APPENDIX C

Natural Resource Technical Memorandum

NATURAL RESOURCE TECHNICAL MEMORANDUM

I-26 Corridor Improvement Project
(Mile Marker 172-187)

SCDOT Project ID: P042567

Dorchester and Berkeley Counties, SC

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Prepared For: SCDOT

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1.0 Introduction and Project Description

Infrastructure Consulting and Engineering (ICE) has been contracted by the South Carolina Department of Transportation (SCDOT) to provide professional environmental support services for the proposed corridor improvements of Interstate 26 (I-26) from mile marker 172 to mile marker 187, and its associated overpasses and interchanges in Dorchester and Berkeley Counties, South Carolina. The proposed improvements include adding a travel lane in each direction of I-26, grading median/outside shoulders, installing barrier walls and/or cable guardrail, replacing 11 bridges, (including 5 overpass bridges, 2 interchange overpasses, and 4 mainline bridges), addressing 6 hydrological box culverts and 2 “access” box culverts, and making drainage improvements. The interchange overpass improvements (at Exit 172 and Exit 177) would also include improving the ramps and associated frontage roads. The proposed improvements are anticipated to disturb approximately 1,016 acres within the PSA. However, the I-26 widening would occur within the existing median where possible, with most of the median consisting of maintained habitat. The project would be constructed utilizing industry standard techniques and equipment. As part of project development, ICE staff conducted desktop reviews associated with the proposed project as well as field delineations from late spring 2024 to early summer 2025. An approximately 1,340-acre project study area (PSA) was identified and evaluated as part of project development.

The purpose of this assessment was to evaluate the PSA to determine the potential presence and location of any waters of the United States (WOTUS) regulated under the Clean Water Act (CWA), and to determine the presence, or suitable habitat, of any protected species that are listed as threatened, endangered, or proposed for listing pursuant to Section 7 of the Endangered Species Act of 1973 (50 Code of Federal Regulations [CFR] Part 402). The following assessment was conducted utilizing a variety of methods, including a review of available online mapping, literature research, and field investigations as documented. In addition, supporting documentation is appended with detailed information on the project. Appendix A contains mapped figures that illustrate the project location, aerial imagery, topography, National Wetland Inventory (NWI), delineated potential WOTUS, and soils. Appendix B is a photo log of the current conditions of the site. Appendix C includes Flood Insurance Rate Maps (FIRM) generated by the Federal Emergency Management Agency (FEMA), showcasing flood zones that are found within the PSA. Appendix D contains the Biological Assessment (BA) that was submitted to U.S. Fish and Wildlife Service (USFWS) and includes the South Carolina Department of Environmental Services (SCDES) Water Quality Report, the SCDOT Bridge Replacement Scoping Trip Risk Assessment Forms and Floodplains Checklist, Acoustic Bat Survey Report performed by Jackson Group and the USFWS Information for Planning and Consultation (IPaC) report.

1.1 Project Setting

Within the PSA, I-26 is primarily an east/west route north of Harleyville, South Carolina. Additionally, I-26 within the PSA consists of two interchanges (US Highway 15 [US 15] and South Carolina 453 (SC 453), one underpass (Tunnel Road), five overpasses (Seven Mile Road, First Bend Road, Second Bend Road, Taylor Pond Road, and Beidler Forest Road), two bridges over a CSX rail line, and two bridges over Four Hole Swamp. The PSA ties in with existing and recent

corridor improvement projects at the western and eastern ends. I-26 provides a major travel route between the Low Country of South Carolina and the Upstate, as well as connecting with Interstate 95 (I-95) approximately 2 miles west of the PSA.

The PSA is located along the southern edge of the Middle Atlantic Coastal Plain Ecoregion, which stretches from Delaware to the South Carolina/Georgia border and consists of low elevation flat plains, with many swamps, marshes, and estuaries. Forest cover in the region was previously dominated by longleaf pine (*Pinus palustris*) in the Carolinas but is now mostly loblolly (*Pinus taeda*) and some shortleaf pine (*Pinus echinata*), with patches of oak, sweetgum (*Liquidambar styraciflua*), and bald cypress (*Taxodium distichum*), as compared to the mainly longleaf-slash pine forests of the warmer Southern Coastal Plain. Poorly drained soils are common, and the region has a mix of coarse and finer textured soils compared to the mostly coarse soils in the majority of the Southern Coastal Plain. The Middle Atlantic Coastal Plain is typically lower, flatter, more poorly drained, and consists of more marshes than the Southeastern Plains. Less cropland occurs in the southern portion of the region than in the central and northern parts.

The PSA is within the boundaries of the Lower Four Hole Swamp (Hydrologic Unit Code [HUC] 0305020503) and the Indian Field Swamp (HUC 0305020602) Watersheds. The Lower Four Hole Swamp Watershed consists of approximately 184,047 acres and land use is made up of forested wetlands (37.29%), forest (29.01%), pasture/hay (25.96%), urban (5.80%), open water (0.92%) and non-forested wetlands (0.54%). The Indian Field Swamp Watershed is approximately 102,069 acres. The land use is made up of forested wetlands (33.85%), pasture/hay (29.18%), forest (28.67%), urban (7%), non-forested wetlands (0.83%), and open water (0.31%).[1]

The PSA includes a variety of mapped soils including Albany fine sand (non-hydric), Alpin fine sand (non-hydric), Blanton fine sand (non-hydric), Bonneau fine sand (non-hydric), Chipley sand (non-hydric), Coxville loam (hydric), Daleville silt loam (hydric), Echaw fine sand (non-hydric), Elloree loamy fine sand (hydric), Emporia loamy fine sand (non-hydric), Goldsboro loamy sand (non-hydric), Grifton fine sandy loam (hydric), Haplaquents loamy (hydric), Izagora silt loam (non-hydric), Jedburg loam (non-hydric), Lynchburg loamy sand (non-hydric), Mouzon fine sandy loam (hydric), Noboco loamy sand (non-hydric), Ocilla sand (non-hydric), Osier loamy fine sand (hydric), Pantego sandy loam (hydric), Pelham sand (hydric), Rains sandy loam (hydric), Rutlege loamy fine sand (hydric), and Seagate sand (non-hydric).

The FIRM discussed in Section 4.0 indicates portions of the PSA contain a special flood hazard area (Zone AE) associated with Four Hole Swamp and its tributaries.

1.2 Project Study Area Description

The approximately 1,340-acre PSA consists primarily of disturbed uplands including transportation/utility right-of-way (ROW) and infrastructure, mixed upland forest, forested wetlands, agricultural lands, residential properties, industrial and commercial development, emergent wetlands, open water, and riverine areas. The PSA includes a portion of 17 linear features, including Four Hole Swamp, Spring Branch, Mill Branch, Crawford Branch, and Deep

[1] SCDES https://gis.dhec.sc.gov/watersheds/, accessed December 30, 2024

Branch as shown in Appendix A (Figures). As such, the following natural habitats and communities were identified within portions of the PSA.

- Disturbed uplands
- Mixed upland forest
- Forested wetlands
- Emergent wetlands
- Agricultural
- Residential
- Industrial and commercial development
- Open water
- Riverine

Disturbed Uplands:

The PSA consists of large areas of various types of disturbed land uses including transportation facilities, commercial/industrial developments, and utility corridors. Disturbed uplands make up approximately 53 percent of the PSA. The existing transportation facilities include roadway fill embankments, maintained shoulders/slopes, drainage features, and impervious materials associated with the travelways. As such, the utility corridors and slopes/roadway fill that are placed during roadway construction often create a concave area below the toe-of-slope that precipitation and stormwater runoff collects, often creating wetlands within these disturbed areas. There are also various underground and overhead utilities within and adjacent to this ROW. As such, these ROW areas are maintained to ensure the integrity of the facilities, including routine mowing/spraying to prevent vegetative obstructions and safety concerns. These areas have affected the natural landscape through clearing, grading, filling, paving, and landscaping. As such, these areas do not include any natural systems and provide no habitat for protected species.

Mixed Upland Forest:

The PSA includes areas of undeveloped, upland forests typically consistent with southern mixed forests as defined in *Natural Communities of South Carolina* (Nelson 1986). The upland communities make up approximately 29 percent of the PSA and are generally dominated by loblolly pine, sweetgum, white oak (*Quercus alba*), and water oak (*Quercus nigra*). Many of these areas have been left unmanaged; therefore, the age structure varies from less than 3 years to greater than 20 years. These areas are generally associated with larger areas that extend beyond the PSA. These mixed upland habitats provide foraging, nesting, and travel corridors for various common birds and mammals but are largely on the edges of the PSA and are fragmented due to farming, commercial/residential development, and existing transportation infrastructure. Upland forests adjacent to waterbodies and wetlands would provide roosting and foraging habitat for the Northern long-eared bat (*Myotis septentrionalis*, NLEB) and the tricolored bat (*Perimyotis subflavus*, TCB). Within the PSA, the upland forested areas do not contain pure stands of old-growth pine, consistent with red-cockaded woodpecker (*Dryobates borealis,* RCW) habitat.

Freshwater Wetland

The PSA includes 99 wetlands totaling approximately 133 acres that were identified as part of a forested or emergent community type. Below is a detailed description for each identified community throughout the PSA.

Forested:

The forested areas identified throughout the PSA consist of bottomland hardwoods and small stream forest communities as defined in *Natural Communities of South Carolina*.[2] The forested wetlands contribute to approximately 8 percent of the total PSA. These communities vary in species composition but typically are dominated by sweetgum, water oak, red maple (*Acer rubrum*), and willow oak (*Quercus phellos*). Although these forested communities typically provide nesting and foraging habitat for different species of mammals, birds, and reptiles, they are often dissected by existing roads and utility corridors. These forested wetlands provide habitat for both the NLEB and TCB, with the NLEB in particular, relying on forested areas and the associated cleared corridors within and adjacent to the forest for habitat. Additionally, these wetlands may provide habitat for pondberry (*Lindera melissifolia*). Pondberry prefers shaded depressions, bays, sinks, ponds, and other forested wetlands.

Emergent:

The emergent wetlands within the PSA contribute to approximately 2 percent of the total PSA. The emergent communities identified throughout the PSA are dominated by netted chain fern (*Woodwardia areolata*), lizard's tail (*Saururus cernuus*), woolgrass (*Scirpus cyperinus*), dwarf palmetto (*Sabal minor*), and switchcane (*Arundinaria tecta*). Most of these emergent communities were inundated during several site visits and are typically located along the toe-of-slope directly adjacent to the existing interstate and local roadways and residential/commercial developments. Most of these areas have been disturbed; they are frequently maintained by mowing, spraying, and/or clearing for access to utility corridors and ROW. Emergent wetlands provide foraging habitat for the NLEB and TCB, especially when adjacent to forested cover/roosting habitat. The emergent wetlands within the PSA may also provide habitat for Canby's dropwort (*Oxypolis canbyi*), and secondary habitat for pondberry.

Agricultural:

Within the PSA there are isolated areas of agriculture, with fields inside the PSA associated with larger fields extending to areas adjacent to and outside of the PSA. These fields constitute approximately 4 percent of the PSA. Many of these fields appear to be planted in hay or row crops, while several areas may be used as pasture. Planted agricultural fields for crops are typically maintained as monoculture or with specific plantings. They are frequently disturbed by discing, tilling, and pesticide use. Pastures may be disturbed by the animals grazing on the land and are typically maintained for plants that are supportive of cattle, horses, or other grazing

[2] SCDNR, https://heritagetrust.dnr.sc.gov/pdfs/SC_Natural_Communities_Nelson_1986.pdf, accessed August 5, 2025.

animals. These areas have no natural systems and would provide minimal habitat for protected species.

Residential:

The PSA contains several residential homes and lawns located predominantly in the eastern half of the PSA, especially along First Bend Road, Second Bend Road, Taylor Pond Road, and Francis Beidler Road. These residential areas constitute approximately 2 percent of the PSA. These areas are typically maintained areas with lawns, ornamental plantings, or specifically planted and controlled vegetation that is maintained by pruning, mowing, and weeding. Flowering plants may provide nectar to the monarch butterfly (*Danaus plexippus*); however, the species relies solely on milkweed for forage in the larval stages. Large patches of milkweed are unlikely to be present in the residential areas. These areas have no natural systems and would provide minimal habitat for protected species.

Industrial and Commercial Development:

The PSA contains several areas that are considered industrial and commercial development, making up approximately 2 percent of the total PSA. These areas are associated predominantly with the Argos Cement LLC and Giant Cement Company plants along SC 453 at Exit 177. Along with the industrial development of these areas, there are several commercial businesses partially within the PSA. These are the Enmarket on US 15 south of Exit 172 and Ronnie's Station and the Harleyville Liquor Store both located south of Exit 177 along SC 453. Both the industrial and commercial areas have high levels of use and noise, and have paved, compacted, or otherwise disturbed ground. As such, these areas do not include any natural systems and provide no habitat for protected species.

Open Water

The PSA includes five open water features with a total of 3.36 acres of open water habitat, which is less than 1 percent of the total PSA. These open waters are primarily ponds associated with residential homes and agricultural irrigation ponds and are bound by various disturbed/maintained uplands. Several features are more natural ponds with dense vegetation growing around them predominantly in upland areas. Shaded areas around the ponds within the PSA can provide habitat for pondberry, which may be found along shorelines. Ponds within and adjacent to the PSA provide foraging habitat for the bald eagle (*Haliaeetus leucocephalus*).

Riverine

The PSA includes 17 streams totaling approximately 8,536 linear feet (LF), including one major tributary (Four Hole Swamp) with an ultimate connection to the Edisto River and then to the Atlantic Ocean. These areas comprise less than 1 percent of the total PSA. Four Hole Swamp is a fourth order, perennial tributary as depicted on the *Harleyville, Holly Hill, and Wadboo Swamp* USGS Topographic Quadrangles. Within the PSA, Four Hole Swamp consists of an approximately 50-foot-wide channel in areas and 1 to 6-foot-high banks, with a wide floodplain of forested wetlands. Other tributaries throughout the PSA were identified as either first order intermittent tributaries or second order perennial tributaries ranging from 2 to 10-feet wide. Other characteristics of these features range from lack of vegetation within the channel bottom, sand/silt

substrate, a clear impressed line on the bank, and scour. Generally, these features are immediately bound by forested wetlands, forested uplands, open water features and commercial/residential land uses. The streams within the PSA provide potential flight corridors and feeding habitat for NLEBs and TCBs. Margins of these streams may also provide habitat for pondberry.

SCDES defines these Freshwaters as:

> Freshwater: "*suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of flora and fauna."* [3]

2.0 Waters of the U.S.

The PSA was evaluated to determine the potential presence of any WOTUS. This evaluation included a review of available mapping, specifically NWI maps, soil surveys, USGS topographic quadrangles (*Harleyville, Holly Hill, and Wadboo Swamp* USGS Topographic Quadrangles) and aerial photography. The review of initial mapping identified Four Hole Swamp, potential wetlands, and other WOTUS within the PSA. Various site visits have been conducted throughout project development, with the most recent visit conducted in June 2025 to further evaluate and document the potential WOTUS. The field evaluations confirmed waters associated with Four Hole Swamp, and various wetlands and tributaries within the PSA. These areas have been field-delineated and surveyed. It was determined that the approximately 1,340-acre PSA includes approximately 8,536 linear feet (LF) of linear non-wetland waters (NWW), approximately 3.36 acres of NWW-open water, and approximately 133 acres of individual wetlands areas.

2.1 Non-Wetland Waters-Streams

A total of 17 linear NWWs (streams) were identified during the field and desktop delineations of the PSA. The total length of the streams is approximately 8,536 linear feet. These streams are typically associated with taking on water from roadside drainage and wetlands within and outside of the PSA. These streams are characterized by sandy bottoms and range from 2 to 10 feet wide except for Four Hole Swamp which is approximately 50 feet wide. Named streams within the PSA include Spring Branch, Mill Branch, Cane Branch, Crawford Branch, Deep Branch, and Four Hole Swamp. Spring Branch and Mill Branch appear to drain directly to Four Hole Swamp, while Crawford Branch and Deep Branch first drain to Walnut Branch before flowing into Four Hole Swamp. Four Hole Swamp flows to the Edisto River to the south, and ultimately to the Atlantic Ocean. These streams have scour, sediment sorting, minimal vegetation in the channels, and support aquatic fauna. Most of these streams are shaded and have a vegetative buffer between them and cleared land. Within the PSA, many of these streams have been altered through

[3] SCDES, https://des.sc.gov/sites/des/files/Library/Regulations/R.61-68.pdf#page=32, accessed September 4, 2025.

channelization, pipe/culverts, and/or armoring of beds and banks. Therefore, most of the stream reaches within the PSA are considered partially impaired to impaired.

2.2 Non-Wetland Waters-Open Waters

Five NWW-open water features (ponds) were identified within the PSA and total 3.36 acres. Four of these ponds are agricultural/recreational ponds built by landowners. The fifth pond is associated with the mining operations of the Argos Cement LLC located near the I-26 and SC 453 interchange north of Harleyville. The ponds within the PSA are typically bounded by either developed or undeveloped uplands, although several have adjacent wetland areas.

2.3 Wetlands

A total of 99 wetlands were identified within the PSA and total approximately 133 acres. Forested wetlands and emergent wetlands were identified and mapped in the field. Most of the wetlands within the PSA are forested and dominated by hardwoods. Emergent wetlands were typically vegetated by herbaceous plants and small shrubs. Each of these wetland types are further described below. The majority of the wetlands are located immediately adjacent to existing infrastructure facilities including roads, utilities, and commercial and residential development. Therefore, it is likely that the existing wetlands have been affected through prior conversion to maintained infrastructure ROW and fragmentation. This includes the maintenance (mowing, herbicide application, etc.) of several emergent wetlands throughout the year within transportation and utility ROW.

Forested Wetlands:

The forested wetlands within the PSA are bounded by forested uplands, pasture/agricultural field, transportation and utility infrastructure, emergent wetlands, and/or commercial and residential development. The PSA contains approximately 110 acres of forested wetlands. The dominant vegetation along these areas includes water oak, willow oak, red maple (*Acer rubrum*), sweetgum, swamp chestnut oak (*Quercus michauxii*), fetterbush (*Lyonia lucida*), wax myrtle (*Morella cerifera*), red bay (*Persea borbonia*), switchcane, *Rubus* spp., poison ivy (*Toxicodendron radicans*), and muscadine (*Vitis rotundifolia*) as well as other species.

Emergent Wetlands:

The emergent wetlands within the PSA are typically bounded by forested and herbaceous uplands, pasture/agricultural field, transportation and utility infrastructure, emergent and forested wetlands, and/or commercial and residential development. The PSA contains approximately 23 acres of emergent wetlands. These wetlands are characterized by various rushes (*Juncus spp*.), switchcane, wax myrtle, fetterbush, muscadine, and sedges (*Carex spp*.), along with other herbaceous species.

3.0 Water Quality

The Lower Four Hole Swamp and Indian Field Swamp Watersheds were identified using online mapping as overlapping with the PSA. While the Indian Field Swamp Watershed does overlap

with the PSA near SC 453, there were no identified streams or other WOUS that drain to the watershed. Within the PSA, SCDES maintains no monitoring stations for water quality standards. There are 17 streams within the PSA including the named streams: Spring Branch, Mill Branch, Cane Branch, Crawford Branch, Deep Branch, and Four Hole Swamp. Spring Branch and Mill Branch flow to the north of the PSA, draining directly into Four Hole Swamp. Both Cane Branch and Crawford Branch flow into Little Walnut Branch to the south of the PSA, which in turn flows into Walnut Branch and then Four Hole Swamp. Deep Branch drains directly into Walnut Branch and then to Four Hole Swamp. SCDES maintains an ambient surface water quality monitoring station (RS-20523) along Walnut Branch on Beidler Forest Road south of the PSA towards US 178, downstream of the confluence of Cane, Crawford, and Deep Branches with Walnut Branch. At this location, Walnut Branch is listed as non-supporting for dissolved oxygen (DO) as documented in the *SCDES Water Quality Information Report* (Appendix D of the BA, which is appended to this document).[4] Additionally, the SCDES "Watershed Atlas" online map shows two watershed monitoring sites within the Lower Four Hole Swamp Watershed; E-112, located north of the PSA at SC 453; and E-100, located along Four Hole Swamp south of the PSA at US 78. A third site was identified at Big Branch along Saint Paul Road (RS-10373) within the Indian Field Swamp Watershed.[5] This mapping concluded that the project is not found within a MS4-designated area, but that the Lower Four Hole Swamp and Indian Field Swamp Watersheds are Total Maximum Daily Load (TMDL) Watersheds based on findings at the above sites. E-100 and RS-10373 meet TMDL parameters for *E. coli*/fecal coliform. This is reported in TMDL Report No. 008-07. The 2024 South Carolina Section 303(d) List of Impaired Waters was searched for waterbodies within the PSA. Based on the findings from this report, none of the tributaries to Four Hole Swamp are impaired within the PSA; however, downstream locations are impaired.[6] While none of the tributaries are listed as impaired, the E-100 monitoring site at Four Hole Swamp is impaired for *E. coli*, and the E-112 monitoring site (upstream of PSA) is listed as impaired for dissolved oxygen and mercury. The entire project is within TMDL watersheds to improve the water quality standards within the watershed.

4.0 Floodplains

A review of the FIRMs—45035C0045E, 45035C0065E, 45035C0185E, 45035C0195E, and 45035C0215E (effective date July 18, 2017)—identified that the PSA includes portions of the regulated 100-year floodplain and floodway zone associated with Four Hole Swamp and its tributaries. These areas are classified as special flood hazard areas, Zone AE, which have been determined to be subject to inundation by the 1 percent annual chance flood, in which base flood elevations have also been determined. In addition, FIRM 45035C0180E and 45035C0213E (effective date July 18, 2017) overlap the PSA, but had no flood hazard areas intersecting the PSA. A copy of the FIRMs is included in Appendix C.

[4] SCDES, https://gis.dhec.sc.gov/stormwater/, accessed August 6, 2025.
[5] SCDES https://gis.dhec.sc.gov/gisportal/apps/webappviewer/index.html?id=5748b81cf2d84668be4175eed2511654, accessed September 5, 2025
[6] SCDES, https://des.sc.gov/sites/des/files/Documents/BOW/WaterQuality/303dList2024.pdf, accessed September 5, 2025

Within the PSA, nine FEMA crossings would be affected by the proposed project. Three of these locations are associated with the stream labeled “Four Hole Swamp Tributary 10” in FIRM panel # 45035C0045E. This tributary crosses I-26 just west of Exit 172 and crosses US 15 and Alligator Lake Road to the north of the I-26/US 15 interchange. One crossing is associated with an unnamed tributary approximately 1,700 feet to the north of the intersection of Alligator Lake Road and US 15. A fifth crossing is located at I-26 over Spring Branch (Four Hole Swamp Tributary 8 on FIRM panel # 45035C0065E). Cane Branch crosses Taylor Pond Road south of I-26, and Crawford Branch crosses Taylor Pond Road north of I-26 (FIRM panel # 45035C0185E). The same crossings of Cane Branch and Crawford Branch are also shown on FIRM Panel # 45035C0195E, along with a crossing of I-26 by Crawford Branch to the east of the Taylor Pond Road overpass. The ninth crossing is located at the I-26 bridges over Four Hole Swamp, as shown on FIRM panel # 45035C0215E. The FEMA flood zone layer is shown on Figure 4.1 through Figure 4.10 in Appendix A.

Executive Order (EO) 11988 of May 24, 1977 (Floodplain Management) requires federal agencies to avoid to the greatest extent possible long and short-term adverse impacts associated with the occupancy and modification of floodplains. In addition, it requires the avoidance of direct and indirect support of floodplain development whenever there is a practicable alternative. In January 2015, EO 13690 was signed into law amending EO 11988 establishing a Federal Flood Risk Management Standard (Standard), a flexible framework to increase resilience against flooding and help preserve the natural values of floodplains. This Standard will ensure that agencies expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.

The Federal Emergency Management Agency (FEMA) regulates floodplains subject to inundation by the “100-year flood” (a flood that has a 1 percent chance of occurring in a given year). FEMA produces the FIRM, which depicts flood hazard areas and divides them into zones that reflect the potential severity or type of flooding in that area. The extent of the 500-year flood (0.2 percent annual chance of flooding) and the 100-year flood (1 percent annual chance of flooding) are depicted on the FIRM. Base Flood Elevation (BFE) is the depth of anticipated flood water based on computer modeling. Zone A floodplains are areas that will be inundated during a 100-year flood, for which no BFEs have been determined. Zone AE floodplains are areas that will be inundated during a 100-year flood, for which BFEs have been determined.

To comply with EO 11988 and its amendment EO 13690, a hydraulic analysis must be conducted to determine if the project will cause changes within the 100-year floodplain (Zone AE). SCDOT considers “No Impact” projects those that cause no change to the 100-year flood profile or floodway profile rounded to the nearest 0.1 foot or no change to the floodway width rounded to the nearest 1.0 foot. Any changes greater than those listed will require the development of a Conditional Letter of Map Revision (CLOMR) and eventually a Letter of Map Revision (LOMR) documenting the changes. SCDOT policy limits any increase to 1.0 foot or less above the unrestricted or natural 100-year flood profile without a request for design exemption.

A preliminary hydraulic analysis was conducted in accordance with *SCDOT Requirements for Hydraulic Design Studies* (May 26, 2009). In addition, the SCDOT Bridge Replacement Scoping Trip Risk Assessment Forms and the Floodplains Checklist were completed for the appropriate structures and are attached in Appendix C of the BA, which is appended to this document. Based on this analysis, the proposed project is anticipated to have a “no impact” on the base flood elevation associated with the regulated floodplains.

A final detailed hydraulic analysis would be conducted during final design development in accordance with *SCDOT Requirements for Hydraulic Design Studies*. The final analysis and findings will be coordinated with appropriate agencies, including Dorchester and Berkeley Counties.

5.0 Federally Protected Species

The PSA was evaluated for the potential presence of any federally protected species currently listed on the USFWS IPaC report, updated on October 28, 2025. The IPaC report identified three endangered and one threatened species, as well as one species that is proposed endangered, and two species that are proposed threatened. These species as well as their effect determinations are listed in **Table 1** below. Further details about the species and their effects determinations are discussed in the BA attached as Appendix D.

The federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 16 U.S.C., Sections 703-711) prohibits the take of protected migratory bird species for species that occur within the United States or U.S. territories as the result of natural biological or ecological processes. Species protected under the MBTA may be potentially affected from the construction of the proposed project. However, SCDOT will comply with the provisions of the MBTA to avoid and minimize impact.

Table 1. Protected Species and Effects Determination

Category	Common name	Scientific name	Status	Effects determination
Birds	Bald eagle	*Haliaeetus leucocephalus*	BGEPA[a]	No Effect
	Red-cockaded woodpecker	*Dryobates borealis*	Threatened	No Effect
Mammals	Northern long-eared bat	*Myotis septentrionalis*	Endangered	May Affect – Likely to Adversely Affect
	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	N/A[b]
Reptiles	Southern hognose snake	*Heterodon simus*	Proposed Threatened	N/A[b]
Insects	Monarch butterfly	*Danaus plexippus*	Proposed Threatened	N/A[b]
Plants	Canby's dropwort	*Oxypolis canbyi*	Endangered	No Effect
	Pondberry	*Lindera melissifolia*	Endangered	No Effect

[a] Federally protected under the Bald and Golden Eagle Protection Act (BGEPA).
[b] No effects determination was added due to no formal listing, and no published Dkeys.

5.1 Consultation History

The I-26 Corridor Improvement Project was initially scoped for completion as a non-programmatic categorical exclusion (NPCE) under the National Environmental Policy Act (NEPA). In September 2025, SCDOT provided USFWS with a biological evaluation (BE) with effects determinations for species subject to Section 7 of the ESA. Upon USFWS' review, it was determined that the project "**may affect, likely to adversely effect**" the Northern long-eared bat (NLEB) due to the extensive tree clearing proposed, and formal consultation would be required to further evaluate potential effects. To initiate formal consultation a BA was completed in December 2025 and is currently under USFWS review.

5.2 Proposed Conservation Measures

As documented in the attached BA, SCDOT proposes various avoidance and minimization measures regarding NLEB and TCB. In addition, a compensatory mitigation plan is proposed to compensate for the loss of NLEB habitat as a result of the project. The following conservation measures are proposed to reduce impacts to the NLEB and TCB:

- Reduce clearing limits to the greatest extent practical
- Reduce fill of aquatic resources to the greatest extent practical
- Utilize best management practices (BMPs) for water resources
- Preserve suitable habitat through Section 404 wetland mitigation in the Four Hole Swamp watershed
- Direct temporary lighting away from suitable habitat
- Implement a clearing/suitable structure work moratorium from December 15 through February 15, and from April 1 through July 15
- Utilize the South Carolina Bat Conservation Pooled Fund to mitigate impacts

While no NLEBs were identified within the structures, SCDOT proposes to conduct a presence/absence survey of suitable structures, and use exclusionary barriers as needed to minimize potential impacts to the TCB.

6.0 Conclusion

The approximately 1,340-acre PSA associated with the proposed I-26 Corridor Improvement Project is comprised of various land uses and habitats, including the existing transportation facility, small streams, Four Hole Swamp, forested uplands, wetlands, open waters, disturbed areas and an abandoned roadbed. Specifically, the PSA consists of approximately 8,536 linear feet of NWW, 133 acres of wetlands, and 3.36 acres of NWW open waters. The delineated boundaries and jurisdictional status/determination of these areas are pending verification by USACE.

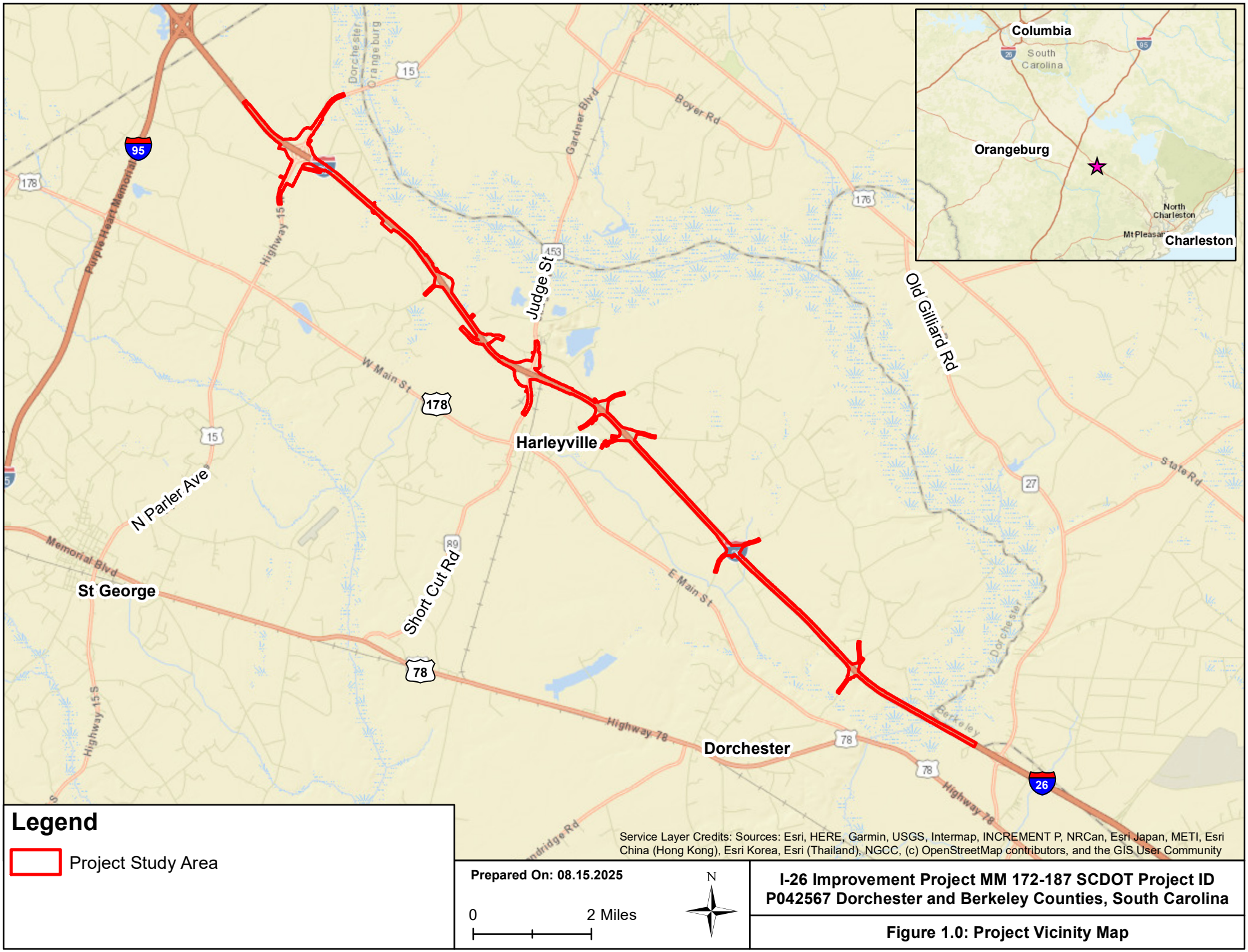
A review for federally protected and proposed protected species determined that there is habitat available for the monarch butterfly, pondberry, and Canby's dropwort. No habitat is present for the RCW within the PSA. No individuals of these species were observed during site visits, and of the species listed only the RCW has a known occurrence within 1 mile of the PSA. The project is assumed to have "**No Effect**" on the bald eagle, RCW, Canby's dropwort, and pondberry. Appropriate guidance will be followed, and a formal effects determination will be added as the final listing for the monarch butterfly and Southern hognose snake is determined.

The review for federally protected species also determined that there is suitable habitat available for TCB and NLEB. Following the proposed clearing and structure work moratoriums and other conservation measures would reduce the risk of impacting both the TCB and the NLEB. It is anticipated that the proposed project "**May Affect – Likely to Adversely Affect**" the NLEB. A formal determination for TCB would be finalized upon official listing of the species.

A more detailed analysis of the determination of effects for each species is discussed in the attached BA, and includes descriptions of protected species, as well as potential effects and recommended conservation measures.

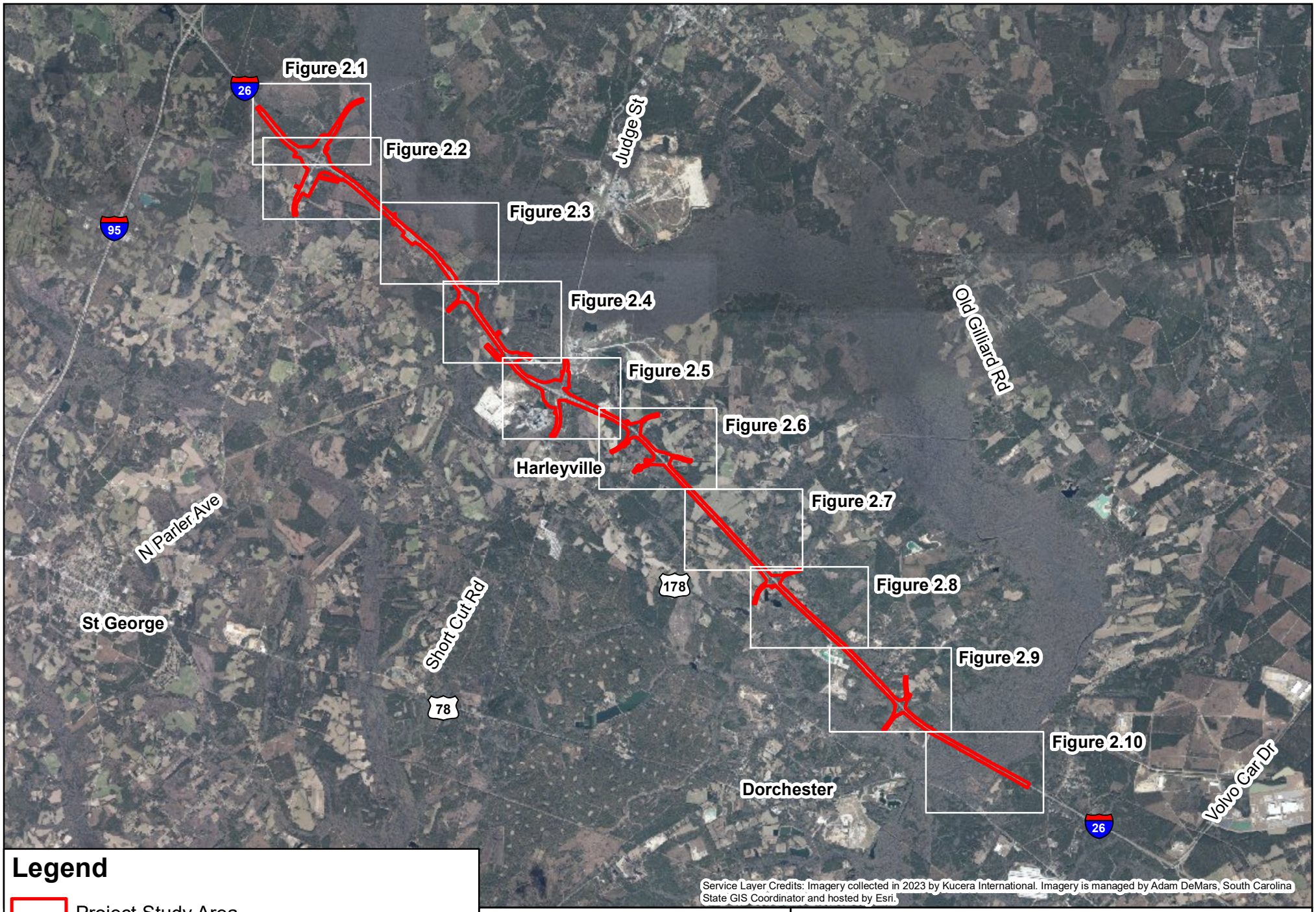
Appendix A

Figures



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 1.0: Project Vicinity Map



Legend

- Project Study Area
- Figure Sheets

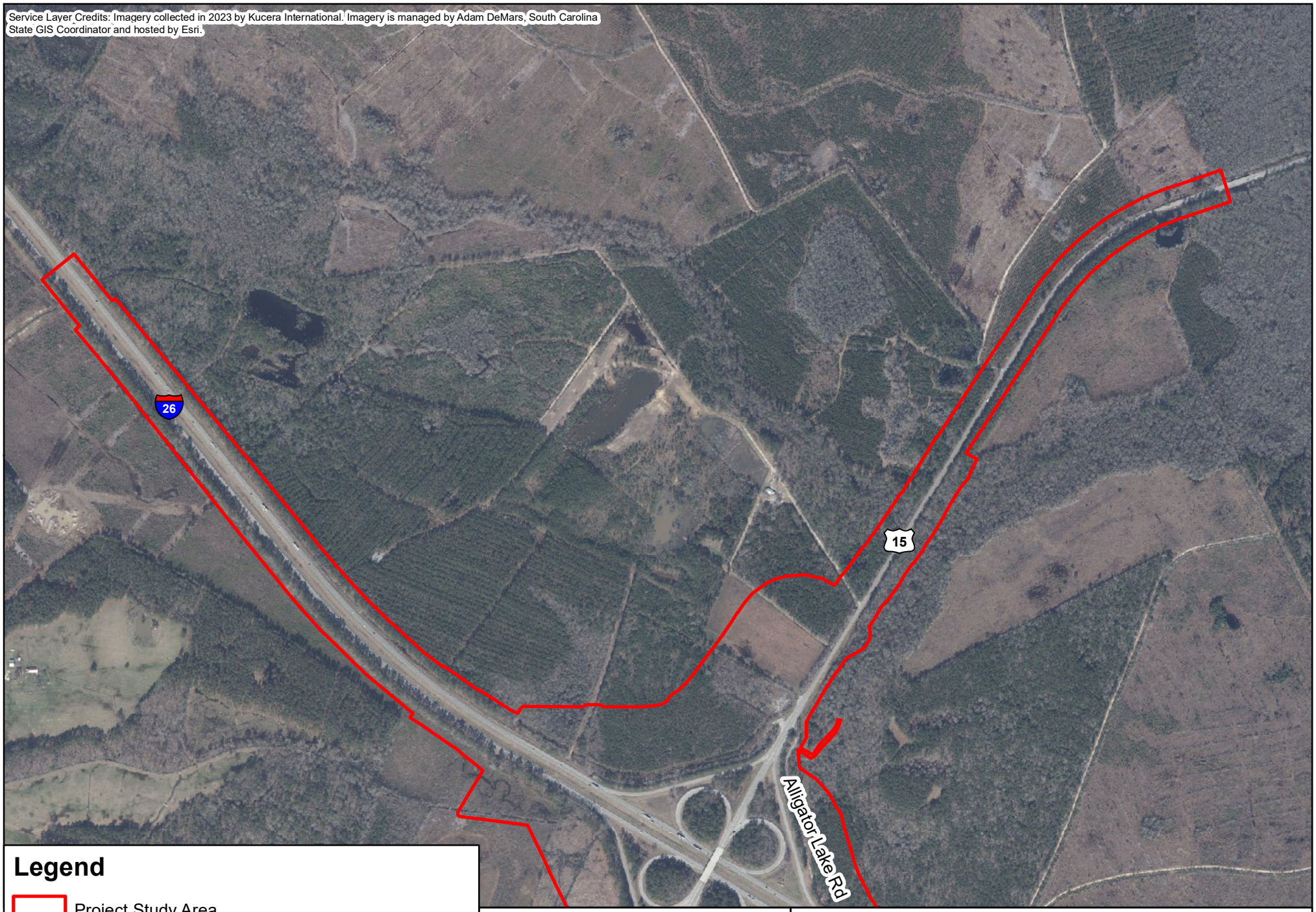
Prepared On: 08.15.2025

0 2 Miles

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.0: Aerial Overview Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.1: Aerial Map

Legend

Project Study Area

Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.2: Aerial Map

Legend

Project Study Area

Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.3: Aerial Map

Legend

Project Study Area

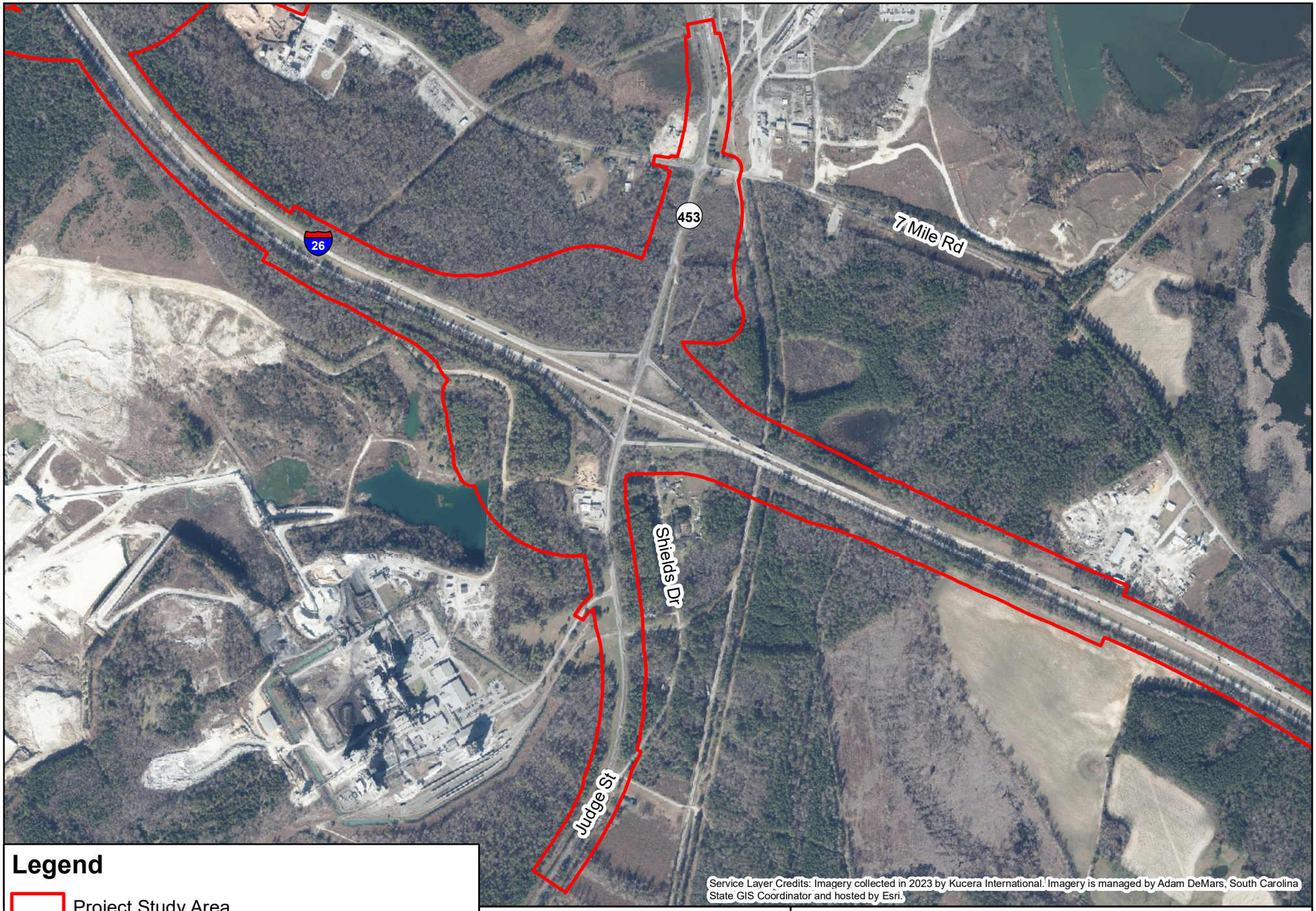
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.4: Aerial Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

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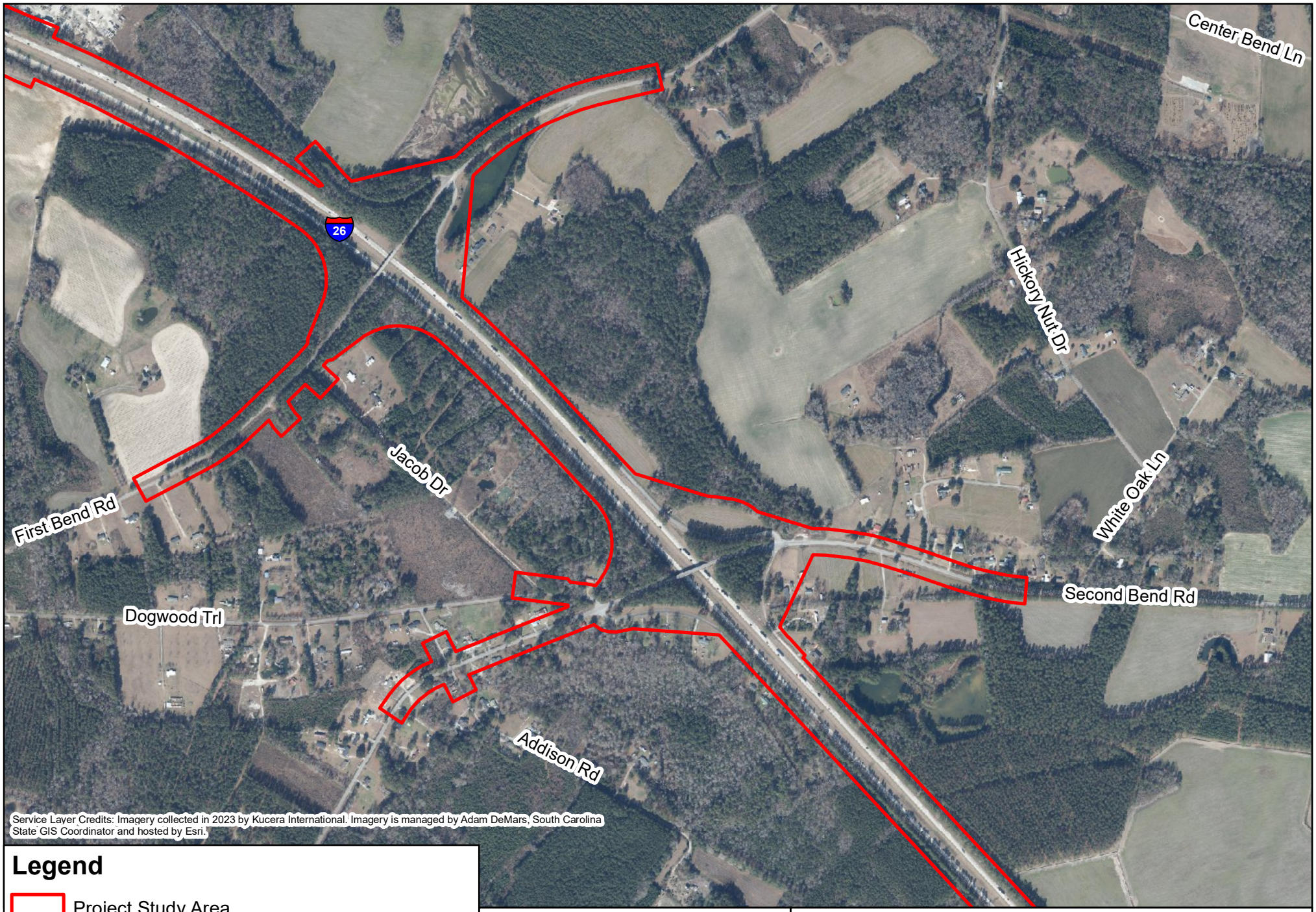
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.5: Aerial Map



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Project Study Area

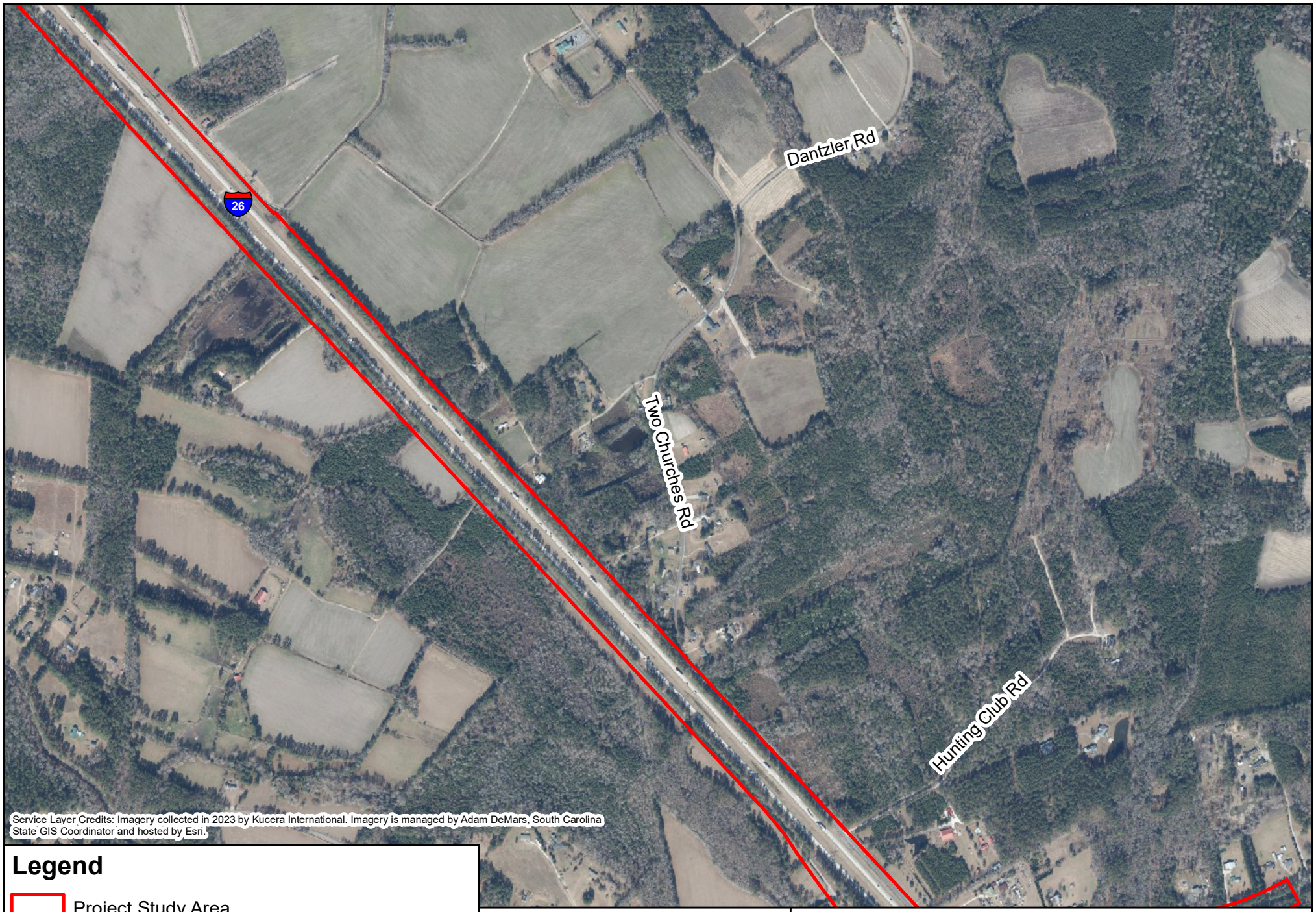
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.6: Aerial Map



