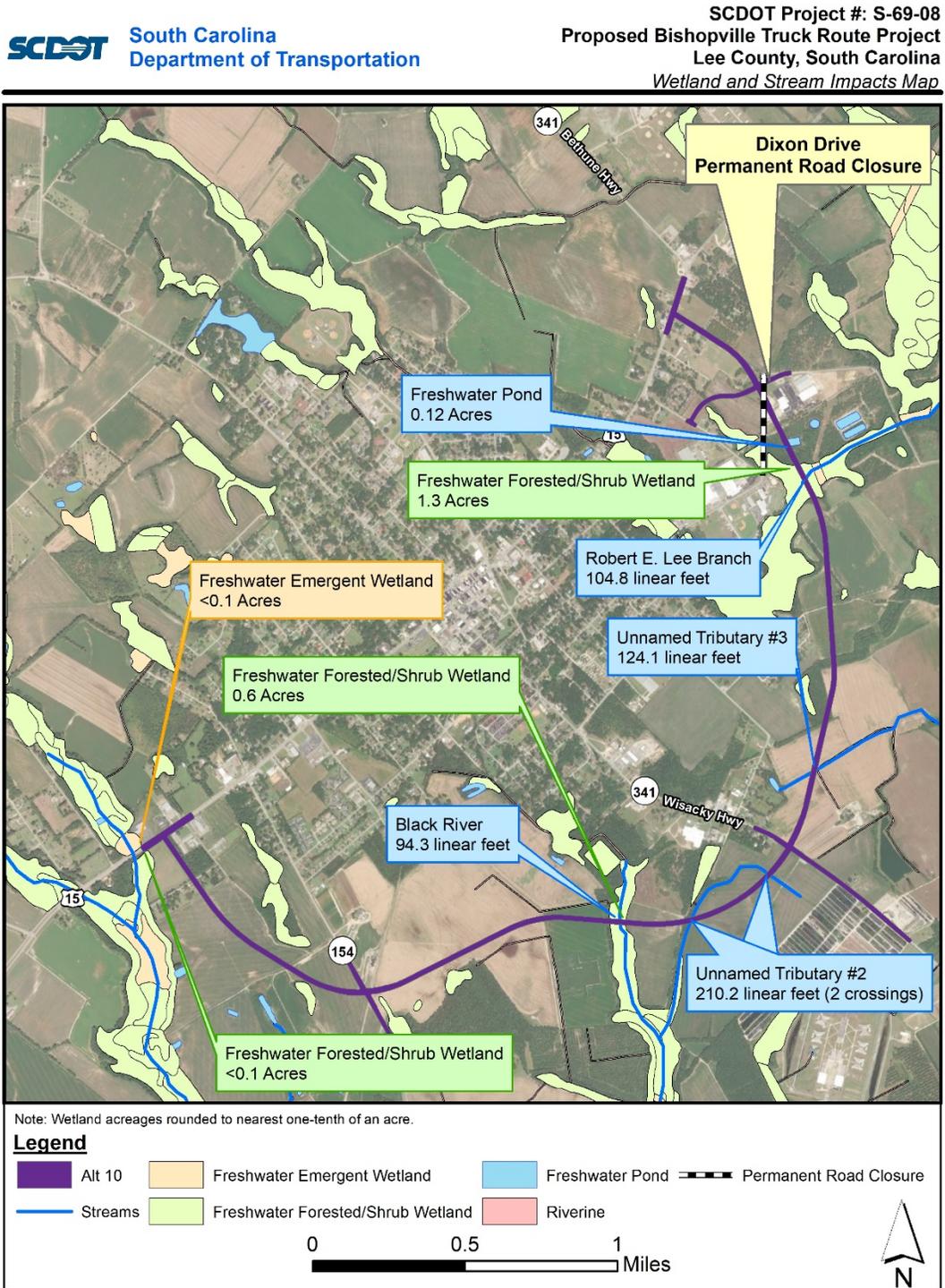


Figure 16: Wetland