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Project Study Area

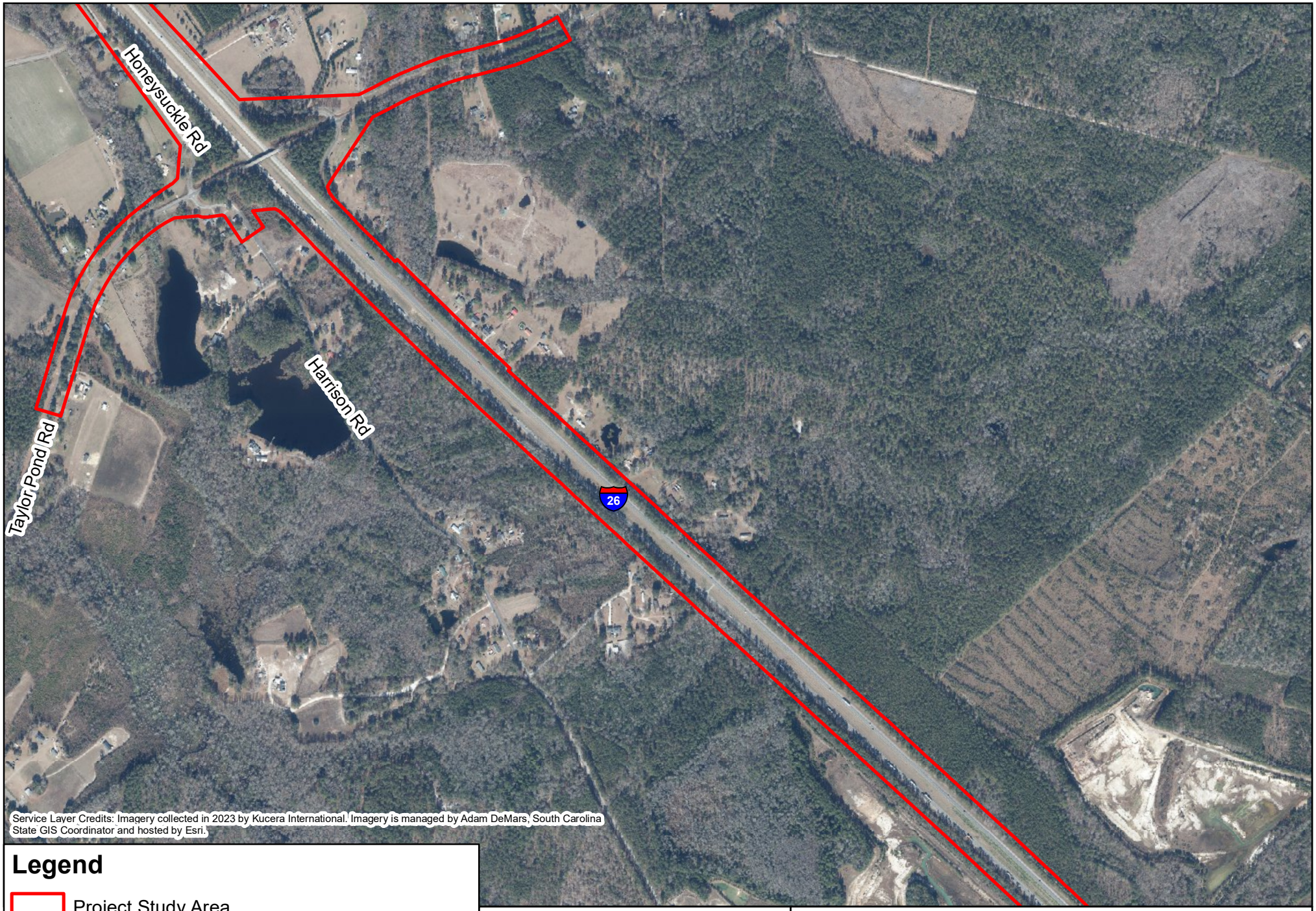
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.7: Aerial Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

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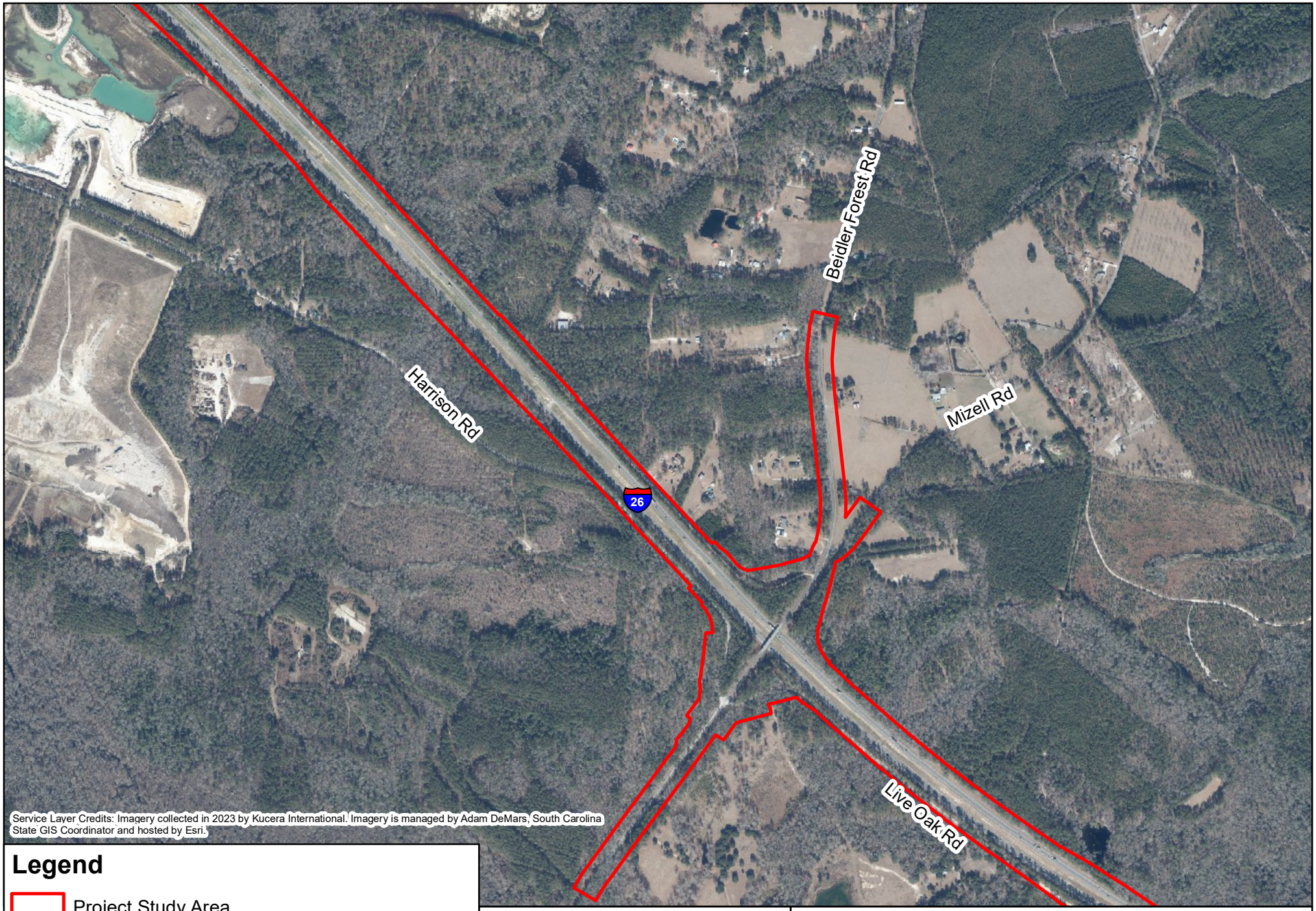
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.8: Aerial Map



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Project Study Area

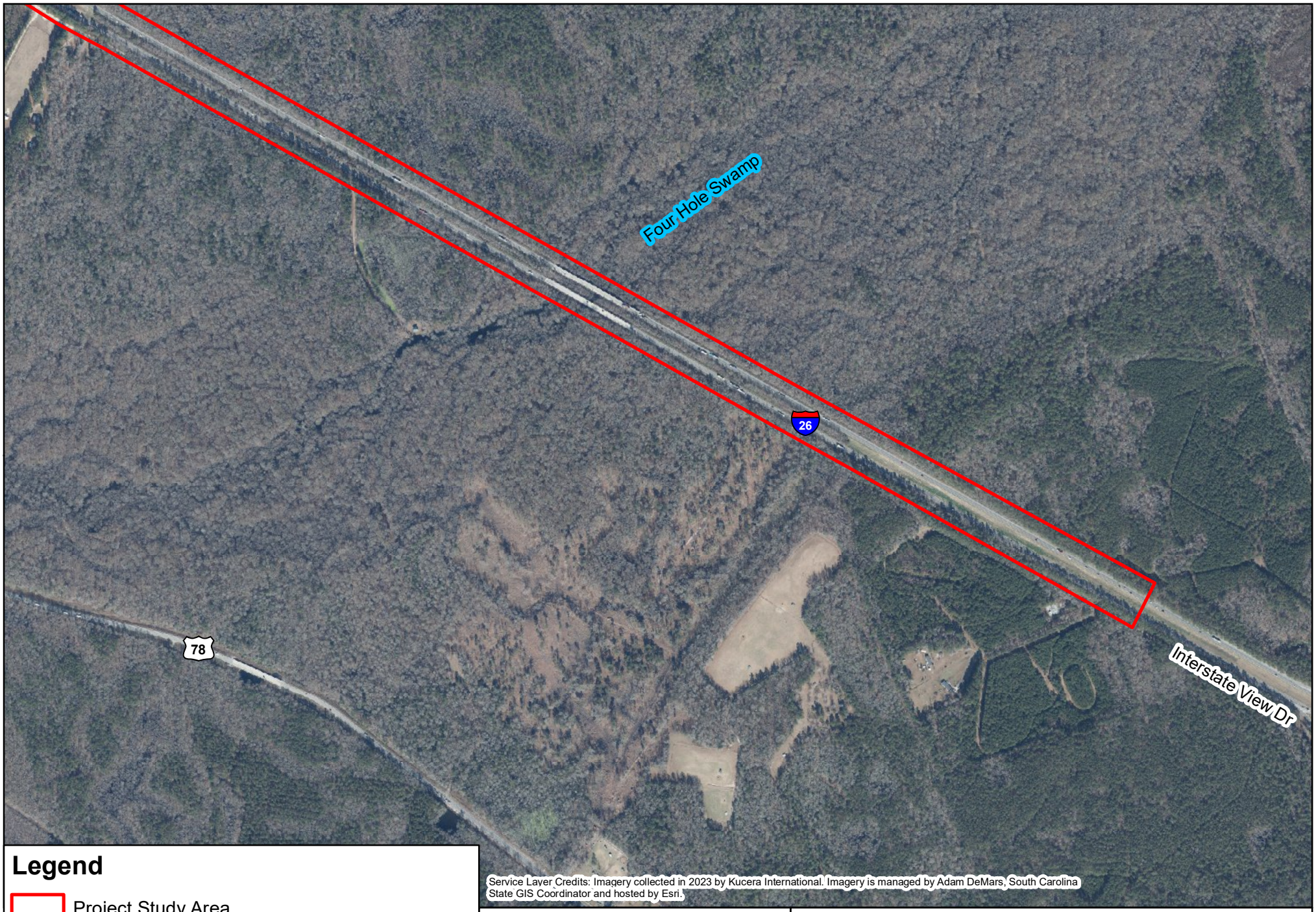
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.9: Aerial Map



Legend

Project Study Area

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Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 2.10: Aerial Map

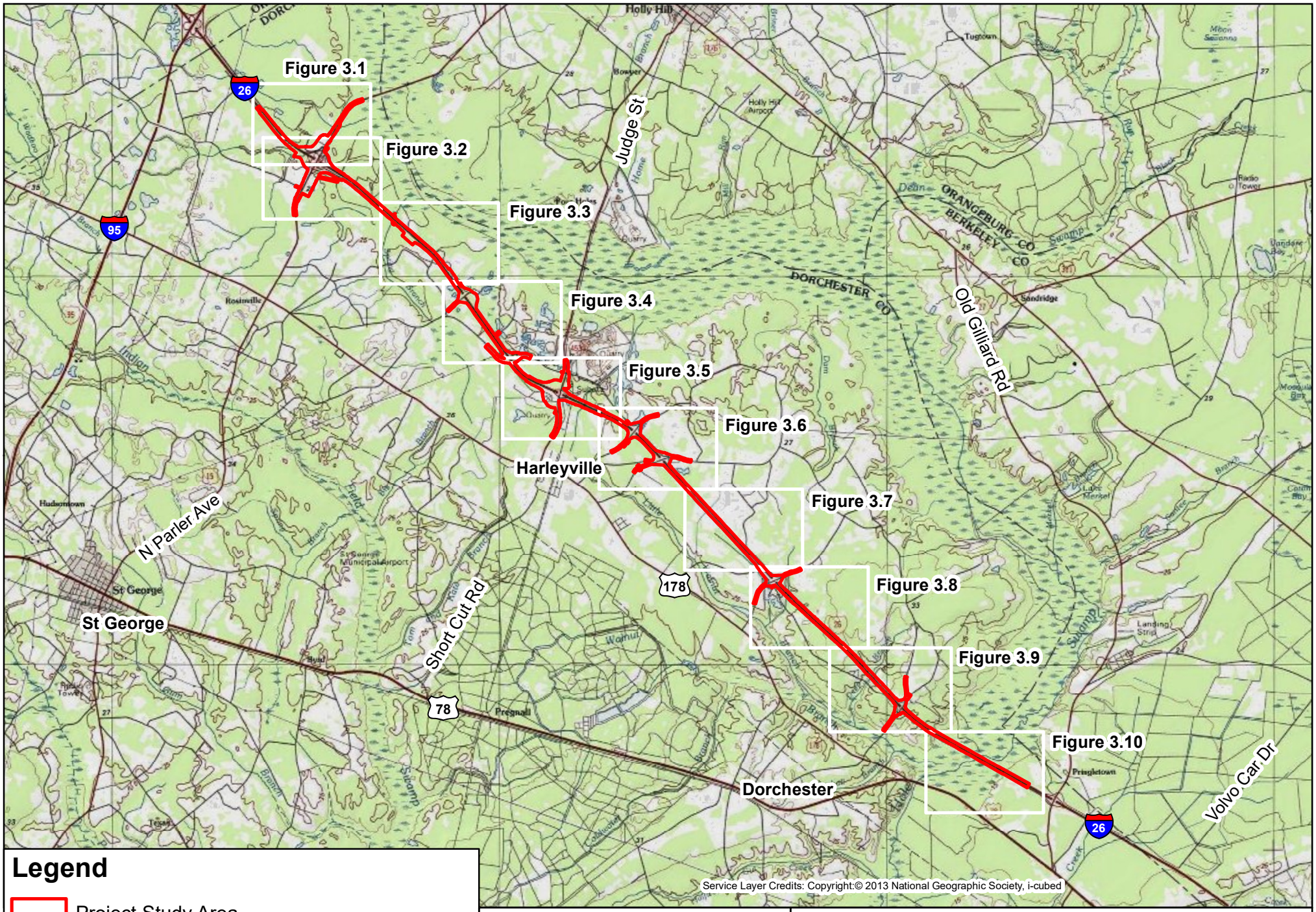
Figure 3.1
Figure 3.2
Figure 3.3
Figure 3.4
Figure 3.5
Figure 3.6
Figure 3.7
Figure 3.8
Figure 3.9
Figure 3.10
Harleyville
St George
Dorchester
Judge St
Old Gilliard Rd
N Parler Ave
Short Cut Rd
Volvo Car Dr
ORANGEBURG CO
BERKELEY CO
DORCHESTER CO
26
95
178
78
Legend
Project Study Area
Figure Sheets
Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
Prepared On: 08.15.2025
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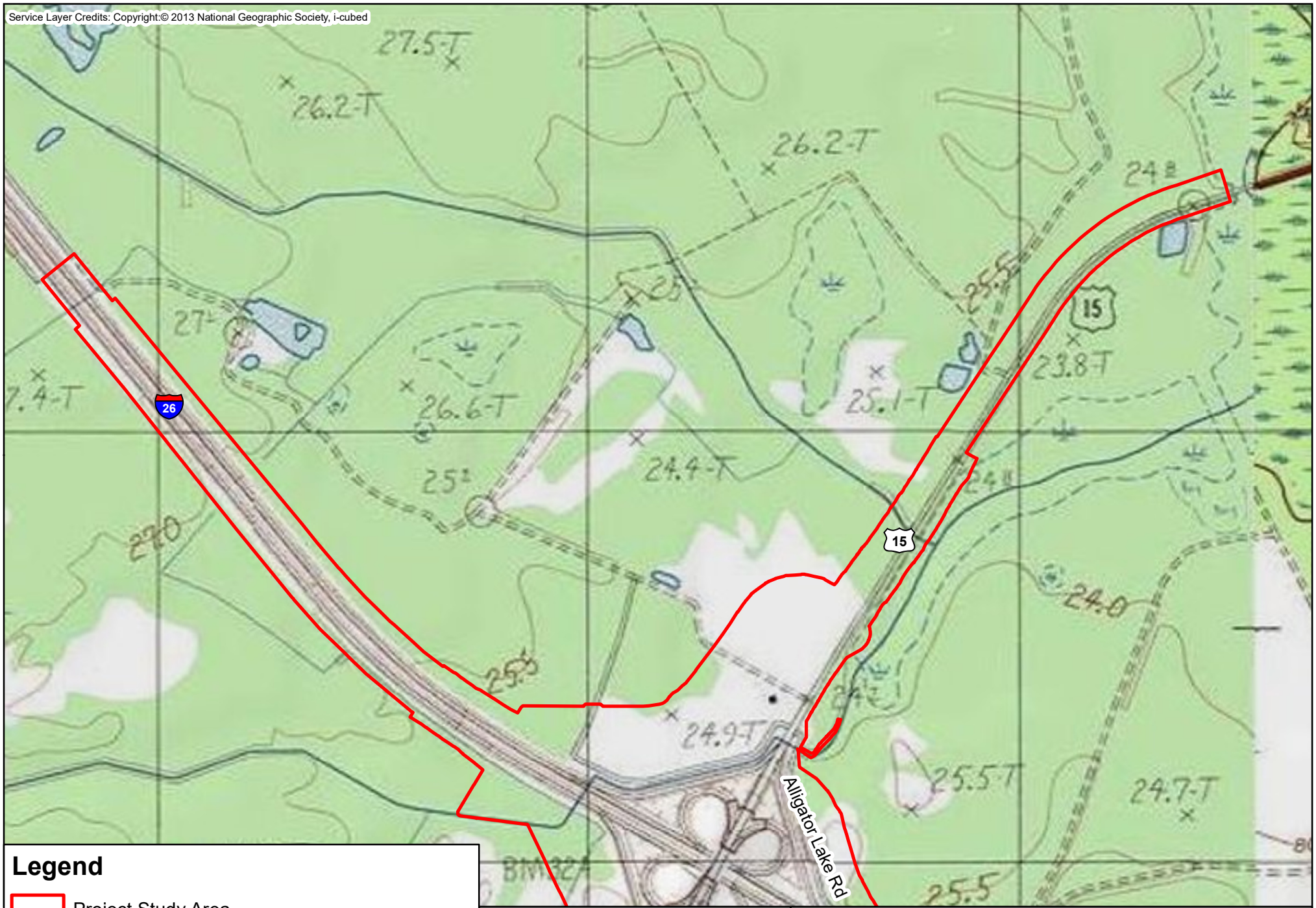
2 Miles
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 3.0: Topographic Overview Map


Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
27.5-T
26.2-T
26.2-T
24.8
26
15
23.8-T
25.1-T
26.6-T
24.4-T
25.5
15
24.0
24.9-T
25.5-T
24.7-T
Alligator Lake Rd
25.5
Legend
Project Study Area
Prepared On: 08.15.2025
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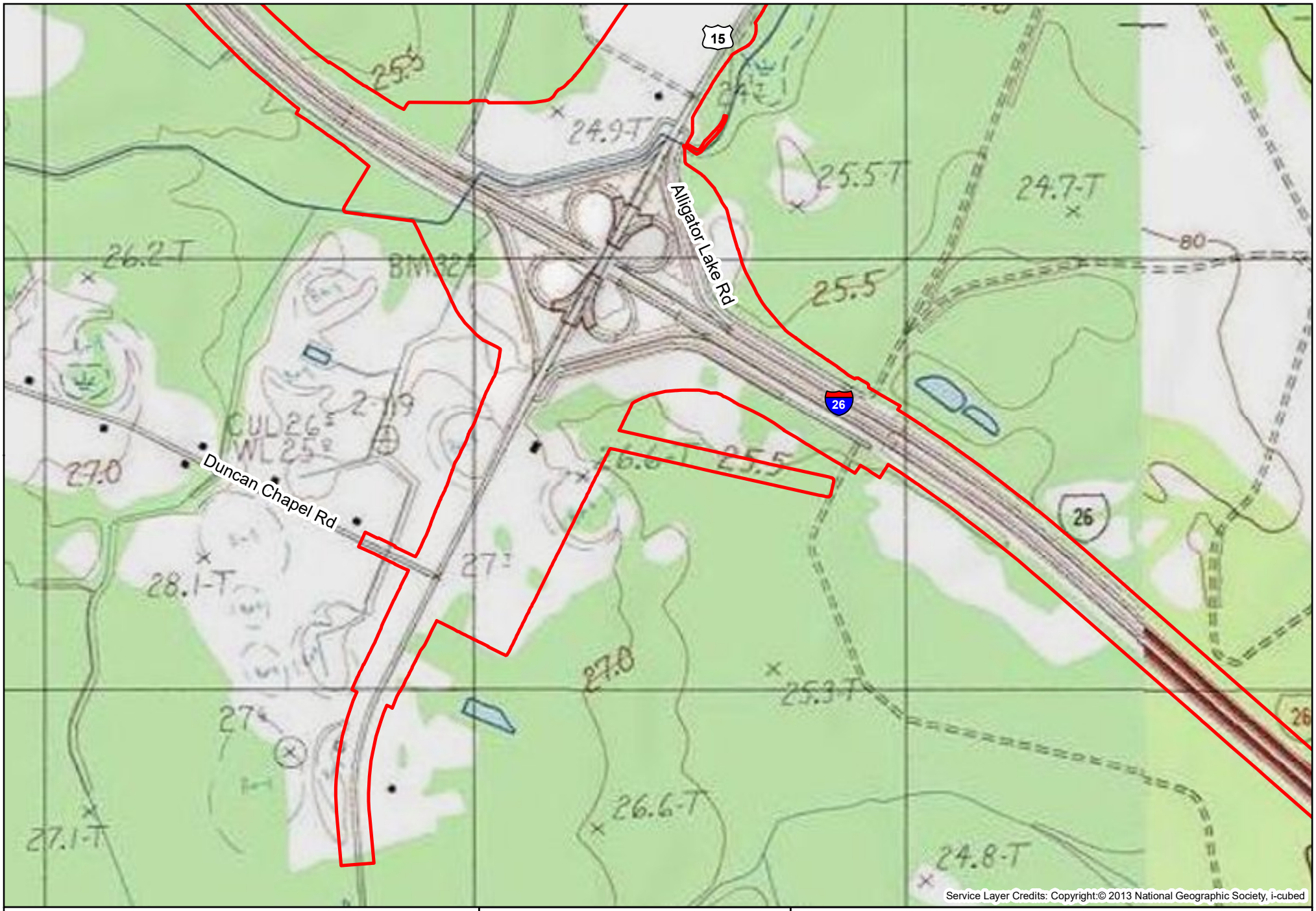
0
950 Feet
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 3.1: Topographic Map



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Project Study Area

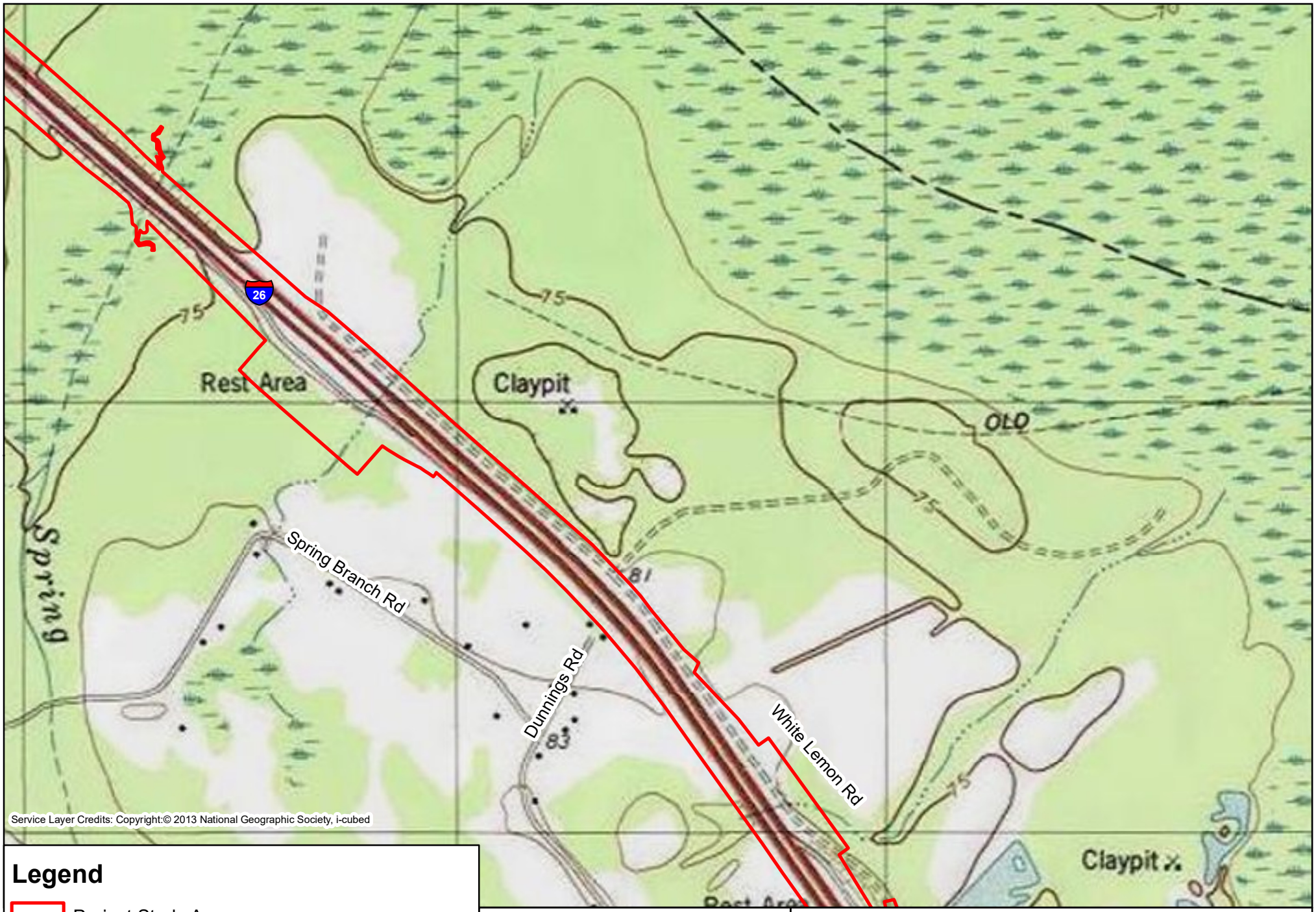
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.2: Topographic Map



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Project Study Area

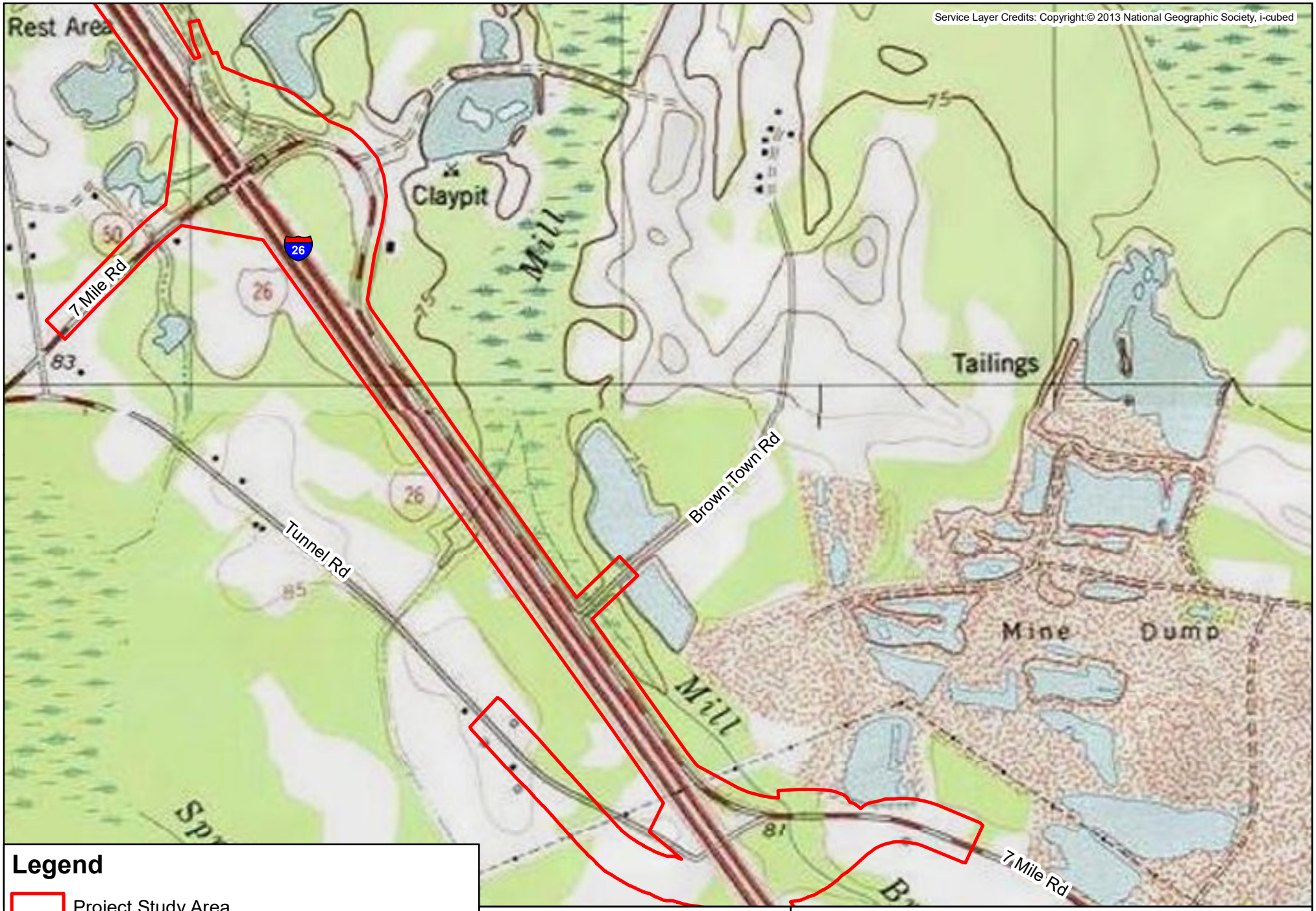
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.3: Topographic Map


Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
Rest Area
Claypit
Mill
7 Mile Rd
26
Tailings
Brown Town Rd
Tunnel Rd
Mine
Dump
Mill
7 Mile Rd
Legend
Project Study Area
Prepared On: 08.15.2025
0
950 Feet
N
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 3.4: Topographic Map

Legend

Project Study Area

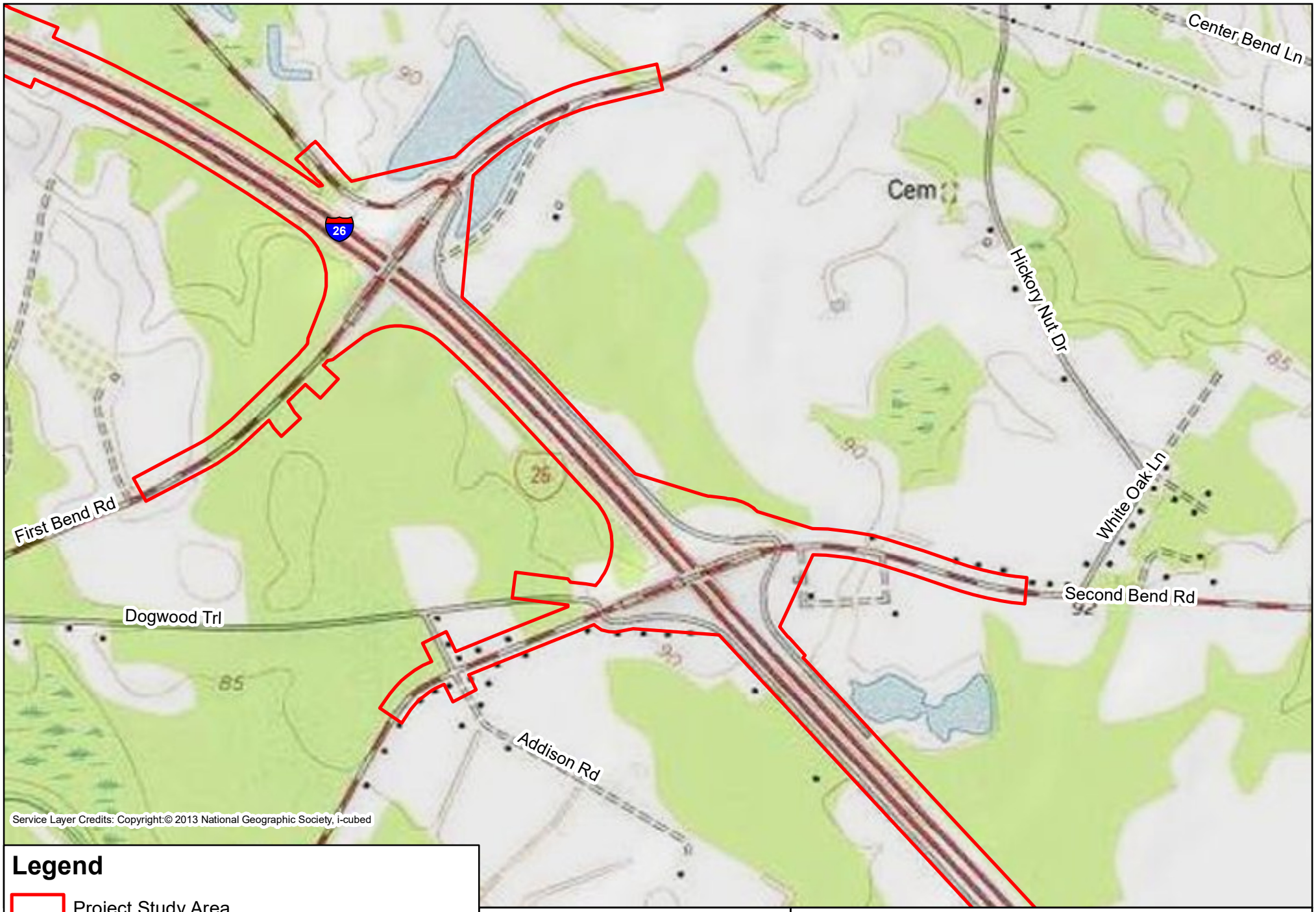
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.5: Topographic Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.6: Topographic Map

Legend

Project Study Area

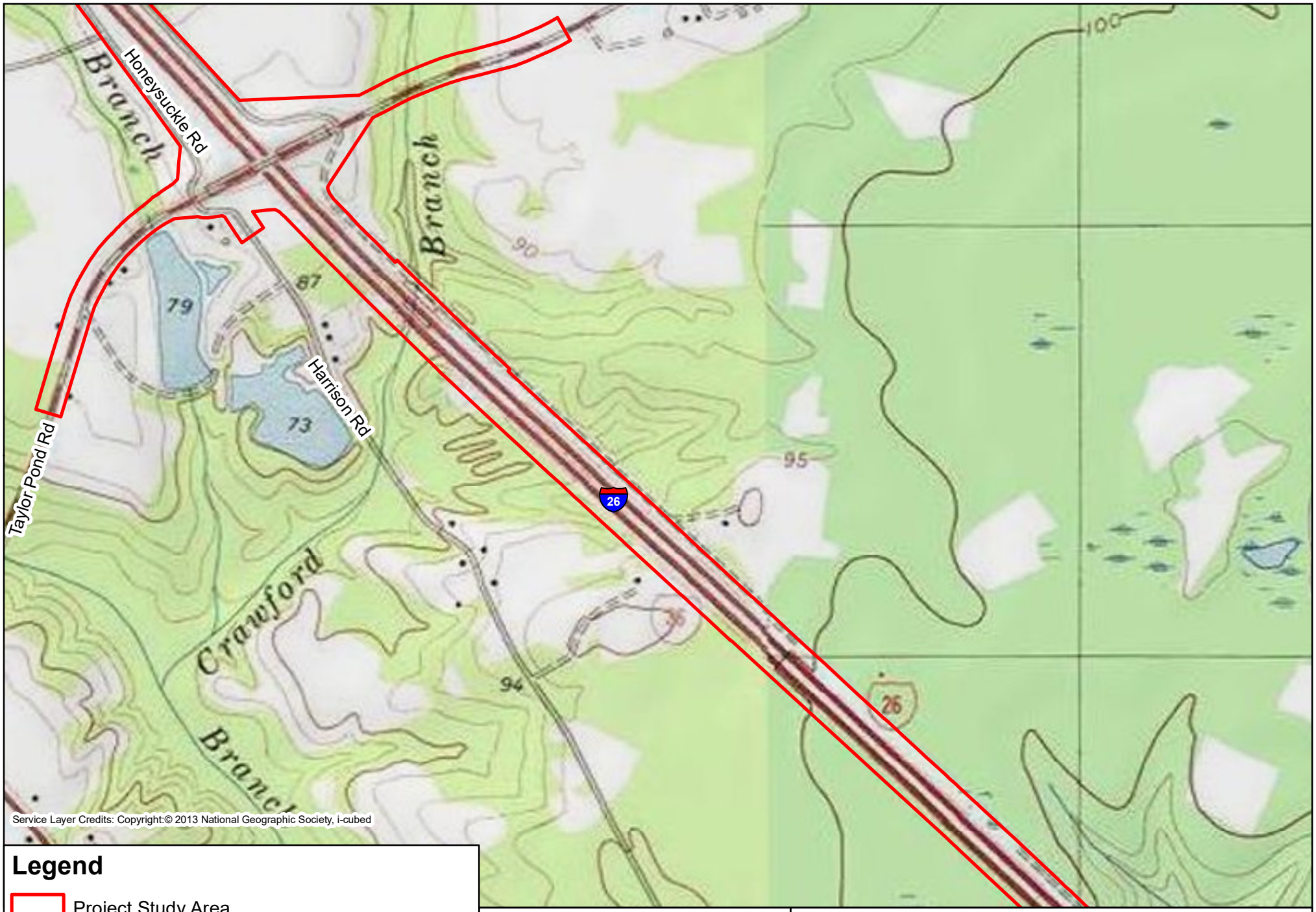
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.7: Topographic Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

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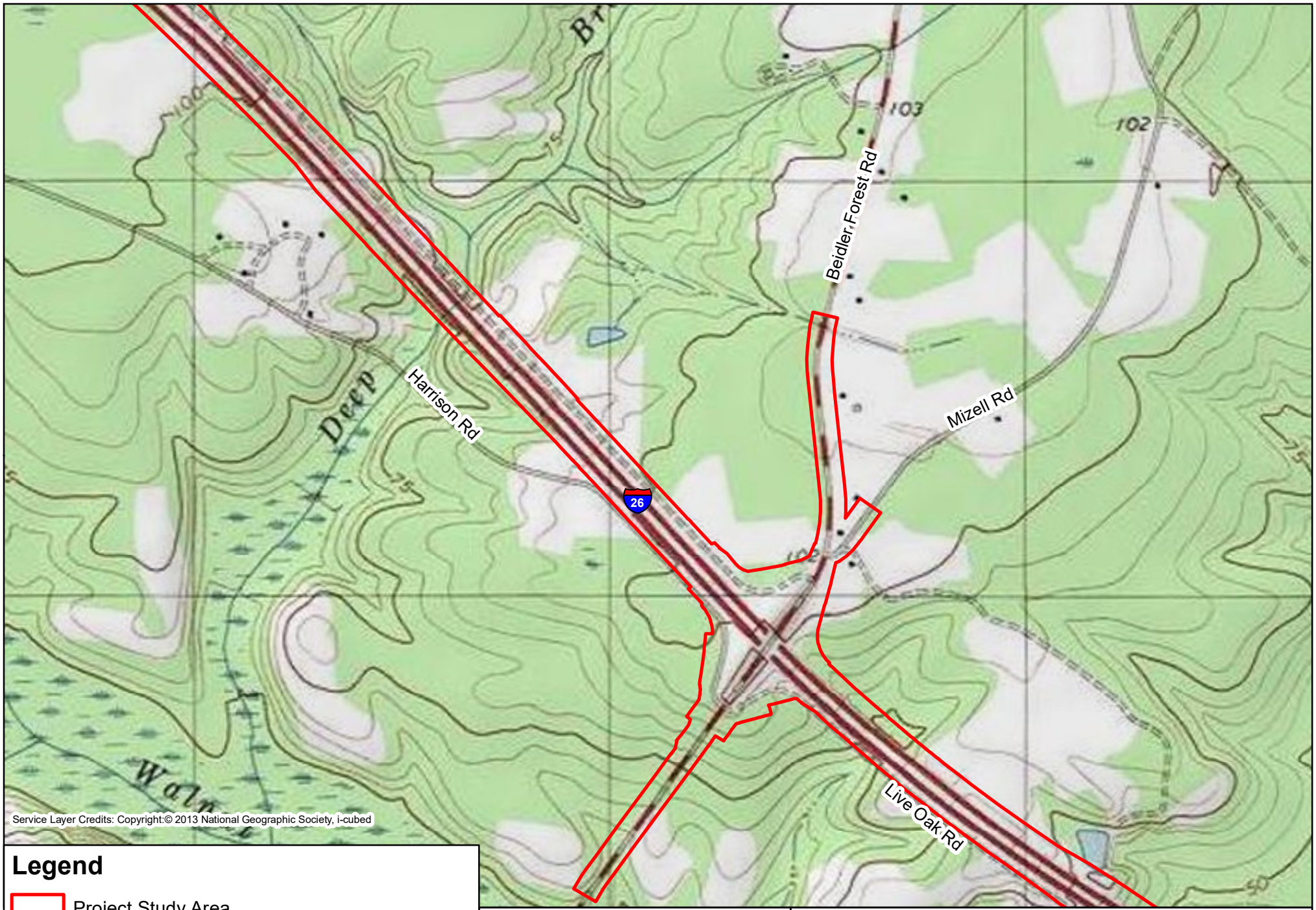
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.8: Topographic Map



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Project Study Area

Prepared On: 08.15.2025

0 950 Feet

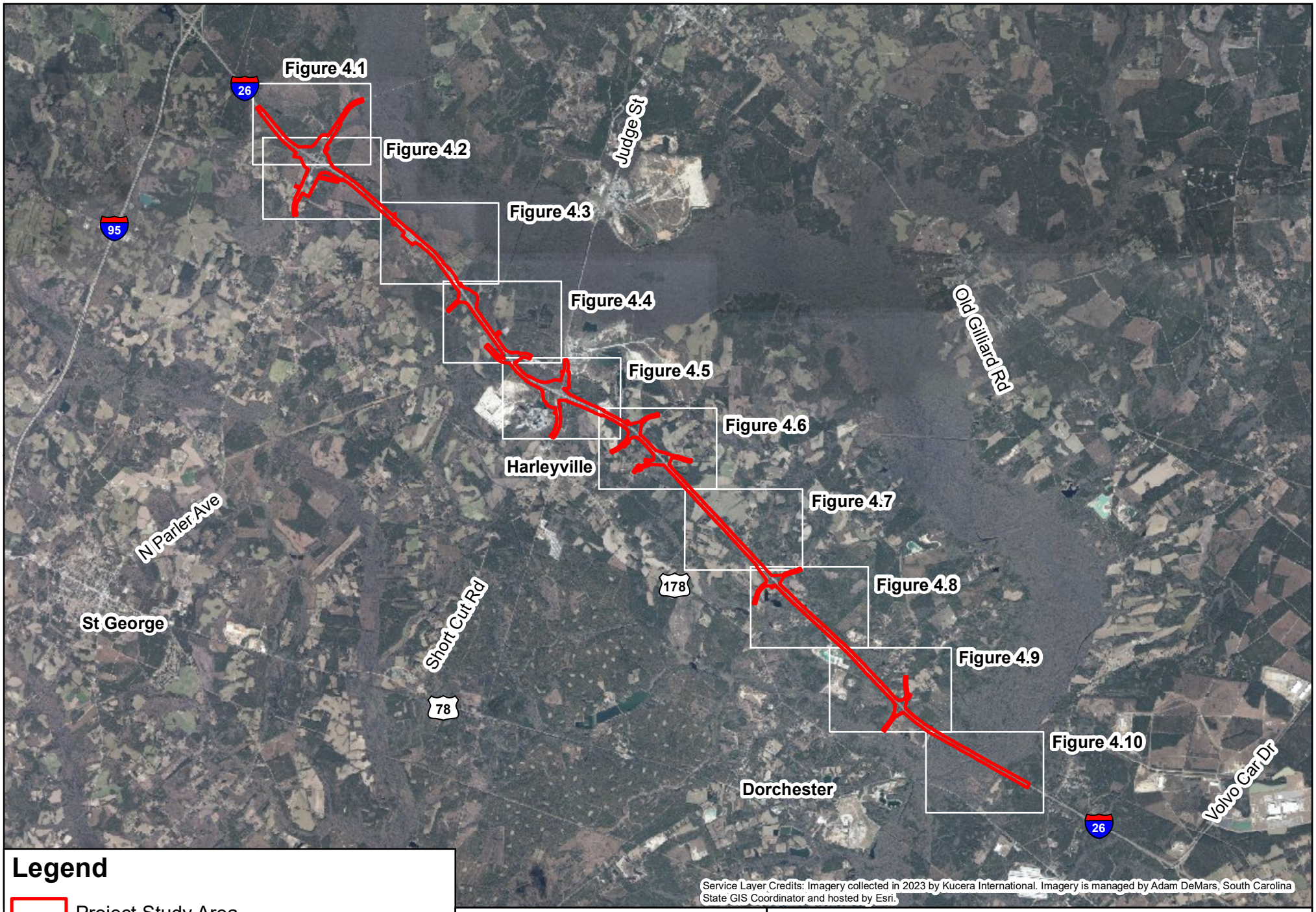
N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.9: Topographic Map

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.10: Topographic Map



Legend

- Project Study Area
- Figure Sheets

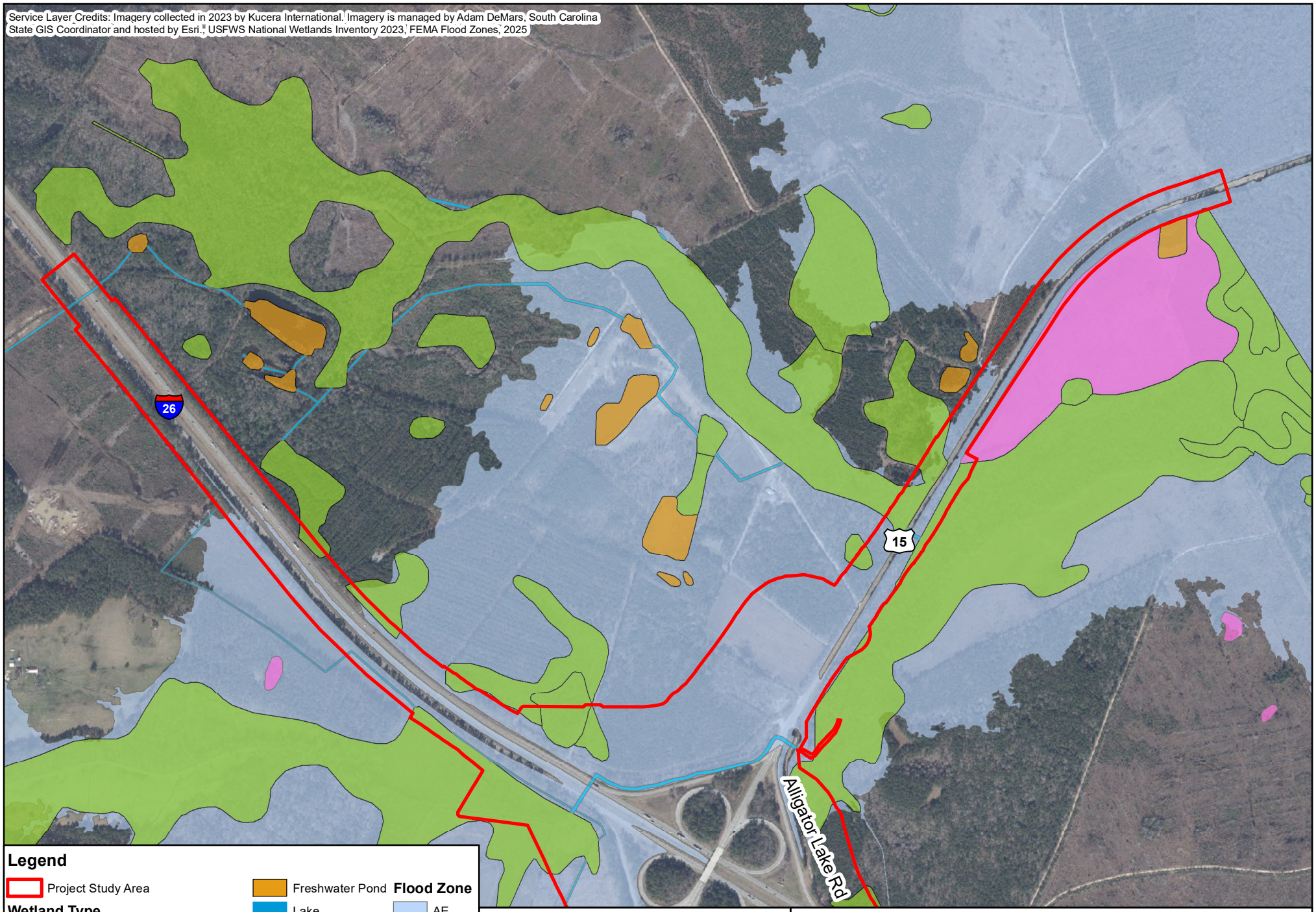
Prepared On: 08.15.2025

0 — 2 Miles

N

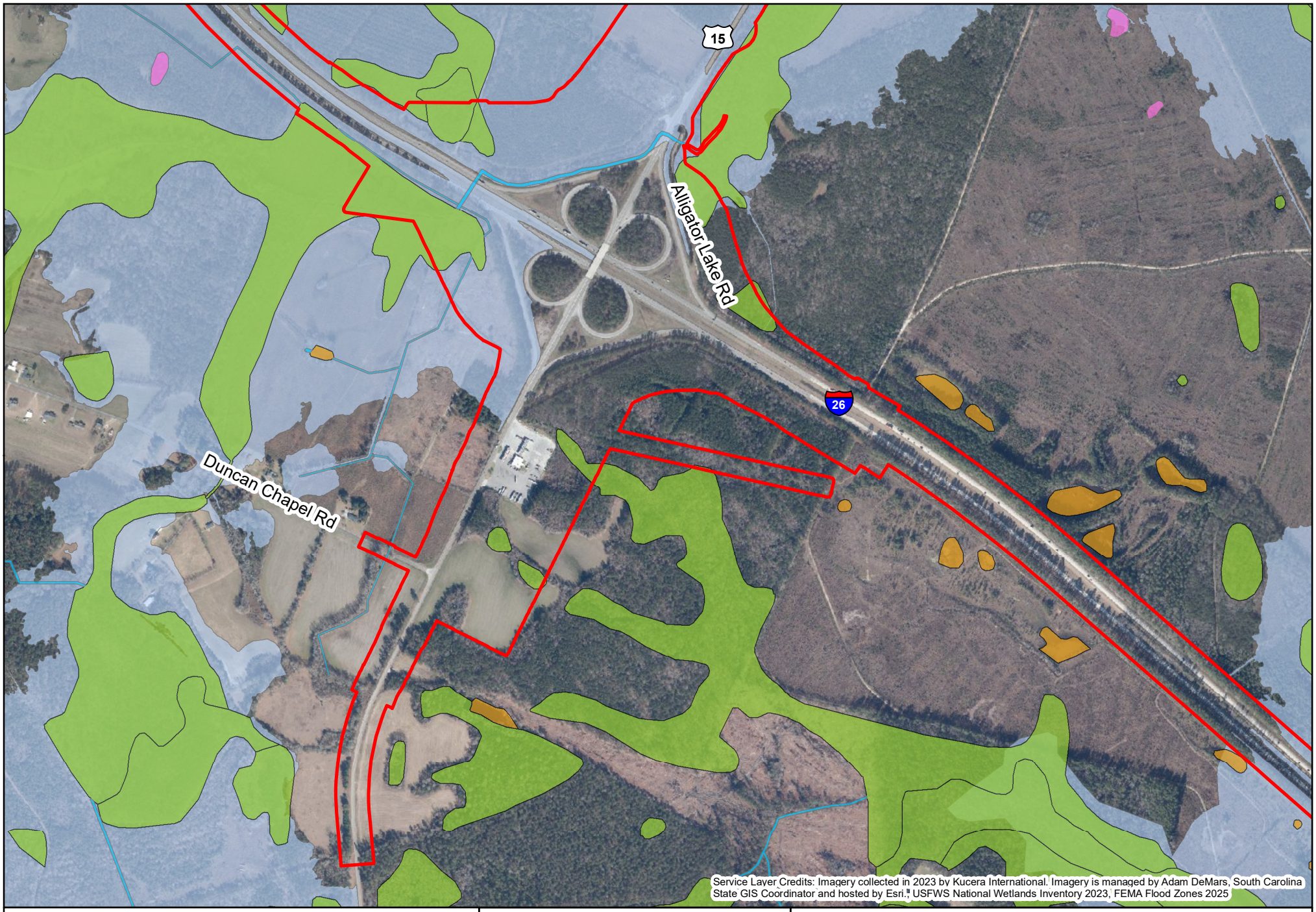
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.0: National Wetlands Inventory and FEMA Overview Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.1: NWI and FEMA Map