and Stream Impact Map – Alternative 11

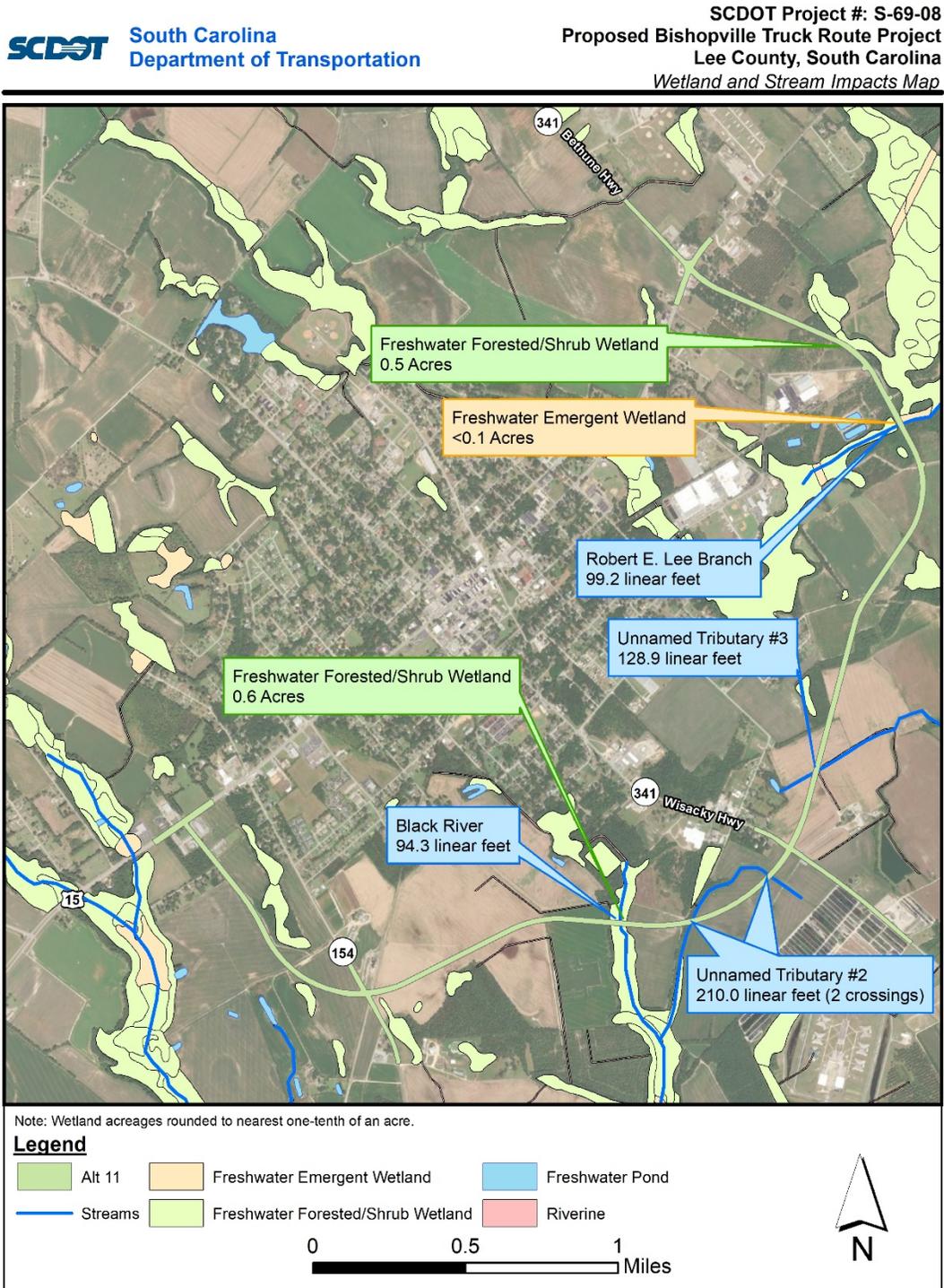
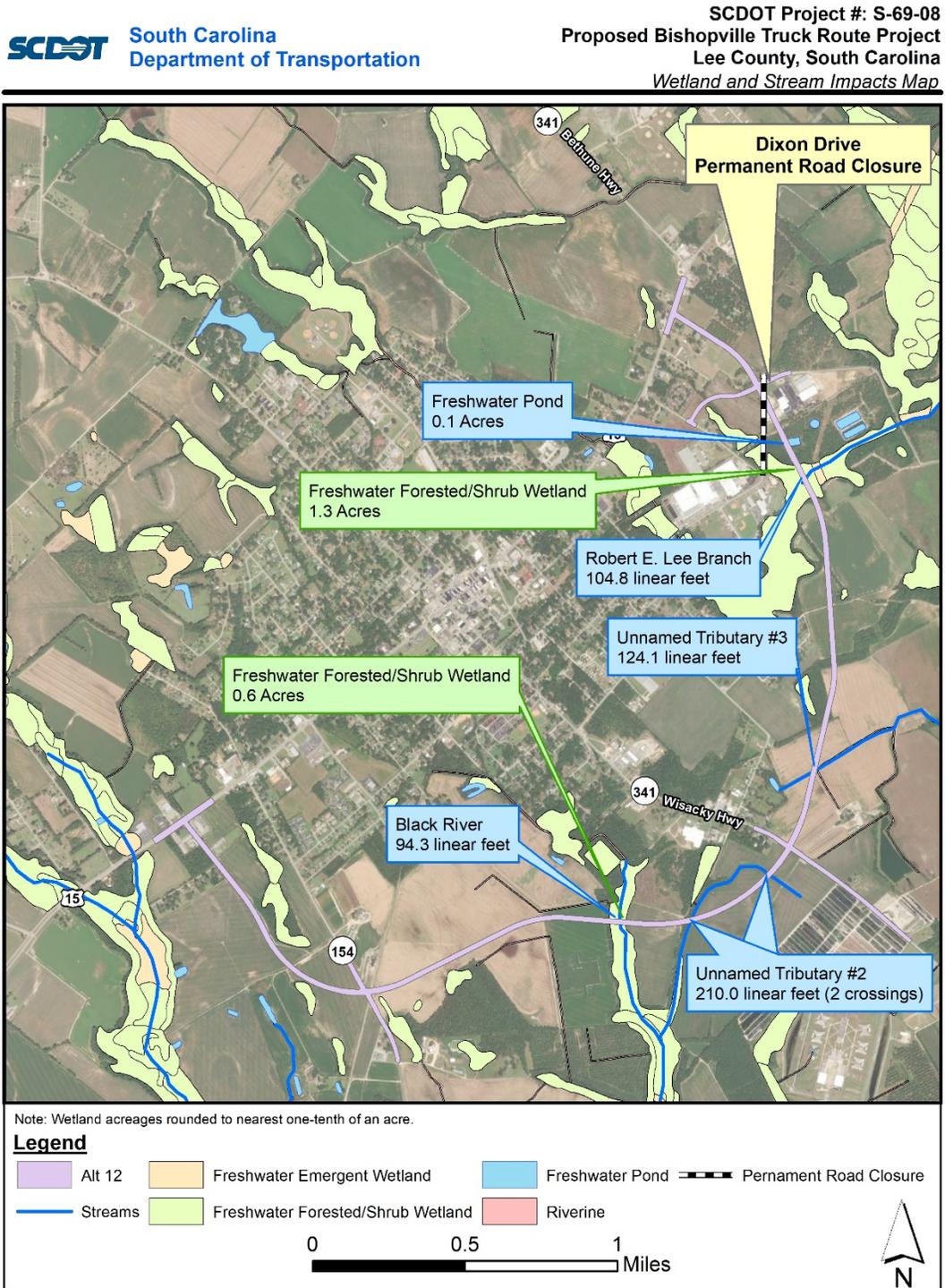