Legend

- Project Study Area

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Flood Zone

- AE

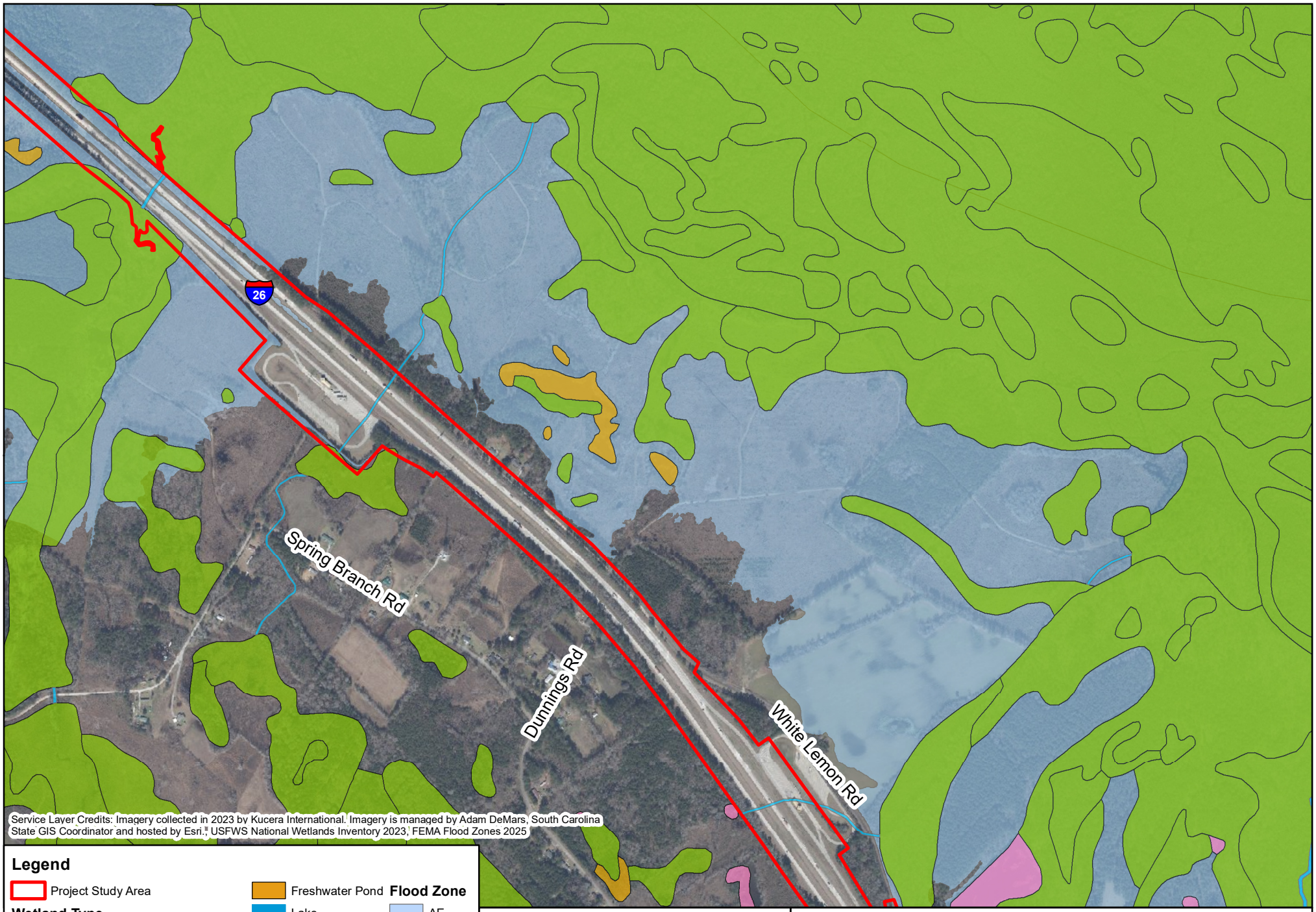
Prepared On: 08.15.2025

0 950 Feet

N

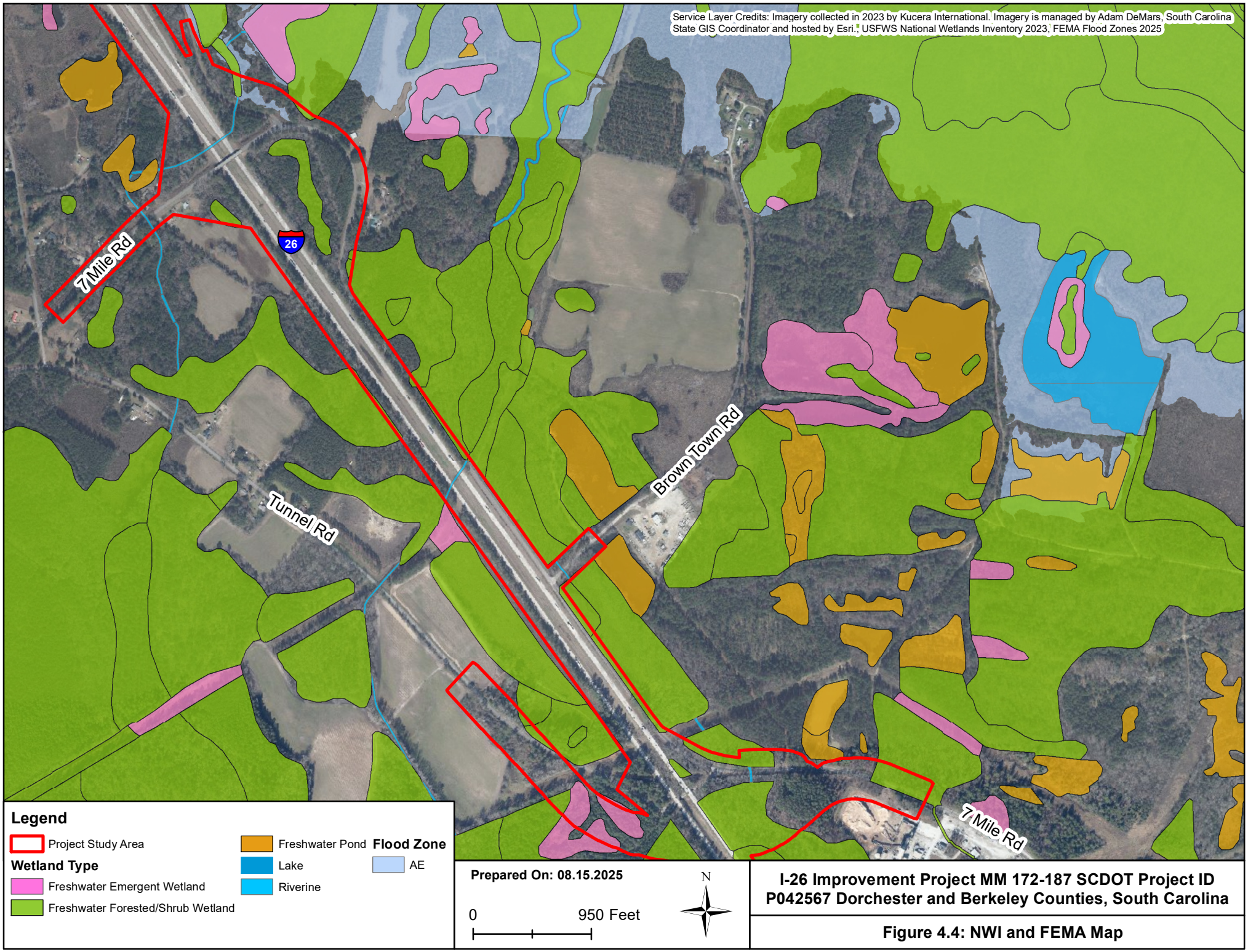
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

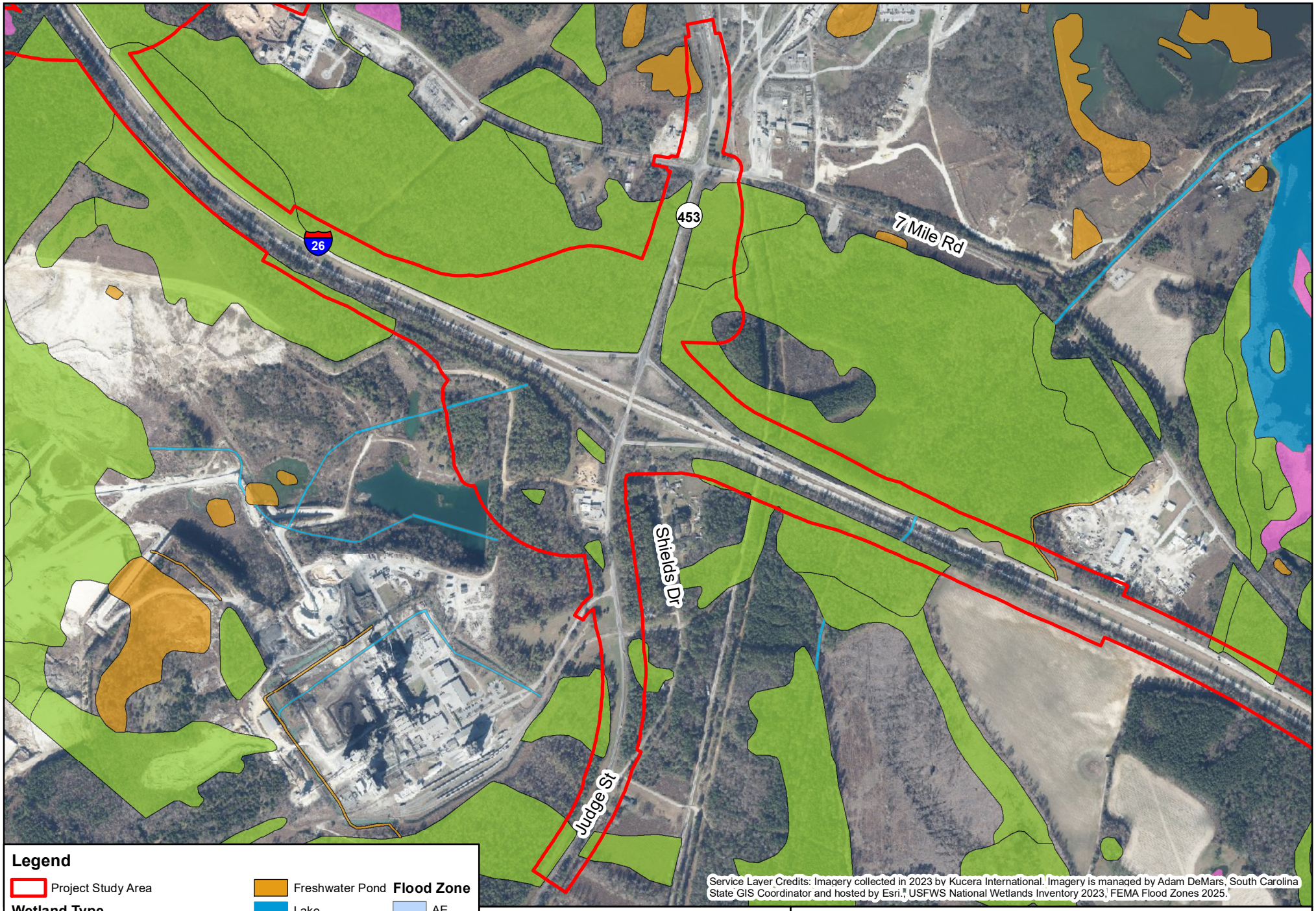
Figure 4.2: NWI and FEMA Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.3: NWI and FEMA Map


Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri., USFWS National Wetlands Inventory 2023, FEMA Flood Zones 2025
7 Mile Rd
26
Tunnel Rd
Brown Town Rd
7 Mile Rd
Legend
Project Study Area
Wetland Type
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Riverine
Flood Zone
AE
Prepared On: 08.15.2025
0
950 Feet
N
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 4.4: NWI and FEMA Map



Legend

- Project Study Area
- **Wetland Type**
  - Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Lake
  - Riverine
- **Flood Zone**
  - AE

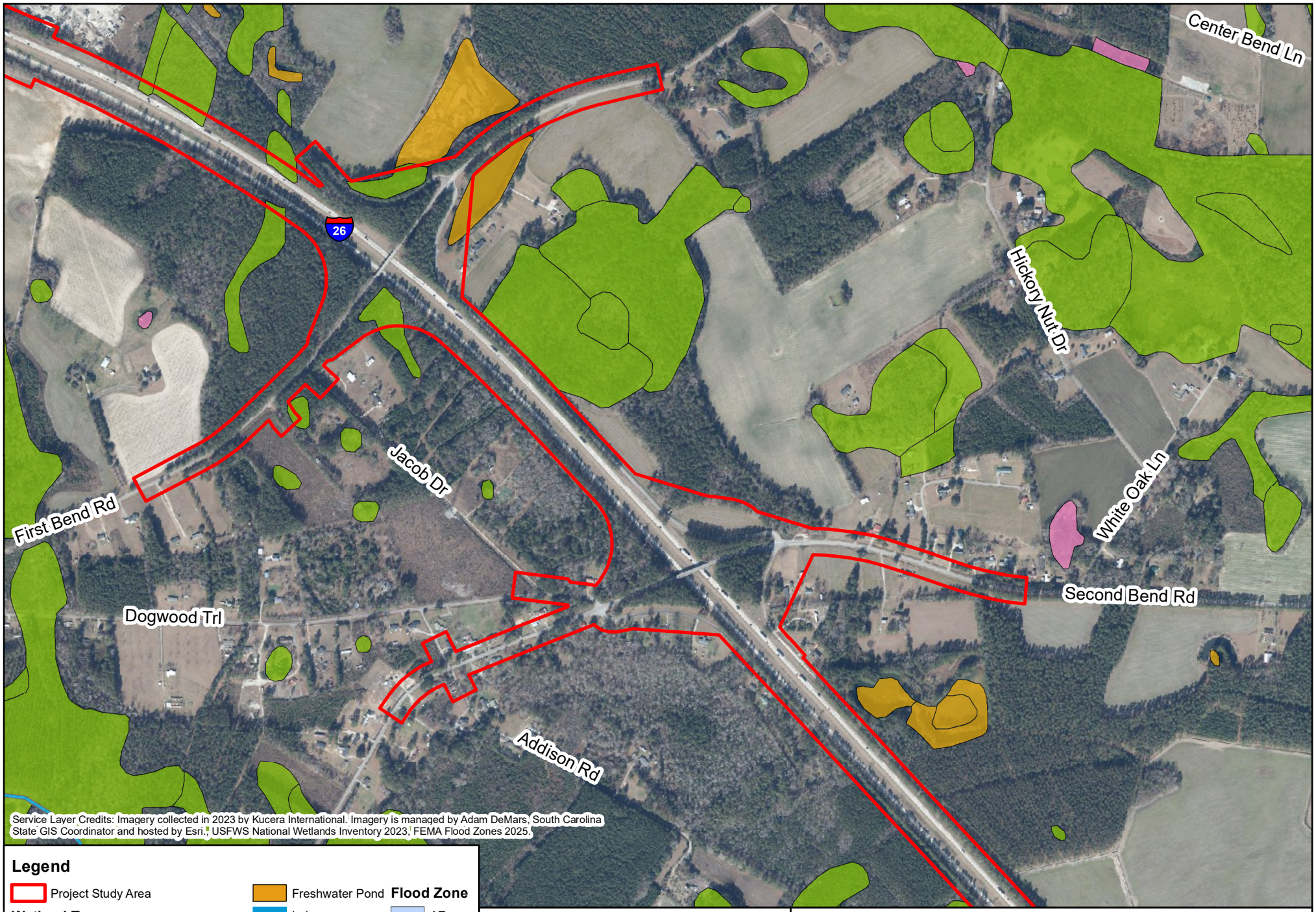
Prepared On: 08.15.2025

0 950 Feet

N

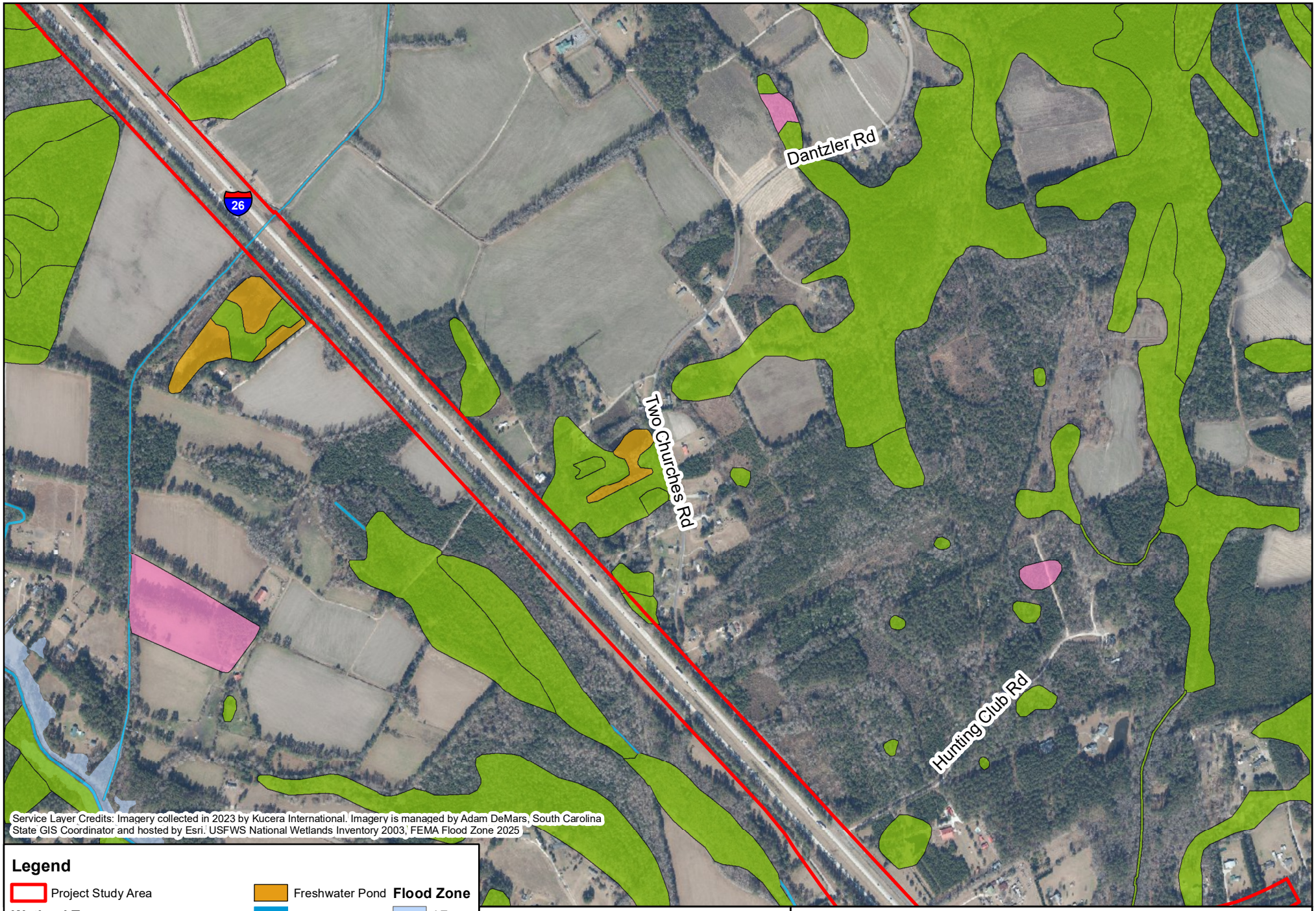
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.5: NWI and FEMA Map



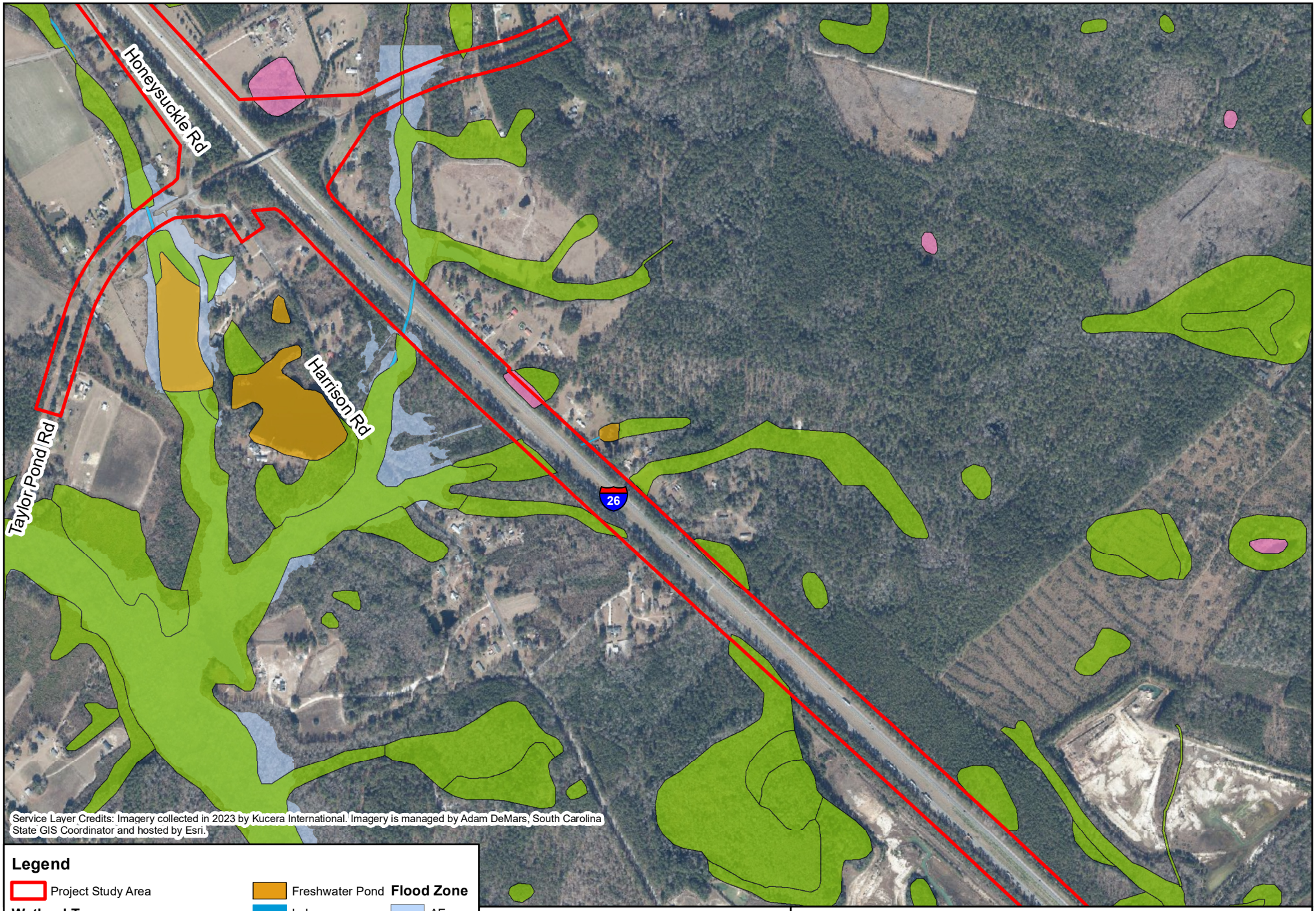
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.6: NWI and FEMA Map



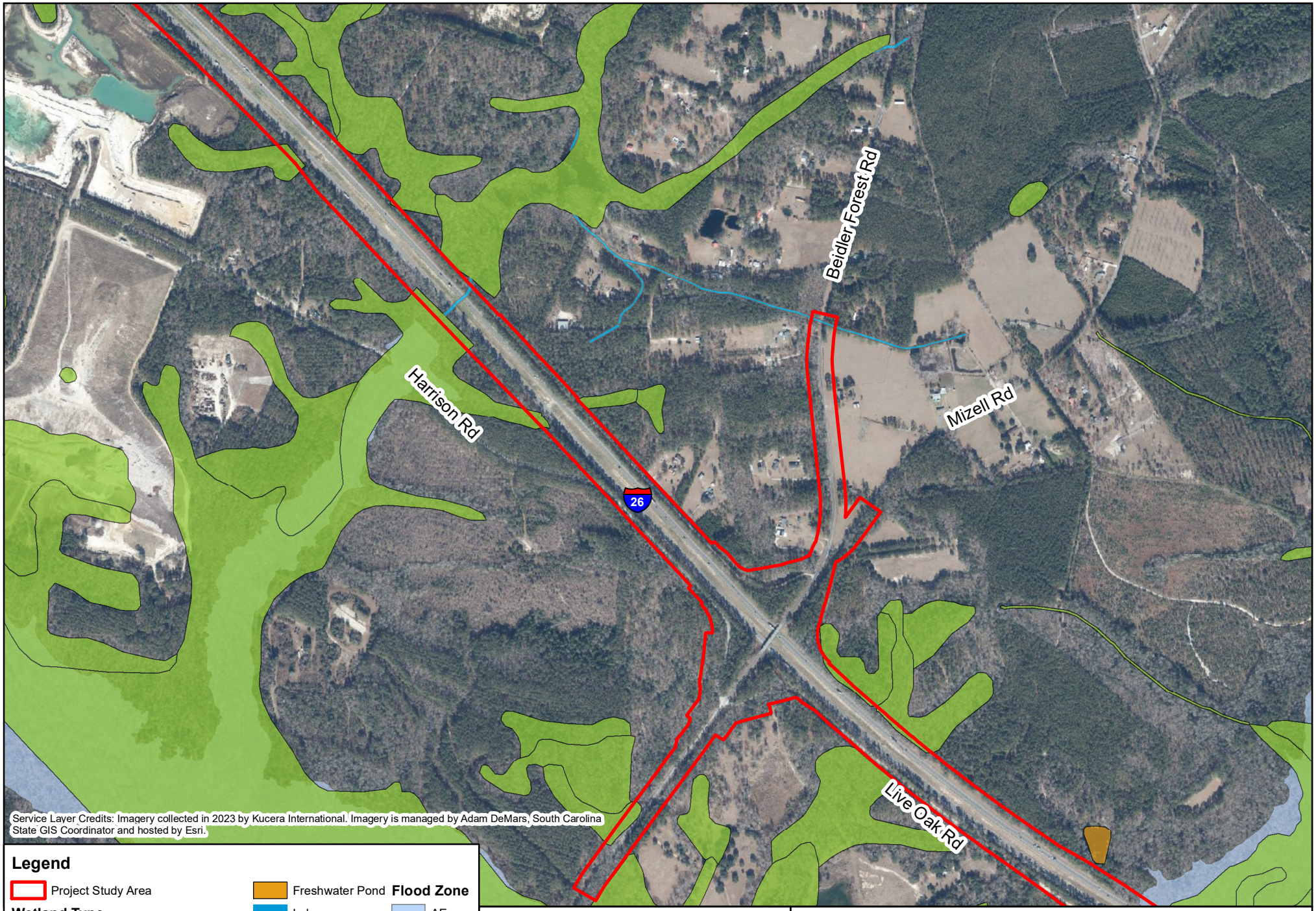
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.7: NWI and FEMA Map



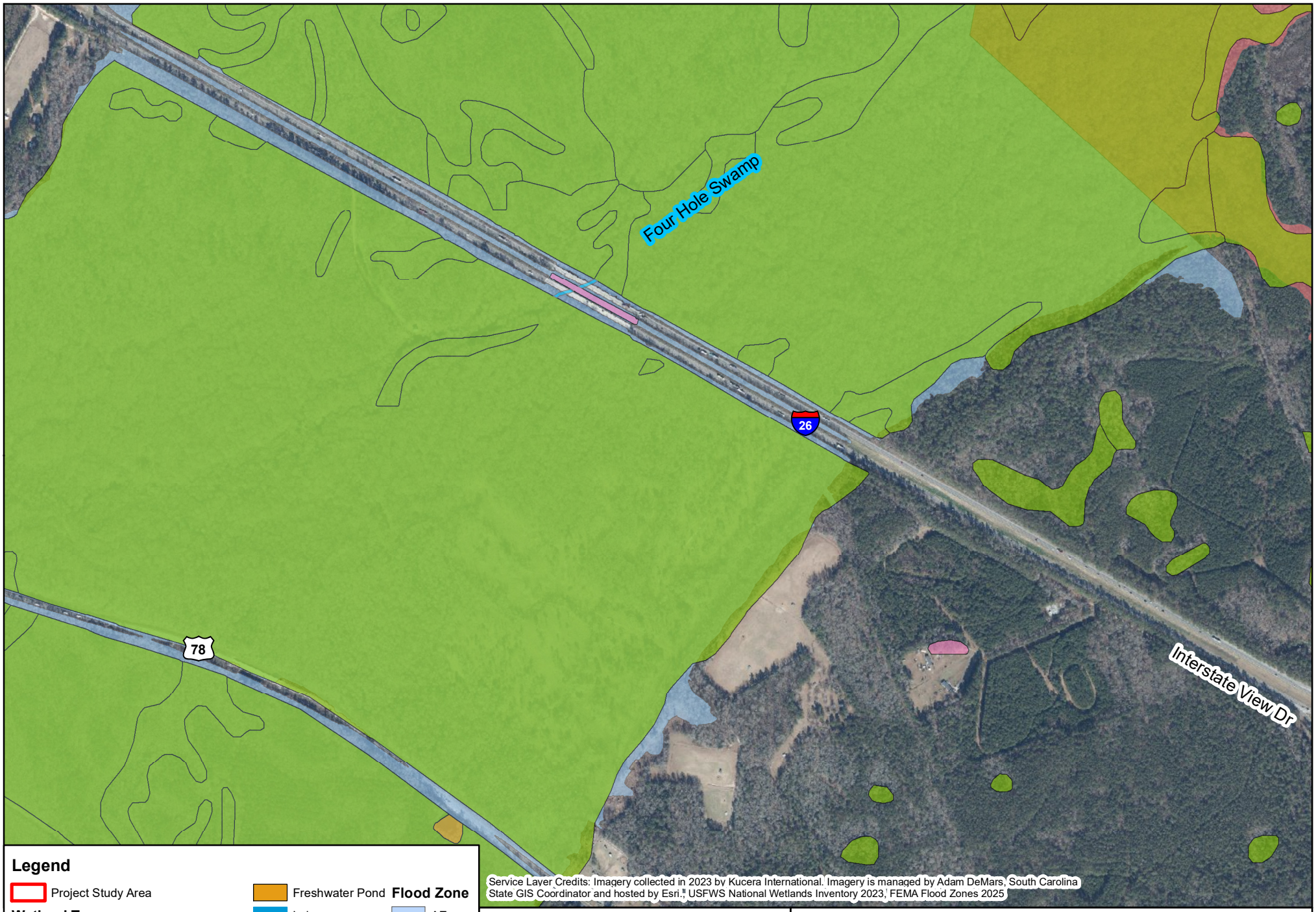
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.8: NWI and FEMA Map



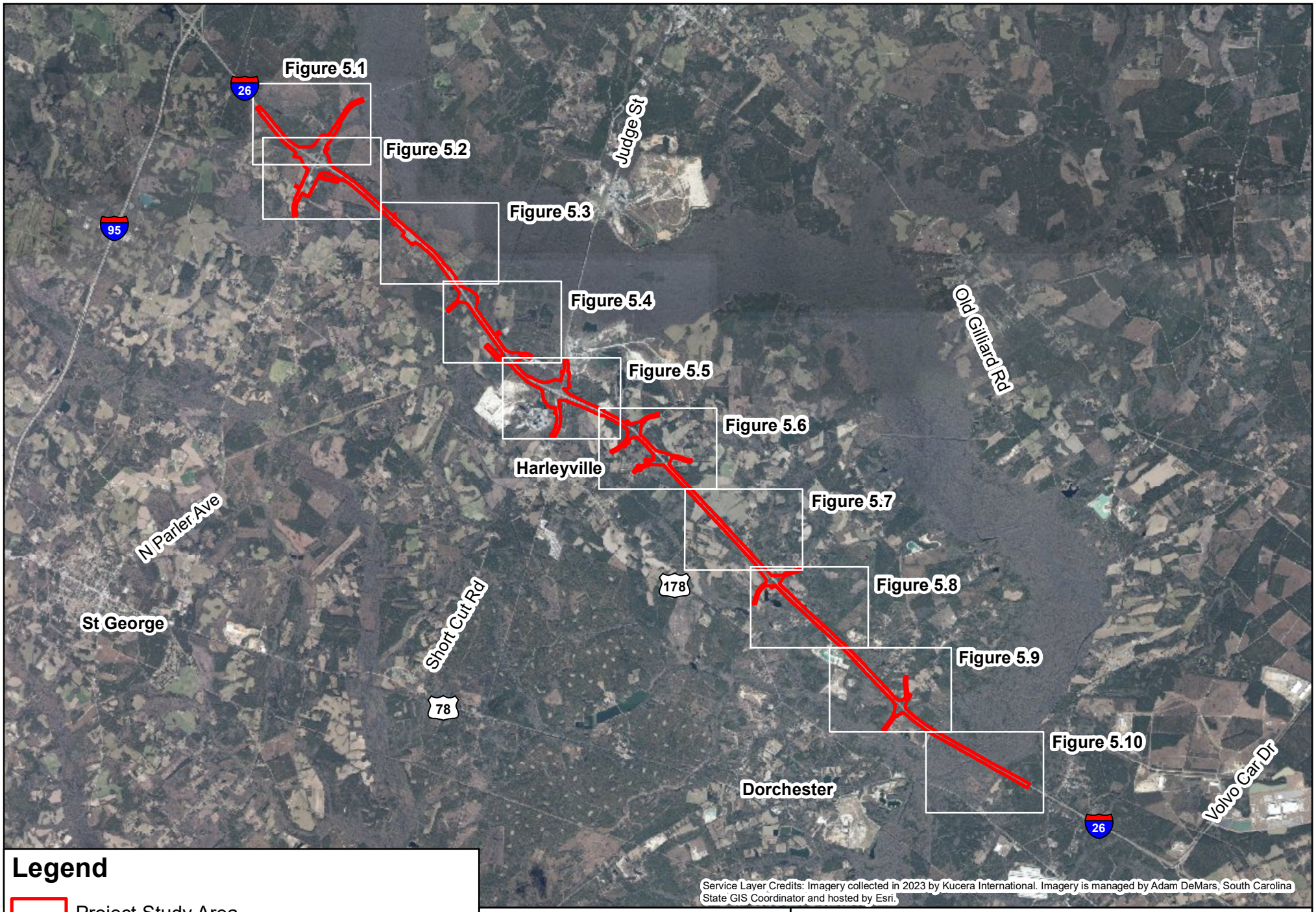
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.9: NWI and FEMA Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.10: NWI and FEMA Map



Legend

- Project Study Area
- Figure Sheets

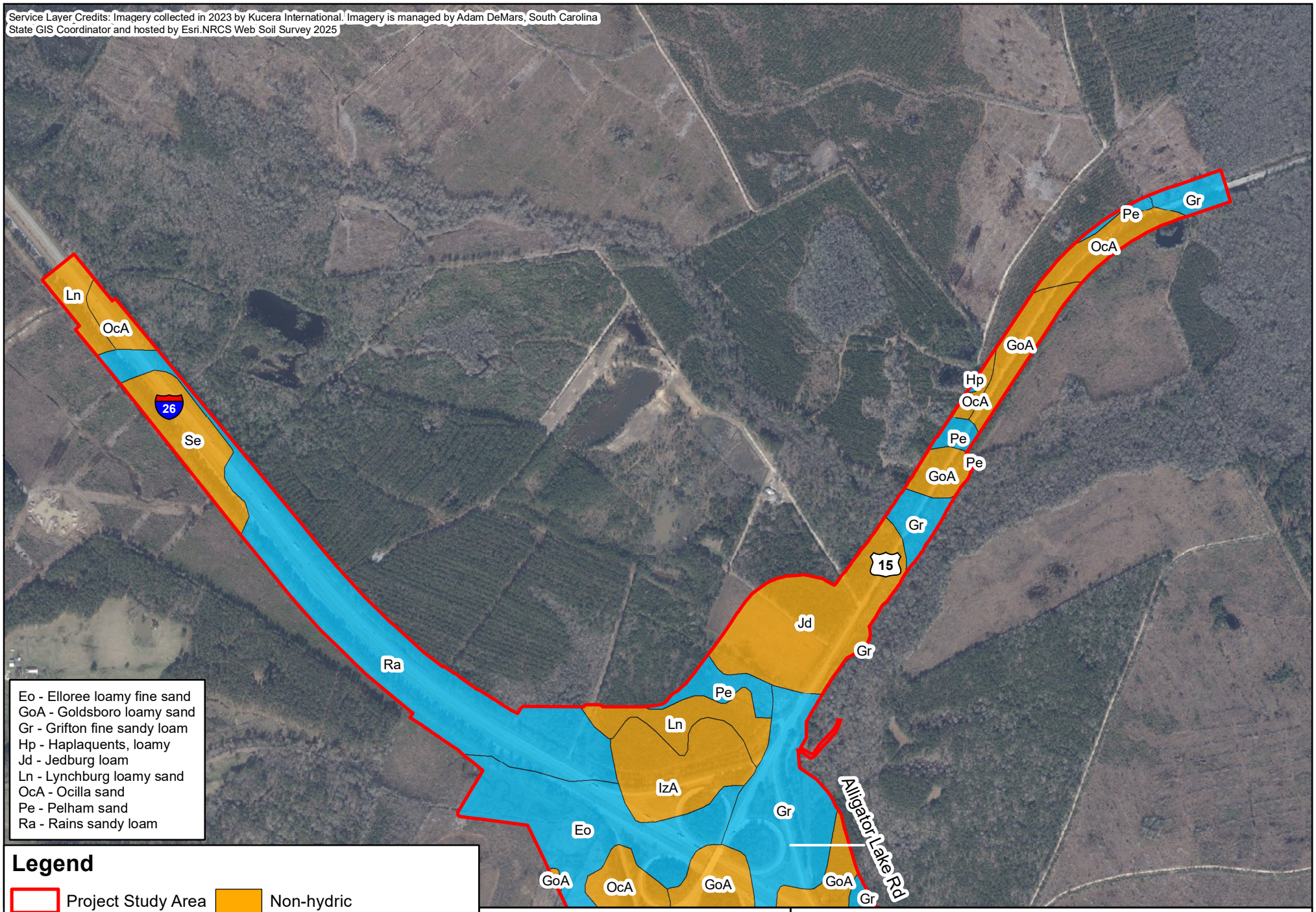
Prepared On: 08.15.2025

0 2 Miles

N

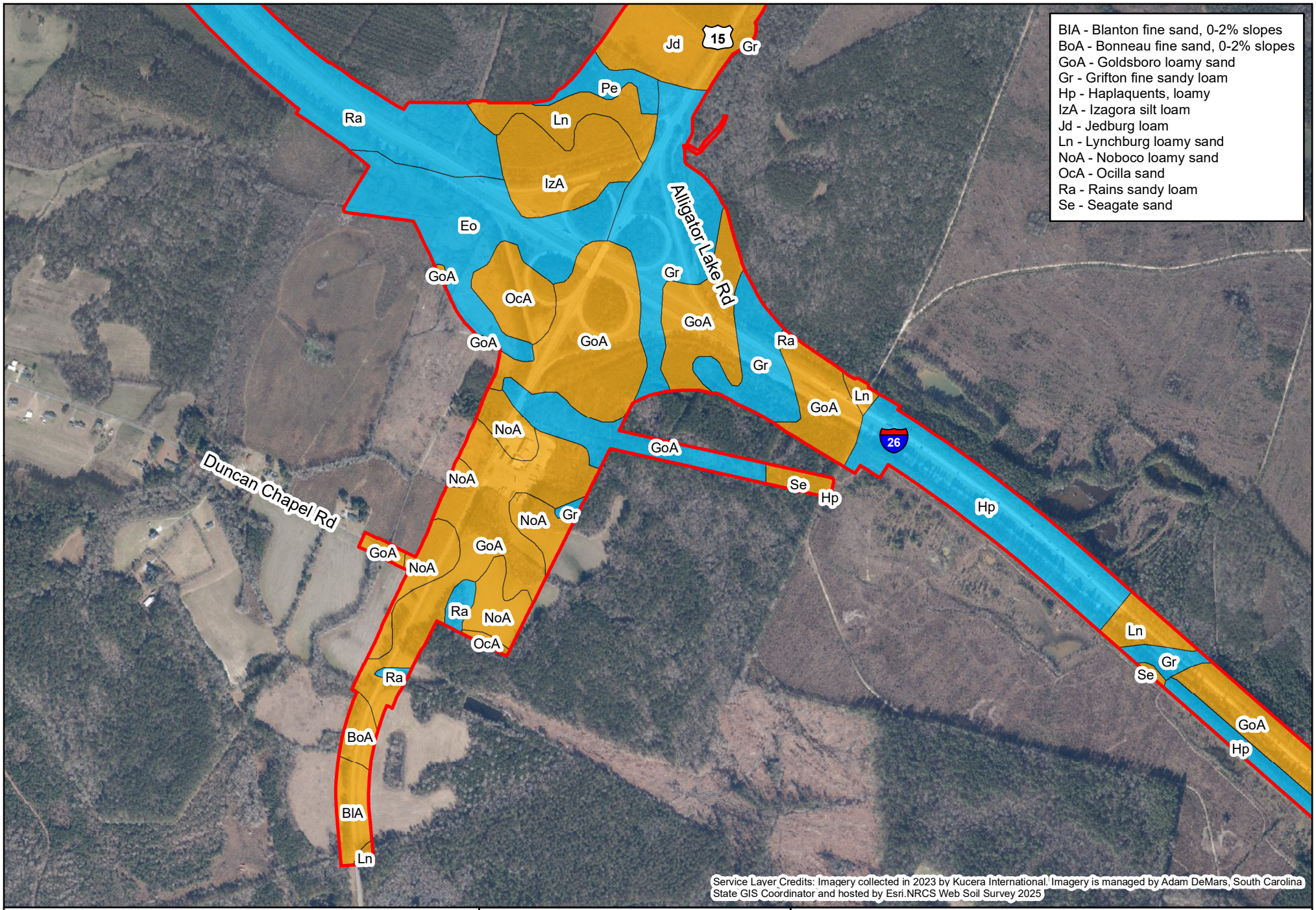
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.0: Soils Overview Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.1: Soils Map



Legend

Project Study Area

Hydric Rating

Hydric

Non-hydric

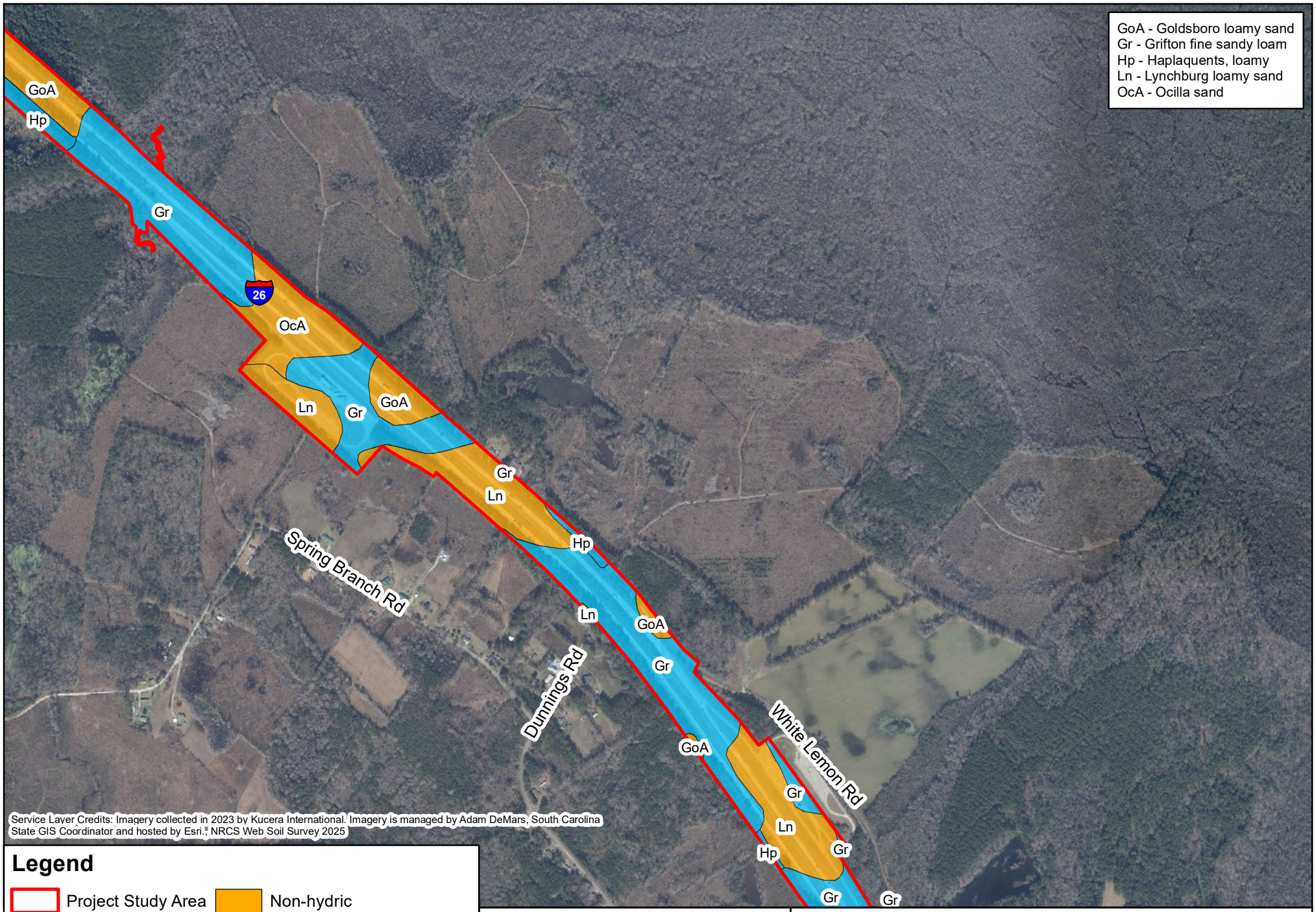
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.2: Soils Map



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Project Study Area

Non-hydric

Hydric Rating

Hydric

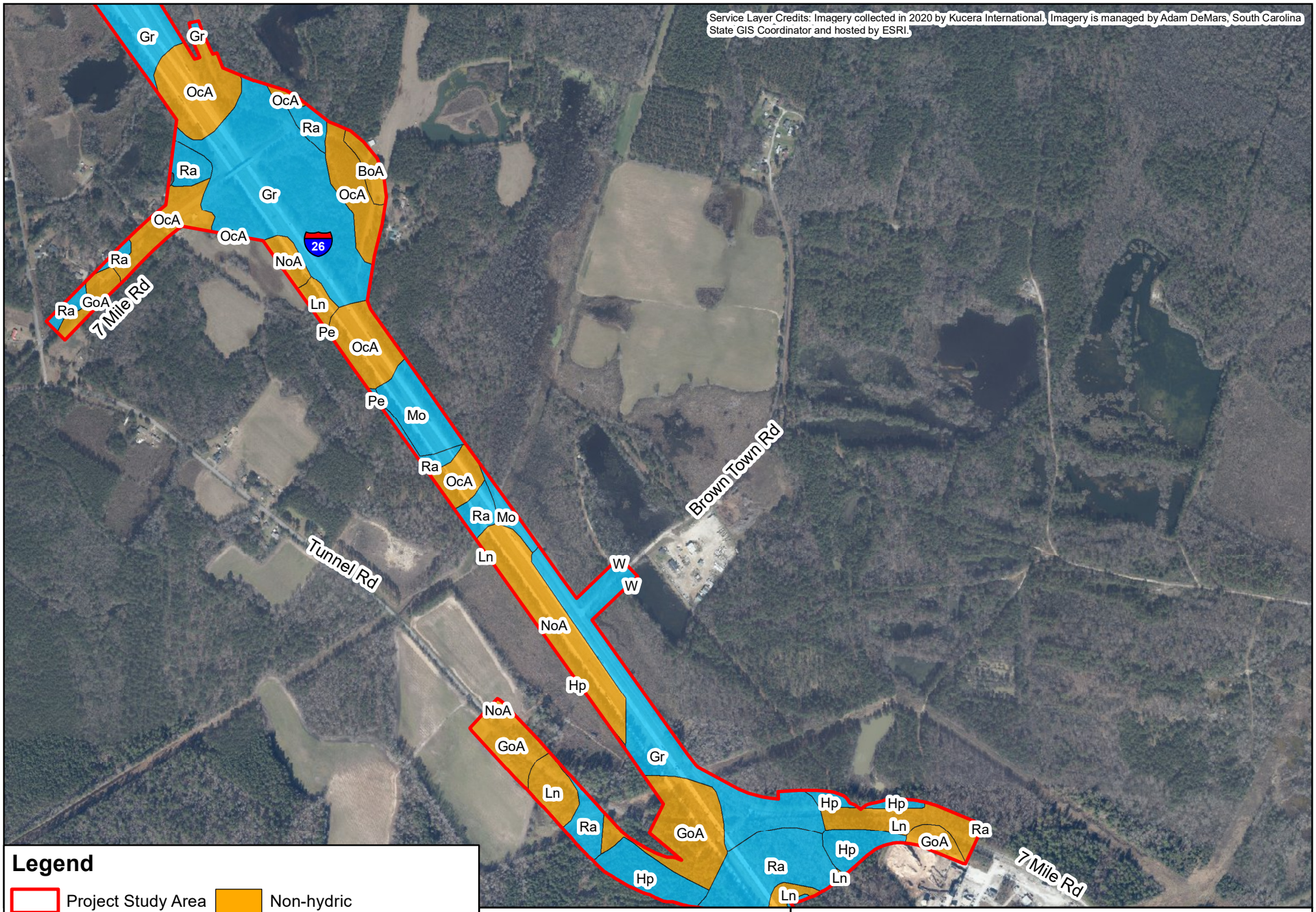
Prepared On: 08.15.2025

0 950 Feet

N

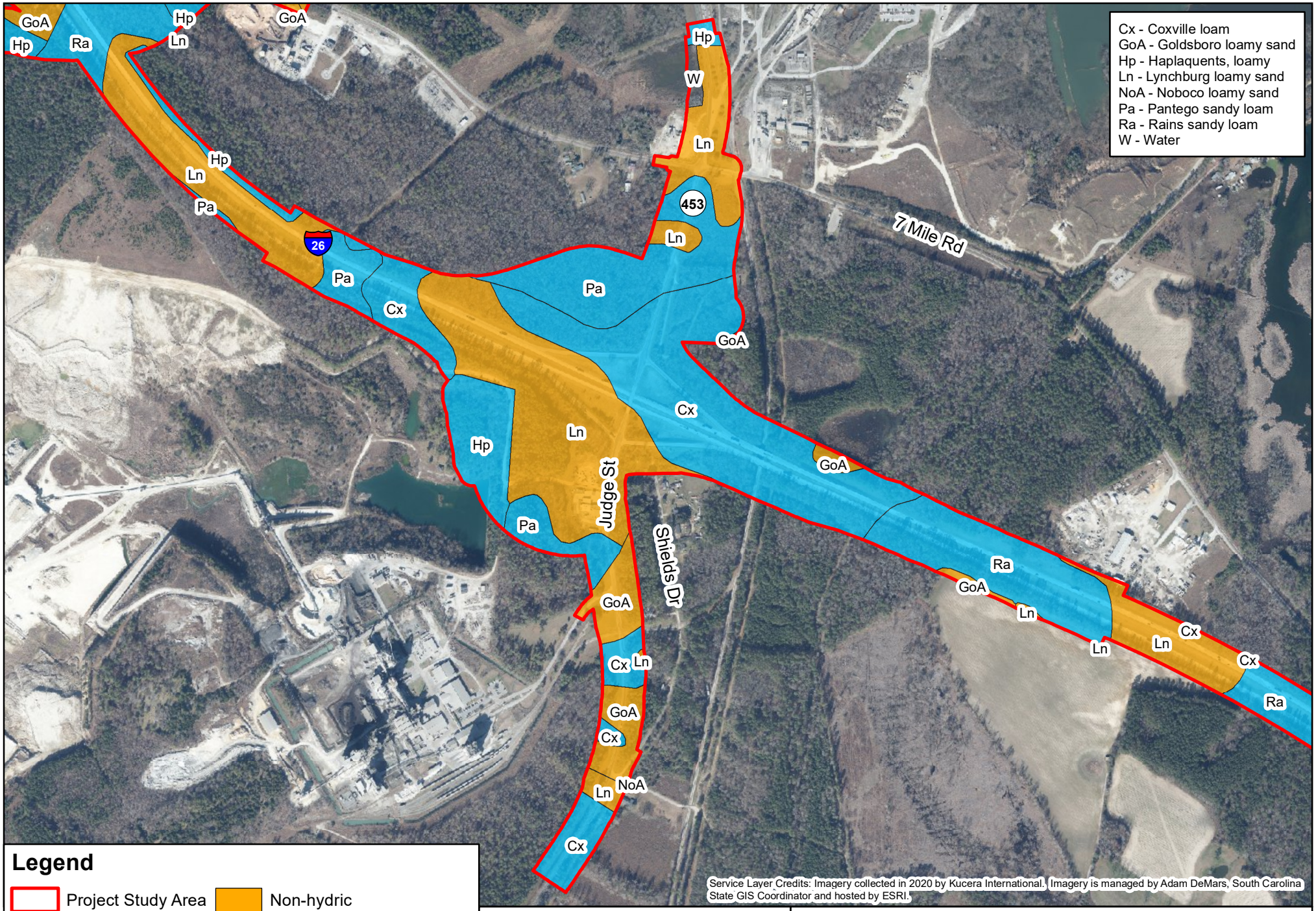
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.3: Soils Map



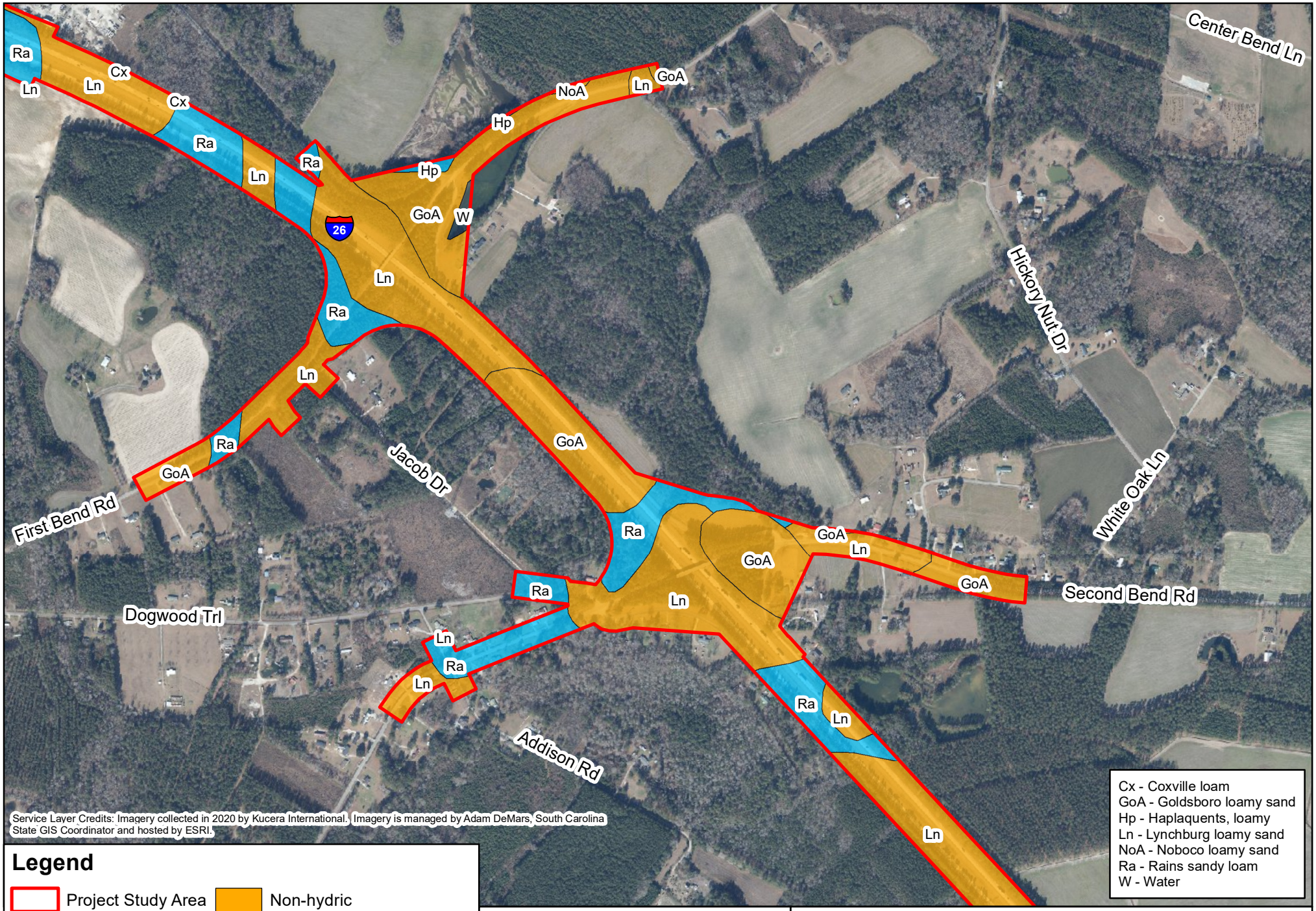
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.4: Soils Map



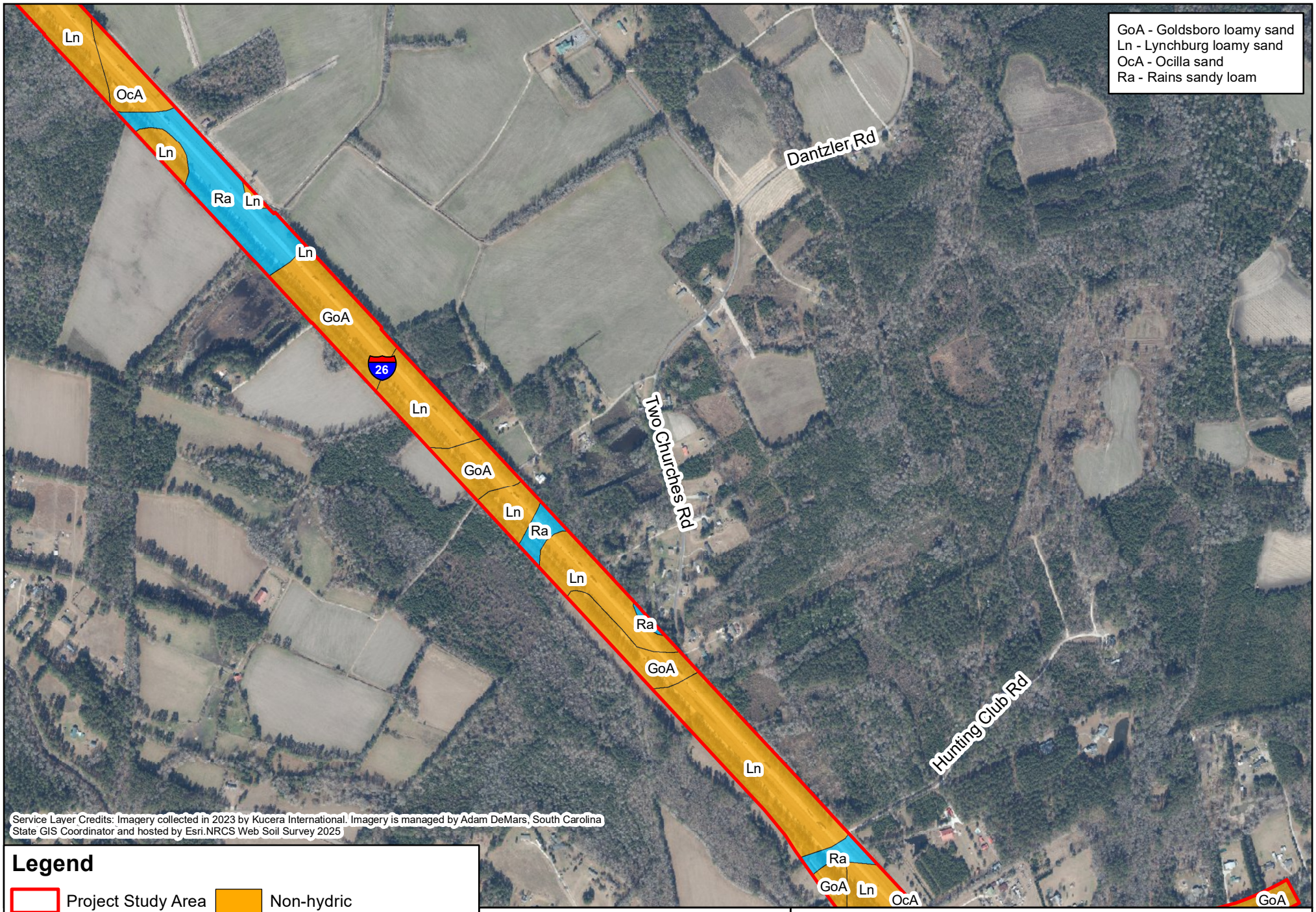
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.5: Soils Map



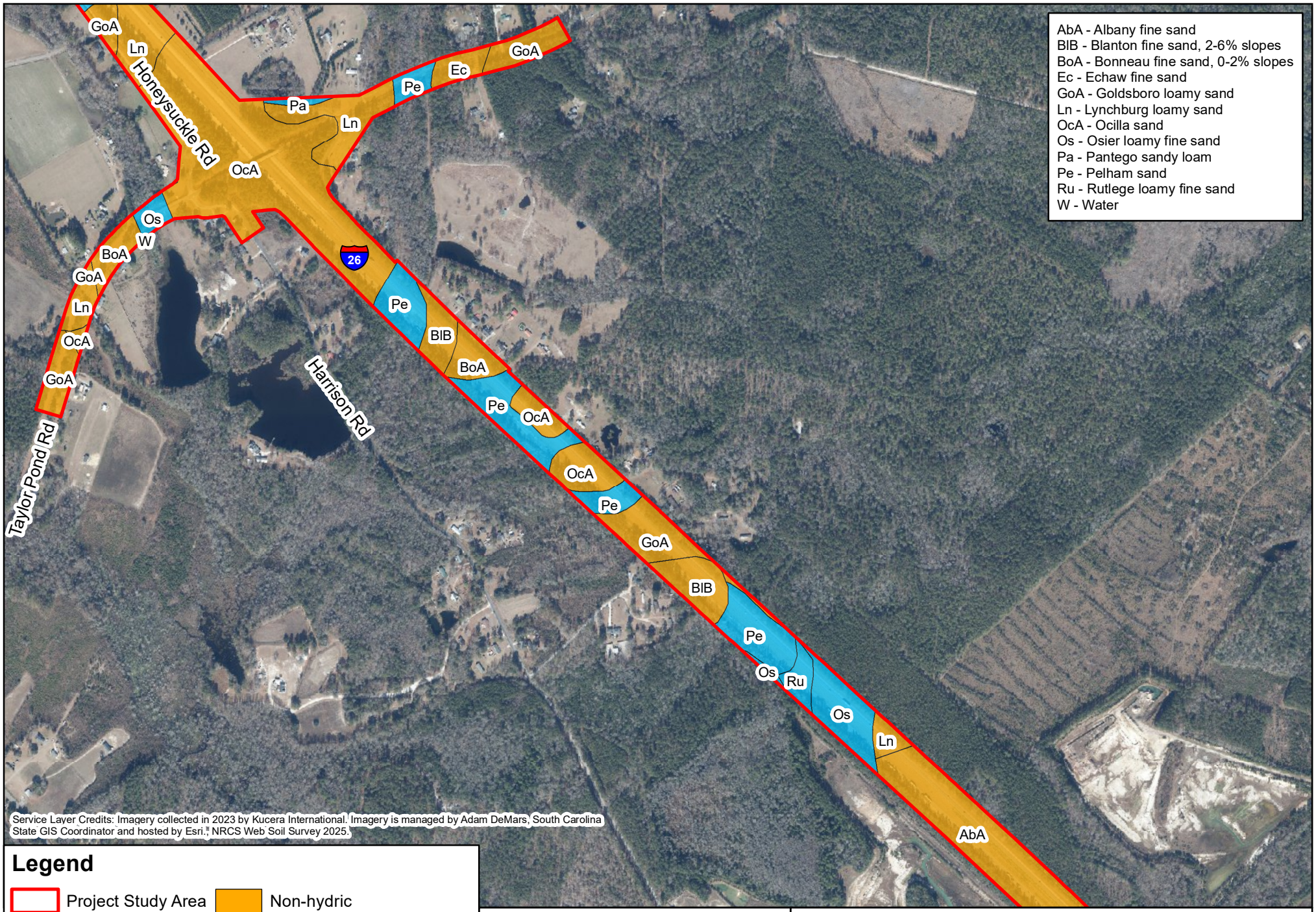
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.6: Soils Map



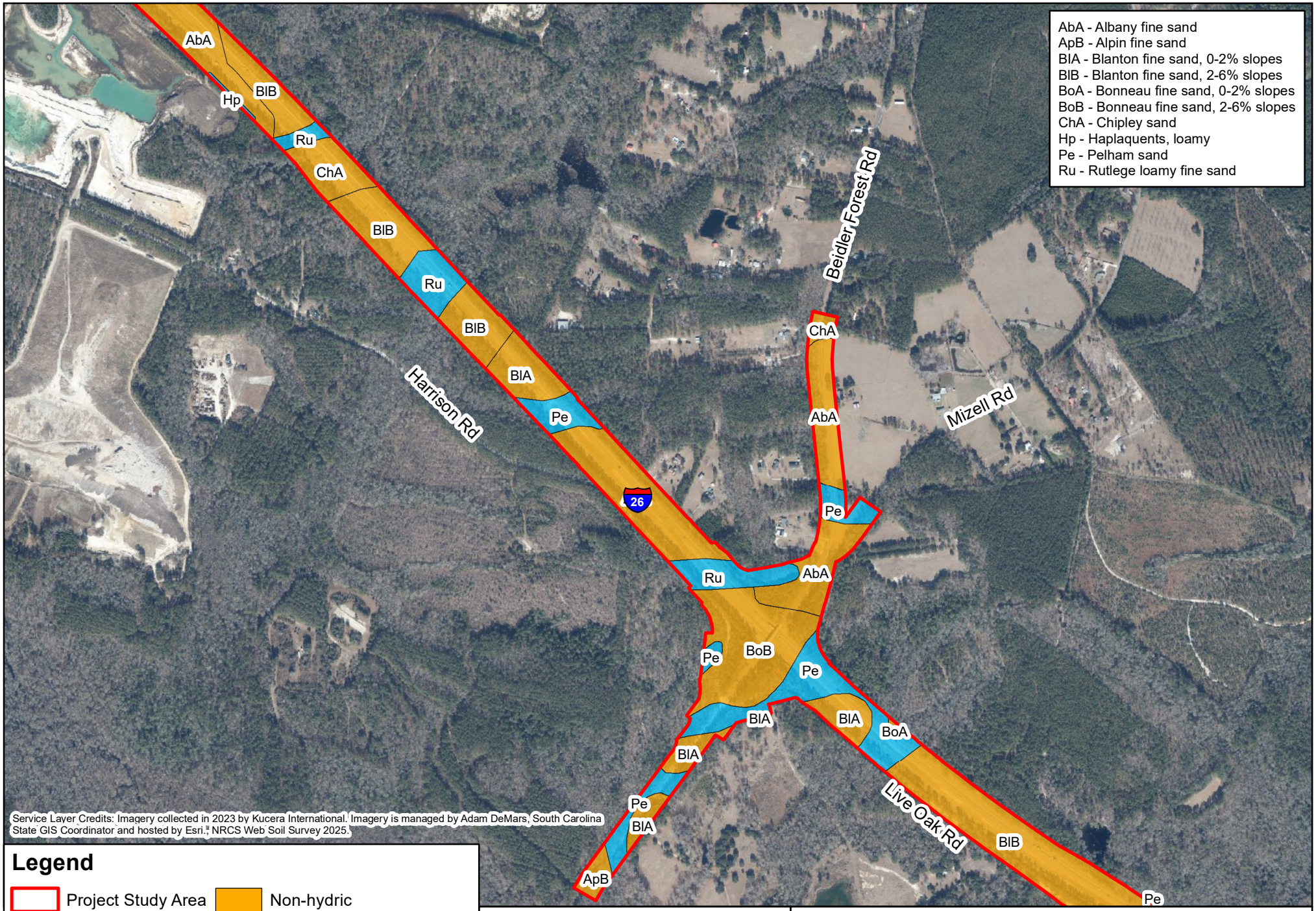
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.7: Soils Map



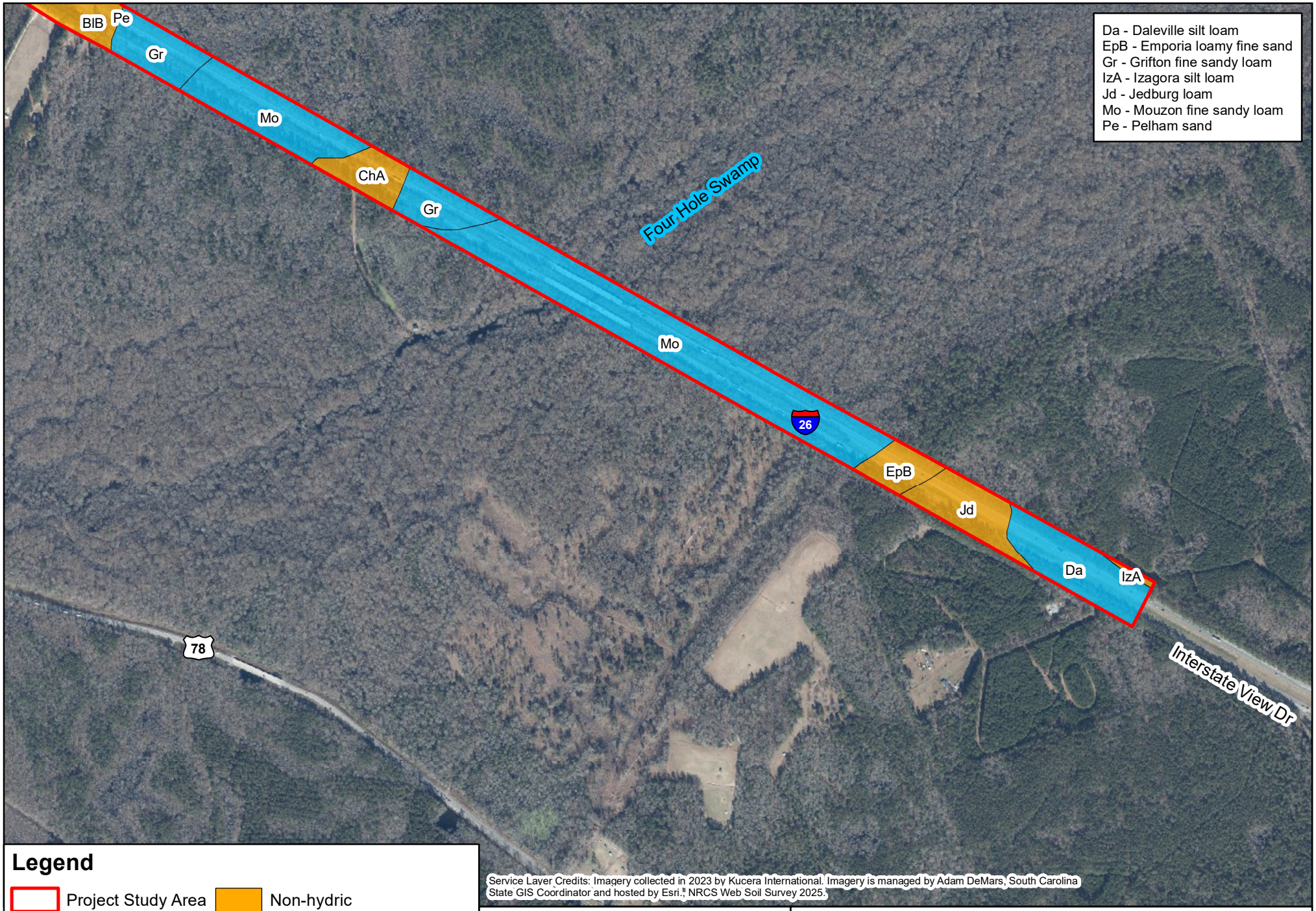
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.8: Soils Map



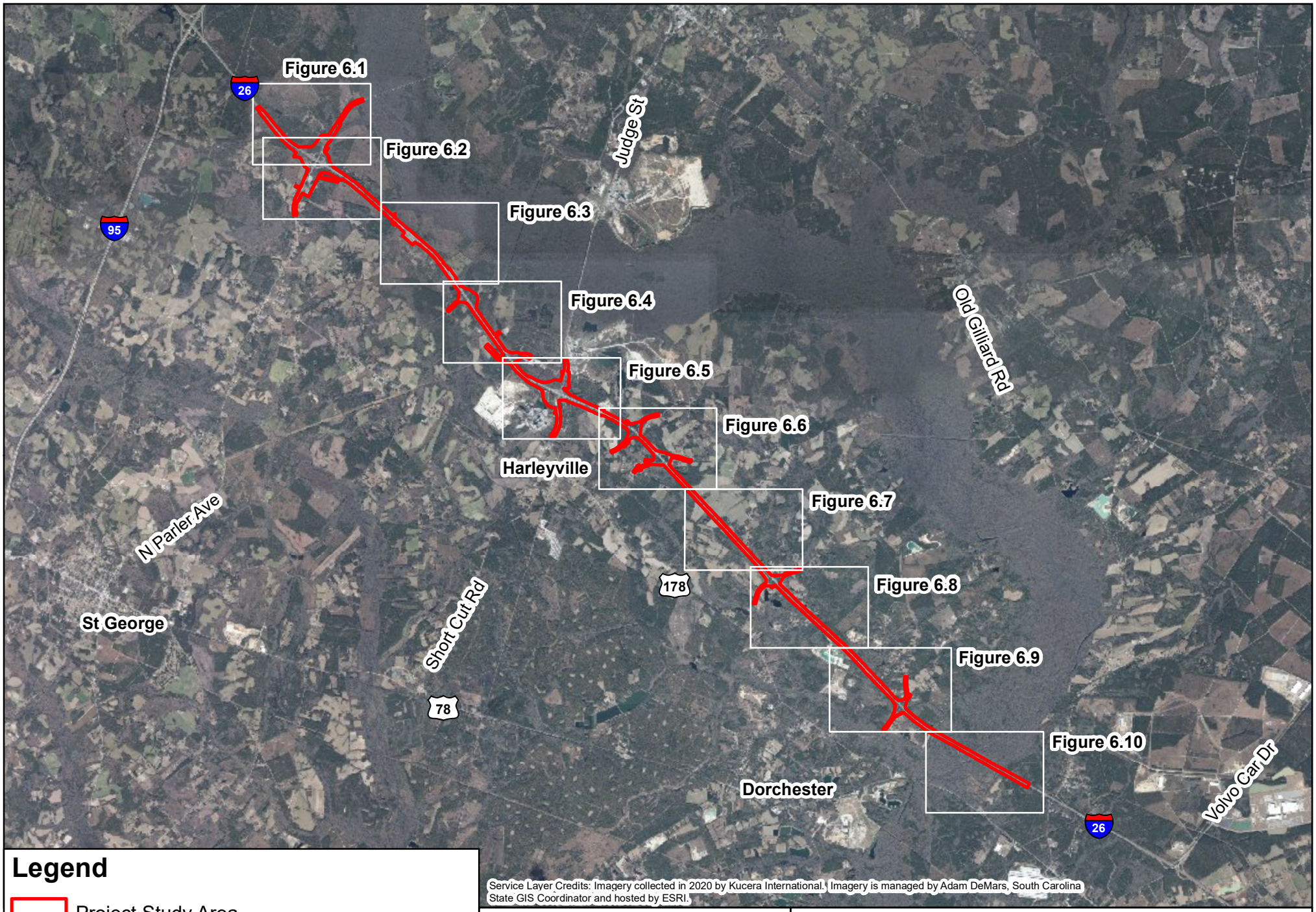
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.9: Soils Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 5.10: Soils Map



Legend

- Project Study Area
- Figure Sheets

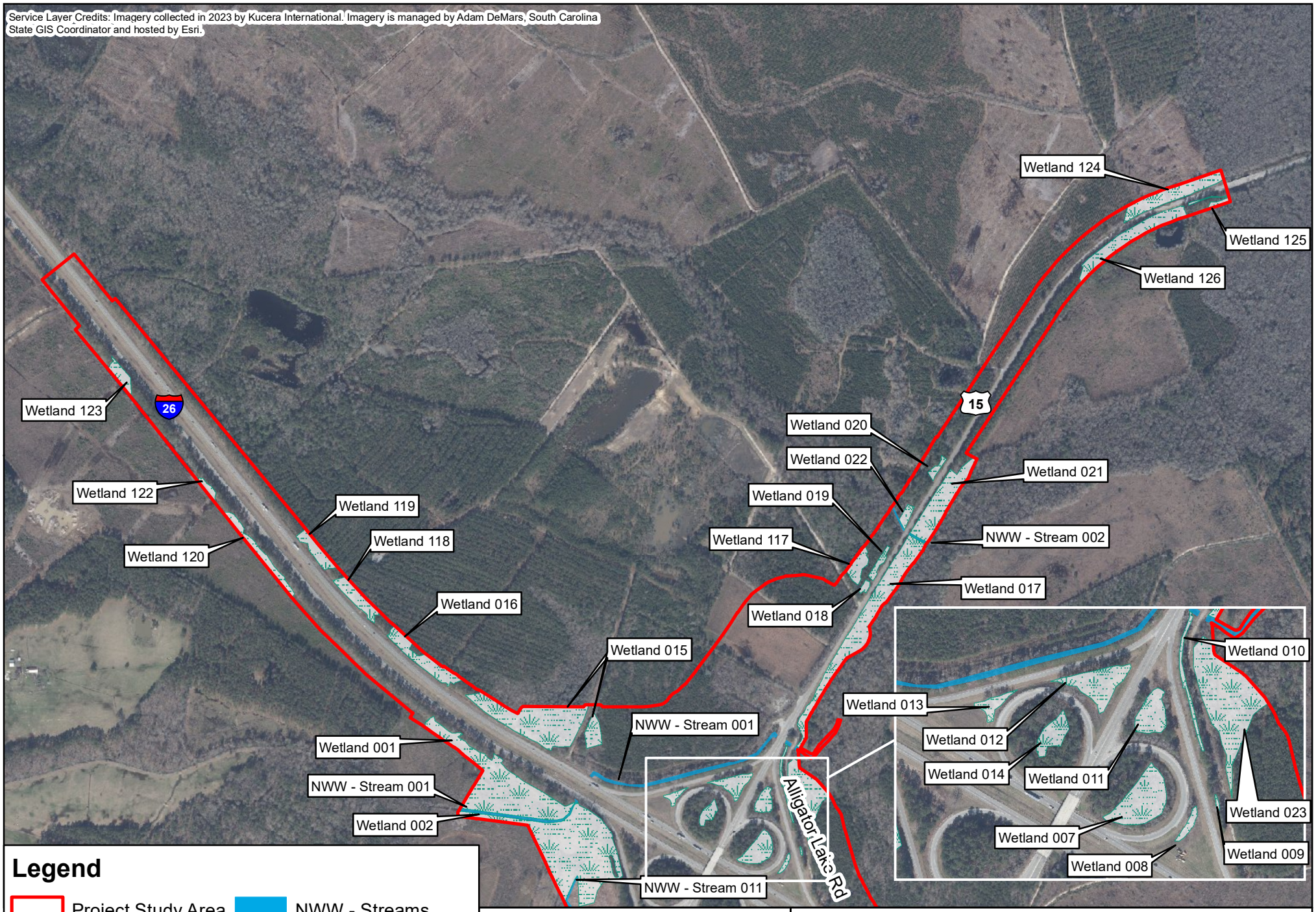
Prepared On: 08.15.2025

0 2 Miles

N

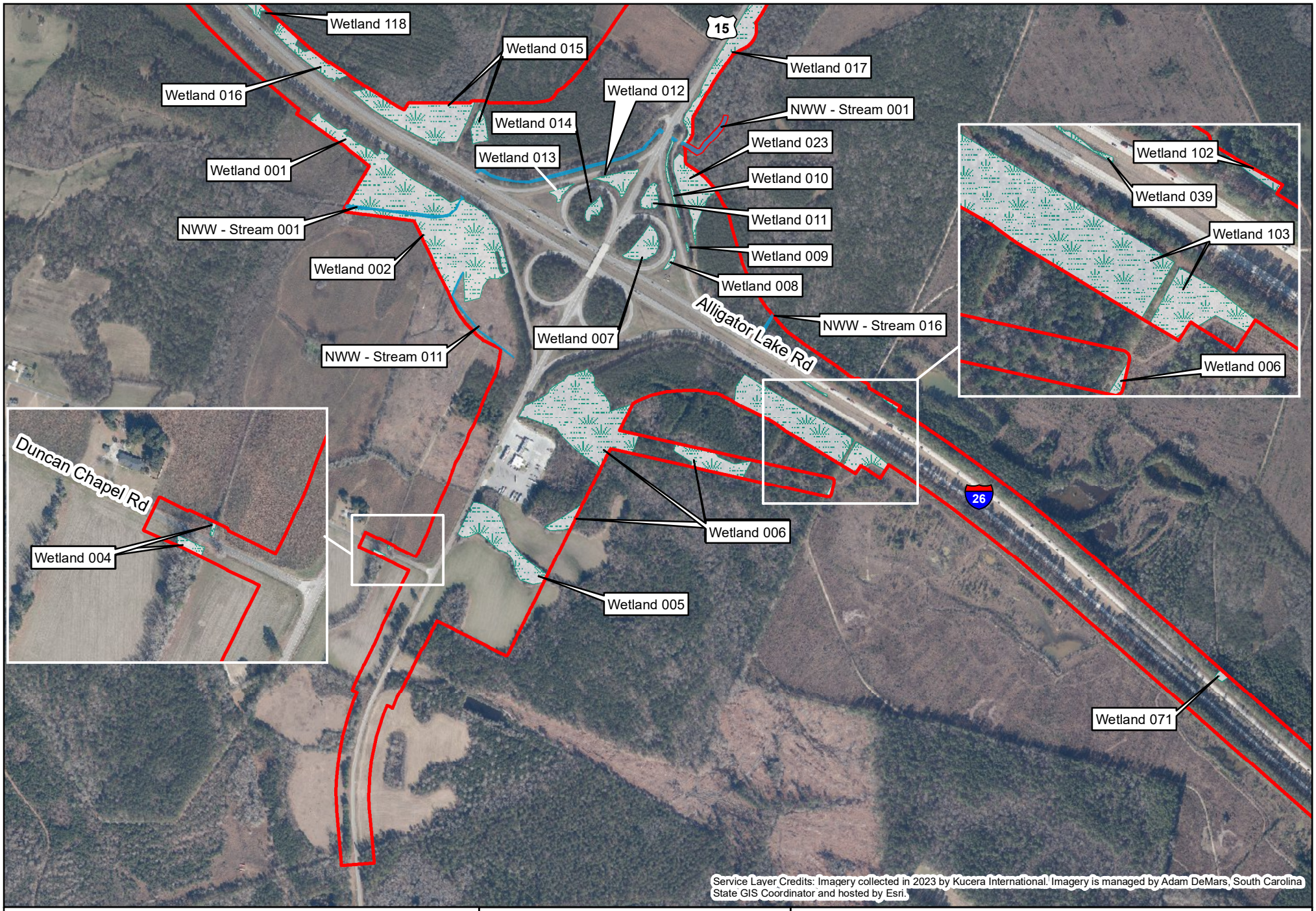
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.0: Delineated Features Overview Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.1: Delineated Features Map



Legend

- Project Study Area
- Project Study Area
- Wetlands
- Wetlands
- NWW - Streams
- NWW - Open Waters

Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.2: Delineated Features Map

Legend

- Project Study Area
- Wetlands
- NWW - Streams
- NWW - Open Waters

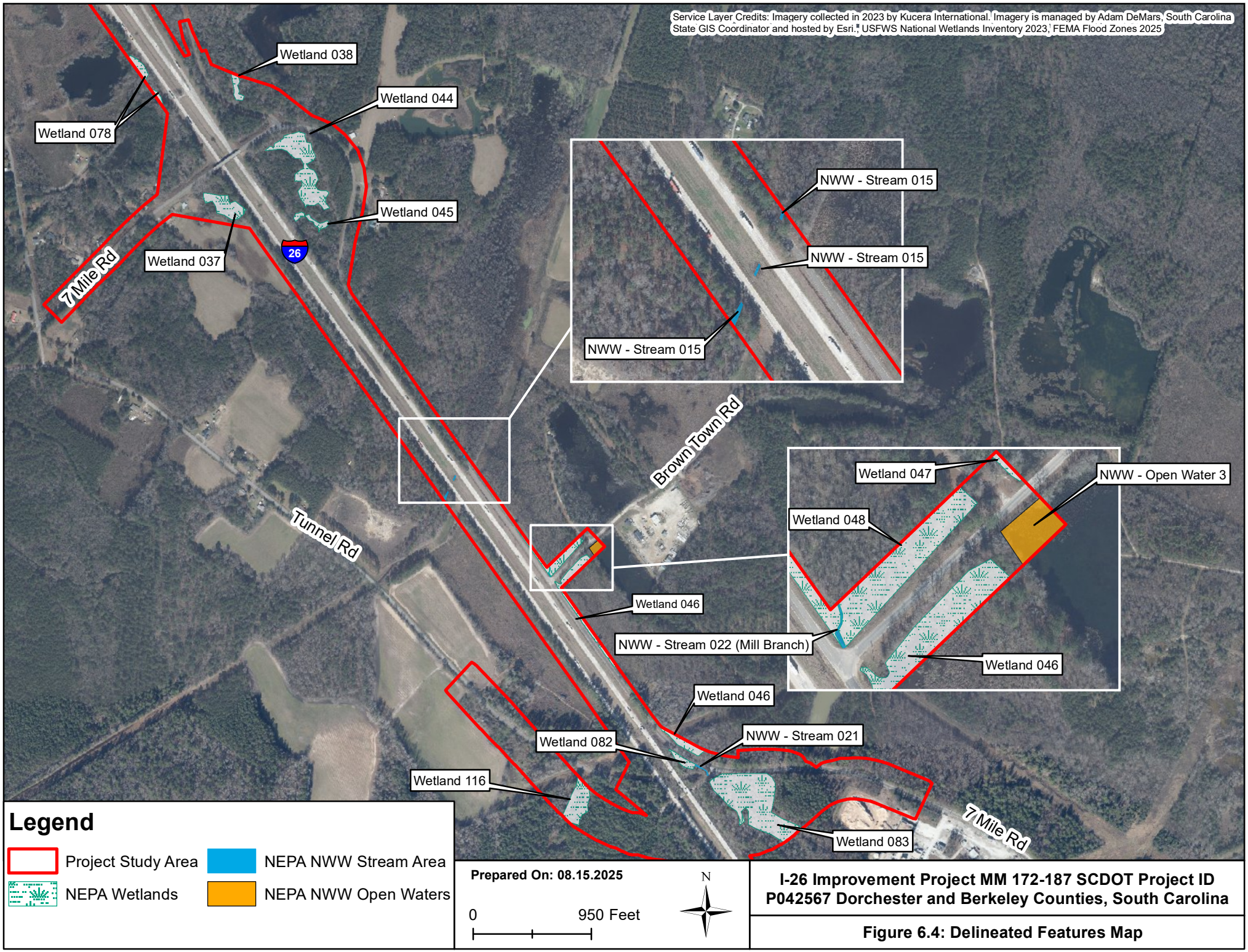
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.3: Delineated Features Map


Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri.," USFWS National Wetlands Inventory 2023, FEMA Flood Zones 2025
Wetland 038
Wetland 044
Wetland 078
Wetland 045
Wetland 037
7 Mile Rd
26
NWW - Stream 015
NWW - Stream 015
NWW - Stream 015
Brown Town Rd
Wetland 047
NWW - Open Water 3
Wetland 048
Tunnel Rd
Wetland 046
NWW - Stream 022 (Mill Branch)
Wetland 046
Wetland 046
Wetland 082
NWW - Stream 021
Wetland 116
Wetland 083
7 Mile Rd
Legend
Project Study Area
NEPA NWW Stream Area
NEPA Wetlands
NEPA NWW Open Waters
Prepared On: 08.15.2025
0
950 Feet
N
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 6.4: Delineated Features Map

Legend

- Project Study Area
- Wetlands
- NWW - Streams
- NWW - Open Waters

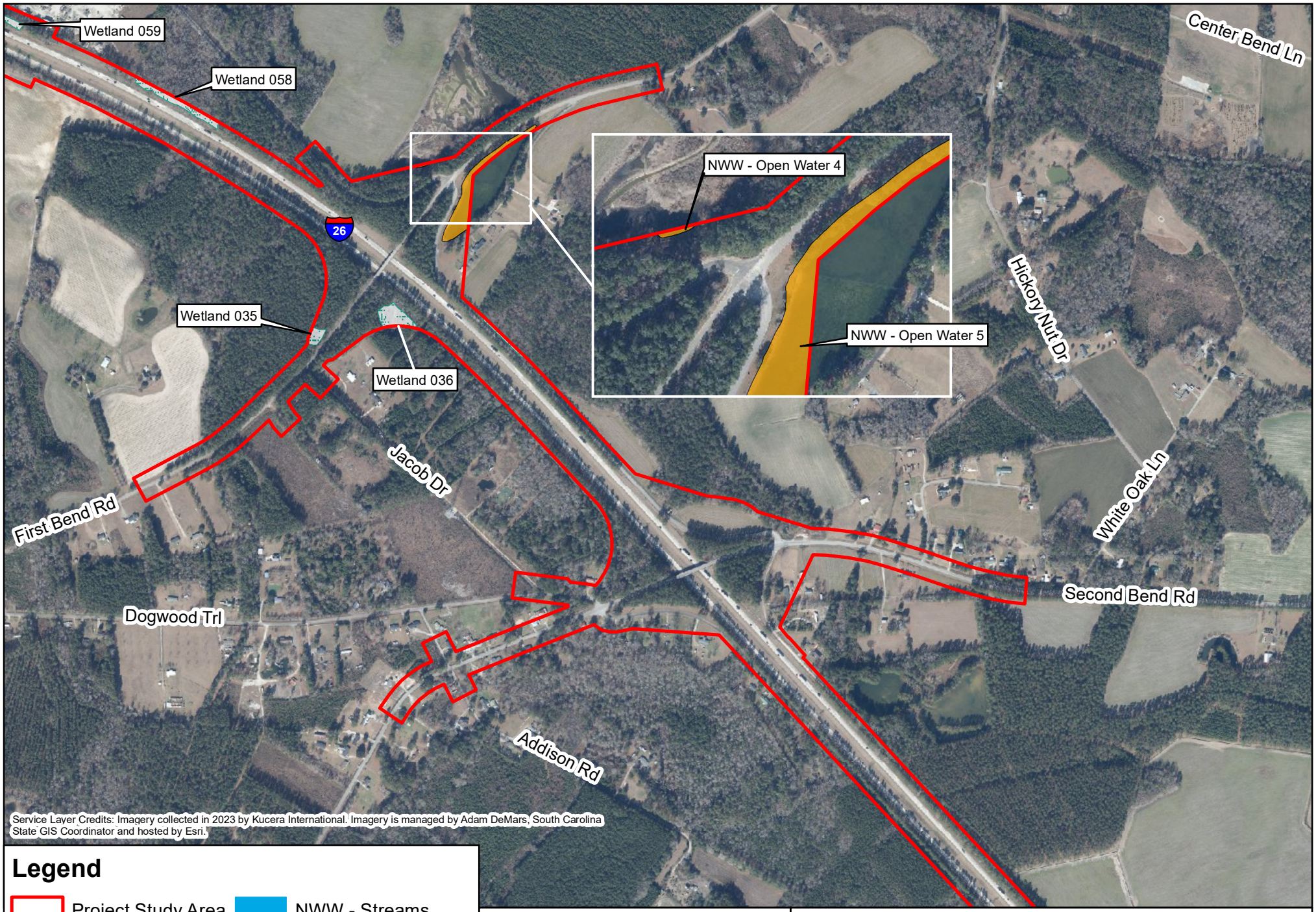
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.5: Dellineated Features Map



Legend

- Project Study Area
- Wetlands
- NWW - Streams
- NWW - Open Waters

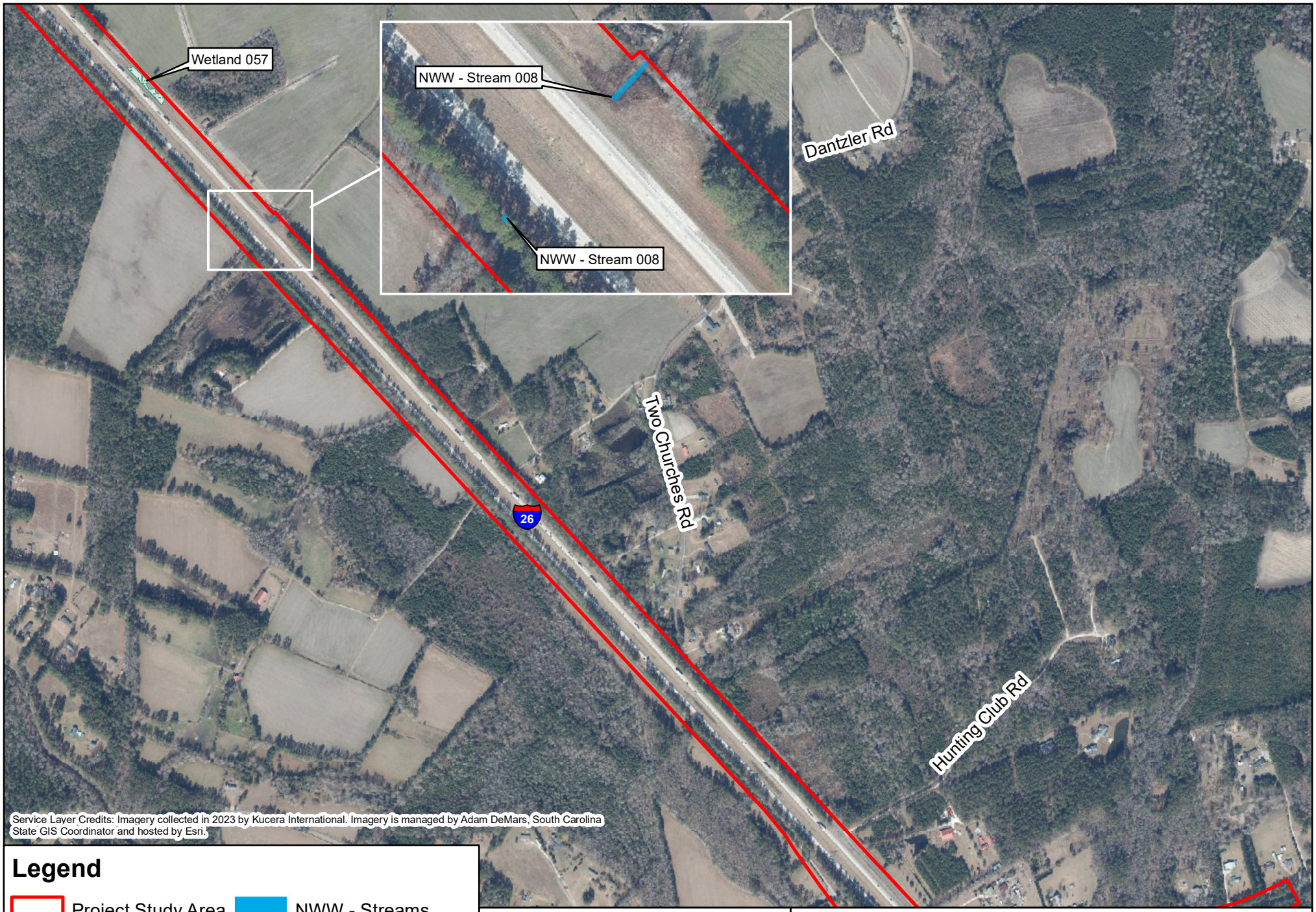
Prepared On: 08.15.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.6: Delineated Featuresl Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.7: Delineated Features Map

Legend

- Project Study Area
- Wetlands
- NWW - Streams
- NWW - Open Waters

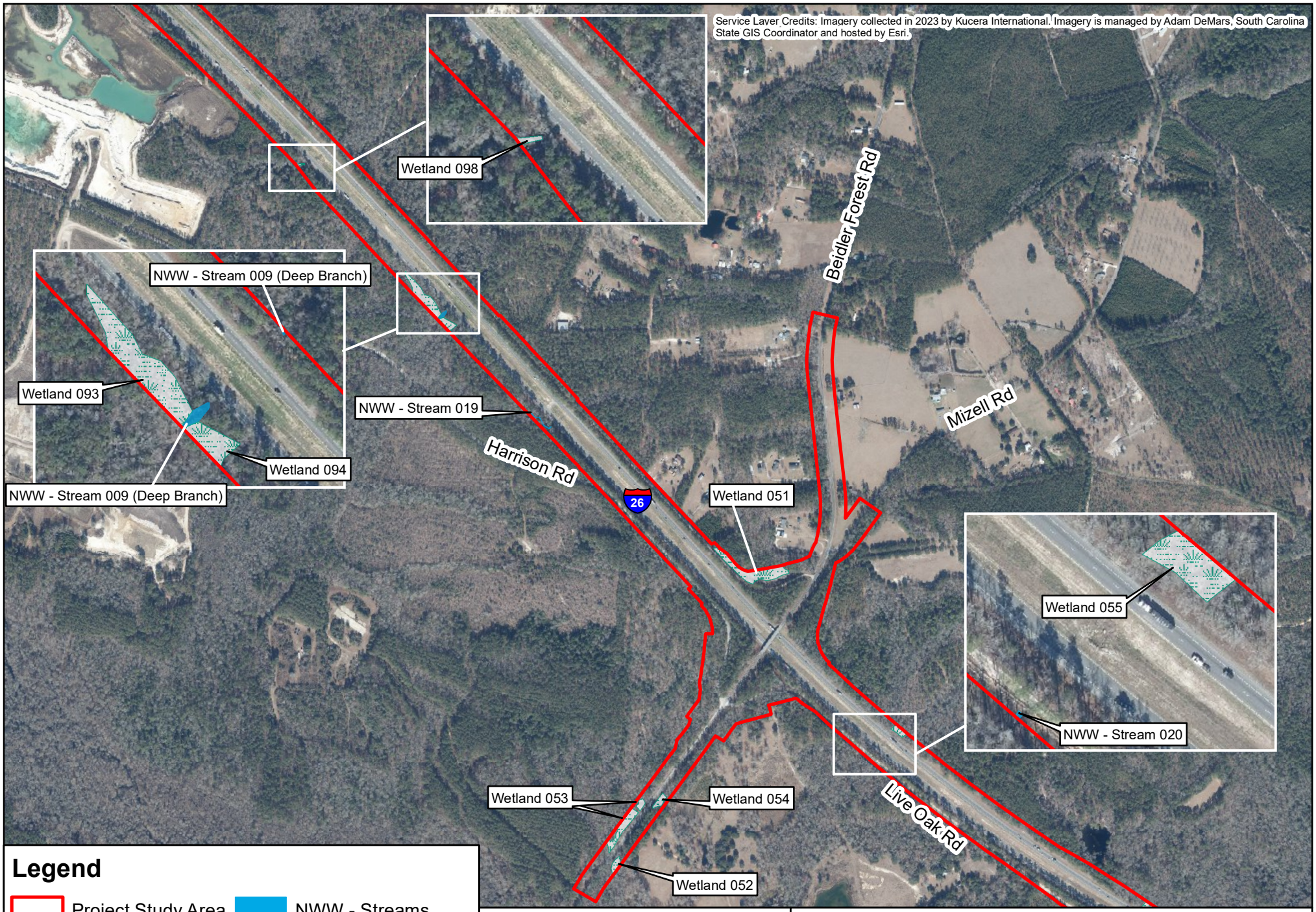
Prepared On: 08.15.2025

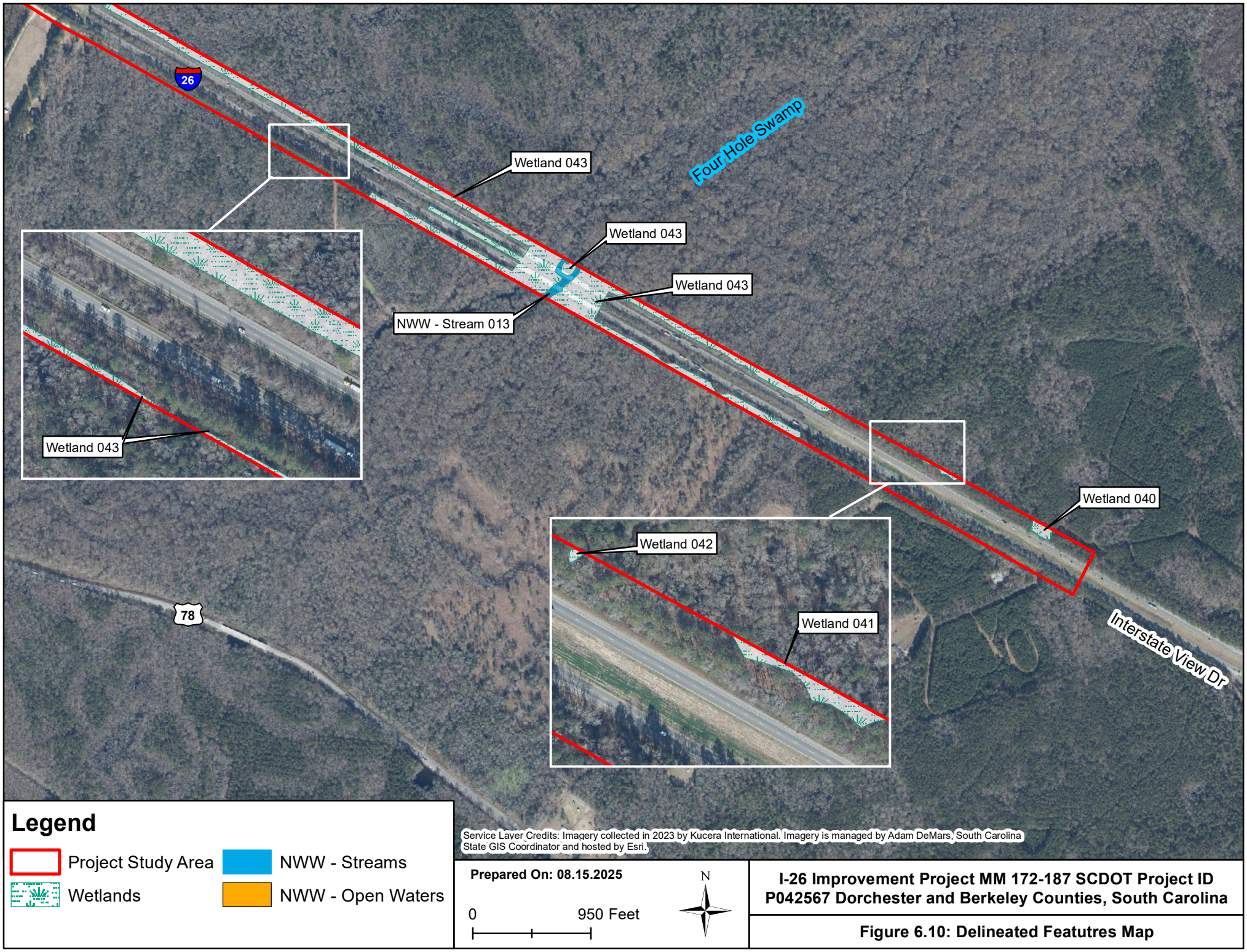
0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.8: Delineated Features Map


Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri.
Wetland 098
NWW - Stream 009 (Deep Branch)
Wetland 093
Wetland 094
NWW - Stream 009 (Deep Branch)
NWW - Stream 019
Harrison Rd
26
Beidler Forest Rd
Mizell Rd
Wetland 051
Wetland 055
NWW - Stream 020
Live Oak Rd
Wetland 053
Wetland 054
Wetland 052
Legend
Project Study Area
Wetlands
NWW - Streams
NWW - Open Waters
Prepared On: 08.15.2025
0
950 Feet
N
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 6.9: Delineated Features Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 6.10: Delineated Featutres Map

Appendix B

Photo Log

Feature Name: Upland
Photo Number: 1
Direction: 268° (W)
Remarks: Example of an upland along the interstate and utility ROW

Feature Name: Upland
Photo Number: 2
Direction: 323° (NW)
Remarks: Example of a forested upland off the interstate.

Feature Name: Residential Pond
Photo Number: 3
Direction: 52° (NE)
Remarks: Example of a pond within the PSA

Feature Name: Stream
Photo Number: 4
Direction: 23° (NNE)
Remarks: Example of a stream within the PSA.

Feature Name: Forested Wetland
Photo Number: 5
Direction: 142° (SE)
Remarks: Example of a forested wetland within the PSA. This area is potential pondberry habitat, and no individuals were observed during site visits.

Feature Name: Forested Wetland
Photo Number: 6
Direction: 235° (SW)
Remarks: Example of a forested wetland within the PSA. This area is potential pondberry habitat, and no individuals were observed during site visits.

Feature Name: Emergent Wetland
Photo Number: 7
Direction: 170° (S)
Remarks: Example of an emergent wetland within the PSA. This area is potential Canby's dropwort habitat, and no individuals were observed during site visits.

Feature Name: Emergent Wetland
Photo Number: 8
Direction: 51° (NE)
Remarks: Example of an emergent wetland within the PSA. This area is potential Canby's dropwort habitat, and no individuals were observed during site visits.

Feature Name: Utility ROW
Photo Number: 9
Direction: 117° (ESE)
Remarks: Powerline easement and access road.

Feature Name: Railroad
Photo Number: 10
Direction: 196° (SSW)
Remarks: Railroad passing underneath I-26.

Appendix C

Flood Insurance Rate Maps

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 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 State Plane South Carolina FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 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, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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 their website at http://www.ngs.noaa.gov/.

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

This map may reflect more detailed or up to date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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 table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information eXchange (FMIX)** at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FMIX may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/national-flood-insurance-program.

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 a long-term approach of floodplain management to decrease 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 State agreement with FEMA to produce and maintain this digital FIRM.