Figure 17: Wetland and Stream Impact Map – Alternative 12



6. THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973 as amended, requires federal agencies, in consultation with, and assisted by, the U.S. Fish and Wildlife Service (USFWS), to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species.

The USFWS Information for Planning and Consultation (IPaC) database report was queried to determine federally protected species that could potentially occur within or adjacent to the project area. Three federally endangered species were identified in the database search (**Table 4**). During field visits, no suitable habitat for these protected species was identified within the project area. No critical habitat was identified within or directly adjacent to the project area.

Table 4: Federally Endangered Species that Could Potentially Occur within the Project Area

Common Name	Scientific Name	Federal Status	State Status
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered	Endangered
Canby's dropwort	<i>Oxypolis canbyi</i>	Endangered	Not Listed
American chaffseed	<i>Schwalbea americana</i>	Endangered	Not Listed

A brief summary of the three endangered species identified in the IPaC report is presented below, along with the effect determination.

6.1 RED-COCKADED WOODPECKER

The red-cockaded woodpecker (*Picoides borealis*) is found in the southeastern United States from Florida to Virginia and west to southeast Oklahoma and eastern Texas. It is about the size of the common cardinal, about 8.7 inches long with a wingspan of about 13.8 inches. Its feathers are black and white with white bars on the back. Its underside is white to gray with notable black spots along the sides of the breast. Males have red spots on each side of the nape, but they are rarely exposed. Females are larger than males and lack the red spots. The most distinguishing feature of this species is its black cap, which is called a "cockade."

The red-cockaded woodpecker prefers mature, open pine stands for its nesting habitat. Loblolly and longleaf pines that are 60-plus years old are generally selected for nesting sites. However, other species of southern pines are sometimes used for nesting. As referenced above, the preferred nesting sites for this species generally include relatively mature, open pine stands with an undeveloped or low understory layer. Management of understory growth, such as prescribed fire or use of silvicultural herbicides, contributes to the habitat structure preferred by this species. Foraging habitat is frequently limited to pine or pine-hardwood stands that are 30 years or older, with a preference for pine trees with a diameter of 10 inches or larger. Generally, the maximum foraging range for the red-cockaded woodpecker is approximately one-half mile. The occurrence of mature, open pine

stands with low understory coverage preferred by the red-cockaded woodpecker was not encountered during the field visits.

6.2 CANBY'S DROPWORT

Canby's dropwort (*Oxypolis canbyi*) belongs to the mint family (*Apiaceae*). It is a perennial herb that grows from 80 to 120 cm (30 to 50 in.) tall. The quill-like hollow leaves and the thick, corky wings that extend out from the margins of the fruit are the most distinctive features of the plant. The stems are erect or ascending, round, and slender with arching or ascending or forking branches above the mid-stem. The flowers are monoecious or dioecious (flowers have either male or female parts or both), small and white, and sometimes tinged with red or pink. The flowers are borne on compound umbrella-like structures that extend from the base of the leaves, and the fruit is a schizocarp (fruit splits into one-seeded segments) from 4 to 6 mm long.

The primary habitats of Canby's dropwort are pineland ponds and savannas, wet meadows, and around the edges of open cypress ponds. This species prefers open habitat with little to no canopy closure of tree species. The habitat types preferred by Canby's dropwort generally consist of hydric soils with a seasonal high-water table. No pineland ponds or open cypress ponds preferred by Canby's dropwort were identified within the project area. The field review of the project area did not reveal the presence of any pineland ponds and savannas, wet meadows, or open moist pine flatwoods, as preferred by Canby's dropwort.

6.3 AMERICAN CHAFFSEED

The American chaffseed (*Schwalbea americana*) is a perennial herb with large purplish-yellow, tubular flowers. The leaves are alternate, lance-shaped to elliptic, and attach directly to the stalk without a leaf stem. Leaves are 2 to 5 cm (1 to 2 in.) long, and the herb can be 30–60 cm (1 to 2 ft) tall. The entire plant is densely hairy throughout, including the flowers. Flowering occurs from April to June in the south.

American chaffseed prefers fire-maintained areas, such as wet savannas and open moist pine flatwoods. American chaffseed is found in sandy soils (moist to dry) of the coastal plain. This species is also documented to occur within open grass and sedge systems. American chaffseed depends on a fluctuating water table and frequent fire to maintain the open habitat that it requires. The field review of the project area did not reveal the presence of any wet meadows, savannas, or open moist pine flatwoods, as preferred by American chaffseed. The open grass areas within the project area are active agricultural fields and are not fire maintained, which limits their suitability as habitat for American chaffseed.

6.4 EFFECTS DETERMINATION

The field review of the project area did not reveal the preferred habitats required by the documented federally endangered species described above. Based on the lack of suitable habitat and no observations of the listed species during field surveys, results of the biological assessment indicate that the proposed action would have no effect on threatened or endangered species. A request for initiation of ESA Consultation was sent to USFWS on January 13, 2020 (**Appendix A**). On January 14, 2020, USFWS provided a response stating they know of no threatened or endangered species in the project area and that the May 30, 2019 U.S. FWS Clearance Letter for Species and Habitat Assessments should be used (**Appendix A**). Based on this letter, no further coordination with USFWS is necessary at this time.