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

LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of 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 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 of different Base Flood Elevations, flood depths or flood velocities.
513 (EL 987)	Base Flood Elevation line and value; elevation in feet* / Base Flood Elevation value where uniform within zone; elevation in feet*
	*Referenced to the North American Vertical Datum of 1988
A — A	Cross section line
23 — 23	Transect line
97° 07' 30", 32° 22' 30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4 76 000mE	1000-meter Universal Transverse Mercator grid values, zone 17
600000 FT	5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0045E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 45 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0045	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
45035C0045E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

NOTES TO USERS

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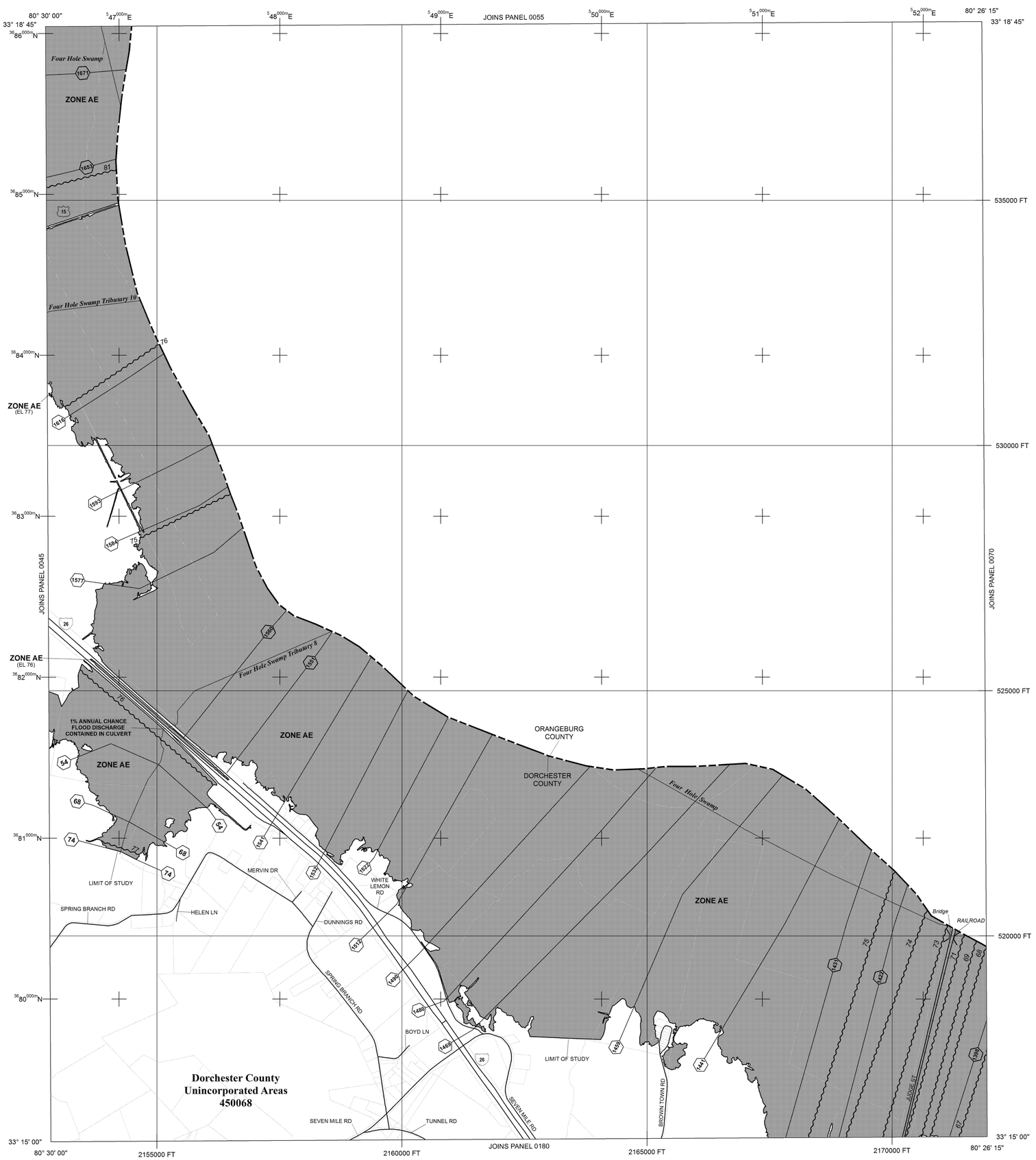
http://www.dnr.state.sc.us/



LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of 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 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 of different Base Flood Elevations, flood depths or flood velocities.
- 513 (EL 987) — Base Flood Elevation line and value; elevation in feet*; Base Flood Elevation value where uniform within zone; elevation in feet*
- *Referenced to the North American Vertical Datum of 1988
- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4 276 000m E — 1000-meter Universal Transverse Mercator grid values, zone 17
- 600000 FT — 5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0065E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 65 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0065	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 45035C0065E

EFFECTIVE DATE JULY 18, 2017

Federal Emergency Management Agency

NOTES TO USERS

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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 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 State Plane South Carolina FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 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
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National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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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 table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

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If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

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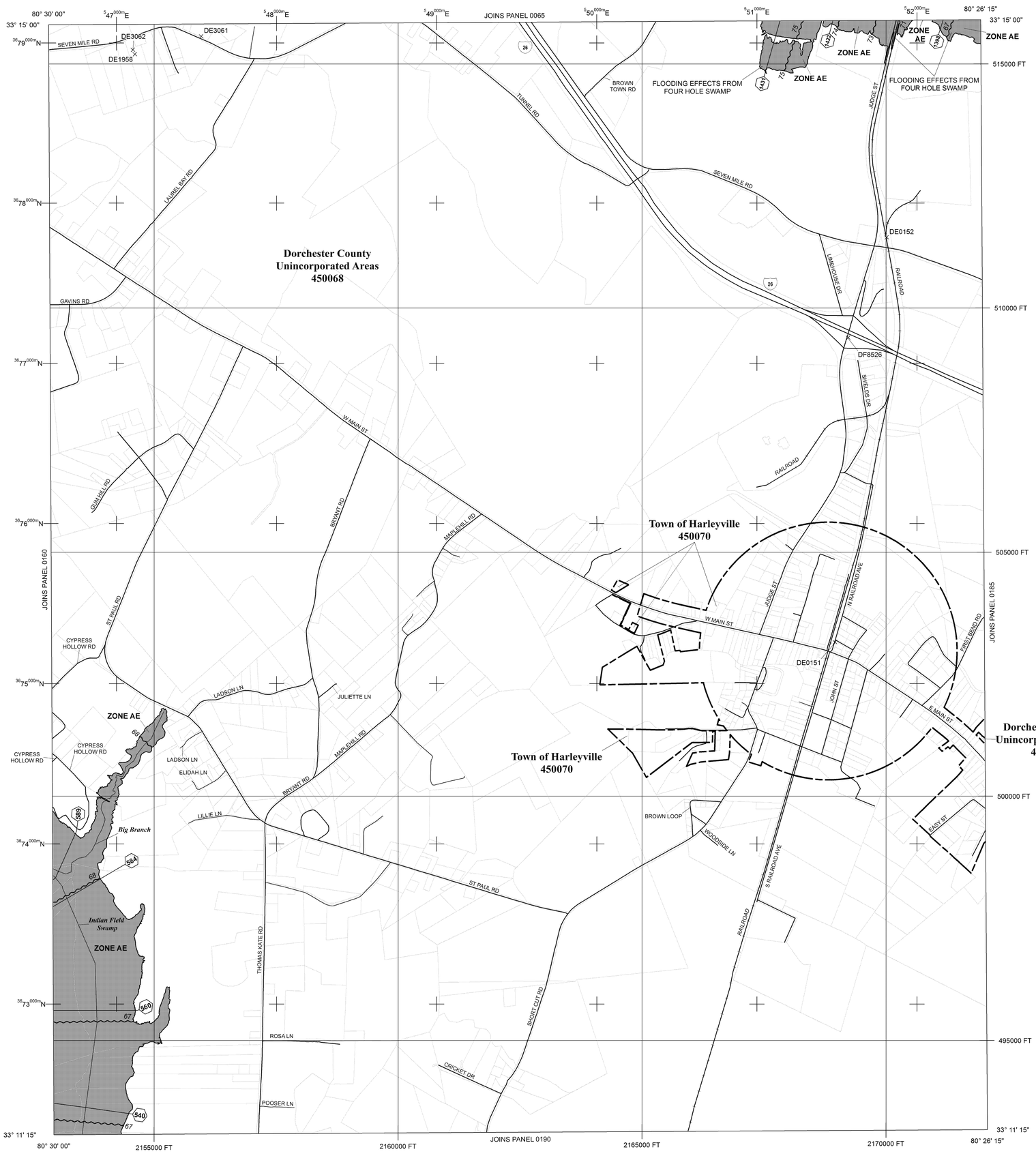

LEGEND

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

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ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
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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

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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 of different Base Flood Elevations, flood depths or flood velocities.
513 (EL 987)	Base Flood Elevation line and value; elevation in feet* Base Flood Elevation value where uniform within zone; elevation in feet*
	*Referenced to the North American Vertical Datum of 1988
A — A	Cross section line
23 — 23	Transect line
97° 07' 30", 32° 22' 30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4 76 000m E	1000-meter Universal Transverse Mercator grid values, zone 17
600000 FT	5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0180E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 180 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0180	E
HARLEYVILLE, TOWN OF	450070	0180	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 45035C0180E

EFFECTIVE DATE JULY 18, 2017

Federal Emergency Management Agency

NOTES TO USERS

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DNR

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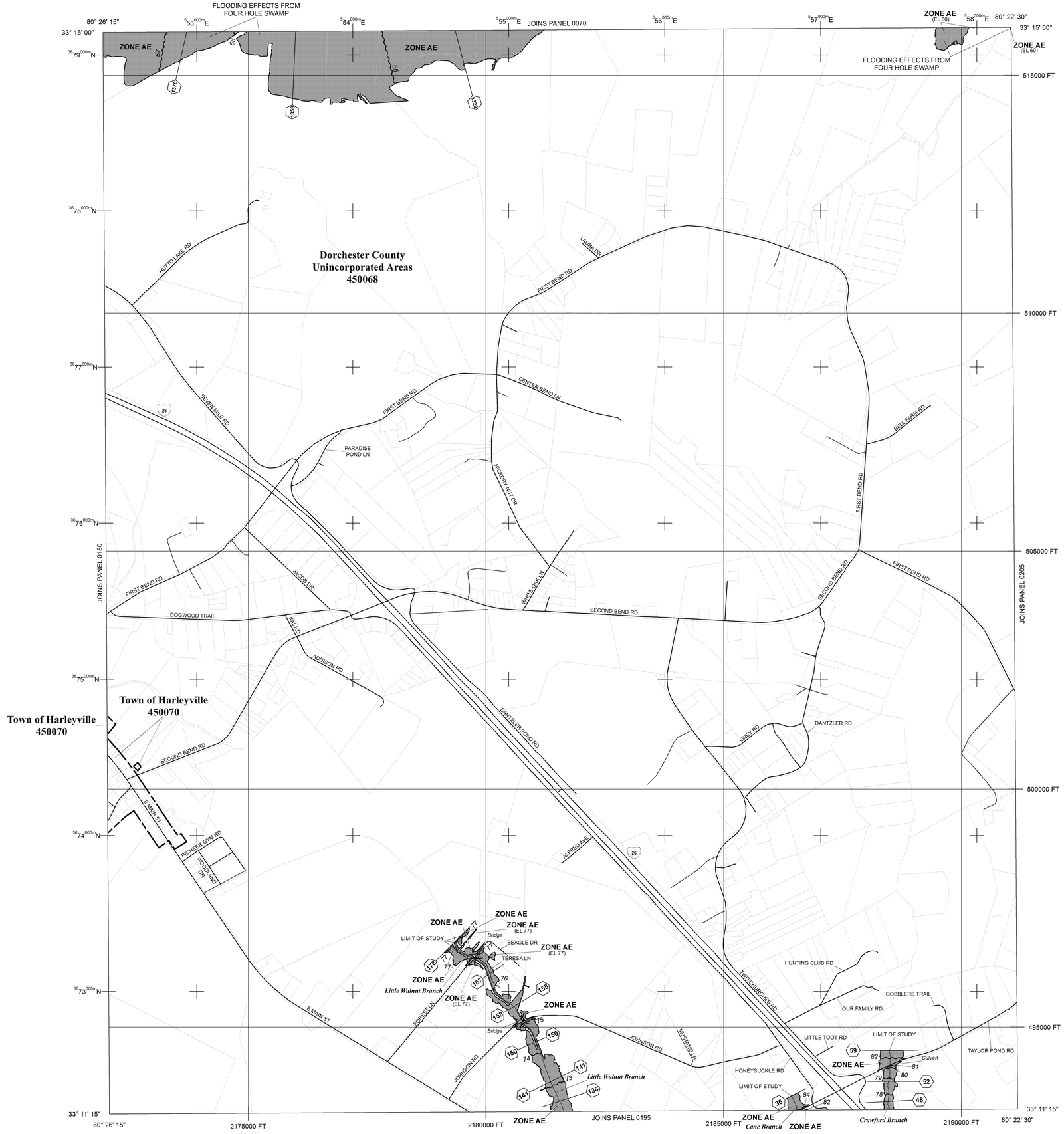

LEGEND

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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

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M1.5	River Mile

*Referenced to the North American Vertical Datum of 1988

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0185E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 185 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0185	E
HARLEYVILLE, TOWN OF	450070	0185	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
45035C0185E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

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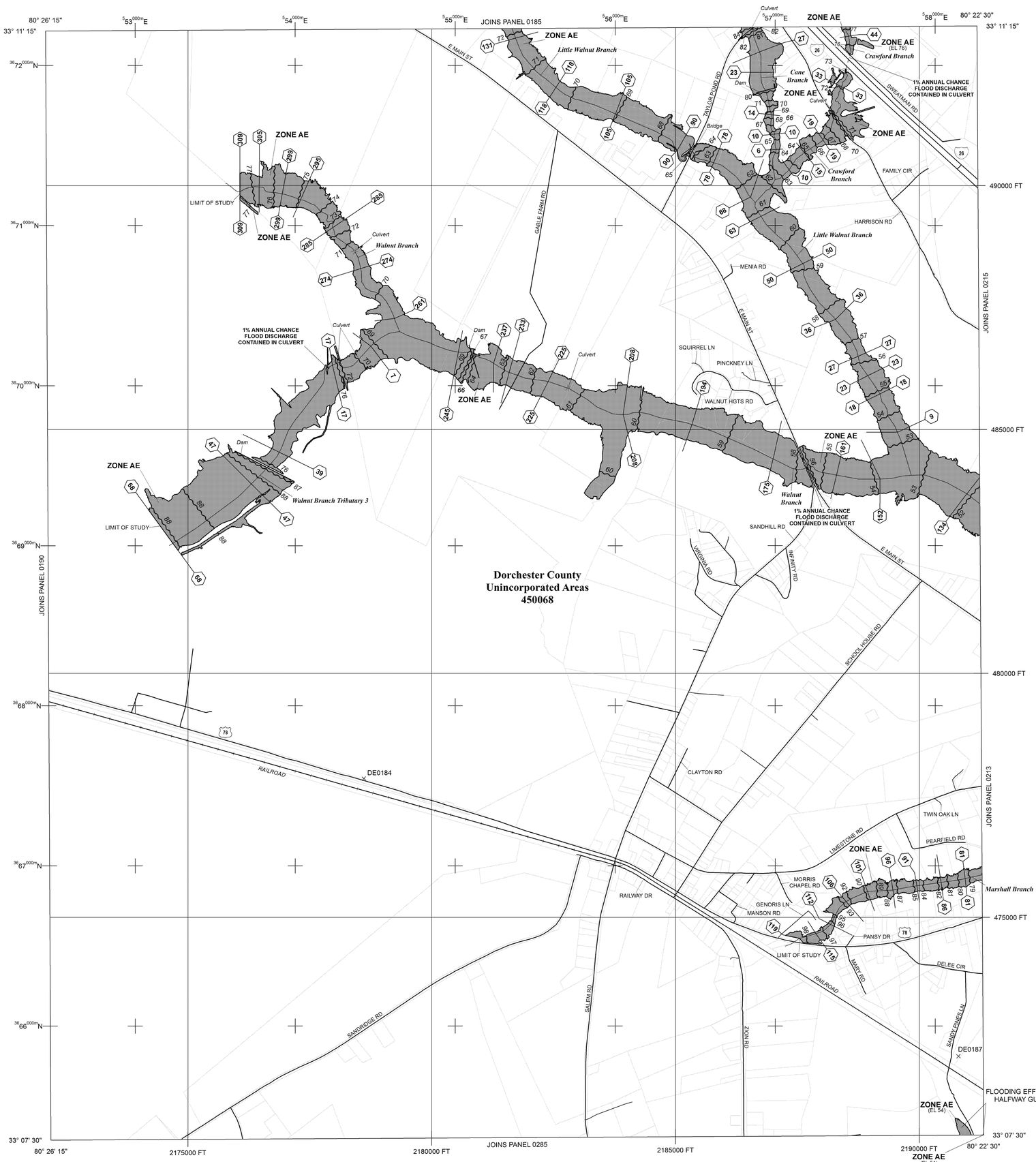

LEGEND

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

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ZONE AE	Base Flood Elevations determined.
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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 ZONE D	Areas determined to be outside the 0.2% annual chance floodplain. 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 of different Base Flood Elevations, flood depths or flood velocities.
- 513 — 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

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- 23 — 23: Transect line
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- 600000 FT: 5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
- DX5510 × : Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 : River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0195E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 195 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0195	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 45035C0195E

EFFECTIVE DATE JULY 18, 2017

Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevations 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 State Plane South Carolina FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 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, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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DNR

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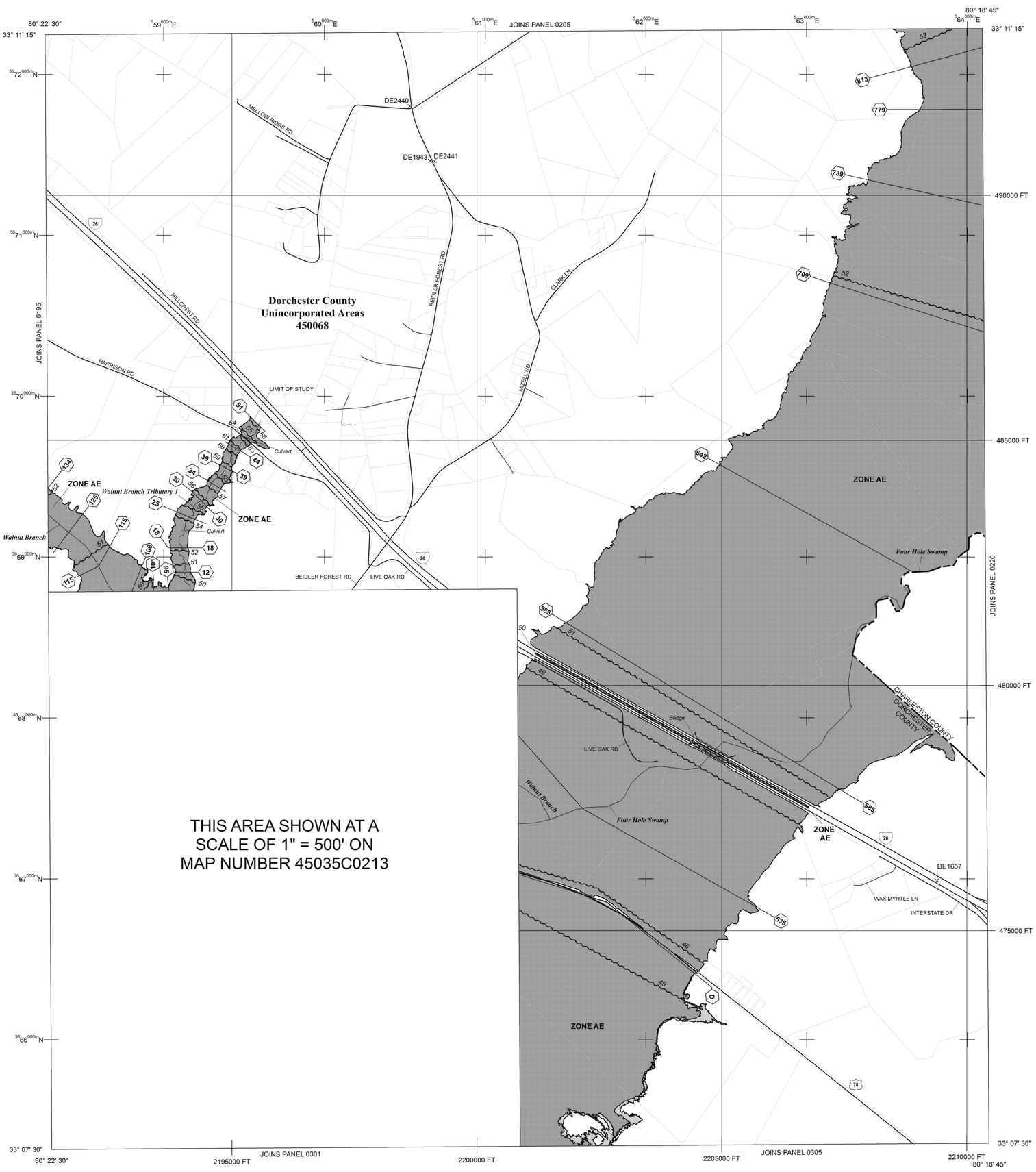

LEGEND

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Floodplain boundary

Floodway boundary

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Boundary dividing Special Flood Hazard Area Zones of different Base Flood Elevations, flood depths or flood velocities.

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NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0215E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA

AND INCORPORATED AREAS

PANEL 215 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0215	E

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MAP NUMBER 45035C0215E

EFFECTIVE DATE JULY 18, 2017

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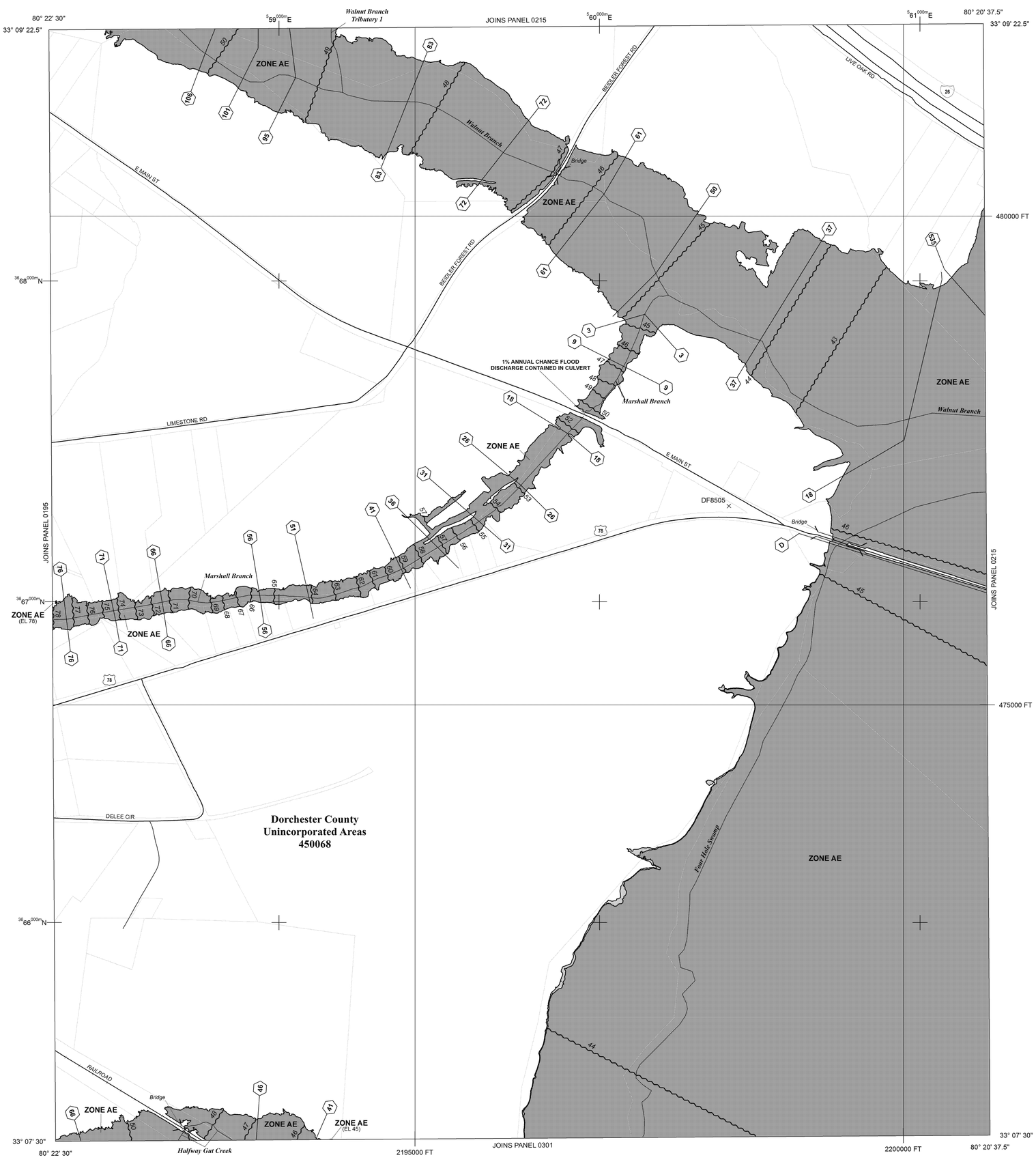

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JULY 18, 2017

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
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NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0213E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA

AND INCORPORATED AREAS

PANEL 213 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450068	0213	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
45035C0213E

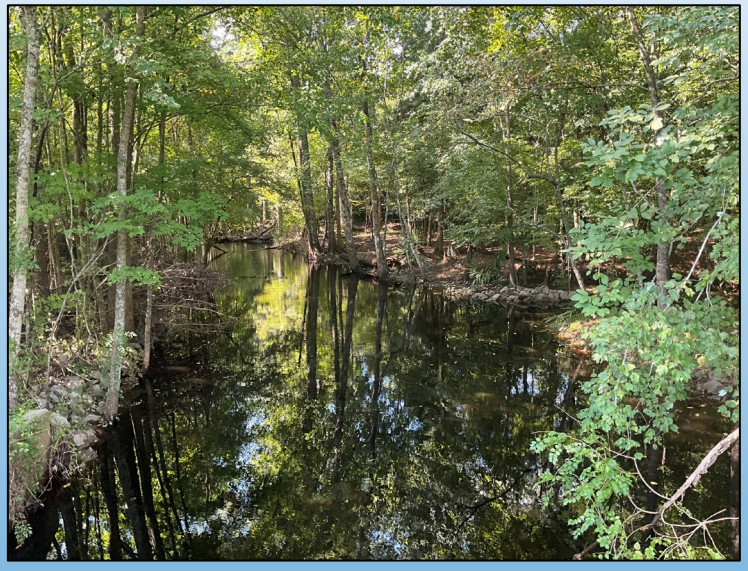
EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

Appendix D

Biological Assessment

Biological Assessment



I-26 Corridor Improvement Project

(Mile Marker 172-187)

SCDOT Project ID: P042567

Dorchester and Berkeley Counties, SC

December 5, 2025

Prepared For: SCDOT

Prepared By: Infrastructure Consulting & Engineering

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1 Project Overview

1.1 Federal Nexus

This biological assessment (BA), prepared by Infrastructure Consulting & Engineering (ICE) on behalf of the South Carolina Department of Transportation (SCDOT), addresses the Proposed Action in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973 (16 United States Code 1536 (c)), as amended. The BA also follows standards established in Federal Highway Administration (FHWA) and SCDOT National Environmental Policy Act (NEPA) guidance.

Section 7 of the ESA requires that, through consultation (or conferencing for proposed species) with the U.S. Fish and Wildlife Service (USFWS), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat.

This BA evaluates the potential effects of the proposed transportation project on species that are federally listed under the ESA and under the jurisdiction of USFWS. Specific project design elements are identified that avoid or minimize adverse effects of the proposed project on listed species and/or critical habitat.

1.2 Project Description

SCDOT proposes to widen approximately 15 miles of Interstate 26 (I-26) from just west of the existing interchange of I-26 and US Highway 15 (US 15, Exit 172 A-B) to just west of the I-26 and South Carolina 27 (SC 27) interchange (Exit 187). The project would include adding a travel lane in each direction of I-26, grading median/outside shoulders, installing barrier walls and/or cable guardrail, replacing 11 bridges (including 5 overpass bridges, 4 mainline bridges, and 2 interchange overpasses), addressing 7 hydrological box culverts and 2 “access” box culverts, and making drainage improvements. The interchange overpass improvements would include improving the ramps and associated frontage roads at Exits 172 and 177. Likewise, the associated frontage and side roads at the five overpass bridges at Seven Mile Road, First Bend Road, Second Bend Road, Taylors Pond Road, and Beidler Forest Road would be improved. The proposed project would address existing and future traffic conditions while improving mobility and operations of local roadways in the project study area (PSA) (see **Figure 1**).

The purpose of the proposed project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187.

The project is needed based on analysis of existing and projected traffic volumes and operational deficiencies along this section of I-26. Specifically, the existing and projected

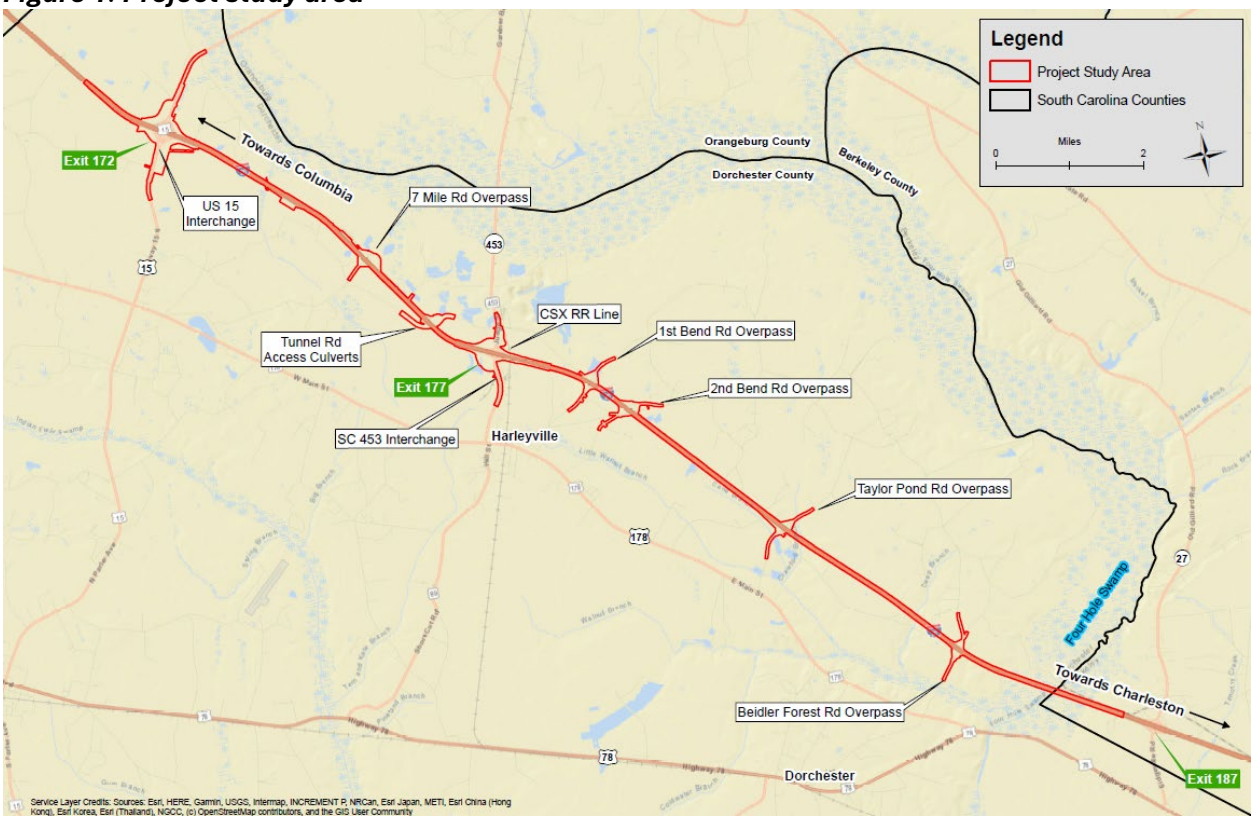
traffic volumes indicate that I-26 would be operating beyond capacity and would experience an increase in traffic congestion and operational deficiencies if no improvements are made.

In addition, this section of I-26 is dated and includes various design elements that do not meet current standards. The ramp loops at I-26 and US 15 do not meet current geometrical design standards. Each of the existing bridges fail to meet vertical clearance standards, appropriate shoulder width, or meet current seismic design standards. Additionally, the twin I-26 bridges over CSX railroad do not meet current horizontal clearance standards.

The project's termini match up with the I-26 Corridor Improvements Project (MM 187 to MM 194) in Berkeley County to the east (SCDOT Project ID P029263) and the proposed I-26 Widening (MM 154 and MM 172) in Dorchester and Orangeburg Counties to the west (SCDOT Project ID P042454).

Due to modifications to the Interstate system (I-26) and federal-aid funds, FHWA is the lead federal agency. The project as proposed would result in certain modifications to the human and natural environment. SCDOT, as assigned by FHWA, have prepared an environmental assessment (EA), which examines the proposed project's potential impacts on the human and natural environment. This BA will be included in the EA to document the findings associated with the proposed project.

Figure 1. Project study area



1.3 Project Area and Setting

The I-26 PSA contains two travel lanes in each direction with interchanges at US 15 (Exit 172) and SC 453 (Exit 177). The PSA also includes dual bridges over CSX railroad and Four Hole Swamp, and five overpass bridges. The PSA begins approximately 1.3 miles west of Exit 172 A-B and continues east for approximately 15 miles until approximately 0.44 mile west of SC 27 (Exit 187). The width of the mainline PSA varies between 350 feet to 390 feet with larger areas near the I-26 interchanges and overpasses. The western end of the PSA is approximately 1.7 miles from the I-95 and I-26 interchange. The I-26 corridor is utilized mostly for connecting the public and commerce with the city of Charleston and its tourism and international seaports.

The interchange at Exit 172 is a full clover leaf design that provides northbound and southbound access onto US 15 from I-26. This portion of US 15 is a two-lane road that runs parallel to I-95 and provides connectivity for several small communities in the area.

The interchange at Exit 177 is a diamond design that provides northbound and southbound access on SC 453 from I-26. This portion of SC 453 is a two-lane road that connects to the town of Holly Hill to the north and the town of Harleyville to the south. It is also the primary route for transporting Portland cement from nearby industrial facilities.

The PSA consists of approximately 1,340 acres and is mostly located within Dorchester County with a smaller portion within neighboring Berkeley County. The entire PSA is considered rural and is bordered by farmland, undeveloped land (including property belonging to the National Audubon Society), limited industry, and sparse residential development. The National Audubon Society owns 11,772 acres of land within a 3-mile radius of the PSA (Musselman, Mark 2025).

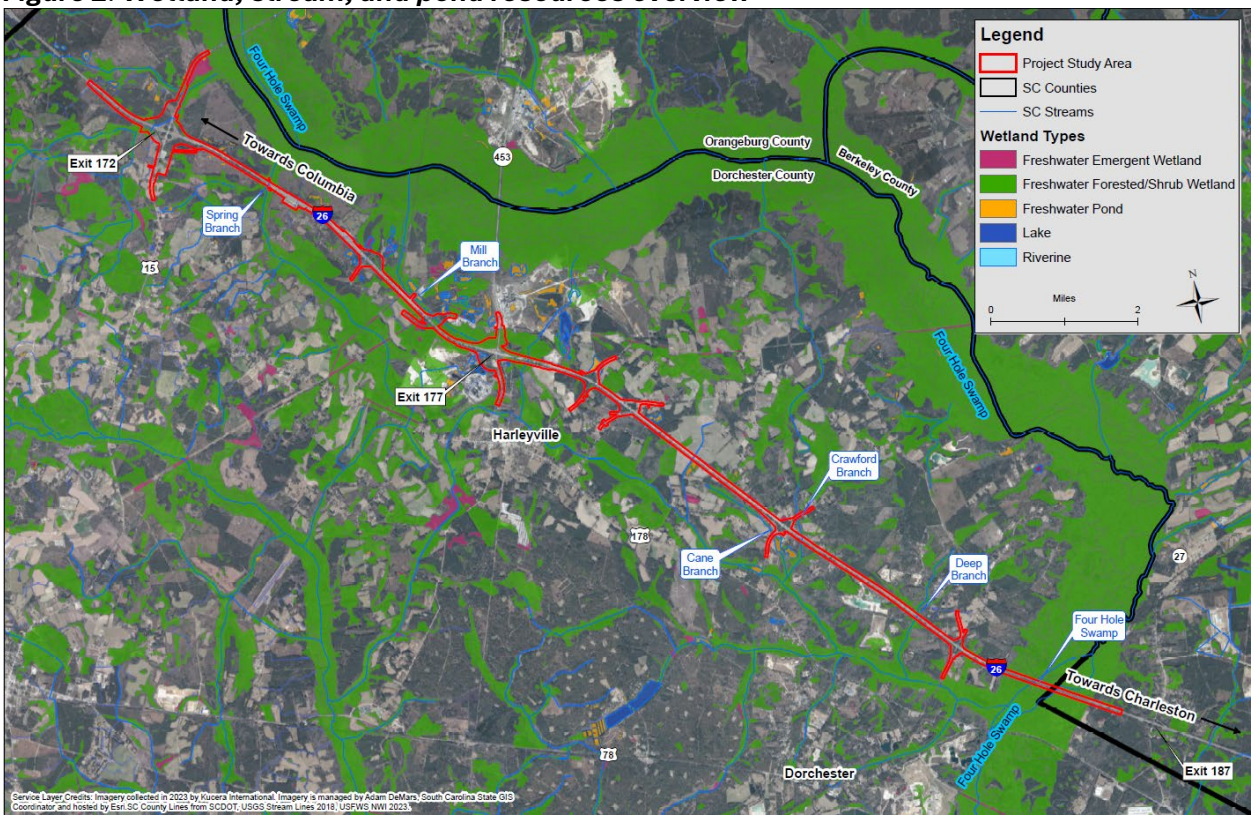
Four Hole Swamp extends parallel to the northeast of the PSA until it crosses under I-26 approximately 1.3 miles from Exit 187. Other named stream crossings within the PSA include Spring Branch (under I-26), Mill Branch (under Brown Town Road), Cane Branch (under Taylors Pond Road), Crawford Branch (under Taylors Pond Road and I-26), and Deep Branch (under I-26). There are numerous wetlands within and surrounding the PSA as well as several ponds. Detailed wetland, stream, and open water features within the PSA are in **Appendix A**. See **Figure 2** for an overview of these resources.

The PSA is in the Middle Atlantic Coastal Plain Ecoregion. The Middle Atlantic Coastal Plain stretches from Delaware to the South Carolina/Georgia border and consists of low elevation flat plains, and is characterized by swamps, marshes, and estuaries. Forest cover in the region was previously dominated by longleaf pine (*Pinus palustris*) in the Carolinas but is now mostly loblolly (*Pinus taeda*) and some shortleaf pine (*Pinus echinata*), with patches of oak, sweetgum (*Liquidambar styraciflua*), and bald cypress (*Taxodium distichum*), as

compared to the mainly longleaf-slash pine forests of the warmer Southern Coastal Plain. Poorly drained soils are common, and the region has a mix of coarse and finer textured soils compared to the mostly coarse soils in the majority of the Southern Coastal Plain. The Middle Atlantic Coastal Plain is typically lower, flatter, more poorly drained, and consists of more marshes than the Southeastern Plains. Less cropland occurs in the southern portion of the region than in the central and northern parts (Griffith, et. Al. 2002).

The PSA was identified as being within the boundaries of the Lower Four Hole Swamp (0305020503) and the Indian Field Swamp Watersheds (0305020602) by utilizing the South Carolina Watershed Atlas, maintained by the SC Department of Environmental Services (SCDES). The Lower Four Hole Swamp Watershed consists of approximately 184,047 acres and land use is made up of forested wetlands (37.29%), forest (29.01%), pasture/hay (25.96%), urban (5.80%), open water (0.92%) and non-forested wetlands (0.54%). The Indian Field Swamp Watershed is approximately 102,069 acres. The land use is made up of forested wetlands (33.85%), pasture/hay (29.18%), forest (28.67%), urban (7%), non-forested wetlands (0.83%), and open water (0.31%). While the Indian Field Swamp Watershed does overlap with the PSA near SC 453, there were no identified streams or other WOUS that drain to the watershed (SCDES 2025).

Figure 2. Wetland, stream, and pond resources overview



1.4 Consultation History

Originally the I-26 Corridor Improvement Project (Mile Marker 172–187) was scoped for completion as a non-programmatic categorical exclusion (NPCE) under NEPA. On September 10, 2025, SCDOT provided USFWS (via email) with a biological evaluation regarding the effects determination for Section 7 species within the PSA. As a result, USFWS responded (via email) on September 16, 2025, that formal consultation would be required due to potential impacts to the Northern long-eared bat (*Myotis septentrionalis* [NLEB]).

At the direction of USFWS, FHWA is initiating formal consultation supported by the preparation of this BA. All correspondence with USFWS is in **Appendix B**.

2 Federally Proposed and Listed Species and Designated Critical Habitat

The USFWS Information for Planning and Consultation (IPaC) tool was utilized to determine where the ranges of federally listed species overlap with the PSA. The IPaC report confirmed that the PSA may contain three endangered species, one threatened species, one proposed endangered species, and two proposed threatened species. **Table 1** details the species identified in the IPaC list. No critical habitat was identified within the PSA.

Table 1. Federally listed and proposed listed species

Category	Common name	Scientific name	Status	Survey window
Birds	Red-cockaded woodpecker	*Dryobates borealis*	Threatened	March 1-July 31
Mammals	Northern long-eared bat	*Myotis septentrionalis*	Endangered	March 1-October 15
	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	March 1-October 15
Reptiles	Southern hognose snake	*Heterodon simus*	Proposed Threatened	N/A[a]
Insects	Monarch butterfly	*Danaus plexippus*	Proposed Threatened	N/A[a]
Plants	Canby's dropwort	*Oxypolis canbyi*	Endangered	Mid July-September
	Pondberry	*Lindera melissifolia*	Endangered	February-March; September-October

[a]No formal survey window is published by USFWS.

2.1 Red-cockaded woodpecker (Dryobates borealis)

The red-cockaded woodpecker (RCW) is a territorial, non-migratory species approximately 7 inches long with a wingspan of about 15 inches. Its back is barred with black and white horizontal stripes, and its most distinguishing feature is a black cap and nape that encircle large white cheek patches. The RCW inhabits mature pine forests with longleaf pines, the most preferred species, but other species of southern pine are also acceptable. Habitat requirements include mature forests with over 50 percent coverage by pine species, and with an open understory less than 12 feet high. The RCW exclusively excavates nesting cavities in living pine trees. Their diet consists mostly of insects in the egg, larvae and adult stages, which include beetles, ants, roaches, spiders, and other insects found in or on pine trees (USFWS 2025a).

2.2 Northern long-eared bat (Myotis septentrionalis)

The NLEB was listed by USFWS as a threatened species in 2015 and was subject to a Final 4(d) rule in 2016. In 2021 a Species Status Assessment was performed leading to a 2022 proposal to list the NLEB as endangered. The final listing decision of endangered was made on November 30, 2022, and became effective January 30, 2023. The NLEB is a medium sized bat approximately 3 to 3.7 inches in length, with a wingspan of 9 to 10 inches. The NLEB's fur

ranges from medium to dark brown on the back, and a pale brown on the underside. This bat is noted for large ears compared to other bats in the Myotis genus (USFWS 2025b).

2.3 Tricolored bat (Perimyotis subflavus)

A Species Status Assessment for the tricolored bat (TCB) was completed by USFWS and a proposal to list the species as endangered was published on September 14, 2022. These small bats measure 3 to 3.5 inches in body length and males can weigh from 0.16 oz to 0.26 oz, and females from 0.20 oz to 0.28 oz. The TCB is distinguished by its tricolored fur that is darker at the base and tip and lighter in the middle. It often appears yellowish in color when observed, but can also show as silvery gray, to dark brown or nearly black. Younger bats are typically darker and grayer than adults (USFWS 2025c).

2.4 Southern hognose snake (Heterodon simus)

The Southern hognose snake is a small, heavy-bodied snake reaching approximately 2 feet long when fully grown. The species exhibits sexual dimorphism, with the females typically being larger than males. The Southern hognose snake is distinguished by its upturned, keeled snout, which is more sharply upturned than the snouts on Eastern hognose snakes (*Heterodon platirhinos*) (USFWS 2018).

2.5 Monarch butterfly (Danaus plexxipus)

The monarch butterfly is a large butterfly characterized by orange wings with black borders and veins, with white spots along the edges. Males of the species have a black spot in the center of both hind wings, while females have thicker wing veins. The monarch butterfly has two sets of wings and their wingspan typically ranges from 3 to 4 inches. Caterpillars are 2 to 5 inches long and have black, white, and yellow stripes across their bodies. The caterpillar stage feeds exclusively on milkweed before forming a chrysalis and completing metamorphosis. Adults feed on the nectar of a wide variety of blooming plants (National Wildlife Federation 2025).

2.6 Canby's dropwort (Oxypolis canbyi)

Canby's dropwort was listed as an endangered species in 1986. Canby's dropwort is a perennial plant found in the South Carolina Coastal Plain that is 2.6 to 3.9 feet tall with erect stems. The leaves are slender, hollow and quill like, and the flowers are compound umbels with white petals that appear from July to September. The flower's fruits are 0.1 to 0.2 inch in length, with prominent wings, and will split into multiple single seeded parts upon maturation. Canby's dropwort reproduces primarily via asexual means through rhizomes.

A recovery plan for this species was issued in 1990. Canby's dropwort has been found in natural ponds dominated by pond cypress, grass-sedge dominated Carolina bays, wet pine

savannas, shallow pineland ponds and cypress-pine swamps or sloughs. Canby's dropwort has been documented in Delaware, Georgia, Maryland, North Carolina, and South Carolina. USFWS has not designated critical habitat for this species (SCDNR 2020a).

2.7 Pondberry (Lindera melissifolia)

Pondberry is a deciduous shrub growing between 1 and 6 feet in height. The leaves are alternate, elliptical and have entire margins. When crushed, the leaves have a strong aromatic smell. This shrub is sparsely branched and frequently propagates by vegetative sprouts from stolons. This species is dioecious with females producing green drupes during the summer that mature to bright red in the fall, generally from September to October. The species has clusters of small yellow flowers in the spring typically from February to March. Pondberry is predominantly associated with bottomland and hardwood wetlands, and along the margins of sinks, ponds, and other depressional wetlands. While they prefer shaded areas, pondberry has been known to grow in full sun (SCDNR 2020b).

3 Environmental Baseline

Within the PSA a variety of land uses exist that are important to the habits of the listed species, specifically the NLEB. Water resources such as floodplains, wetlands, streams, and open waters, forested lands, man-made structures, and corridors/margins provided features that are important roosting foraging habitat for NLEBs.

3.1 Water Resources

Water resources found within the PSA include floodplains, wetlands, streams, and open waters. A detailed description of these resources is provided below. A figure set of water resources within the PSA is found in **Appendix A** (Figures 2.1 through 2.17) and includes delineated streams, wetlands, and open waters, as well as flood hazard areas.

3.1.1 Floodplains

A review of the Federal Emergency Management Agency (FEMA) Flood Rate Insurance Maps (FIRMs)—45035C0045E, 45035C0065E, 45035C0185E, 45035C0195E, and 45035C0215E (effective date July 18, 2017)—identified that the PSA includes portions of the regulated 100-year floodplain and floodway zone associated with Four Hole Swamp and its tributaries. These areas are classified as special flood hazard areas, Zone AE, which have been determined to be subject to inundation by the 1 percent annual chance flood, in which base flood elevations have also been determined. In addition, FIRM 45035C0180E and 45035C0213E (effective date July 18, 2017) overlap the PSA, but had no flood hazard areas intersecting the PSA.

A preliminary hydraulic analysis was conducted in accordance with *SCDOT Requirements for Hydraulic Design Studies* (May 26, 2009). In addition, the SCDOT Bridge Replacement Scoping Trip Risk Assessment Forms and the Floodplains Checklist were completed for the appropriate structures and are attached in **Appendix C**. Based on this analysis, the proposed project is anticipated to have a "no impact" on the base flood elevation associated with the regulated floodplains.

A final detailed hydraulic analysis would be conducted during final design development in accordance with *SCDOT Requirements for Hydraulic Design Studies*. The final analysis and findings will be coordinated with appropriate agencies, including Dorchester and Berkeley Counties.

3.1.2 Wetlands

The PSA includes 99 wetlands totaling approximately 133 acres that were identified as part of a forested or emergent community type. Below is a detailed description for each identified community throughout the PSA.

The emergent wetlands within the PSA contribute to approximately 2 percent of the total PSA. The emergent communities identified throughout the PSA are dominated by netted chain fern (*Woodwardia areolata*), lizard's tail (*Saurarus cernuus*), woolgrass (*Scirpus cyperinus*), dwarf palmetto (*Sabal minor*), and switchcane (*Arundinaria tecta*). Most of these emergent communities were inundated during several site visits and are typically located along the toe-of-slope directly adjacent to the existing interstate and local roadways and residential/commercial developments. Most of these areas have been disturbed; they are frequently maintained by mowing, spraying, and/or clearing for access to utility corridors and right-of-way (ROW). Wetlands are important parts of bat roosting and foraging habitat. Trees with cavities, shaggy bark, and snags provide roosting spaces for NLEB and the predominantly deciduous trees found within wetlands provide habitat for TCB. Additionally, these wetlands provide foraging habitat for bat species and have abundant insect life that provides a crucial food source to the bats. Standing water in wetlands also provide a water resource for bats that is close to their foraging and roosting habitats.

3.1.3 Streams

The PSA includes 17 streams totaling approximately 8,536 linear feet (LF), including one major tributary (Four Hole Swamp) with an ultimate connection to the Edisto River and then to the Atlantic Ocean. These areas comprise less than 1 percent of the total PSA. Four Hole Swamp is a fourth order, perennial tributary as depicted on the Harleyville, Holly Hill, and Wadboo Swamp USGS Topographic Quadrangles. Within the PSA, Four Hole Swamp consists of an approximately 50-foot-wide channel in areas and 1 to 6-foot-high banks, with

a wide floodplain of forested wetlands. Other tributaries throughout the PSA were identified as either first order intermittent tributaries or second order perennial tributaries ranging from 2 to 10-feet wide. Other characteristics of these features range from lack of vegetation within the channel bottom, sand/silt substrate, a clear impressed line on the bank, and scour. Generally, these features are immediately bound by forested wetlands, forested uplands, open water features and commercial/residential land uses. The streams within the PSA provide potential flight corridors for bat species due to the absence of trees and other vegetation growing in the stream bed. These corridors provide travel routes between foraging and roosting habitat and attract insects that provide a food source. The streams also provide a source of freshwater for NLEB and TCB.

3.1.4 Open Waters

The PSA includes five open water features with a total of 3.36 acres of open water habitat, which is less than 1 percent of the total PSA. These open waters are primarily ponds associated with residential homes and agricultural irrigation ponds and are bound by disturbed/maintained uplands. Several features are more natural ponds with dense vegetation growing around them predominantly in upland areas. The open areas above ponds provide clear flight paths to foraging habitat for NLEB and TCB, especially when ponds are adjacent to wooded areas that provide roosting habitat. Ponds also provide a source of freshwater for both species of bat.

3.1.5 Water Quality

Within the PSA, SCDES maintains no monitoring stations for water quality standards. There are 17 streams within the PSA including the named streams: Spring Branch, Mill Branch, Cane Branch, Crawford Branch, Deep Branch, and Four Hole Swamp. Spring Branch and Mill Branch flow to the north of the PSA, draining directly into Four Hole Swamp. Both Cane Branch and Crawford Branch flow into Little Walnut Branch to the south of the PSA, which in turn flows into Walnut Branch and then Four Hole Swamp. Deep Branch drains directly into Walnut Branch and then to Four Hole Swamp. SCDES maintains an ambient surface water quality monitoring station (RS-20523) along Walnut Branch on Beidler Forest Road south of the PSA towards US 178, downstream of the confluence of Cane, Crawford, and Deep Branches with Walnut Branch. At this location, Walnut Branch is listed as non-supporting for dissolved oxygen (DO) as documented in the SCDES Water Quality Information Report (**Appendix D**). Additionally, the SCDES "Watershed Atlas" online map shows two watershed monitoring sites within the Lower Four Hole Swamp Watershed—E-112, located north of the PSA at SC 453; and E-100, located along Four Hole Swamp south of the PSA at US 78. A third site was identified at Big Branch along Saint Paul Road (RS-10373) within the Indian Field Swamp Watershed. This mapping concluded that the project is not found within a MS4-

designated area, but that the Lower Four Hole Swamp and Indian Field Swamp Watersheds are Total Maximum Daily Load (TMDL) watersheds based on findings at the above sites. E-100 and RS-10373 meet TMDL parameters for E. coli/fecal coliform. This is reported in TMDL Report No. 008-07 (SCDES 2023). The 2024 South Carolina Section 303(d) List of Impaired Waters was searched for waterbodies within the PSA. Based on the findings from this report, none of the tributaries to Four Hole Swamp are impaired within the PSA; however, downstream locations are impaired. While none of the tributaries are listed as impaired, the E-100 monitoring site at Four Hole Swamp is impaired for E. coli, and the E-112 monitoring site (upstream of PSA) is listed as impaired for dissolved oxygen and mercury. The entire project is within TMDL watersheds to improve the water quality standards within the watershed.

3.2 Forested Lands

The PSA includes areas of undeveloped, upland forests typically consistent with southern mixed forests as defined in *Natural Communities of South Carolina* (Nelson 1986). The upland communities make up approximately 29 percent of the PSA and are generally dominated by loblolly pine, sweetgum, white oak (*Quercus alba*), and water oak (*Quercus nigra*). Many of these areas have been left unmanaged; therefore, the age structure varies from less than 3 years to greater than 20 years. These areas are generally associated with larger areas that extend beyond the PSA. These mixed upland habitats provide foraging, nesting, and travel corridors for various common birds and mammals but are largely on the edges of the PSA and are fragmented due to farming, commercial/residential development, and existing transportation infrastructure. Adjacent to the PSA, there are larger swaths of contiguous forest, including lands preserved by the Audubon Society. Upland forests adjacent to waterbodies and wetlands would provide roosting and foraging habitat for the NLEB and the TCB.

3.3 Man-made Structures

The proposed project will include the replacement of 11 bridges, 2 large “access” box culverts carrying I-26 across Tunnel Road, and numerous pipes and box culverts suitable for use by TCBs and NLEBs. Many of these structures are adjacent to forested areas suitable for roosting habitat for bat species, and to streams, ponds, and wetlands that would provide a water source for the species. These structures, and in particular the box culverts and pipes, may provide more suitable winter habitat for bats, due to their better ability to withstand extreme temperatures.

3.4 Corridors and Margins

Throughout the PSA, the boundaries of a variety of land uses and land covers provide habitat for travel and foraging for the NLEB and TCB. The predominant margins exist along tree lines, fence rows, and transportation and utility ROW. These boundaries are especially important to TCB which feeds at these forest edges more often than NLEBs. Additionally, small gaps and corridors provide clear flight paths to navigate between suitable roosting and foraging grounds. These gaps are created from hunting/access roads, streams, wetlands, or openings from storm damage. The NLEB in particular utilizes these corridors for foraging and travel (USFWS 2024).

3.5 Northern long-eared bat Stressors

3.5.1 White-nose Syndrome

White-nose syndrome (WNS) is a fungal disease that was introduced to the U.S. in the early 2000's. The disease may appear as a fuzzy white growth on bare skin of bats commonly around the nose. WNS causes affected bats to come out of hibernation early, burning up energy reserves and causing starvation. Since its discovery in 2006, WNS has killed millions of bats, in some locations killing 90 to 100 percent of bats. Of the affected species, the NLEB is one of the most affected alongside the TCB and the little brown bat (*Myotis lucifugus*). As of October 2025, WNS has not been identified within Dorchester or Berkeley County in South Carolina (White-nose Syndrome Response Team 2025).

3.5.2 Habitat Loss

Loss of habitat can lead to stressors for NLEB and TCB in several ways. The primary stressors would be injury or mortality occurring during tree clearing, and the direct removal of suitable roosting and foraging habitat that the species utilize. Additionally, fragmentation of habitat could cause increased travel distances to foraging and roosting habitats leading to higher energy consumption and potentially greater exposure to predators. Between 2006 and 2016 deciduous forest landcover and other foraging habitats decreased across the continental U.S. by 2.8 million acres. Adverse effects to the NLEB are more likely to occur in areas that already have poor habitat (e.g., highly fragmented forest and small plots of suitable habitat) and would be less likely to occur in areas with unfragmented forest, and healthy populations (USFWS 2022).