7. REFERENCES

- Environmental Laboratory U.S. Army Waterways Experimental Station. 1987. Corps of Engineers Wetlands Delineation Manual. Washington, D.C.: Department of the Army - U.S. Army Corps of Engineers
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- Natural Resources Conservation Service (NRCS) Web Soil Survey. 2020. Accessed March 25, 2020. <https://websoilsurvey.nrcs.usda.gov/app/>.
- South Carolina Department of Environmental Control (SCDHEC). 2018. "303 (d) – 2018 Integrated Report (IR)," https://www.scdhec.gov/sites/default/files/media/document/PN_IR_Part_I_2018.pdf, Accessed on February 17, 2020.
- South Carolina Department of Environmental Control (SCDHEC) Bureau of Water. 2015. "Watershed Water Quality Assessment: Pee Dee River Basin," https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Watershed/wwqa/Pee_De_WWQA_2015.pdf, Accessed on February 17, 2020.
- South Carolina Department of Environmental Control (SCDHEC). Watershed Atlas, PeeDee River Basin. Accessed March 25, 2020.
- South Carolina Geological Service (SCGS) Generalized Geologic Map of South Carolina, Revised (2005). Accessed March 27, 2020. <http://www.dnr.sc.gov/geology/publications.htm#gms>.

Appendix A: USFWS Correspondence



January 13, 2020

Mr. Mark Caldwell
US Fish & Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

**RE: Request for Initiation of ESA Consultation
Proposed Bishopville Truck Route Project
PIN #33261, Project #S-69-08
Bishopville, Lee County, South Carolina**

Dear Mr. Caldwell:

In support of the environmental review for the Proposed Bishopville Truck Route Project, the South Carolina Department of Transportation (SCDOT) is requesting initiation of an Endangered Species Act (ESA) consultation, pursuant to a biological assessment to be completed for the Preferred Alternative upon its determination. The project area is generally consistent with the biological assessment prepared for the former Bishopville Bypass Project on April 13, 2012. Field studies were conducted in February and March of 2012. No preferred or suitable habitat or species occurrences were identified during the prior field review. The biological assessment for the previous project concluded that the project would have no effect on any listed Federal or State protected species. In April 2012, the South Carolina Department of Natural Resources Heritage Trust Program did not have any species occurrence data documented in the prior project area. The species and their associated habitats included in the prior biological assessment are consistent with those currently listed by the US Fish & Wildlife Service (USFWS) as of September 9, 2019.

The southern portion of the project area begins near US Highway 15 (Sumter Highway) and its intersection with Browntown Road, just south of downtown Bishopville (Latitude: 34.2015, Longitude: 80.2735). The northern project area terminates near the intersection of US Highway 15 (Sumter Highway) and SC Highway 341 (Bethune Highway), north of downtown Bishopville (Latitude: 34.2375, Longitude: 80.2383). The project area extends east from the southern terminus around Bishopville, then turning north and northwest to the northern terminus. The current project area is generally consistent with the Bishopville Bypass Project area discussed above.

After extensive alternative-screening, SCDOT has identified four proposed build alternatives for the project. Please review the attached exhibit, which depicts the twelve possible alternative combinations that are being evaluated in order to identify a preferred alternative.

Initial field reconnaissance of the project area was conducted in late 2019. The results of the initial field reconnaissance indicate that current conditions are consistent with those found

during the 2012 field reconnaissance. There have been no significant land use alterations in the vicinity of the proposed project area since February/March 2012.

At your earliest convenience, please provide any updated species or habitat listings, in addition to any current species occurrence data that the USFWS has documented for the vicinity of the project area, via email to me at CooperCB@scdot.org, and copy J. Shane Belcher (FHWA) at Jeffrey.Belcher@dot.gov. Please feel free to contact me if you have any questions regarding the project or review of the project area.

Thank you in advance for your assistance with this project.

Sincerely,



Christopher B. Cooper (Chris)
SCDOT NEPA Coordinator – Pee Dee Region (RPG2)

ENC: Exhibit
CC: J. Shane Belcher, FHWA
CC: Henry Phillips, SCDOT NEPA Division Manager



Legend

- | | | | | |
|---------------------|---------------------|-----------|-----------|------------------|
| Alt T Original | Alt T Modified | Alt I | Alt N | 50 Ft Alt Buffer |
| Alt T Original S IN | Alt T Modified S IN | Alt IS NN | Alt NS IN | |
| Alt T Original S NN | Alt T Modified S NN | Alt IS TN | Alt NS TN | |

January 2020

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus, DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

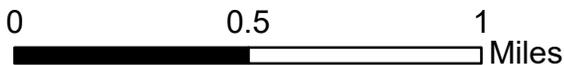


FIGURE 1



United States Department of the Interior
FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407
May 30, 2019