3.5.3 Pesticide Use

The use of pesticides in agricultural, residential, and commercial applications has been known to have adverse effects on bat species. Use of pesticides reduces the population of insect species vital to bat foraging, can poison bats that consume affected insects, and may make affected bats more vulnerable to disease (Canadian Wildlife Federation 2021).

4 Proposed Action

SCDOT proposes to widen approximately 15 miles of I-26 from just west of the existing interchange of I-26 and US 15, (Exit 172 A-B) to just west of the I-26 and SC 27 interchange (Exit 187). This would also require the replacement of 2 interchange overpass bridges, 4 mainline bridges, and 5 overpass bridges. Additional grading and culvert work would also be required. All overpass bridge improvements would include improving the ramps and associated connecting side roads. Once completed, all facilities will operate under design conditions. Maintenance activities such as mowing, surface and structure inspections, and any repairs will be conducted as needed.

4.1 Alternatives, Construction, and Avoidance/Mitigation Measures

An alternatives analysis was conducted during early project development to evaluate and document the potential impacts associated with I-26 mainline widening, five overpass bridge replacements, and the reconfiguration of two interchanges—the I-26 and US 15 interchange (Exit 172) and the I-26 at SC 453 interchange (Exit 177). All overpass and bridge interchange alternatives were evaluated for replacement on alignment or off alignment. As a result, preliminary build alternatives for each of the interstate interchanges were evaluated before a recommended preferred alternative (RPA) was selected. Additionally, one alternative for the mainline widening, and one alternative each for the five overpass bridges were carried forward as RPAs.

This BA has been prepared using the RPA designs and typical construction methods, since each alternative alignment would have similar or no effects on protected species in the PSA. During final design and permitting, coordination with USFWS regarding any design changes that would alter the effect determination, and the implementation of environmental commitments would be initiated by FHWA.

Anticipated construction methods and avoidance/mitigation measures will be discussed under each RPA for widening and bridge replacements.

A No-Build alternative was considered that consists of making no improvements to the I-26 corridor. The No-Build alternative would not improve traffic operations and would not meet the purpose and need of the project.

4.1.1 Mainline I-26 Widening

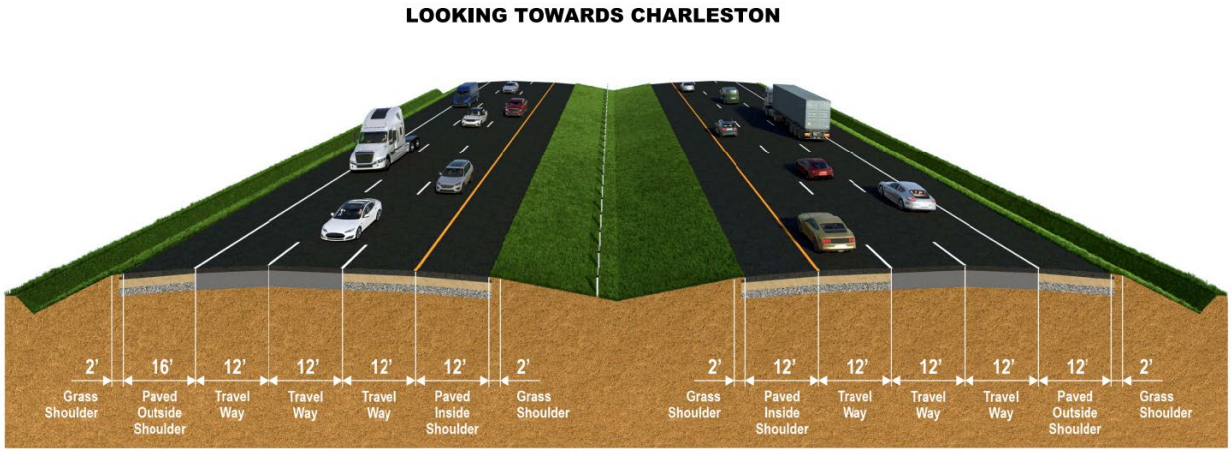
During project development, it was determined that the entire median of the project corridor contained sufficient width to add an additional lane toward the median in both directions for the entire length of the project. Associated grading and drainage improvements will be accommodated, and cable guardrail will be reinstalled in the median upon project

completion. A total of 25 pipes and 5 culverts, 36 inches or larger, are scheduled for replacement along the I-26 mainline. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

Widening the mainline in this manner will allow for design consistency with adjacent SCDOT widening projects along I-26 to the east and west of the project's termini. A typical lane configuration at the completion of widening is shown in **Figure 3**. Only one widening alternative is being considered since widening toward the median reduces impacts from wetlands and streams, right-of-way, and tree clearing. Figures of the mainline corridor RPA are included in **Appendix A**.

Only a few limited areas within the median throughout the 15-mile corridor will require tree clearing. The removal of trees will be conducted in compliance with tree clearing moratoriums for NLEB. The maintenance of traffic sequencing proposal would include adding an outside shoulder in one direction to shift traffic temporarily and then constructing the new inside shoulder and additional travel lane. Once that side of interstate is completed, the opposite side of interstate traffic would be shifted to the completed side for shared travel while all work is completed on the opposite direction. The traffic would be divided by temporary barriers. Once complete, temporary barriers would be removed, and all lanes would be restriped appropriately for future traffic flow. Staging and crossover areas will be determined by the contractor after consultation on avoidance of any protected areas. Lighting restrictions would be utilized to avoid harm to NLEB.

Figure 3. I-26 Typical lane configuration



4.1.2 I-26 Dual Bridges over Four Hole Swamp

The I-26 dual bridges over Four Hole Swamp bridges are located approximately 1 mile west of the SC 27 interchange with I-26 near MM 187. It lies at the junction of Dorchester and Berkeley Counties. They were designed as twin parallel bridges in 1959 and later widened in

1981. The distance between the baseline of the two bridges is 114 feet. The clear distance between the two bridges is approximately 75 feet 8 inches. The dual bridges are 750 feet long with 25 spans of 30 feet each. The as-built finished grade elevation is 58.39 feet.

The hydrologic analysis for this site shows that the low chord elevation of 54.80 feet can be maintained for the replacement structure and the present hydraulic opening of 750 feet is sufficient.

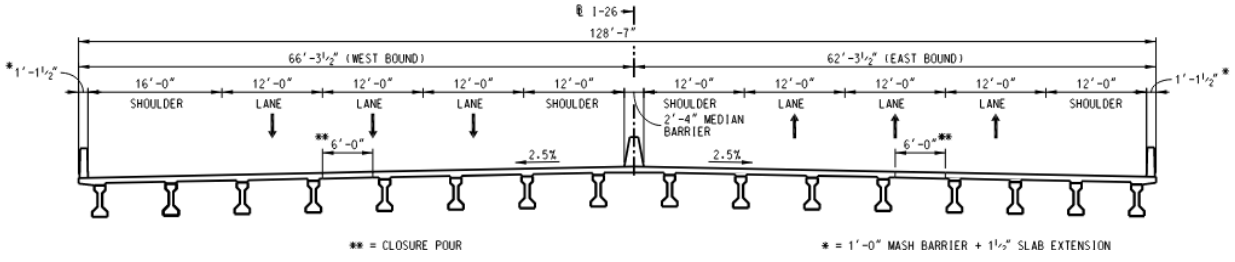
The bridge is in relatively flat swampland (Four Hole Swamp) with a stream meandering through it. The stream does not have well-defined banks and is relatively shallow. Spanning the entire channel was deemed not favorable due to the span length that would be required.

It is expected that limited tree clearing within the footprint of the new bridge will be required for access and construction. The removal of trees will be conducted in compliance with tree clearing moratoriums for NLEB. It should also be noted that no evidence of bat species roosting was detected under the existing bridge structures.

In addition to adding a travel lane for each bridge, the shoulders will also be expanded to meet present design standards. To do this, while keeping traffic moving on the existing bridges, the new bridge will have to be constructed in stages. It is proposed to construct the first stage of the bridge in the median area while the existing bridges remain in service. Once stage 1 is constructed, traffic will be diverted on this new bridge from both travel ways by means of crossovers. Other design and construction specifics, such as the size and number of support shafts, time estimates of in-water work, staging areas, and construction access have yet to be determined.

After the bridge in the median is constructed and opened to traffic, the existing bridges will be demolished and extensions will be made to the new bridge on either side to attain the ultimate cross-section as shown in **Figure 4**. A figure of the Four Hole Swamp bridge RPA is in **Appendix A**.

Figure 4. I-26 Bridge over Four Hole Swamp anticipated configuration



4.1.3 I-26 Bridge over CSX Railroad

The dual I-26 bridges over CSX Railroad are approximately 1,000 feet east of the SC 453 interchange with I-26 near MM 177. They were designed as twin parallel bridges in 1959 and later widened in 1984. The distance between the baseline of the two bridges is 60 feet and they are 153 feet long with 3 spans of 51 feet each.

The removal of several trees will be conducted in compliance with tree clearing moratoriums for NLEB. It should also be noted that no evidence of bat species roosting was detected under the existing bridge structures. No pipes or culverts, 36 inches or larger, are scheduled for replacement at this location.

The project entails providing one additional lane of traffic in each direction on I-26. The shoulders will also be expanded to meet present code requirements. To do this, while keeping traffic moving on the existing bridges, the new bridge will have to be constructed in stages. It is proposed to construct the first stage of the bridge to the outside while the existing bridges remain in service. Constructing stage 1 to the outside will also allow for access to the SC 453 interchange ramps. Once stage 1 is constructed, the existing bridges will be demolished and extensions will be made to the new bridge on either side in stage 2 to attain the ultimate cross-section.

Because the CSX railroad crossing is so close to the SC 453 interchange, the proximity to the new interchange ramps will affect the proposed bridge layout and staging concepts. Close coordination with the interchange and railroad bridge designs will be necessary to ensure the interchange will remain open throughout construction. Other design and construction specifics, such as the size and number of support shafts, time estimates of work, staging areas, and construction access have yet to be determined. A figure for the CSX Railroad bridge RPA is included in **Appendix A**.

4.1.4 Overpass Bridge Replacements

To accommodate the additional lanes on I-26, each of the two-lane overpass bridges within the project limits will have to be demolished and rebuilt to current design standards (this includes adjusting the alignment of connecting side roads). The alternatives associated with the overpass bridges included replacement along existing alignment (on) or adjacent to the existing alignment (off). Due to the relatively low volume of traffic and feasible detours the decision was made to construct the First Bend Road and Second Bend Road overpasses on alignment with detours. The other three overpasses (Seven Mile Road, Taylor Pond Road, and Beidler Forest Road) would be constructed off alignment without the need for detours. The alignments were designed such that they minimized impacts to the natural and human environment, complied with design requirements, and connected with existing side and

frontage roads. **Table 1** provides a summary of the alignment location, detour, and bridge dimensions for the five overpass bridges. A figure for each of the overpass bridge RPAs and detours are in **Appendix A**.

Due to alignment shifts and improved connection to existing frontage and side roads some level of tree clearing will be required at each location. The removal of trees will be conducted in compliance with tree clearing moratoriums for NLEB. It should also be noted that no evidence of bat species roosting was detected under any of the existing bridge structures.

Design and construction specifics, such as the size and number of support shafts, time estimates of work, staging areas, and construction access have yet to be determined.

Table 2. Overpass bridge summary

Overpass road	Proposed new location alignment	Detour (length of days)	Total detour distance	Proposed bridge dimension	
				Length	Width
Seven Mile Road	Off, replacement to the northwest	No	n/a	223’	36’ 3”
First Bend Road	On existing	Yes (365)[a]	9 miles[b]	224’	36’ 3”
Second Bend Road	On existing	Yes (365)[a]	9 miles[b]	238’	36’ 3”
Taylor Pond Road	Off, replacement to the west	No	n/a	232’	36’ 3”
Beidler Forest Road	Off, replacement to the west	No	n/a	225’ 6”	36’ 3”

a: Number of days is approximate, and detours will not occur at the same time.
b: Distance represents maximum distance using state-maintained roads. Local traffic may use alternate county-maintained roads.

4.1.4.1 Seven Mile Road Overpass and Tunnel Road closure

The Seven Mile Road overpass is surrounded by forested wetlands and uplands, planted pine, residential homes, maintained lawns and right-of-way (ROW), and existing road and utility infrastructure. Wetlands were identified approximately 200 feet to the north and south of the bridge on the eastern side of Seven Mile Road. The site is a grade separation; there are no bridge hydraulic constraints to consider. One pipe, 36 inches or larger, is scheduled for replacement near this overpass. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

Due to the lack of available detour routes, and nearby residences, an off-alignment replacement is proposed. Replacement to the northwest of the existing bridge was identified as the RPA due to the existing roadway geometry. Construction of the new bridge will occur while traffic is maintained on the existing bridge. Once completed, the old bridge will be demolished.

The Tunnel Road access culvert will be permanently closed where it crosses under I-26 due to its size restrictions and low average daily traffic volume (350 vehicles). Local traffic will be able to use the comparable Seven Mile Road instead.

4.1.4.2 First Bend Road Overpass

The First Bend Road overpass is surrounded by forested upland and wetlands, ponds, agricultural fields, residential lots, and existing utility and transportation infrastructure. Wetlands were identified approximately 500 feet south of the bridge on the western side of First Bend Road, and at the end of the PSA between Greenhill Road and the edge of the PSA at the start of the tree line. In addition, a large pond was identified along the east side of First Bend Road and Greenhill Road. The site is a grade separation; there are no bridge hydraulic constraints to consider. There is one pipe, 36 inches or larger, scheduled for replacement near this overpass. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

Due to the relatively low average daily traffic volume (384 vehicles) and a feasible detour route, the new bridge is proposed to be constructed on essentially the same alignment by closing the existing bridge and detouring traffic during construction. The detour route was revised to utilize state-maintained roads (see **Appendix A**). The new detour is a maximum of 9 miles, and it is anticipated that the detour would last approximately 12 months. The bridge closure and detour at this location will not occur during the same time as the Second Bend Road overpass closure and detour.

4.1.4.3 Second Bend Road Overpass

The Second Bend Road overpass is surrounded by forested upland, agricultural fields, residential lots, and existing utility and transportation infrastructure. No wetlands or other waters of the United States (WOUS) were identified within the immediate vicinity of the crossing. The site is a grade separation; there are no bridge hydraulic constraints to consider. There are no pipes or culverts, 36 inches or larger, scheduled for replacement at this location.

Due to the relatively low average daily traffic volume (680 vehicles) and a feasible detour route, the new bridge is proposed to be constructed on essentially the same alignment by closing the existing bridge and detouring traffic during construction. The detour route was revised to utilize state-maintained roads (see **Appendix A**). The new detour is a maximum of 9 miles, and it is anticipated that the detour would last approximately 12 months. The bridge closure and detour at this location will not occur during the same time as the First Bend Road overpass closure and detour.

4.1.4.4 Taylor Pond Road Overpass

The Taylor Pond Road overpass is surrounded by forested upland and wetlands, ponds, agricultural fields, residential lots, and existing utility and transportation infrastructure. A wetland was identified southwest of Taylor Pond Road's intersection with Harrison Road and Honeysuckle Road. This wetland was forested on the western side of Taylor Pond Road, and predominantly emergent to the east. An additional wetland was observed northwest of Taylor Pond Road's intersection with Two Churches Road. Another wetland was identified and associated with a stream approximately 450 feet east of the intersection of Taylor Pond Road with Two Churches Road and Sweatman Road and was densely forested. The site is a grade separation; there are no bridge hydraulic constraints to consider. There are two pipes, 36 inches or larger, scheduled for replacement near this overpass. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

Due to the lack of available detour routes, and nearby residences, an off-alignment replacement is proposed. Replacement to the west of the existing bridge was identified as the RPA due to the existing roadway geometry. Construction of the new bridge will occur while traffic is maintained on the existing bridge. Once completed, the old bridge will be demolished.

4.1.4.5 Beidler Forest Road Overpass

The Beidler Forest Road overpass is surrounded by forested uplands and wetlands, agricultural fields and pastures, residential lots, and utility and transportation infrastructure. Multiple wetlands were identified during the field review, including 1,000 feet south of the bridge, on each side of Beidler Forest Road, and northwest of the bridge adjacent to Sweatman Road. The site is a grade separation; there are no bridge hydraulic constraints to consider. There are no pipes or culverts, 36 inches or larger, scheduled for replacement at this location.

Due to the lack of available detour routes, and nearby residences, an off-alignment bridge replacement is proposed. Replacement to the west of the existing bridge was identified as the RPA to avoid utility impacts at this site. Construction of the new bridge will occur while traffic is maintained on the existing bridge. Once completed, the old bridge will be demolished.

4.1.5 I-26 Interchanges

To accommodate the additional lanes on I-26, each of the two interstate interchanges will be rebuilt to current design standards. The alternatives associated with the overpass bridges included replacement along existing alignment (on) or adjacent to the existing alignment

(off). The RPAs were selected because they minimized impacts to the natural and human environment, complied with design requirements, accommodated redesigned ramp configurations, and connected with existing side and frontage roads. The figure for each of the interstate interchange RPAs is in **Appendix A**.

Due to alignment shifts, redesigned ramps, and improved connection to existing frontage and side roads, some level of tree clearing will be required at each location. The removal of trees will be conducted in compliance with tree clearing moratoriums for NLEB. It should also be noted that no evidence of bat species roosting was detected under any of the existing bridge structures.

Design and construction specifics, such as the size and number of support shafts, time estimates of work, staging areas, and construction access have yet to be determined.

4.1.5.1 I-26 at US 15 Interchange

The I-26 at US 15 interstate interchange is surrounded by forested uplands and several wetlands totaling approximately 13.5 acres, streams totaling approximately 2,230 linear feet, agricultural fields, a gas station, and utility and transportation infrastructure. The site is a grade separation; there are no bridge hydraulic constraints to consider. There are 4 pipes and 2 culverts, 36 inches or larger, scheduled for replacement at this interchange. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

The RPA at I-26 and US 15 modifies the existing full cloverleaf and directional ramp interchange to an improved directional ramp interchange with an enlarged loop ramp for the I-26 westbound to US 15 southbound (other loop ramps will be removed). Construction of the new multi-lane bridge and associated ramps will occur while traffic is maintained on existing structures. Once completed, the old bridge and previous ramps will be demolished and removed. A figure of the I-26 at US 15 interchange RPA is in **Appendix A**.

4.1.5.2 I-26 at SC 453 Interchange

The I-26 at SC 453 interstate interchange is surrounded by forested uplands and several wetlands totaling approximately 8 acres, approximately 120 linear feet of stream, and limited residential and commercial development. The site is a grade separation; there are no bridge hydraulic constraints to consider. There are two pipes, 36 inches or larger, scheduled for replacement at this interchange. The structural survey assessment report was approved by USFWS on October 6, 2025. Correspondence is included in **Appendix B**.

The RPA at I-26 and SC 453 modifies the existing directional ramp interchange to an improved directional ramp interchange with an enlarged loop ramp for the I-26 westbound

to SC 453 southbound. Construction of the new multi-lane bridge and associated ramps will occur while traffic is maintained on existing structures. Once completed, the old bridge and previous ramps will be demolished and removed. A figure of the I-26 at SC 453 interchange RPA is in **Appendix A**.

5 Project Action Area

As indicated in 50 CFR § 402.02, an Action Area is a distinct study area that encompasses all areas that may be affected directly or indirectly by the Proposed Action, not just the immediate area involved in the action. As part of this BA, an Action Area was created to assess potential impacts the NLEB. The primary factor in determining the Action Area for the Proposed Action is the potential displacement of bats due to the proposed clearing of suitable roosting habitat.

USFWS determined based on available radio-tracking studies of NLEB and TCB, that these species typically forage, roost, and travel within 1.5 miles of roost trees (USFWS 2025d). The displacement of bats would have the farthest extent of potential impacts. Therefore, the Action Area was created based on a 1.5-mile buffer of the PSA to include all areas that bats would typically move to should they be displaced from tree clearing within the PSA.

Additional factors that were considered when creating the Action Area include impacts associated with sedimentation/runoff, wetland fill, changes to base flood elevation, construction noise, and temporary lighting. It is anticipated that no impacts from sedimentation, wetland fill, or temporary lighting would leave the PSA, and that no impacts would occur from changes to base flood elevation or construction noise.

The Action Area consists of 44,125.30 acres in the area surrounding the PSA. This includes portions of Audubon's Beidler Forest, and other lands owned by the National Audubon Society, as well as lands owned by Norfolk Southern Corporation. Like the PSA, the Action Area consists of undeveloped forested areas, wetlands, existing transportation/utility infrastructure and ROW, agricultural land, and commercial and residential development. A review of the latest available aerial imagery was conducted to determine potential NLEB habitat located within the Action Area.

6 Effects Analysis

The Proposed Action includes activities that have the potential to impact species within the PSA and Action Area. These actions are minimized and avoided to the greatest extent practical, to avoid adverse effects on protected species. The following sections outline the

potential of the Proposed Action to affect federally protected and proposed protected species.

6.1 Federally Endangered

6.1.1 Northern long-eared bat (Myotis septentrionalis)

As described in the *2024 USFWS Range-wide IBAT (Indiana Bat) & NLEB Survey Guidelines*, during the summer NLEBs suitable roosting and foraging habitat for the NLEB is a wide variety of wooded habitats and potentially nearby non-forested habitats including emergent wetlands, agricultural fields, and pastures. Wooded corridors like fencerows and riparian forests with potential roost trees are also considered potential habitat. NLEBs use varying densities of tree and canopy cover and prefer intact tracts of forest with small travel corridors, and sparse to medium vegetative understory. The travel corridors allow free travel between roosting and foraging habitat and water resources. Individual trees within 1,000 feet of forested areas can be considered suitable habitat if they present characteristics of roost trees. Roost trees are defined as live or dead trees at least 3 inches in diameter at breast height (dbh) with exfoliating bark, cracks, crevices, or cavities. In the winter these bats hibernate in humid caves or mines with a constant temperature. It has been determined that near the South Carolina coast, the NLEB can be active year-round. NLEBs in Dorchester and Berkeley Counties fall within the active year-round population. Being active year-round, these bats typically use summer habitat throughout the year. NLEBs also have been known to use man-made structures as roosting habitat. Suitable man-made structures can include buildings, bridges, culverts, and bat houses. Suitable culverts are listed as at least 23 feet in length with a height/diameter of at least 4.5 feet (USFWS 2024).

A survey of suitable bridges, pipes, and culvert structures was conducted in January 2025. A review of the PSA identified 11 bridges, 2 “access” culverts (referred to as bridges 3 and 4 in the survey report), and 10 box culverts that met diameter and length requirements to be suitable habitat for NLEB. During the survey two TCBs were identified in separate 6-foot x 6-foot concrete box culverts; however, no other structures had signs of use, and no NLEBs were identified during the structure surveys. The findings of these surveys were recorded on the SCDOT Study Plan Forms and were submitted to IPaC to complete the *Range-wide Northern Long-eared Bat and Tricolored Bat Determination Key* (Dkey), and to USFWS. The Technical Assistance letter that was generated from completing the Dkey determined that the project “May Affect” the NLEB. While no NLEBs were visually observed in the field, an acoustic survey was conducted in May through July 2025, with a combined survey effort of 121 detector nights across 56 acoustic sites. This acoustic survey detected the NLEB at 18 acoustic sites distributed throughout the PSA. Both the structural survey report and acoustic survey report were approved by USFWS staff on October 6, 2025. The approval of these

reports is attached in **Appendix B**, and the reports are attached in **Appendix E**. As such, the Proposed Action has the potential to affect NLEB by impacting suitable foraging and roosting habitat, including impacts from tree clearing and culvert/bridge construction.

6.1.1.1 Direct Effects

Direct effects are the actions that directly/immediately impact a species or its habitat and can be beneficial or adverse. The following direct effects from the Proposed Action were identified for the NLEB.

Forested Lands

The clearing of forested lands within the Action Area would result in direct impact to NLEBs. The direct impact would stem from the removal of habitat that the NLEB requires for both foraging and roosting. This would cause the displacement of bats, forcing them to move to new roosting and foraging sites. There is also the potential of the clearing action to cause the accidental death of NLEBs should individuals be unable to escape trees being felled. Proposed clearing would take place at the beginning of the project schedule, opening the area for the start of construction. The tree clearing would be completed by industry standard heavy equipment including dozers and excavators. The felled trees would then be disposed of by a combination of on-site chipping, and hauling off the logs off-site. The clearing itself would be a one-time disturbance with cleared areas being maintained in an herbaceous to shrubby vegetative state after project completion. The Proposed Action is anticipated to clear approximately 195 acres within the Action Area.

Water Resources

The filling and conversion of water resources, including streams, wetlands, open waters, and floodplains would cause the direct removal of a source of fresh water and foraging habitat. Approximately 3,300 linear feet (LF) of streams would be directly impacted, along with approximately 29 acres of wetlands, approximately 0.10 acre of open waters, and approximately 79 acres of floodplains. Additionally, indirect impacts from temporary sedimentation could occur from stormwater runoff during construction. This impact would occur throughout the construction process but would not continue after project completion.

Corridors and Margins

Along with the proposed clearing of forested areas, and filling of water resources, the margins associated with these features would be impacted by the proposed project. The removal of corridors and margins would be a one-time impact during project construction. After project completion, the new corridors and margins that develop would be maintained through mowing at regular intervals.

Man-made Structures

The bridges, pipes, and culverts throughout the PSA are anticipated to be replaced with new structures able to accommodate higher volumes of traffic (bridges) and drainage (pipes and culverts). The replacement of these structures would result in the temporary loss of potential roosting during construction. However, the new structures would provide equal or greater potential roosting habitat for NLEBs.

6.1.1.2 Indirect Effects

Indirect effects are those effects that take place after the initial disturbance, and the action itself does not kill individuals.

Loss of Forested Habitat

The clearing of forested lands would not only directly impact the NLEB through the displacement of existing bats but would also remove habitat available for future use. The proposed project would maintain the cleared areas through regularly scheduled mowing, resulting in no additional habitat being created.

Lighting

Temporary construction lighting may be used during the project's construction. This lighting would be essential to night-time work that may be necessary for worker and traveler safety. The lighting would likely be used throughout the project construction but would end upon project completion. There is no proposed permanent lighting for the project. The temporary lighting could potentially impact the NLEB by disturbing their typical foraging behaviors (USFWS 2023).

Noise

The Proposed Action will have certain levels of noise produced due to construction equipment and activities. Increased noise levels could disrupt NLEB behavior by impacting sleep, foraging, or roosting patterns.

Due to the existing noise levels, and high traffic volume associated with I-26, it is anticipated that any noise associated with the proposed construction would not cause a significant increase from the existing noise levels within the PSA.

6.1.1.3 Reasonably Foreseeable Future Actions

Within and adjacent to the Action Area, ongoing and future development has already caused or may cause impacts to the NLEB. The initial construction of I-26 and its frontage roads and overpasses led to the fragmentation and loss of NLEB habitat. Industrial, commercial, residential, and agricultural development further removed habitat from properties within and adjacent to the Action Area. Additional corridor improvement projects have begun or are

in development to both the east and west ends of the proposed project limits. These projects are also anticipated to remove potential habitat for the NLEB along existing transportation routes. The proposed project is being developed to accommodate the predicted increase in traffic along I-26 over the next few years. The proposed project is not anticipated to add additional traffic or cause additional development in the surrounding area.

6.1.1.4 Avoidance, Minimization, and Mitigation

Minimizing Loss of Forested Land

While 195 acres of potential NLEB habitat would be cleared for the Proposed Action, measures would be put in place to limit the impact on the NLEB. Clearing would be limited to the greatest extent possible to complete the project. Direct effects to the NLEB would be minimized by following best management practices (BMPs) outlined by the *August 2024 IPaC Standing Analysis and Implementation Plan – Northern Long-Eared Bat and Tricolored Bat Assisted Determination Key* (USFWS 2024). This Dkey indicates that following clearing moratoriums between December 15 and February 15, as well as from April 1 through July 15 would reduce the risk of directly taking NLEBs.

Additionally, the impact of displacing the NLEBs would be minimized due to the presence of suitable habitat directly adjacent to the PSA within and outside of the Action Area. As referenced in Section 3.2, the majority of forested lands within the PSA are fragmented from roads, utility easements, and commercial, industrial, and residential lands. Outside of the PSA, within the Action Area, forested uplands and wetlands are larger in size and have greater connectivity than areas that may be cleared by the proposed project. Additionally, forested areas within the Action Area and adjacent to the Action Area would be farther from interstate traffic and noise, and would likely be higher quality than the existing habitat within the PSA. An estimate of available habitat within the Action Area was conducted to identify areas that bats may move to if displaced by the project. Estimates of available habitat outside of the PSA were taken at 0.25-mile, 1-mile, and 1.5-mile (Action Area) intervals. The desktop review using the latest available aerial imagery identified that there are approximately 4,242 acres of suitable habitat available within 0.25 miles of the PSA, approximately 17,004 acres available within 1 mile of the PSA, and approximately 25,754 acres available within 1.5 miles of the PSA/ Action Area (**Appendix A**). A portion of this available habitat, particularly around Four Hole Swamp, is protected land owned by the National Audubon Society. Audubon Society staff identified 6,556 acres of protected land owned within the Action Area. Further out, there are 11,772 acres within a 1.5-mile buffer of the Action Area that are owned and conserved by the Audubon Society which includes the Beidler Forest nature center and boardwalk (Musselman, Mark 2025). These lands are protected in perpetuity and would provide suitable safe habitat for the NLEB. A table created

by USFWS for the NLEB Species Status Assessment indicates that habitat loss is anticipated to have low impact to the NLEB, when compared with WNS and wind mortality (USFWS 2022).

Minimizing Impacts to Water Resources

The Proposed Action would avoid impacting water resources to the greatest extent practical, and BMPs for water quality would be incorporated (e.g. silt fence, rip rap, rock checks, etc.). Additionally, improved drainage infrastructure will allow for more efficient movement of water, and the reduction of buildup and sedimentation. Additional off-site water resources are available in areas that displaced NLEBs would likely move to due to the proposed clearing, including the conserved lands owned by the National Audubon Society. Conservation and protection of wetlands would occur through Section 404 wetland mitigation within the Four Hole Swamp Watershed.

Minimizing Structure Impacts

Additionally, the new structures that will be installed will allow for more man-made habitat than what is currently available due to larger structure sizes. Additionally, following the USFWS moratoriums for structure work between December 15 and February 15, as well as from April 1 through July 15 would remove the risk of directly taking NLEBs by the replacement of these structures.

Minimizing Temporary Lighting Impacts

To remove impacts from temporary lighting, any temporary lighting should be directed away from suitable habitat during the active season (USFWS 2023).

Mitigating NLEB Impacts

For unavoidable impacts to the NLEB, it is SCDOT's intent to use the South Carolina Bat Conservation Pooled Fund mitigation option, which is currently being finalized. In coordination with USFWS, the draft Year-Round Active Range Mitigation Multiplier Table was utilized to determine approximate mitigation acres that would be required to offset impacts to NLEB (**Table 3**). This table provided by USFWS is a draft version and is subject to change. Any changes to mitigation amount due to design or USFWS policy will be coordinated with USFW during the formal consultation process.

Table 3. South Carolina year-round active range Compensatory mitigation table

Species	Range	Forest-dwelling bat habitat type	Timing	Impact (acres)	Mitigation multiplier	Mitigation acres	Current rate/acre	Contribution amount
Northern long-eared bat	Year-round active	Suitable occupied	Early active season	195	1.5	292.5	Undefined	Undefined

By following USFWS clearing moratoriums, clearing would only take place during either the early active season, or the late active season. A worst-case scenario of early active season is assumed for calculating the mitigation acres needed for this project, and a multiplier of 1.5 was used for the table. Assuming impacts to 195 acres of suitable habitat, 292.4 mitigation acres is needed for the proposed project.

A comprehensive table of avoidance and minimization measures for the NLEB and the TCB is included in Appendix G of this document.

6.2 Federally Threatened

6.2.1 Red-cockaded woodpecker (Dryobates borealis)

A review of the SCDNR Heritage Trust Database indicated that there are no known occurrences of RCW within the PSA. Due to a lack of suitable foraging and nesting habitat within the PSA, and no proposed clearing or development of such areas, as well as no known occurrences, it is anticipated that no impacts will occur to the RCW.

6.2.2 Canby's dropwort (Oxypolis canbyi)

A review of the SCDNR Heritage Trust Database indicated that there are no known occurrences of Canby's dropwort within the PSA. Due to a lack of known occurrences of Canby's dropwort, and no individuals observed during field surveys during the survey window, it is anticipated that no impacts will occur to Canby's dropwort.

6.2.3 Pondberry (Lindera melissifolia)

A review of the SCDNR Heritage Trust Database indicated that there are no known occurrences of pondberry within the PSA. Due to a lack of known occurrences of pondberry, and no individuals observed during field surveys during the survey window, it is anticipated that no impacts will occur to pondberry.

6.3 Proposed Endangered

6.3.1 Tricolored bat (Perimyotis subflavus)

During the January 2025 structure surveys, two TCBs were observed in box culverts crossing I-26. The findings of these surveys were recorded on the SCDOT Study Plan Forms and were submitted to IPaC to complete the *Range-wide Northern Long-eared bat and Tricolored Bat Dkey*. The Technical Assistance letter that was generated from completing the Dkey determined that the project "May Affect" the TCB. As detailed in the acoustic survey, TCBs were identified throughout much of the PSA. As such, the proposed project has the potential to affect TCB by impacting suitable foraging and roosting habitat, including impacts from tree clearing and culvert/bridge construction. The project is anticipated to clear approximately 195 acres of potential TCB habitat.

Direct effects to the TCB would largely be avoided by following best BMPs outlined by the August 2024 IPaC *Standing Analysis and Implementation Plan – Northern Long-Eared Bat and Tricolored Bat Assisted Determination Key*. This Dkey indicates that following clearing and structure work moratoriums between December 15 and February 15, as well as from May 1 to July 15 would reduce the risk of directly taking TCBs. Conservation measures to remove impacts from permanent lighting include using downward-facing, full cut-off lens lights. Alternatively using the BUG system with ratings as close to zero as possible, with a priority of "uplight" of zero would remove permanent lighting impacts. To remove impacts from temporary lighting, any temporary lighting should be directed away from suitable habitat during the active season.

Indirect effects to the TCB would stem from a reduction of potential roosting and foraging habitat due to the clearing of suitable roost trees, and continued maintenance of new ROW areas.

7 Conclusions and Effect Determinations

7.1 Effect Determination for Listed Species

7.1.1 No Effect

7.1.1.1 Red-cockaded woodpecker (Dryobates borealis)

A review of the SCDNR Species Reviewer Report concludes that there are known occurrences of RCWs within a 1-mile buffer of the PSA, but none within the PSA. As documented, the PSA includes various forested upland communities; however, the mature pine forests required by the species are not present within the PSA. Due to limited proposed disturbance of unmaintained areas, the minimal habitat, the lack of known occurrences,

and no individuals observed over numerous site visits, the Proposed Action is anticipated to have "**No Effect**" on the RCW.

7.1.1.2 Canby's dropwort (Oxypolis canbyi)

A review of the SCDNR Species Reviewer Report concludes that there are no known occurrences of Canby's dropwort in the PSA or within a 1-mile buffer of the PSA. While the PSA does provide some areas of suitable habitat that supports Candy's dropwort, no individuals were observed within the PSA during the survey window across multiple site visits. Additionally, impacts will occur within existing maintained ROW to the greatest extent possible. Due to the limited suitable habitat for Canby's dropwort, no known nearby occurrences, and no individuals observed over numerous site visits, the Proposed Action is anticipated to have "**No Effect**" on Canby's dropwort.

7.1.1.3 Pondberry (Lindera melissifolia)

The SCDNR Species Reviewer Report concludes that there are no known occurrences of pondberry within 1 mile of the PSA. The PSA provides suitable habitat that could potentially support pondberry; however, no individuals were observed within the PSA during the site visits that occurred during the survey window across multiple site visits. Additionally, impacts will occur within existing maintained ROW to the greatest extent possible. Due to no known nearby occurrences, and no individuals observed over numerous site visits, the Proposed Action is anticipated to have "**No Effect**" on pondberry.

7.1.2 May Affect, Likely to Adversely Affect Determination for Listed Species

7.1.2.1 Northern long-eared bat (Myotis septentrionalis)

It was determined that the NLEB has suitable habitat and is present within the Action Area. Due to the amount of clearing included in the proposed project, there is a likelihood that the NLEB will be affected due to the loss of suitable roosting and foraging habitat. Additional impacts to water resources, replacement of bridges, culverts, and pipes, temporary lighting, and construction noise may affect the NLEB. Of these impacts, it is anticipated that the clearing of trees, and replacement of structures will be the most impactful, and would result in the displacement of NLEB to other available habitats. Moving the species farther away from the PSA would reduce the likelihood that the NLEB would be affected by other activities associated with the proposed project. Following the clearing and structure work moratoriums described would reduce the likelihood of harming NLEBs. The areas outside of the PSA within the Action Area have higher quality habitat that would provide a suitable location for NLEBs to move to. Portions of this available land (approximately 6,556 acres) are protected under conservation easements and owned by the National Audubon Society. **Table 4** below provides a summary of proposed effects and correlating minimization measures and effects determinations for each effect. Due to the known presence of the

NLEB, the potential impacts, the proposed minimization measures, and adjacent suitable habitat, it is determined that the Proposed Action "**May affect, likely to adversely affect**" the NLEB.

Table 4. NLEB effects determination

Species	Effect category	Minimization measure	Environmental change	Species response	Effect determination
Northern long-eared bat	Tree clearing	Follow time of year restrictions and reducing clearing limits to the greatest extent practical	Loss of current and future roosting and foraging habitat	Move to available habitat	May affect, likely to adversely affect
	Water resource fill	Use of silt fence, rip rap armor, rock checks, etc., limiting fill limits to the greatest extent practical, and Section 404 wetland mitigation in Four Hole Swamp Watershed	Loss/impairment of fresh water source	Move to available resource	May affect, not likely to adversely affect
	Structure replacement	Follow time of year restrictions	Temporary loss of existing roost habitat	Temporarily move to other available habitat	May affect, not likely to adversely affect
	Temporary lighting	Ensure lighting is angled away from habitat	Artificial lighting present during foraging times	Potential behavioral changes	May affect, not likely to adversely affect
	Construction noise	n/a	No anticipated change	No anticipated change	May affect, not likely to adversely affect

7.2 Effect Determination for Species Proposed for Listing

7.2.1 Tricolored bat (Perimyotis subflavus)

On September 14, 2022, USFWS proposed to list the TCB as an endangered species under the ESA. The TCB was confirmed as being present within the PSA after being identified during structural and acoustic surveys. The TCB uses a variety of trees, and man-made structures as roosting habitat, which are present within the PSA. The proposed project will not jeopardize the continued existence of the TCB due to the adherence to clearing and structural work moratoriums of the NLEB which overlap with moratoriums for the TCB. During initial structure surveys, two TCBs were identified using culverts. No bridges were observed to contain bats or signs of bat usage. Prior to existing culvert demolition, structures would be surveyed for the presence of bats, and exclusionary barriers would be used as needed to reduce the risk of impacting the TCB. Due to the protections of the moratorium,

the Proposed Action will not significantly reduce the likelihood of the survival and recovery of the TCB as a whole. Should the TCB be formally listed prior to project completion, consultation with USFWS would be reinitiated and a formal determination would be made.

7.2.2 Southern hognose snake (Heterodon simus)

On August 29, 2025, USFWS proposed to list the Southern hognose snake as a threatened species under the ESA. The proposal and subsequent listing in the Federal Register initiated a 60-day comment period that closed October 28, 2025. Should the species be formally listed, a proposed 4(d) rule would be followed according to USFWS procedures. The Southern hognose snake is fossorial, spending most of its time underground. In particular, it uses burrows and habitat used by gopher tortoises (*Gopherus polyphemus*), such as scrub and longleaf pine savannas with an open understory and canopy (USFWS 2018). Since there is minimal habitat suitable for the Southern hognose snake within the PSA, the Proposed Action will not jeopardize the continued existence of the Southern hognose snake and will not significantly reduce the likelihood of the survival and recovery of the species as a whole. Should the Southern hognose snake be formally listed prior to project completion, consultation with USFWS would be reinitiated and a formal determination would be made.

7.2.3 Monarch butterfly (Danaus plexippus)

On December 12, 2024, USFWS proposed to list the monarch butterfly as a threatened species under the ESA. The proposed listing was in a 90-day comment period for input on the proposal that ended on March 12, 2025. A second comment period was opened from March 19 to May 19, 2025. Should the species become listed, a proposed 4(d) rule would be followed according to USFWS procedures. The larval stage of the species feeds on milkweed species that may be available in the non-forested uplands associated with transportation and utility ROW, as well as residential yards in and adjacent to the PSA (National Wildlife Federation 2025). Due to the limited disturbance to milkweed and flowering plants, it is assumed that the Proposed Action will not jeopardize the continued existence of the monarch butterfly and will not significantly reduce the likelihood of the survival and recovery of the species as a whole. Should the monarch butterfly be formally listed prior to project completion, consultation with USFWS would be reinitiated and a formal determination would be made.

8 References

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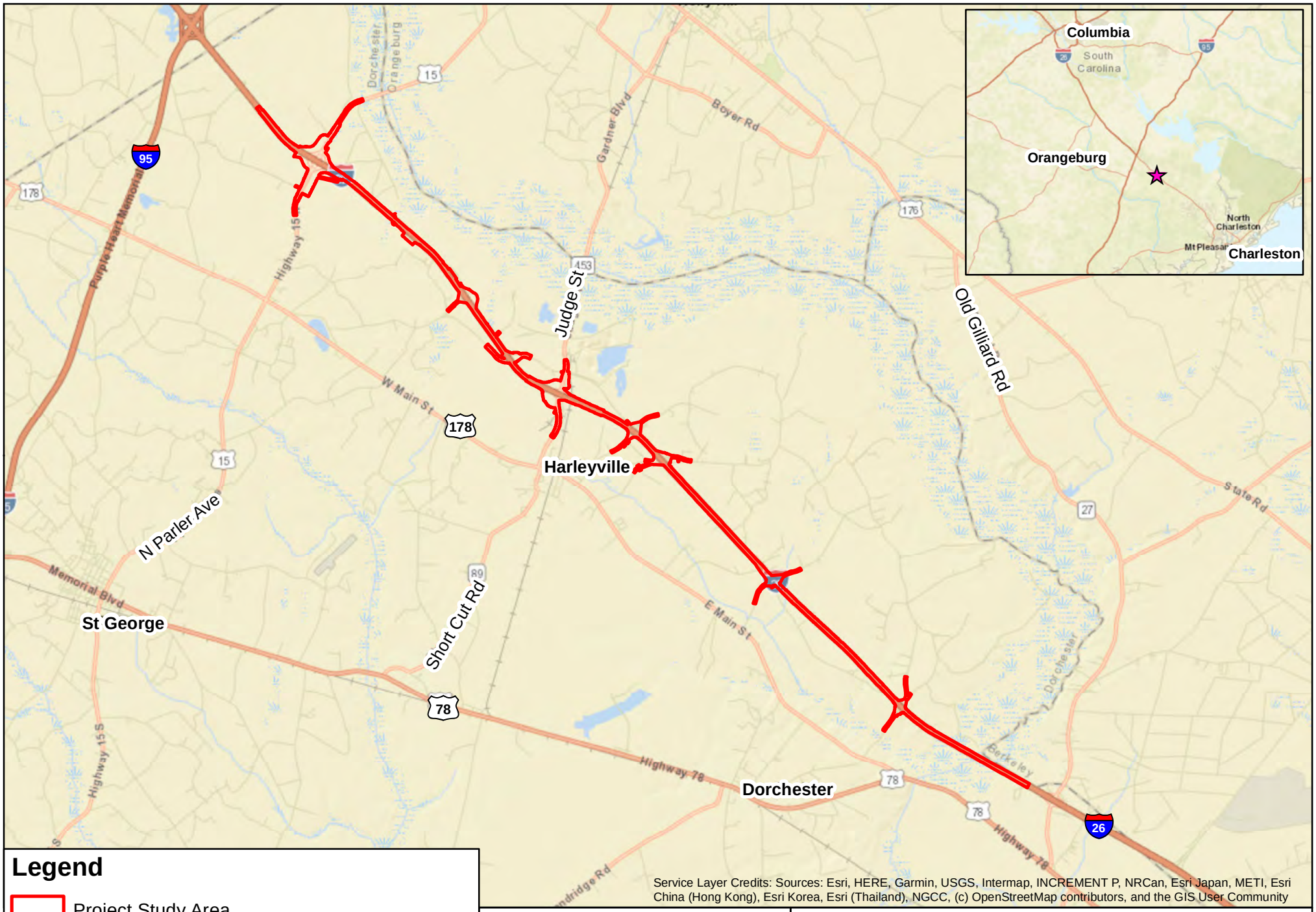
Appendix A

Project Figures



Legend

Project Study Area

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

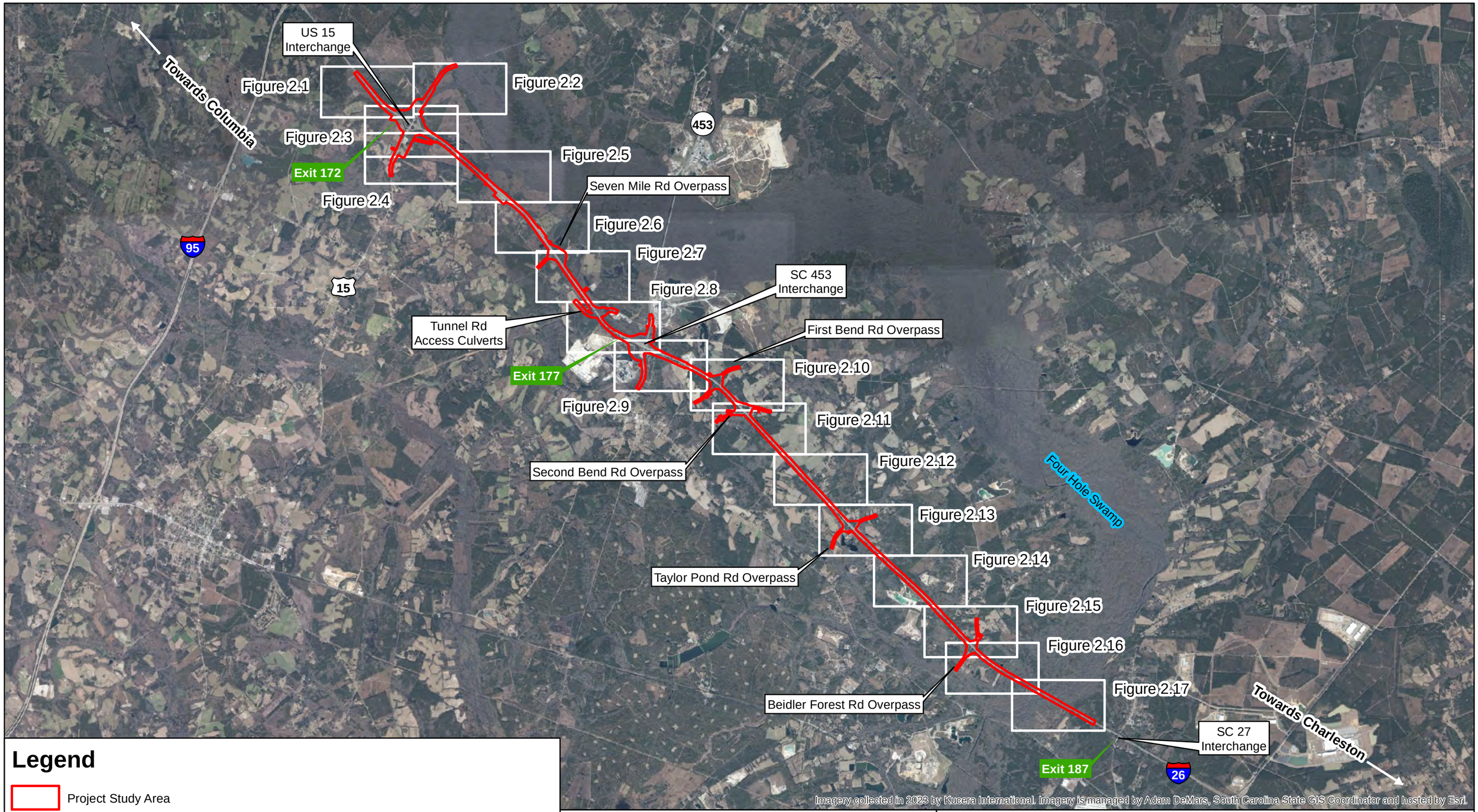
Prepared On: 10.27.2025

N

0 2 Miles

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 1.0: Project Vicinity Map



Legend

- Project Study Area
- Overview Figure Sheets

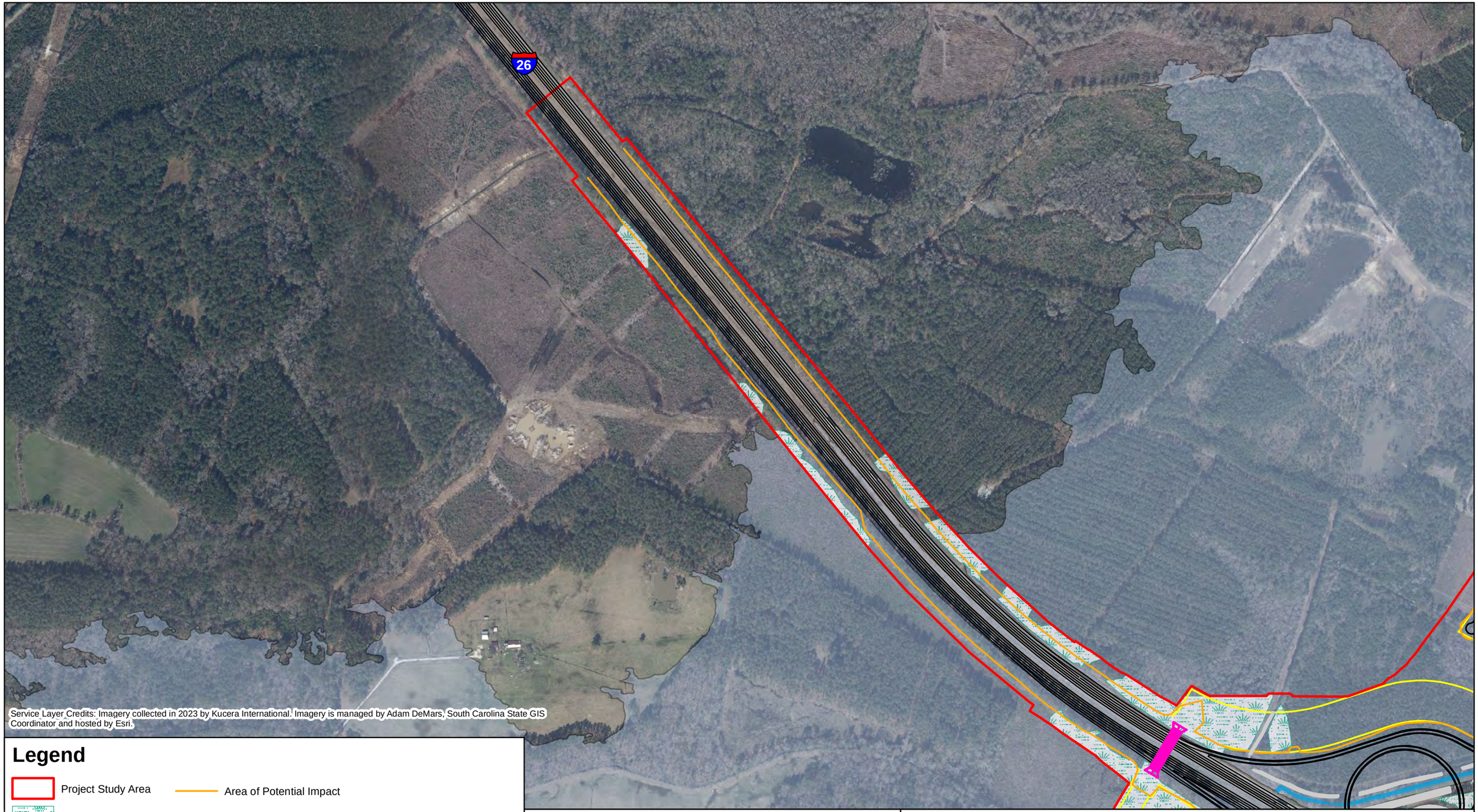
Prepared On: 10.27.2025

0 1.5 3 Miles

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.0: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.1: Project Overview Map

Legend

- Project Study Area
- Wetlands
- NWW Streams
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- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