U.S. Fish and Wildlife Service Clearance Letter for Species and Habitat Assessments

The U.S. Fish and Wildlife Service (Service) is one of two lead Federal Agencies mandated with the protection and conservation of Federal trust resources, including threatened and endangered (T&E) species and designated critical habitat as listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*) (ESA). Development of lands in South Carolina have the potential to impact federally protected species. Accordingly, obligations under the ESA, National Environmental Policy Act (NEPA), Clean Water Act (CWA), Federal Power Act (FPA), and other laws, require project proponents to perform an environmental impact review prior to performing work on the site. These projects may include a wide variety of activities including, but not limited to, residential or commercial developments, energy production, power transmission, transportation, infrastructure repair, maintenance, or reconstruction of existing facilities on previously developed land.

Project applicants, or their designated representatives, may perform initial species assessments in advance of specific development proposals to determine the presence of T&E species and designated critical habitat that are protected under the ESA. These reviews are purposely speculative and do not include specific project or site development plans. Many of these speculative proposals are for previously developed or disturbed lands such as pasture lands, agricultural fields, or abandoned industrial facilities. Due to historical uses and existing conditions, these sites often do not contain suitable habitat to support T&E species. Therefore, an assessment may conclude that any future development of the site would have no effect to T&E species or adversely modify designated critical habitat. If the applicant, or their designee, determines there is no effect or impact to federally protected species or designated critical habitat, no further action is required under the ESA.

Clearance to Proceed

For all sites with potential projects that have no effect or impact upon federally protected species or designated critical habitat, no further coordination with the Service is necessary at this time. This letter may be downloaded and serve as the Service's concurrence or agreement to the conclusions of the species assessment. Any protected species survey or assessment conducted for the property should be included with this letter when submitting the project to Federal permitting agencies. Due to obligations under the ESA potential impacts must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

Please note this Clearance Letter applies only to assessments in South Carolina but may not be used to satisfy section 7 requirements for projects that have already been completed or currently under construction.

If suitable habitat for T&E species or designated critical habitat occurs on, or nearby, the project site, a determination of no effect/impact may not be appropriate. In these cases, direct consultation requests with the Service should be initiated. Additional coordination with the Service may also be required if the potential project requires an evaluation under another resource law such as, but not limited to, NEPA, CWA, FPA, and the Coastal Zone Management Act.

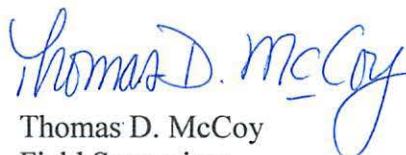
Northern Long-eared Bat Consideration

The Service issued a nationwide programmatic biological opinion (PBO) for the northern long-eared bat (*Myotis septentrionalis*, NLEB) on January 5, 2016. The PBO was issued pursuant to section 7(a)(2) of the ESA to address impacts that Federal actions may have on this species. In addition, the Service published a final 4(d) rule on January 14, 2016, which details special consultation provisions for Federal actions that may affect the NLEB. Briefly, the PBO and the 4(d) rule allow for "incidental" take of the NLEB throughout its range under certain conditions. Take is defined in section 3 of the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Further, incidental take is defined as take that results from, but is not the purpose of, carrying out an otherwise lawful activity. Under the PBO and 4(d) rule, all incidental take of the NLEB is exempted from the ESA's take prohibitions under certain conditions. However, incidental take is prohibited within one quarter mile from known hibernacula and winter roost, or within 150 feet from a known maternity roost tree during the months of June and July.

In consideration of known hibernacula, winter roosts, and maternity roost tree locations in South Carolina, this letter hereby offers blanket concurrence for a may affect, but is not likely to adversely affect determination for the NLEB if the proposed work occurs more than one quarter mile from known hibernacula, winter roosts, or is further than 150 feet from a known maternity roost trees. If an activity falls within one-quarter mile of hibernacula or winter roost or within 150 feet of a maternity roost tree additional consultation with the Service will be required. As a conservation measure for all projects it is recommended that all tree clearing activities be conducted during the NLEB inactive season of November 15th to March 31st of any given year.

The Service appreciates your cooperation in the protection of federally listed species and their habitats in South Carolina.

Sincerely,


Thomas D. McCoy
Field Supervisor