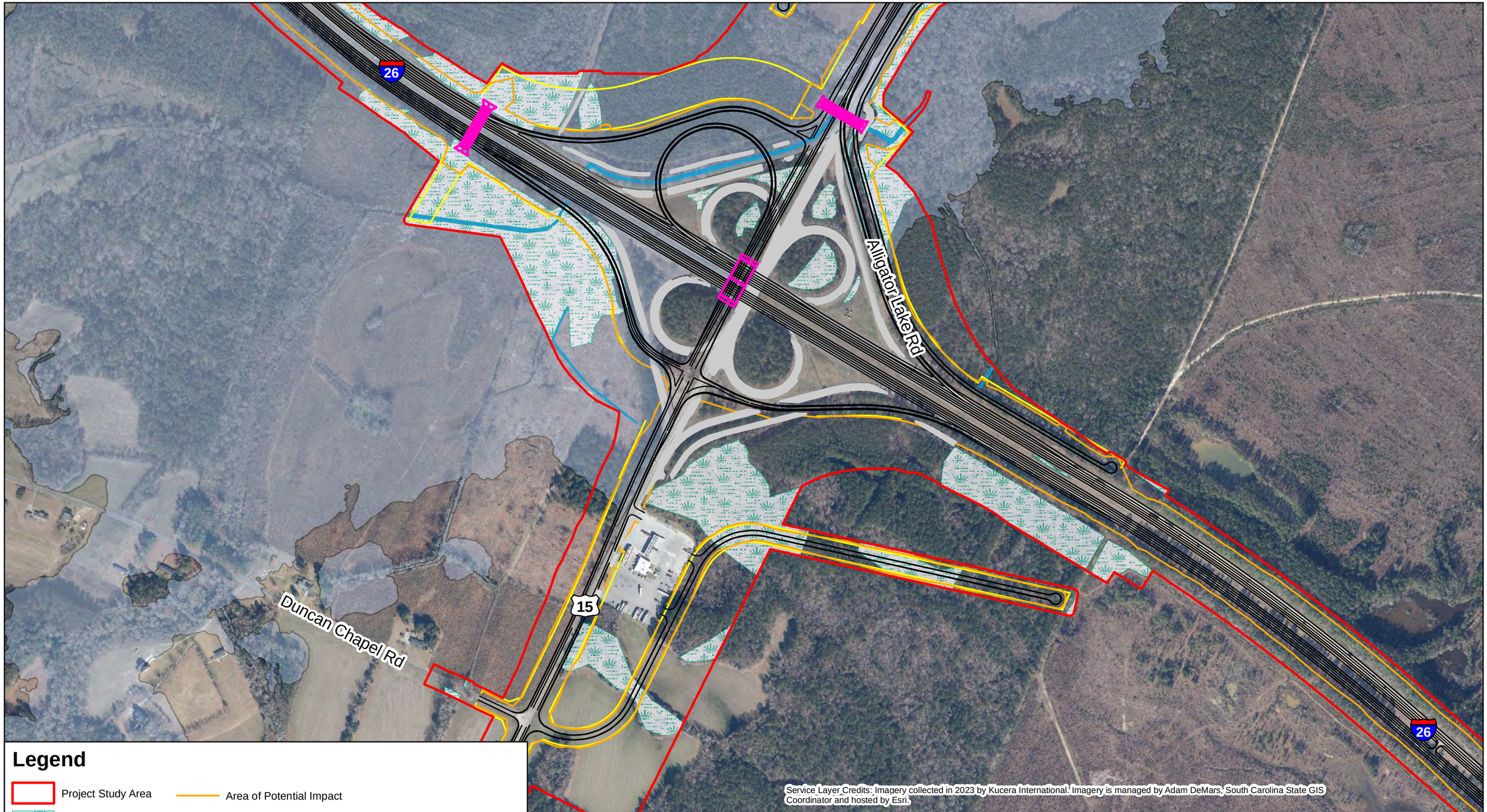
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.2: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

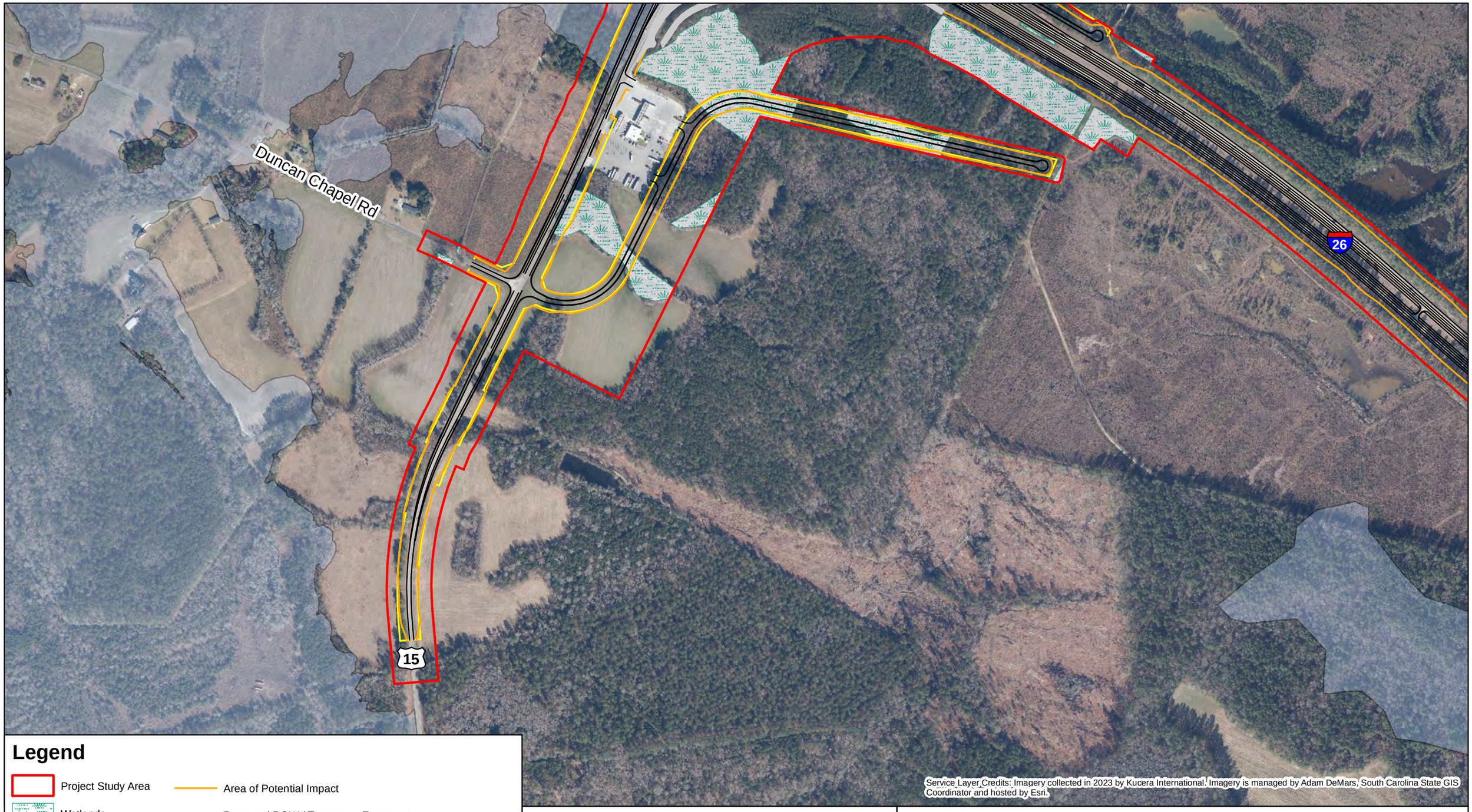
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.3: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.4: Project Overview Map

Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

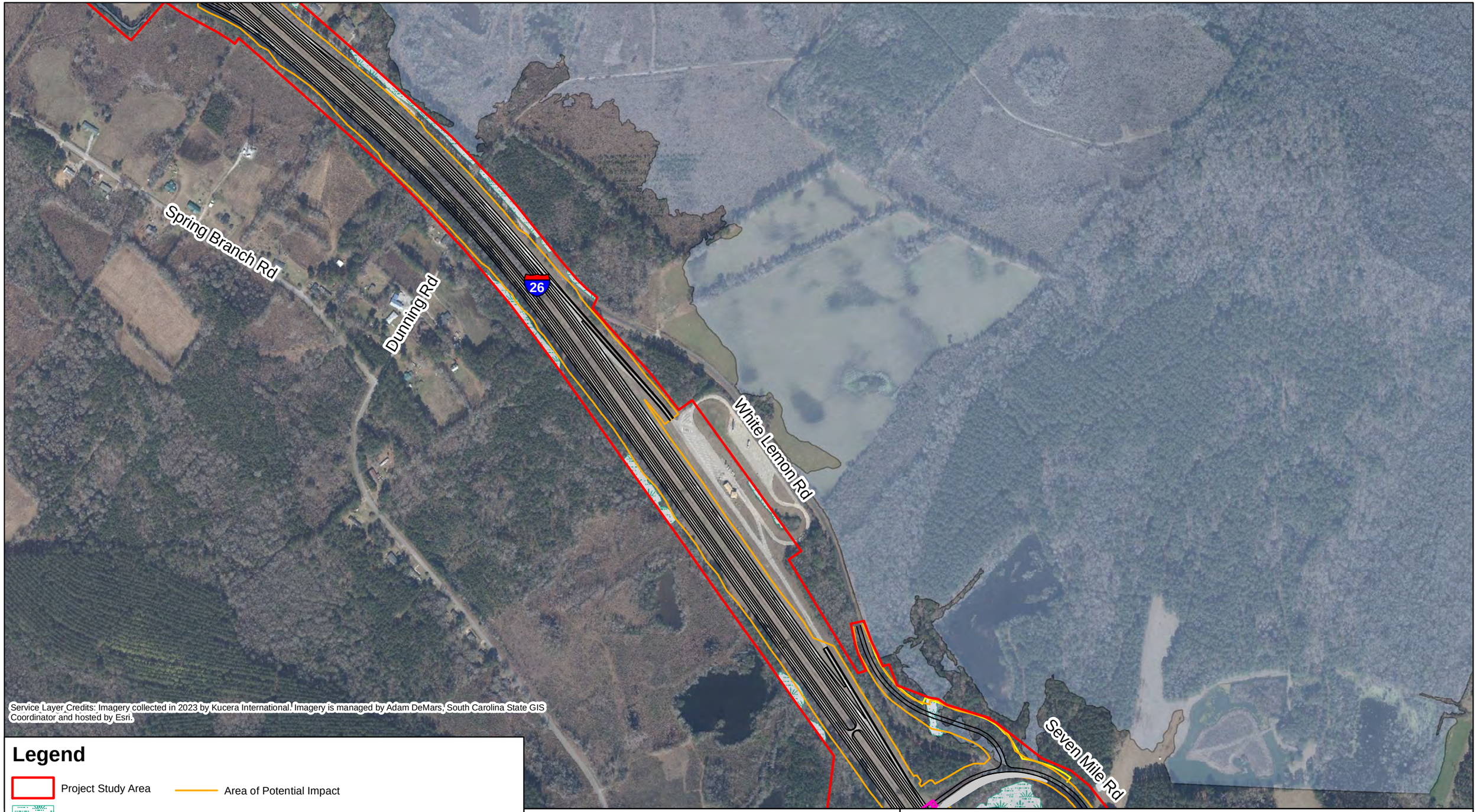
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.5: Project Overview Map



Legend

- Project Study Area
- Wetlands
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- Area of Potential Impact
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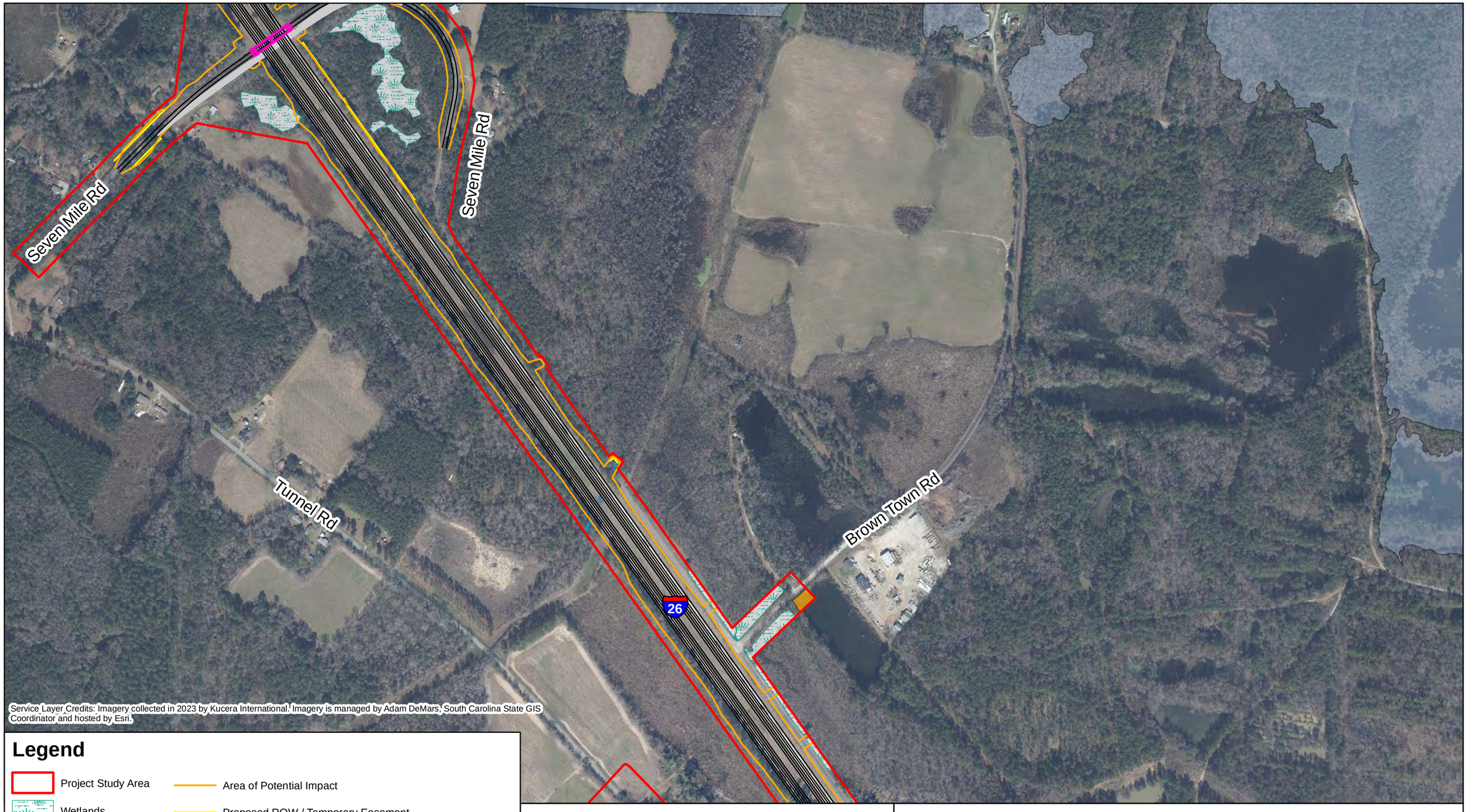
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.6: Project Overview Map



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Legend

- Project Study Area
- Wetlands
- NWW Streams
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- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

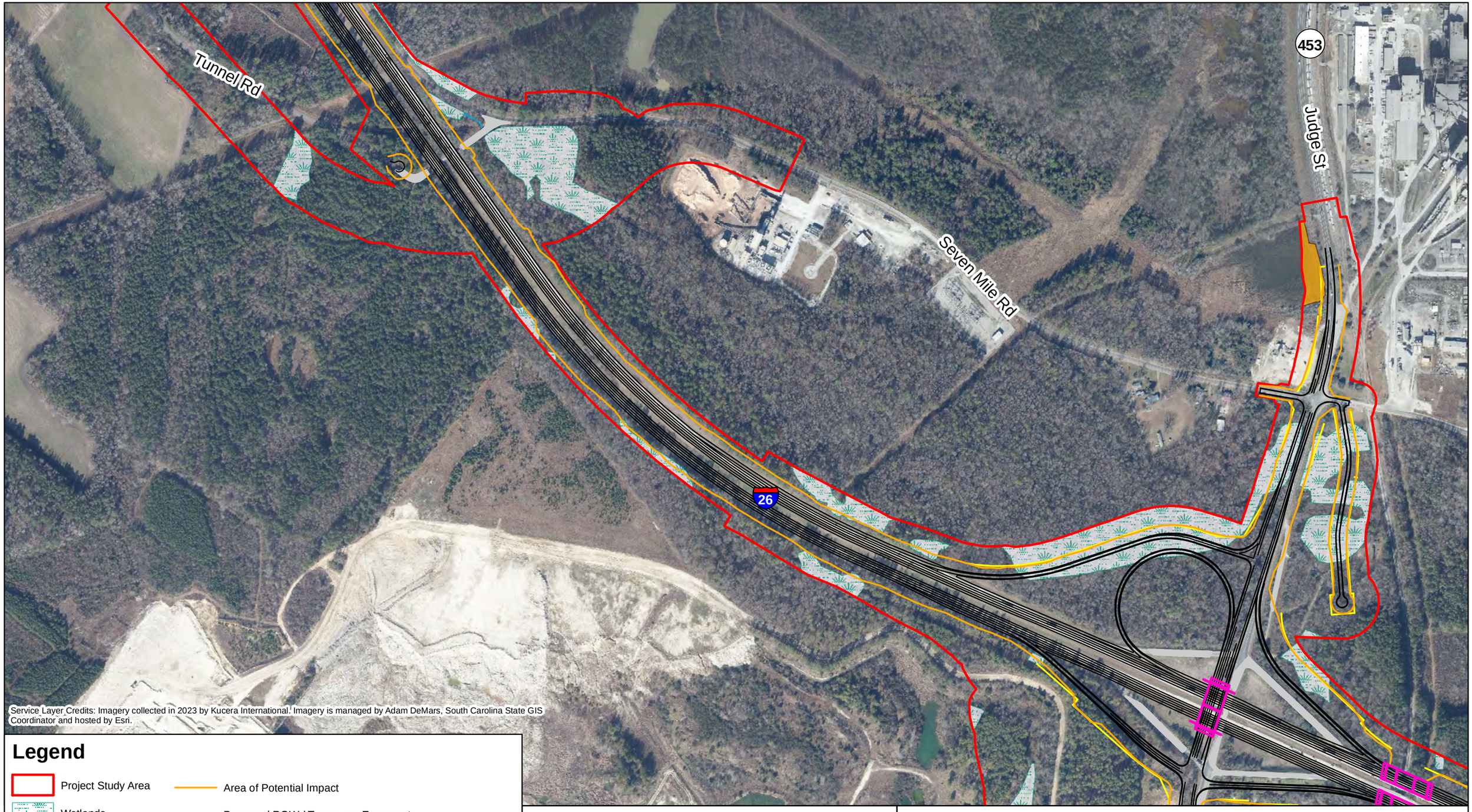
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.7: Project Overview Map



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Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

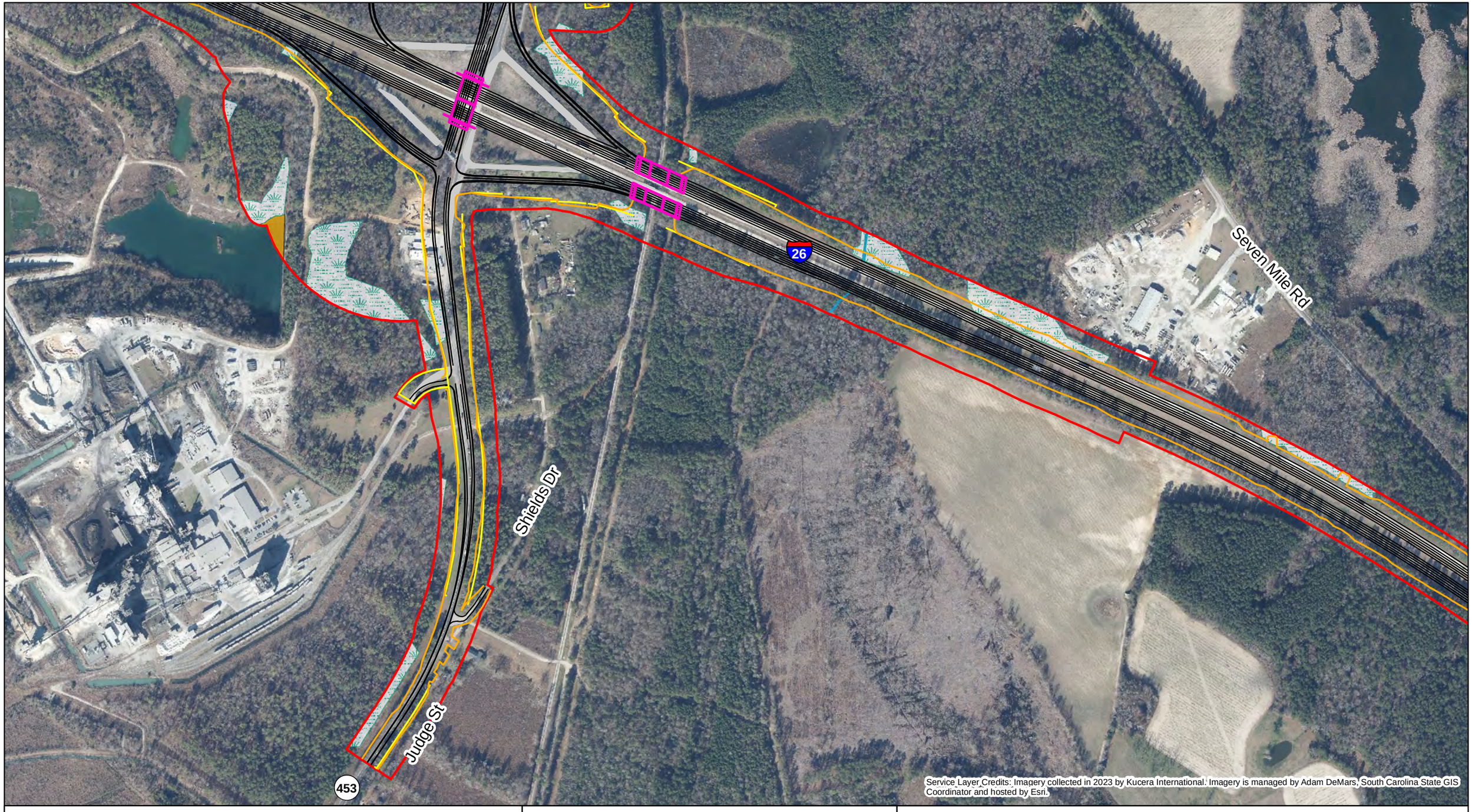
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.8: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
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0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.9: Project Overview Map

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First Bend Rd

Seven Mile Rd

Hickory Nut Dr

Greenhill Dr

26

Jacob Dr

White Oak Ln

Second Bend Rd

Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

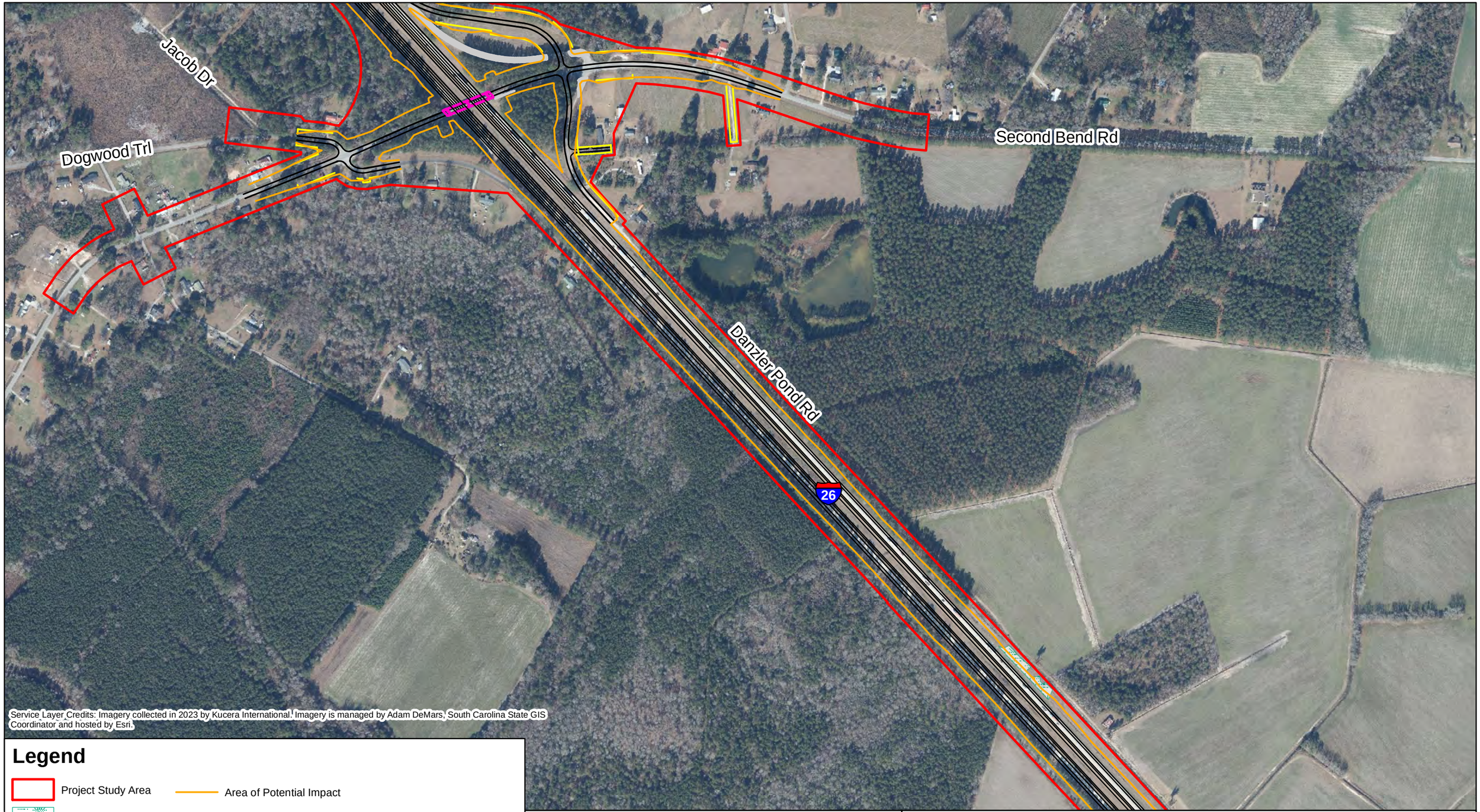
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.10: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.11: Project Overview Map

Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.12: Project Overview Map

Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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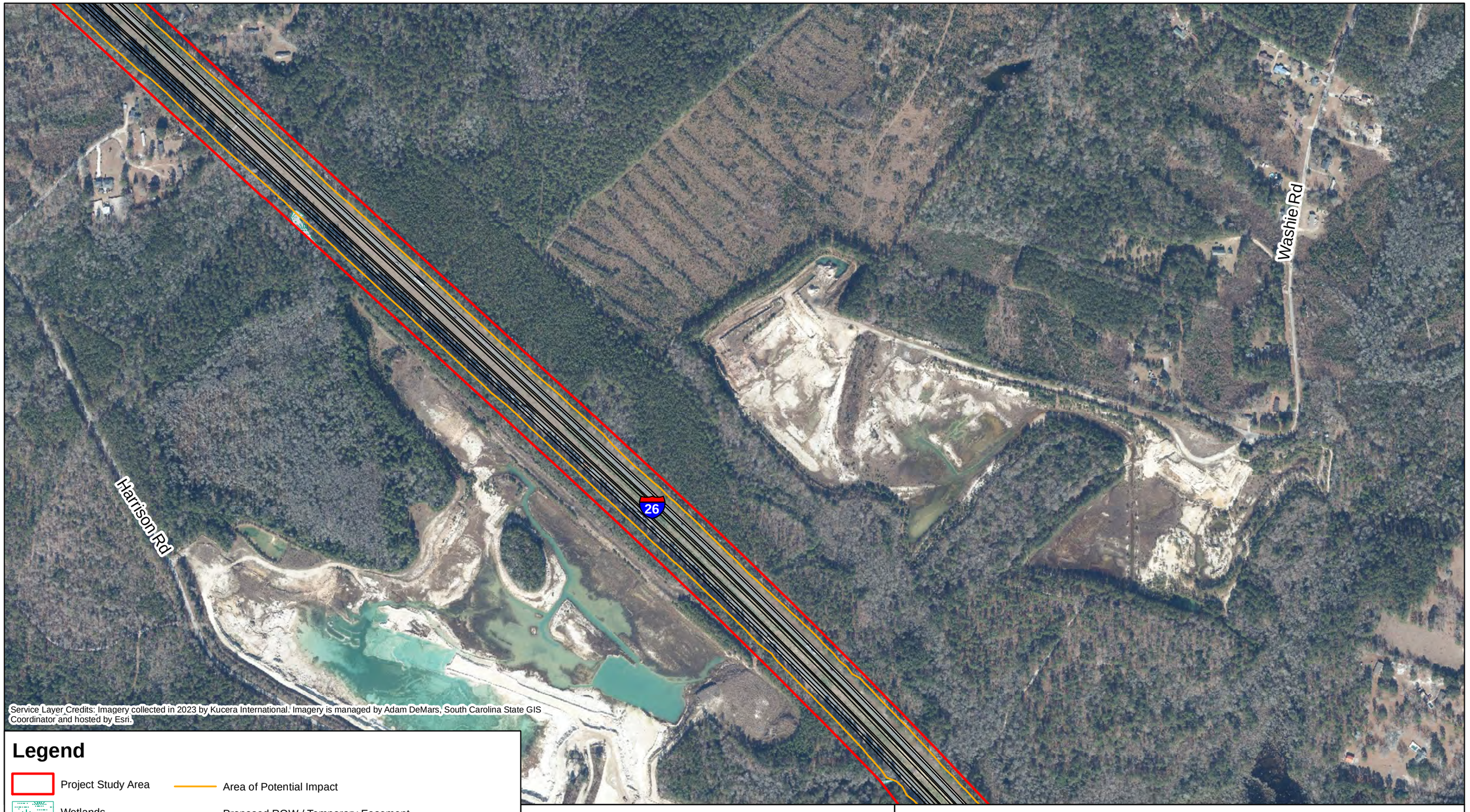
0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.13: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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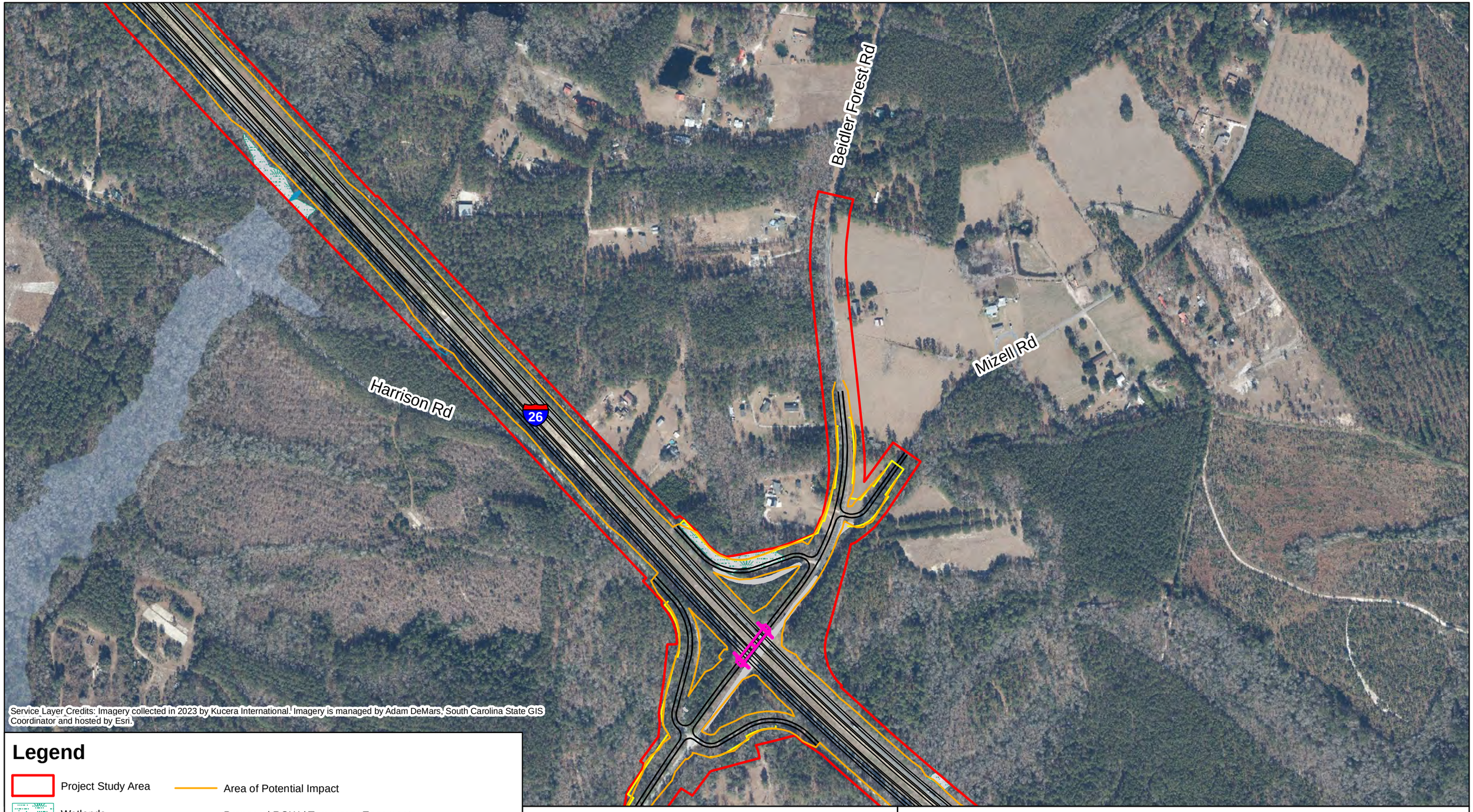
0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.14: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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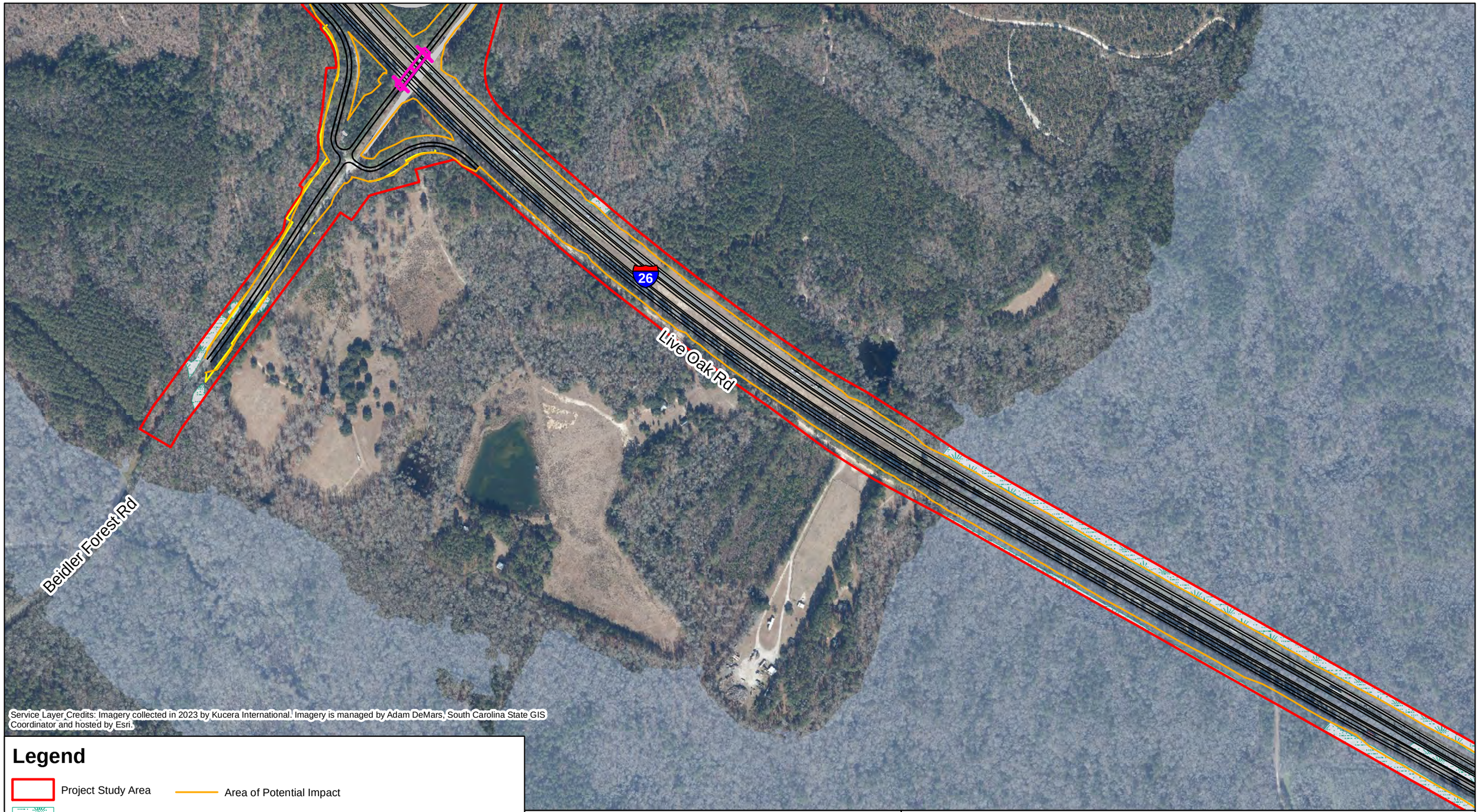
0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.15: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

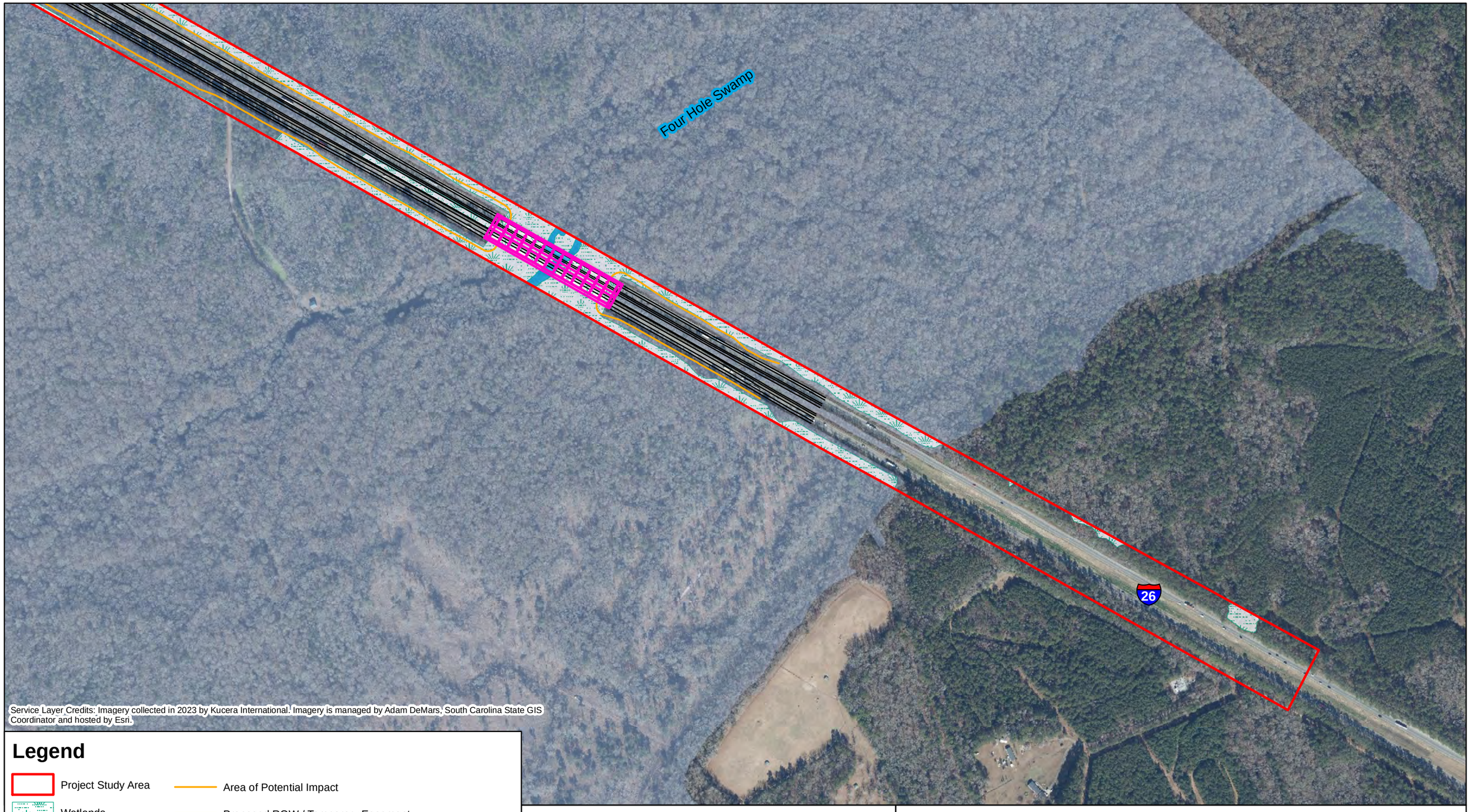
Prepared On: 10.27.2025

0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.16: Project Overview Map



Legend

- Project Study Area
- Wetlands
- NWW Streams
- NWW Open Waters
- Flood Zone AE
- Area of Potential Impact
- Proposed ROW / Temporary Easement
- Proposed Bridge
- Proposed New Pavement
- Proposed Asphalt Removal

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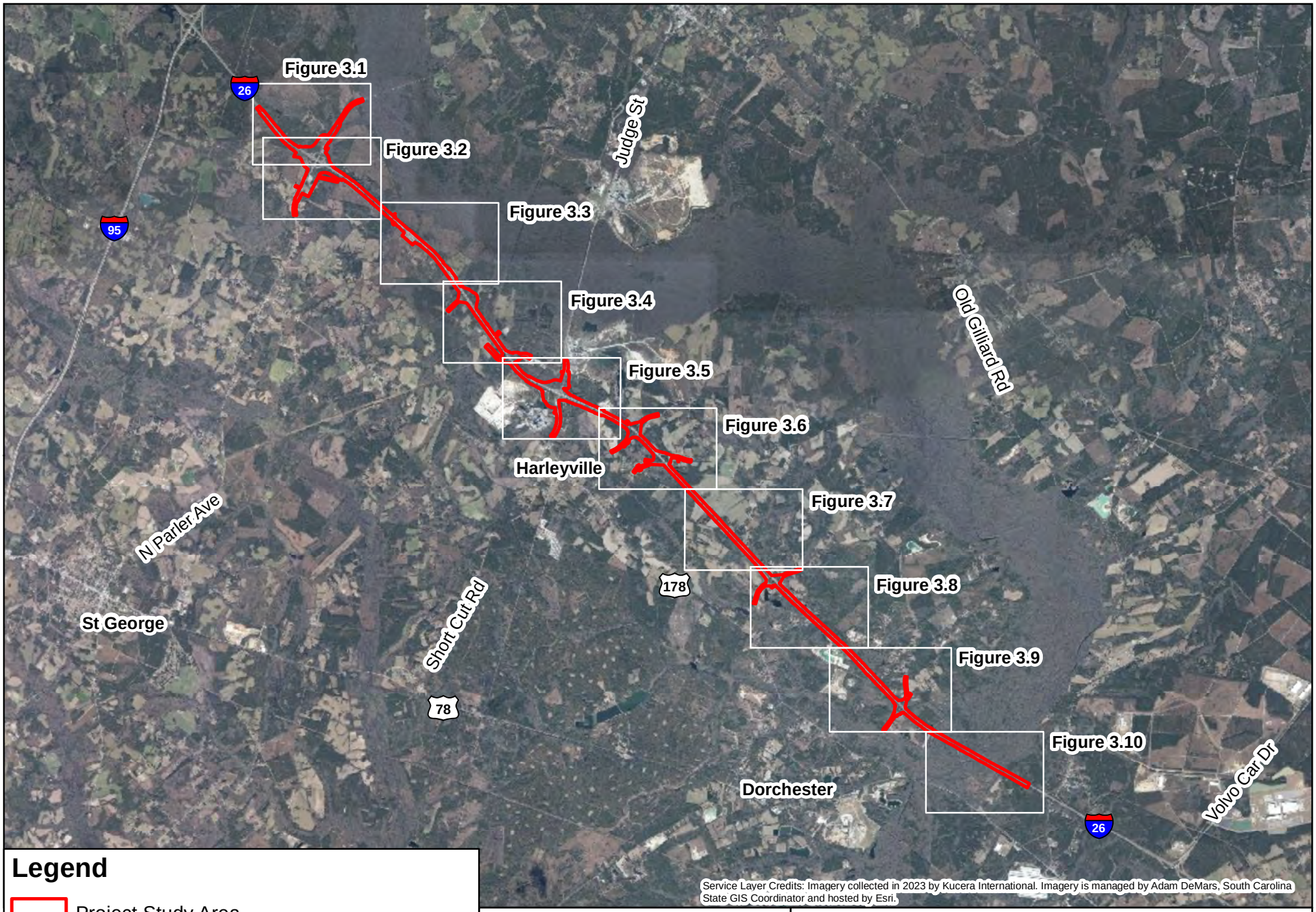
0 250 500 750 1,000 Feet

N W E S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 2.17: Project Overview Map



Legend

- Project Study Area
- Sheets

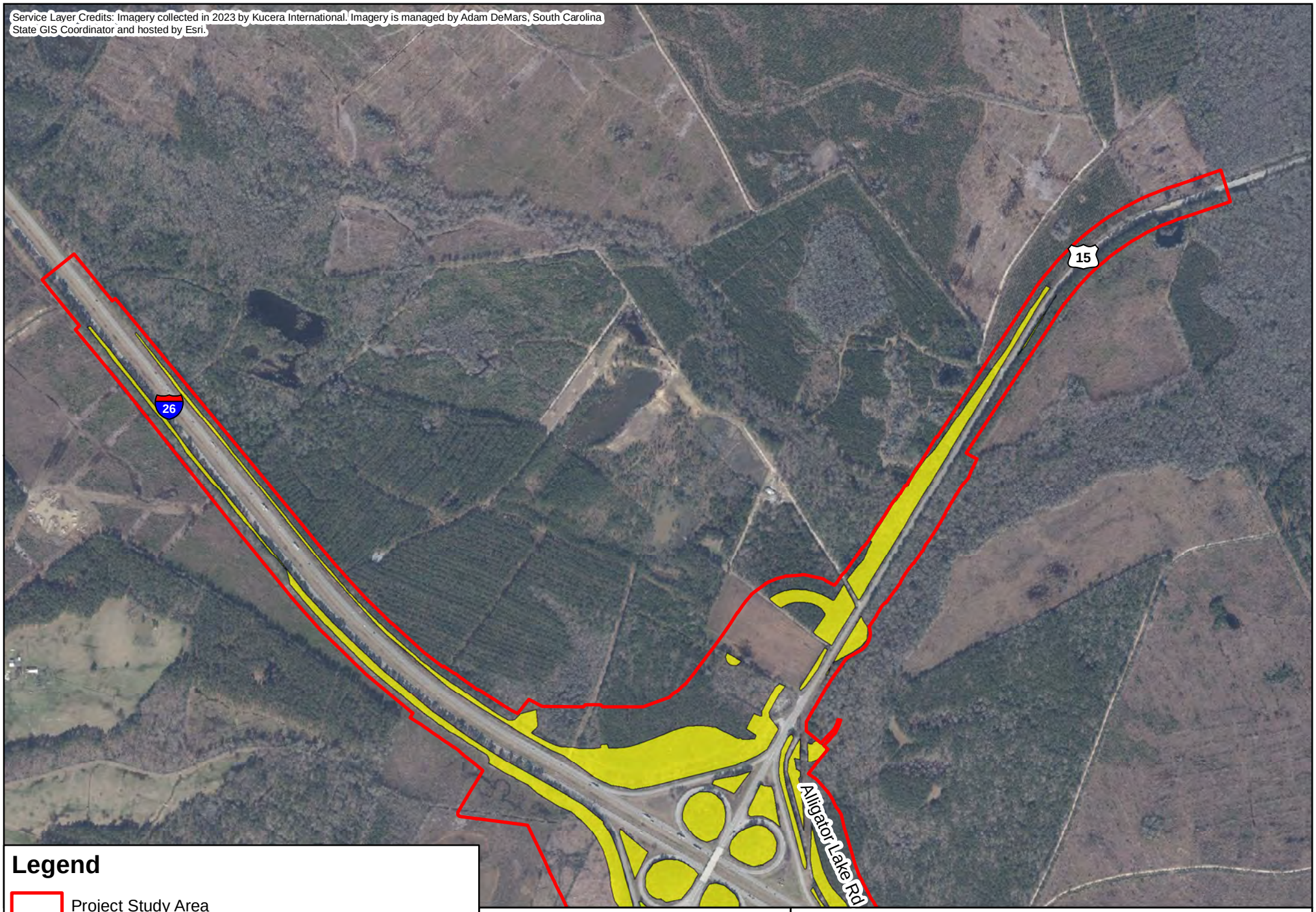
Prepared On: 10.27.2025

0 2 Miles

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.0: Proposed Clearing Overview Map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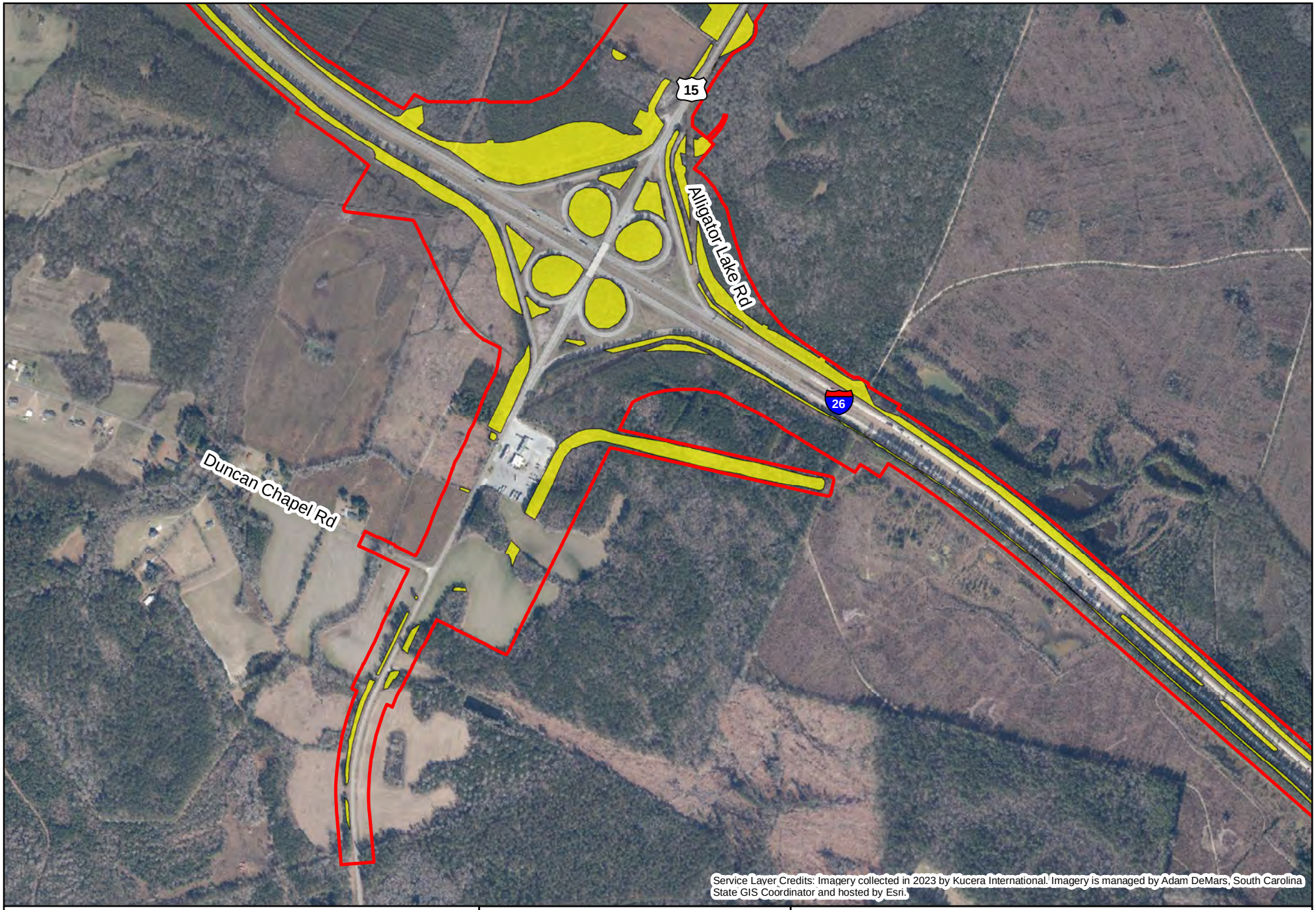
26
15
Alligator Lake Rd
Legend
Project Study Area
Proposed Clearing
Prepared On: 10.27.2025
N
0
950 Feet
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 3.1: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.2: Proposed Clearing Map

Legend

- Project Study Area
- Proposed Clearing

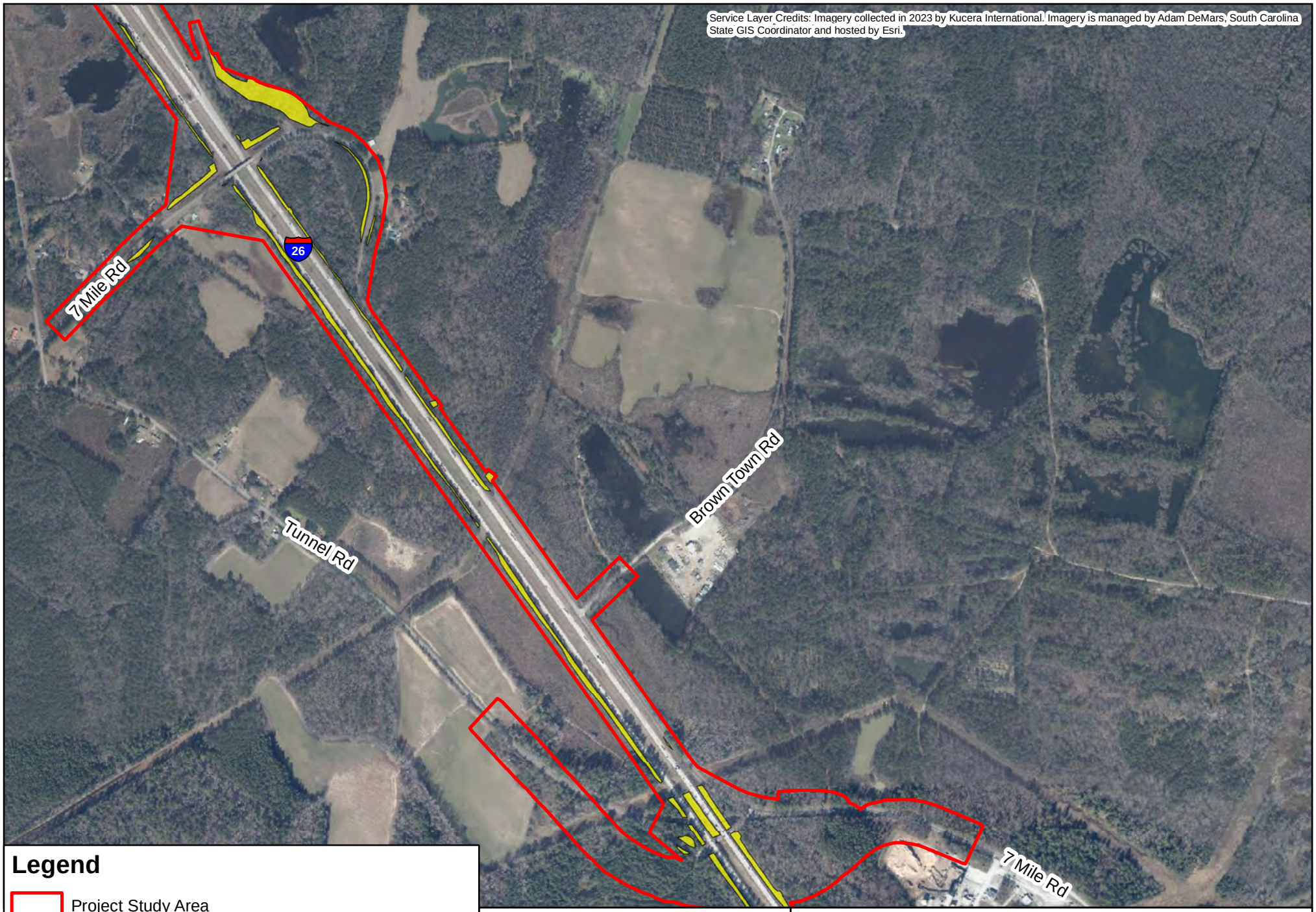
Prepared On: 10.27.2025

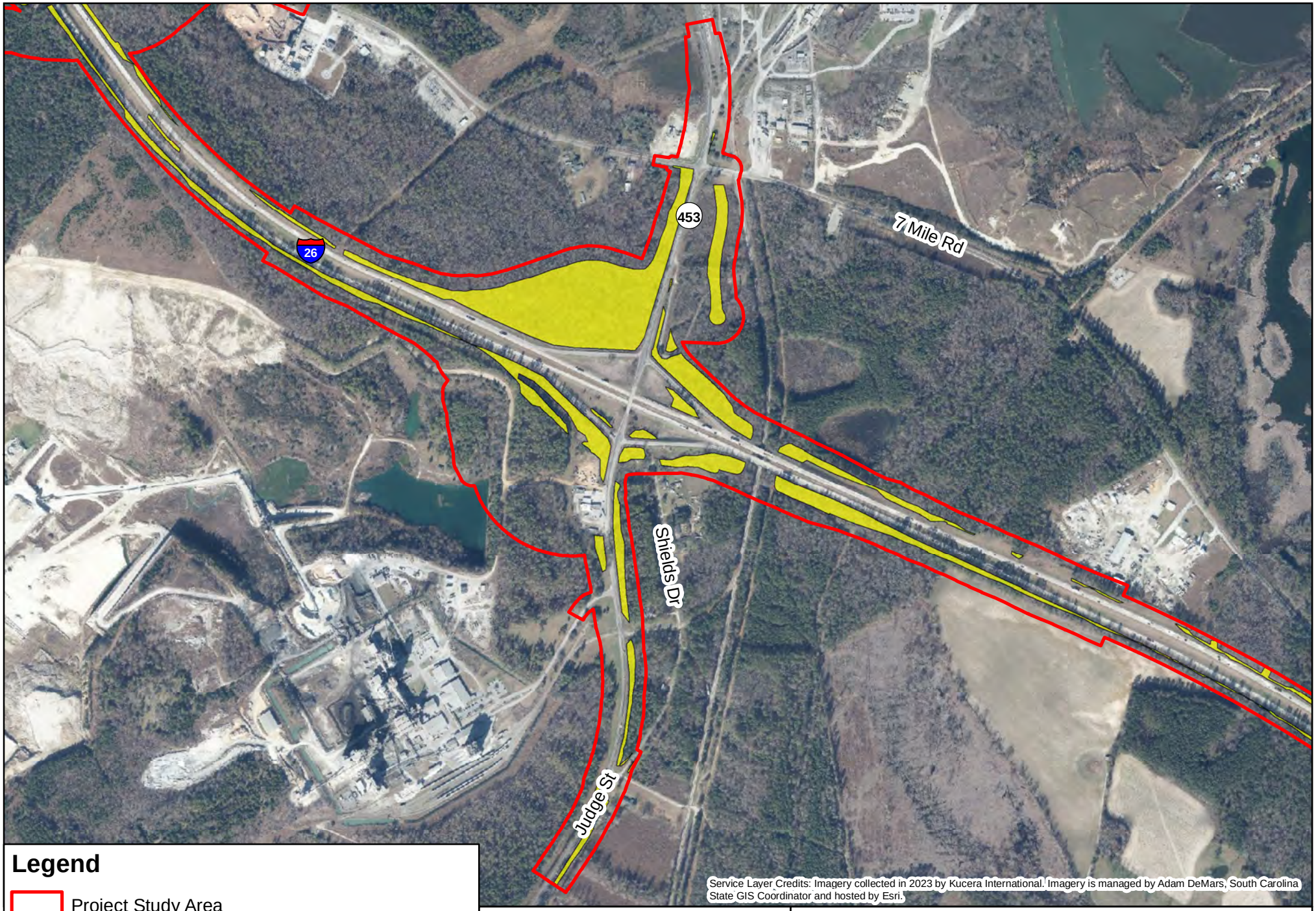
0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.3: Proposed Clearing Map


Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri.
26
7 Mile Rd
Tunnel Rd
Brown Town Rd
7 Mile Rd
Legend
Project Study Area
Proposed Clearing
Prepared On: 10.27.2025
0
950 Feet
N
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina
Figure 3.4: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

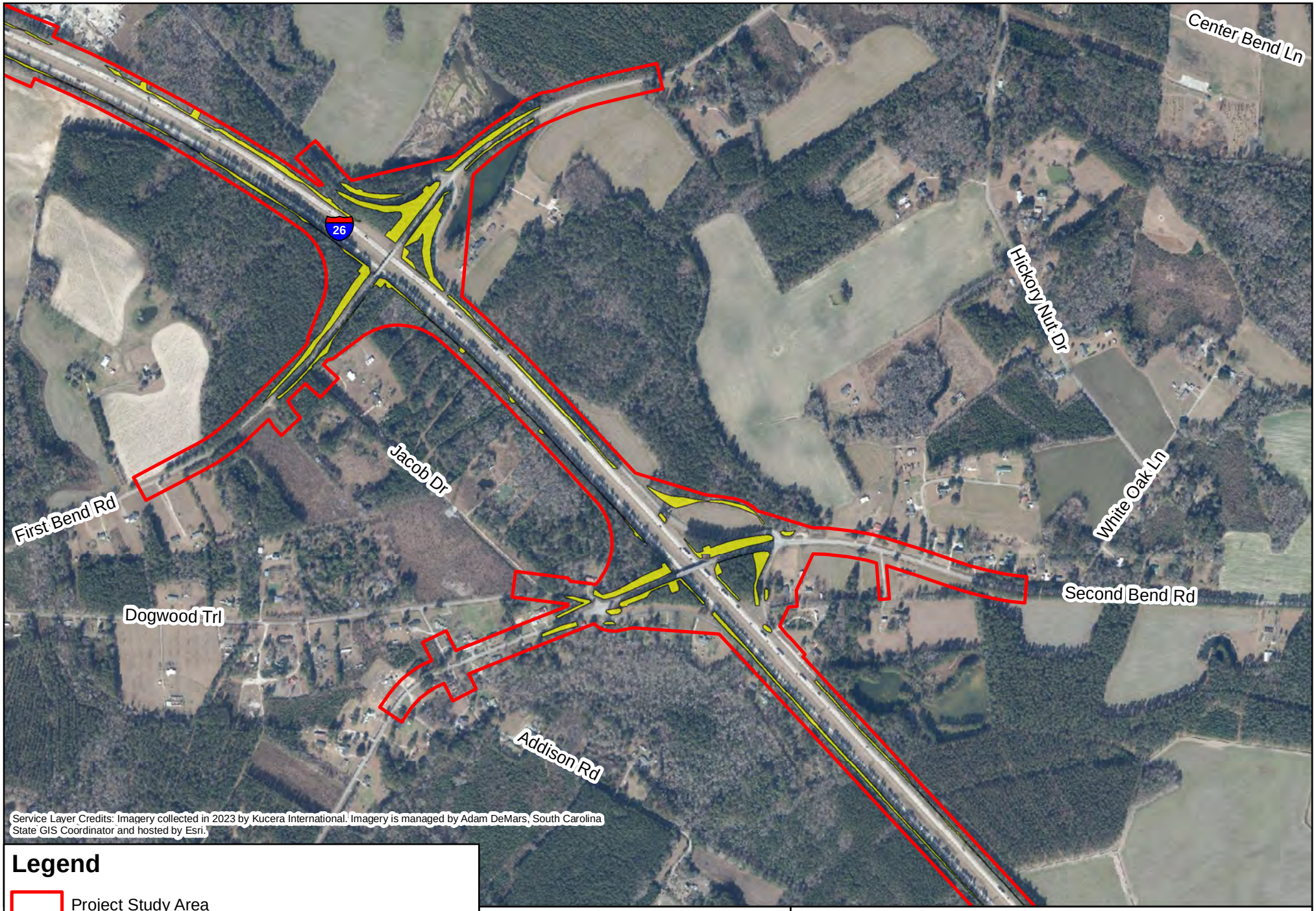
Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.5: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

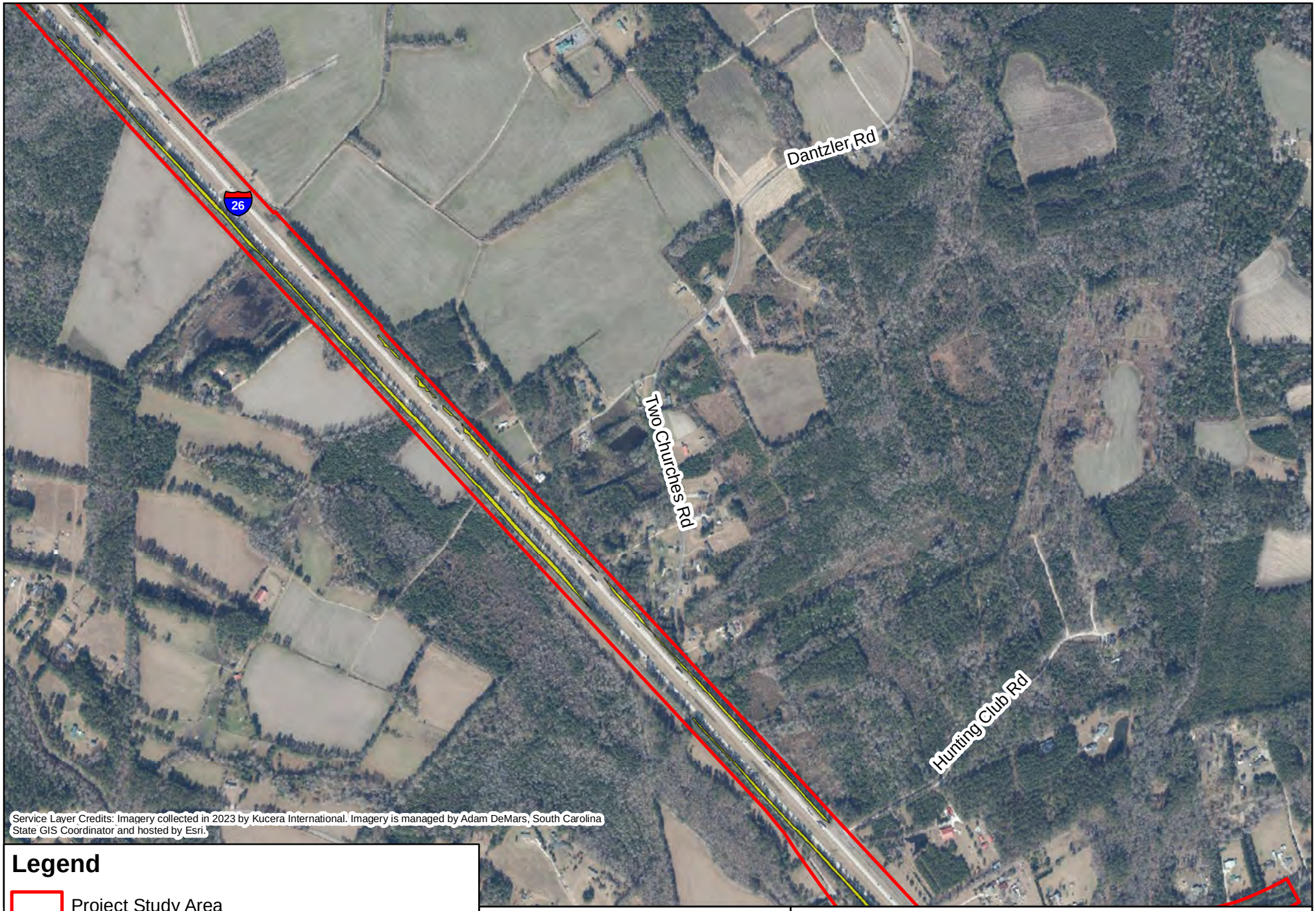
Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.6: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

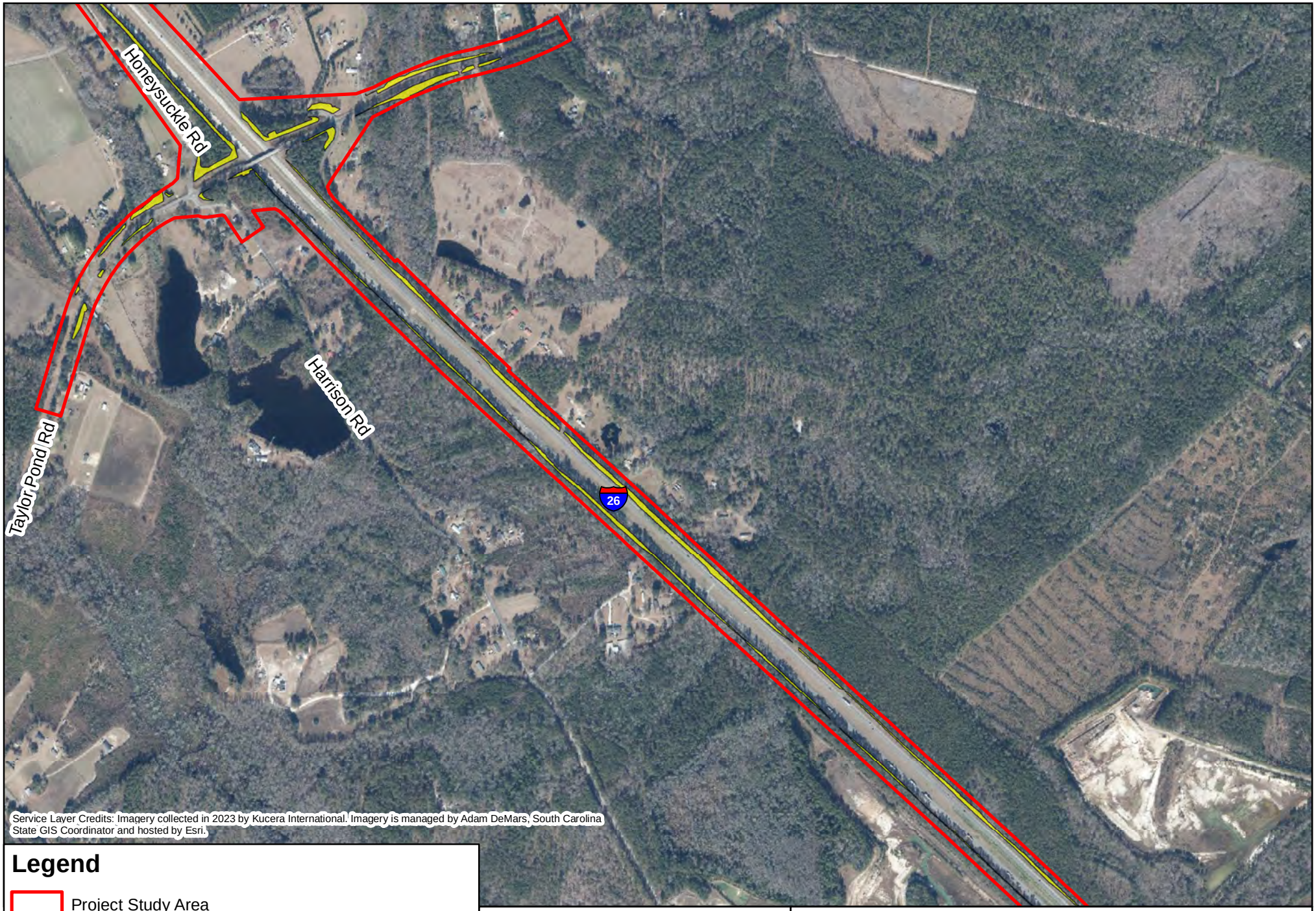
Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.7: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

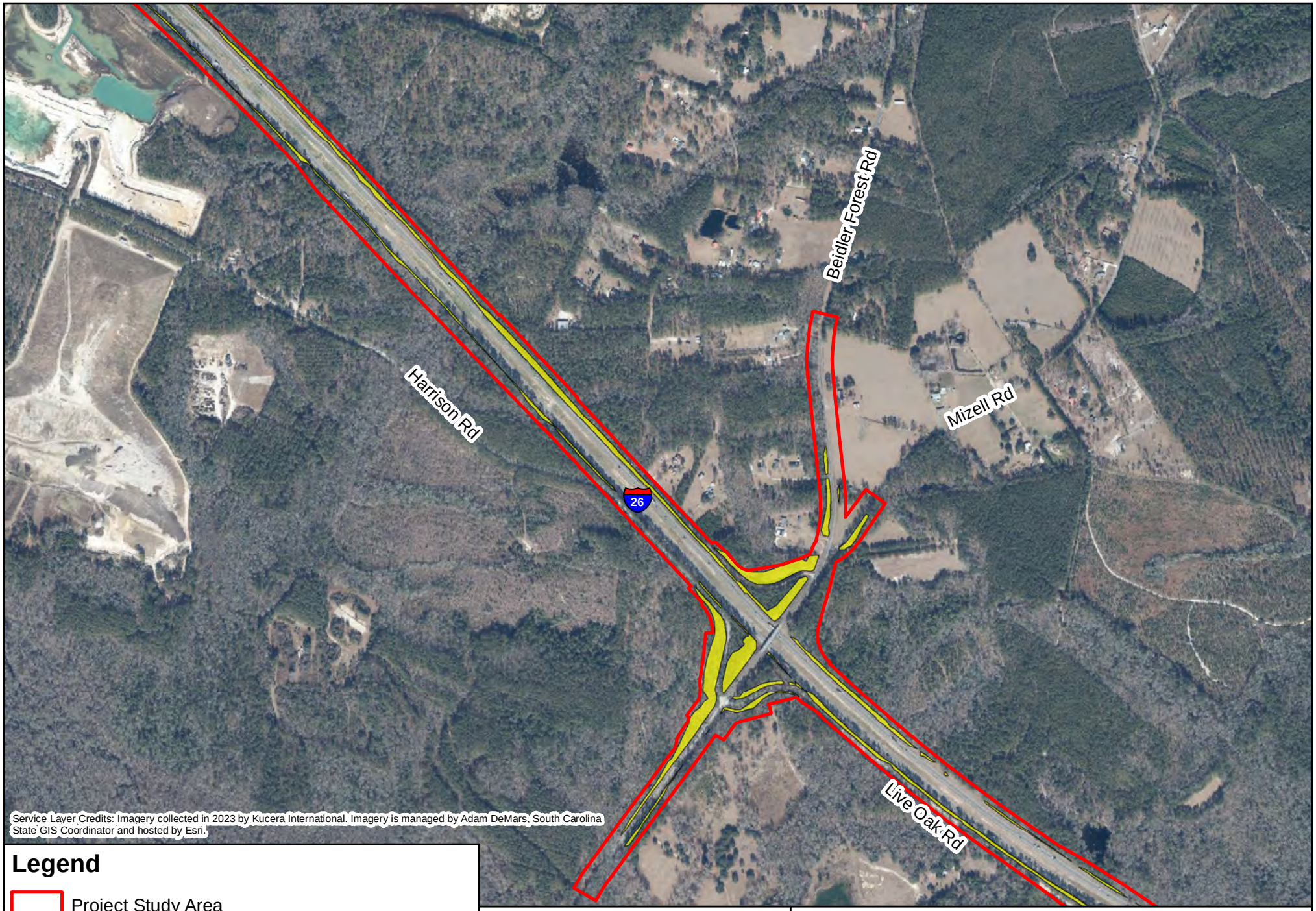
Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.8: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

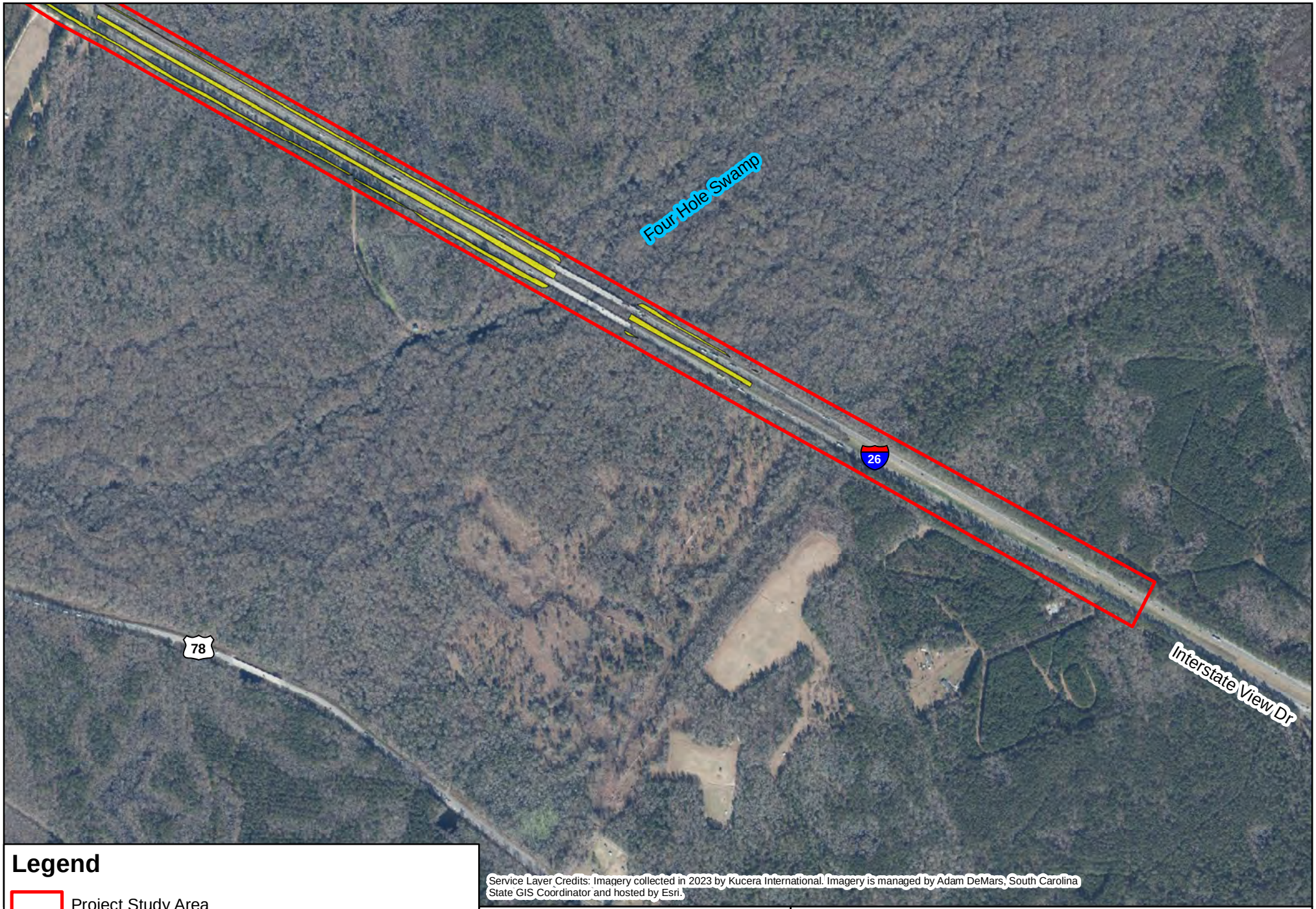
Prepared On: 10.27.2025

0 950 Feet

N

I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.9: Proposed Clearing Map



Legend

- Project Study Area
- Proposed Clearing

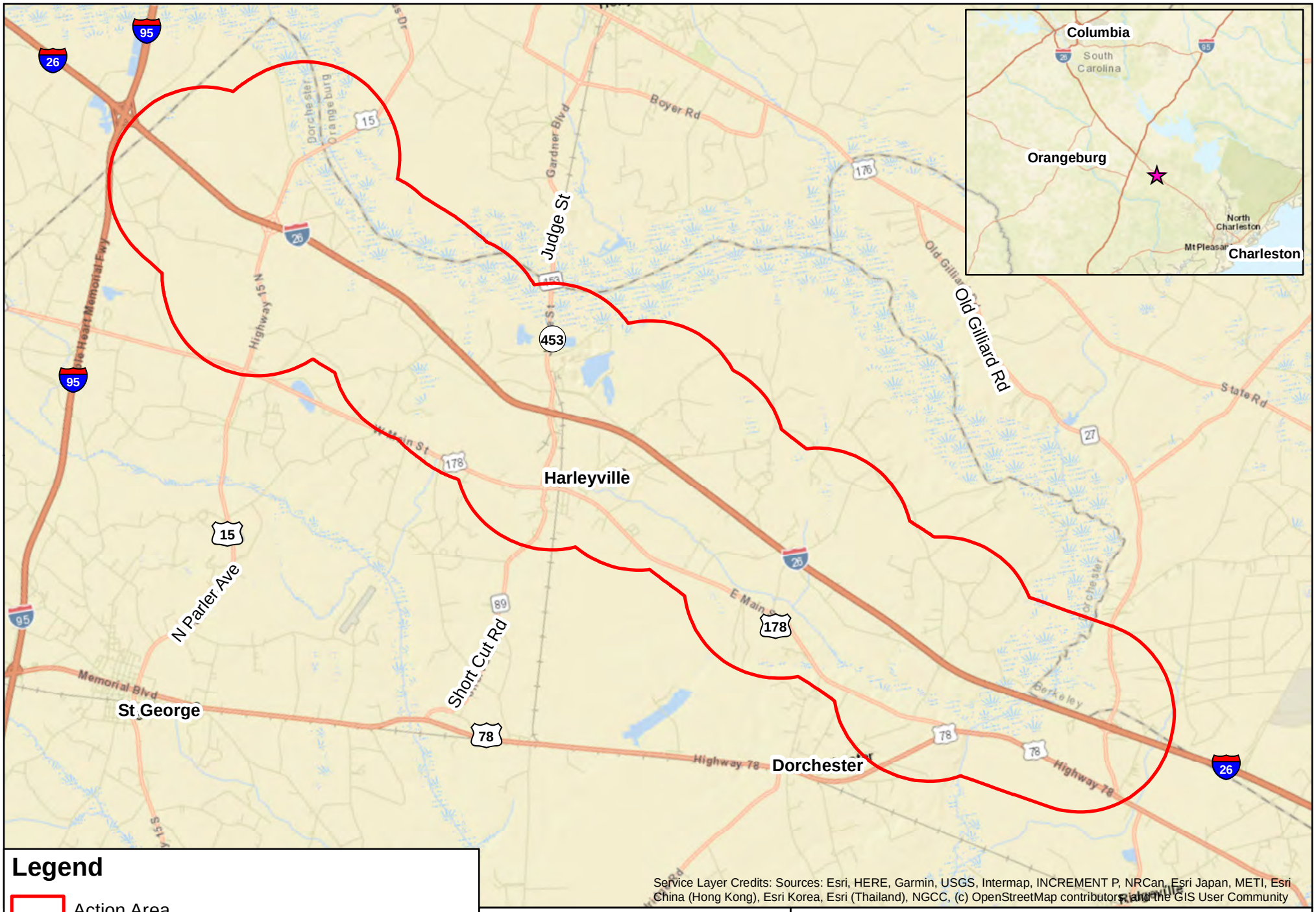
Prepared On: 10.27.2025

0 950 Feet

N

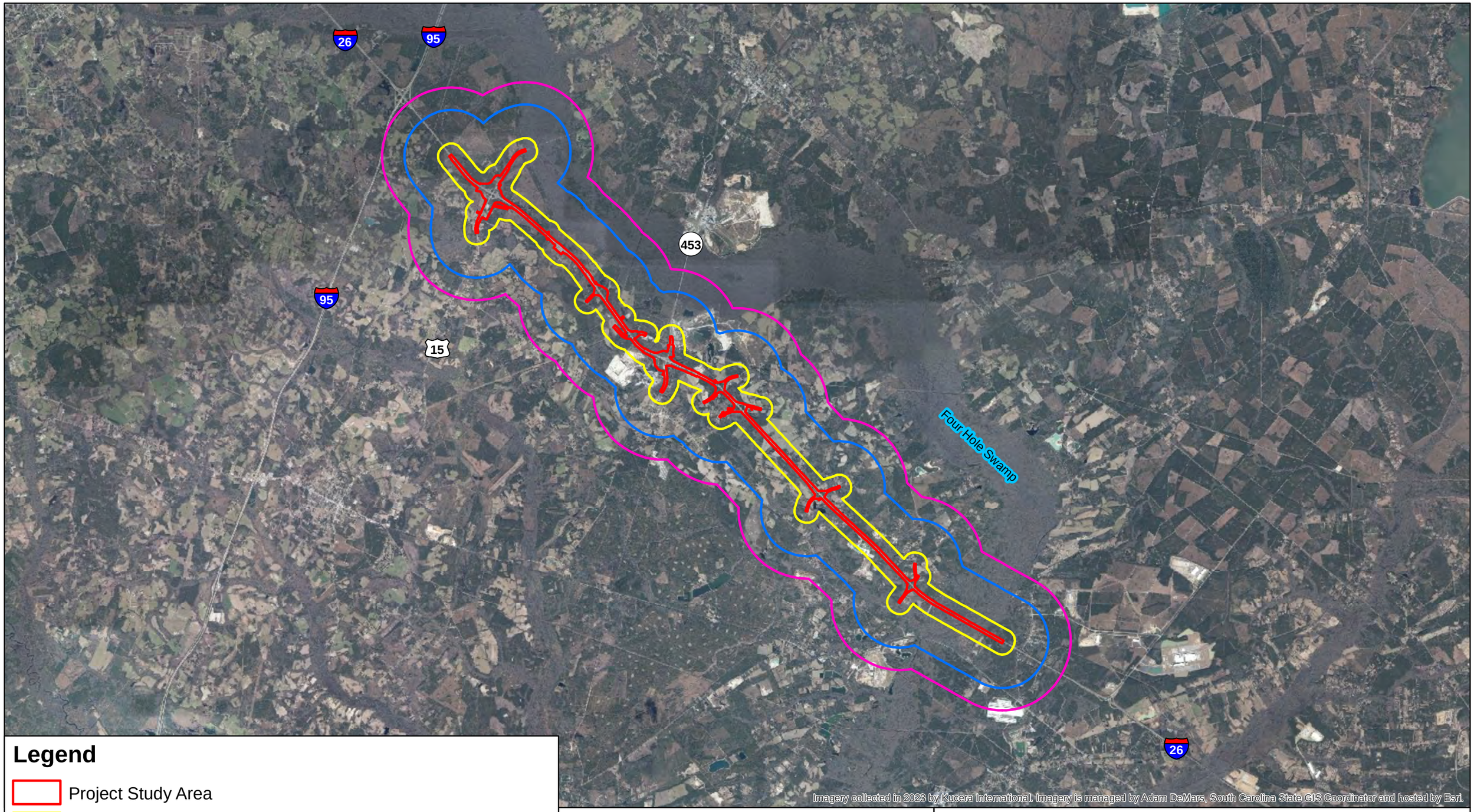
I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 3.10: Proposed Clearing Map



I-26 Improvement Project MM 172-187 SCDOT Project ID P042567 Dorchester and Berkeley Counties, South Carolina

Figure 4.0: Action Area Map



Legend

- Project Study Area
- 0.25 Mile Buffer of PSA
- 1 Mile Buffer of PSA
- Action Area/1.5 Mile Buffer of PSA

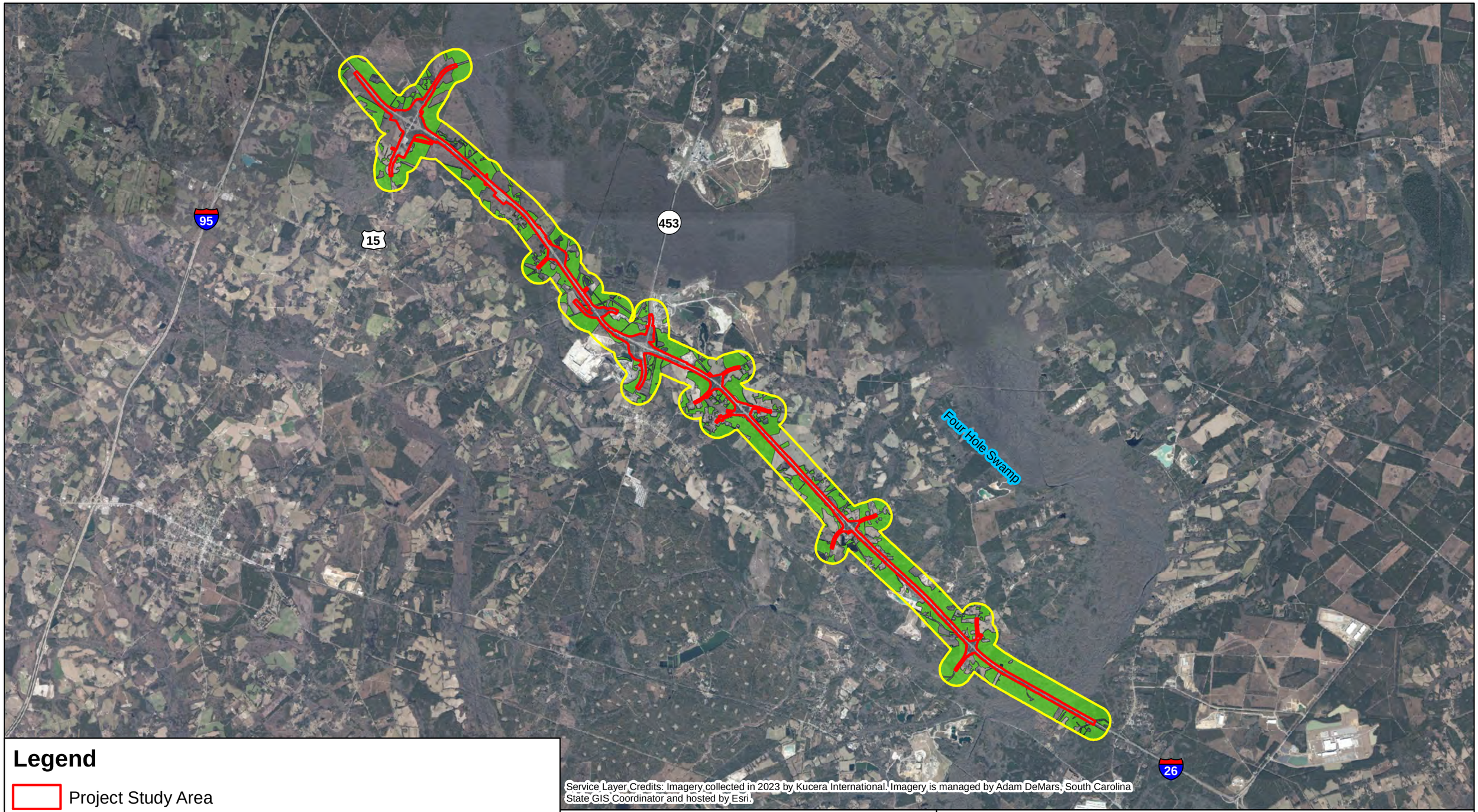
Prepared On: 10.27.2025

N
W E
S

0 2 4 Miles

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 5.0: Available NLEB Habitat Overview Map



Legend

- Project Study Area
- 0.25 Mile Buffer of PSA
- Available NLEB Habitat in 0.25 Mile Buffer of PSA

Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri.

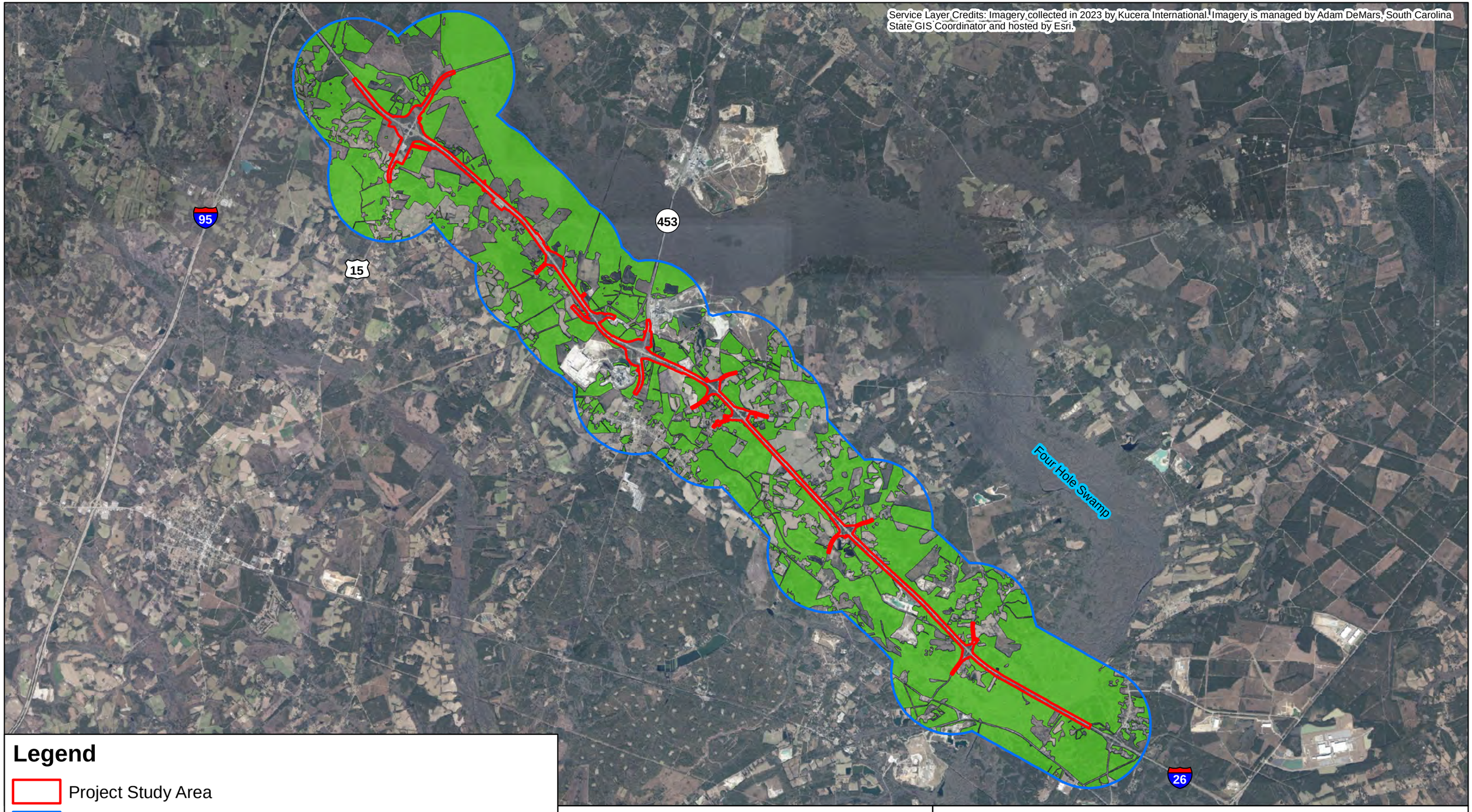
Prepared On: 10.27.2025

N
W E
S

0 1.5 3 Miles

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 5.1: Available NLEB Habitat within 0.25 Miles of PSA



Legend

- Project Study Area
- 1 Mile Buffer of PSA
- Available NLEB Habitat in 1 Mile Buffer of PSA

Prepared On: 10.27.2025

N
W E
S

0 1.5 3 Miles

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 5.2: Available NLEB Habitat within 1 Mile of PSA

Service Layer Credits: Imagery collected in 2023 by Kucera International. Imagery is managed by Adam DeMars, South Carolina State GIS Coordinator and hosted by Esri.

26
95
95
15
453
Four Hole Swamp
26

Legend

- Project Study Area
- Action Area/1.5 Mile Buffer of PSA
- Available NLEB Habitat in Action Area/ 1.5 Mile Buffer of PSA

Prepared On: 10.27.2025

0 2 4 Miles

N
W E
S

I-26 Corridor Improvement Project MM 172-187
SCDOT Project ID P042567
Dorchester and Berkeley Counties, South Carolina

Figure 5.3: Available NLEB Habitat within 1.5 Miles of PSA

Appendix B

Consultation with United States Fish and Wildlife Service

From: Barrett Stone
To: Beckham, Chris
Cc: Daniel Koon; Henry Phillips
Subject: FW: [EXTERNAL] I26 Corridor Improvement MM 172-187
Date: Friday, September 19, 2025 2:38:43 PM

Hey Chris....just wanted to tough base and see if USFWS would be providing any comments on the submitted BE? Also, curious if there has been any decision regarding EA and timing with consultation. We can touch base early next week if needed.

Thanks,

Barrett Stone | *VP - Environmental Services Manager*
803-726-7147 (O) 803-206-0963 (M)

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 16, 2025 3:50 PM
To: Beckham, Chris <BeckhamJC@scdot.org>; Charleston Regulatory, FW4 <charleston_regulatory@fws.gov>
Cc: Jurgelski, William, M. <JurgelskWM@scdot.org>; Barrett Stone <barrett.stone@ice-eng.com>
Subject: Re: [EXTERNAL] I26 Corridor Improvement MM 172-187

This Message Is From an External Sender
This message came from outside your organization.
Report Suspicious

Good afternoon Chris,

Thank you for providing the clarification on the tree clearing acreage for the proposed I-26 Corridor Improvement Project (Mile Marker 172-187) (FWS Project Code: 2025-0057191 and 2025-0131772) in Dorchester and Berkeley Counties, SC (hereafter Project). You made a determination of may affect, not likely to adversely affect (MANLAA) for the northern long-eared bat (NLEB; *Myotis septentrionalis*). The Service does not concur with this determination based on the following:

1. The Project determined presence of NLEB based on a recent bat acoustic survey conducted within the Project Study Area.
2. The Project exceeds the tree removal acreage threshold of 100 acres where forest cover within 5x5 km grid cells is 30 - 100%.

We recommend formal consultation for NLEB.

To initiate formal consultation, a written request and Biological Assessment (BA) should be submitted to the Service. The Service has 30 days to request for more information, if needed. Once a complete BA is received and no further information is required, Section 7 implementing regulations (50 CFR 402.14) provide the Service up to 90 days to conclude formal consultation and an additional 45 days to prepare our Biological Opinion.

Please let me know if you have any questions or require more information.

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Beckham, Chris <BeckhamJC@scdot.org>
Sent: Wednesday, September 10, 2025 8:57 AM
To: Charleston Regulatory, FW4 <charleston_regulatory@fws.gov>
Cc: Hinson, Jessica R <jessica_hinson@fws.gov>; Jurgelski, William, M. <JurgelskWM@scdot.org>; Barrett Stone <barrett.stone@ice-eng.com>
Subject: [EXTERNAL] I26 Corridor Improvement MM 172-187

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning,

The South Carolina Department of Transportation, on behalf of the Federal Highway Administration, is requesting consultation with the US Fish and Wildlife Service for species pursuant to Section 7 of the Endangered Species Act. SCDOT proposes to construct improvements to a segment of Interstate 26 from mile marker 172 to 187 (IPaC project code 2025-0131772) in Dorchester and Berkeley Counties, South Carolina. Please find the attached biological evaluation report that includes project information and effect determinations for federally listed species. Let me know if you have any questions or need any additional information to process this request.

Respectfully,

Chris Beckham
SCDOT Environmental Services
Office: (803) 737-1332
Mobile: (803) 609-9464

From: Hinson, Jessica R
To: Jeremy Jackson
Cc: Barrett Stone; Daniel Koon; Chris Beckham; Charleston Regulatory, FW4
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project
Date: Monday, October 6, 2025 4:39:16 PM

This Message Is From an External Sender
This message came from outside your organization.

Report Suspicious

Good afternoon,

Please see my response below to the acoustic survey and bridge/culvert assessment reports. I am providing this response for the project record. The Service received a Biological Assessment on September 10, 2025, in a separate email and has responded regarding next steps in the consultation process for this project.

I have reviewed the P/A acoustic bat survey and bridge/culvert assessment reports for the proposed I-26 Widening MM 172-187 Project in Berkeley and Dorchester Counties, South Carolina (FWS Project Code: 2025-0057191 and 2025-0131772) and find it to be acceptable for presence of Northern long-eared bat (*Myotis septentrionalis*) and presence of the proposed endangered tricolored bat (*Perimyotis subflavus*) in the project area.

In addition, for future acoustic bat survey reports, please include 1) a description of how proper functioning of the detectors was determined; and 2) copies of all acoustic detector log/summary files.

Please be aware that my approval of these survey results is not a section 7(a)(2) concurrence and does not authorize implementation of any part of the proposed action or remove the applicant from the permitting requirements that may be required by other State and federal agencies. Additional coordination with our office is occurring now based on the survey results and Biological Assessment submitted on September 10, 2025. Please submit consultation requests through https://ipac.ecosphere.fws.gov/ and any additional project questions to our office email account at charleston_regulatory@fws.gov .

The tricolored bat (*Perimyotis subflavus*) is currently proposed for listing and does not have the full protection of a listed species under the ESA. If potential project impacts (i.e., tree clearing; structure work) will occur prior to the effective date of a listing determination, if warranted, you will not need to further consult on this species. To minimize or avoid unforeseen impacts in the year-round active range, the Service recommends the following voluntary conservation measures: 1) avoiding activities affecting trees from December 15th to

February 15th (winter torpor) and May 1st to July 15th (pupping season); 2) culverts/bridges will be surveyed for evidence of bat use/presence prior to working on the bridge/culvert; 3) if bat evidence or bat sightings are unexpectedly made during structure maintenance or demolition, the contractor will stop work and the Service will be notified immediately. No work will resume at the structure location until discussions with the Service have concluded; and 4) avoid culvert, bridge, or other structure removal or modification during winter months (Dec. 15th - Feb. 15th) or pupping season (May 1st - July 15th), when bats are present or assumed present. Listing updates for tricolored bat can be found here.

The Service recommends that you contact the South Carolina Department of Natural Resources regarding potential impacts to State protected species.

Thank you. Please let me know if you have any questions.

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 23, 2025 1:57 PM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Chris Beckham <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Wonderful, thank you for doing that so quickly!

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 23, 2025 1:52 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Chris Beckham <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

They are uploading now and should be available in a few minutes.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 23, 2025 1:44 PM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Chris Beckham <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

No problem, thank you!

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov

Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 23, 2025 1:41 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Chris Beckham <BeckhamJC@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

My mistake. I only uploaded the ones with p>0.05. You told me all of them yesterday I forgot

I'll do that now
Sent from my iPhone

> On Sep 23, 2025, at 1:39 PM, Hinson, Jessica R <jessica_hinson@fws.gov> wrote:
>
> Hi Jeremy,
>
> Are the files that were uploaded just the MYSE calls that had significant MLE values (<0.05)? I noticed there are no folders labeled for Km segments 3, 4, 5, 11, 16, 21, and 26, but Table 2 in the report says that sites within those segments had MYSE detections.
>
> Thank you!
>
> Jessica R. Hinson, M.S.
> Fish and Wildlife Biologist
> SCDOT Liaison
> U.S. Fish and Wildlife Service
> South Carolina Ecological Services Field Office
> 176 Croghan Spur Road, Suite 200
> Charleston, SC 29407
> Email: jessica_hinson@fws.gov

Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 23, 2025 11:19 AM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Good morning Jeremy,

Great, thank you for organizing and uploading all of those files!

I will let you know if I have any issues or have any further questions.

Thank you again!

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 23, 2025 10:55 AM

To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Jessica,

I uploaded the GIS files. File names are self-explanatory.

All files should be projected in "DAD 1983 StatePlane South Carolina FIOS 3900 (US feet)"

Let me know if you have any problems opening them up.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Monday, September 22, 2025 9:18 AM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Good morning Jeremy,

I just wanted to touch base and see if you had any success getting those acoustic files uploaded to the FileShare Hub link?

Thank you!

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov

Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

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From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Wednesday, September 10, 2025 3:46 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Ok... Let me look at those tomorrow and send those files. I thought you need them all, but this is better.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Wednesday, September 10, 2025 3:29 PM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Hi Jeremy,

I want to clarify that you do not need to send us all of the acoustic files. You can send us those marked as MYSE or at least those with the lowest MLE values for us to take a closer look at.

Thank you!

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

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From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Wednesday, September 10, 2025 10:57 AM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Hey Jeremy,

Great, thank you!

That is what I thought, but wanted to double check.

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
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From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Wednesday, September 10, 2025 10:35 AM
To: Hinson, Jessica R <jessica_hinson@fws.gov>

Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>; Beckham, Chris <beckhamjc@scdot.org>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Due to the high volume of detector nights and associated calls, and the timing of the BE submittal, we only did the quanatative analysis. It would take several months to go through and do a qualatative analysis.

I am working on zipping all the call folders and sometime today, I will up load them, as well as the digital output of the call summaries.

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Wednesday, September 10, 2025 10:03 AM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Good morning Jeremy,

Great, please let me know if you have any issues!

I am still reviewing the acoustic survey report, but how exciting! This data will be great for us to have as we better understand how NLEB is distributed, especially within the YRA range.

For the qualitative analysis, was the data manually vetted or was just automated analysis used for presence/absence?

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov

Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 9, 2025 2:55 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Thanks. I will try

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 9, 2025 2:35 PM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Hey Jeremy,

Yes, looks like I got the PDF! I am downloading it now.

For the raw acoustic files, I have been able to receive them through this FileShare Hub, but surveyors have just had to highlight all of the folders, right-click, and compress them to a zip file. That should keep them in their respective folders, and you can just upload the zip file itself.

The other option is uploading each file, one by one, but that would be very time consuming!

If compressing them to a zip file and uploading it that way won't work, I will look into other options. Another option is an external hard drive being sent to us with the data on it.

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 9, 2025 2:26 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

If you want the raw acoustic files, I can only upload them as folders. I can't undo that process, because the data would not be able to be reanalyzed.

How have you been receiving the raw acoustic data

From: Hinson, Jessica R <jessica_hinson@fws.gov>
Sent: Tuesday, September 9, 2025 2:18 PM
To: Jeremy Jackson <jjackson@jacksongroupco.com>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: Re: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

Hey Jeremy,

Thank you! Unfortunately, I can't get the Dropbox link to open. It may not be allowed on my end.

Luckily, there is an alternative that should work. Here is a link to a FileShare Hub folder to upload the file(s): https://fws-fileshare.app.box.com/f/d5afcf19a5e1459aac898775bcf37ec9

The maximum upload size is 32 GB per file, so hopefully that will work! Uploading a folder is not supported, but you can upload multiple files at once or upload a zip file, if needed. I recommend if it is multiple files in multiple folders, to just create a compressed zip file and upload that.

You are welcome to just upload all project files at that link and I can download them to the project folder on our end.

Please let me know if you have any issues!

Sincerely,

Jessica R. Hinson, M.S.
Fish and Wildlife Biologist
SCDOT Liaison
U.S. Fish and Wildlife Service
South Carolina Ecological Services Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Email: jessica_hinson@fws.gov
Work Phone: 854-253-0441

Work schedule: Monday - Thursday; Friday by appointment

South Carolina Ecological Services Field Office | U.S. Fish & Wildlife Service

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Jeremy Jackson <jjackson@jacksongroupco.com>
Sent: Tuesday, September 9, 2025 2:04 PM
To: Hinson, Jessica R <jessica_hinson@fws.gov>
Cc: Barrett Stone <barrett.stone@ice-eng.com>; Daniel Koon <daniel.koon@ice-eng.com>
Subject: [EXTERNAL] 2025-0057191_SCDOT_I26 MM172-187 Widening Project

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Jessica,

Please follow the following link to final report for the 2025-0057191_SCDOT_I26 MM172-187 Widening Project.

https://www.dropbox.com/scl/fi/1umesgplrdv5dyzog9qgx/2025-0057191_SCDOT_I26-MM172-187-Widening-Project-Acoustic-Bat-Survey.pdf?rlkey=betgiiymrlglej07h733no7gf&st=rul8fijg&dl=0

Please let me know if you are able to download the document. The Acoustical Print out is not in the link. I will send a separate link for that file.

What is the best way to send the raw acoustical data to you?

Jeremy L. Jackson AWB, CE
<image.png>
A Service-Disabled Veteran-Owned Small Business
1586 Boonesborough Rd
Richmond, Kentucky 40475
www.jacksongroupco.com
(501)339-3580

Appendix C

Bridge Replacement Scoping Trip Risk Assessment Forms and Floodplains Checklist

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: Alligator Lake Road STREAM CROSSING: Four Hole Swamp Trib #10

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert replacement under US15 and Alligator Lake Road.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0045E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

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

b. Road Plans ☐ Yes ☑ No File No. _____ Sheet No. _____ (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 **Double 10' x 6' Box Culvert**

Length: 40 ft. Width: 22.25 ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☑ Yes ☐ No

Describe: Buried fiber optic cable.

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Well vegetated, defined channel.

g. Soil Type: Sandy

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.

None, swampy area upstream of I-26.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

Existing road alignment maintained.

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

Yes.

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

VI. Field Review (cont.)

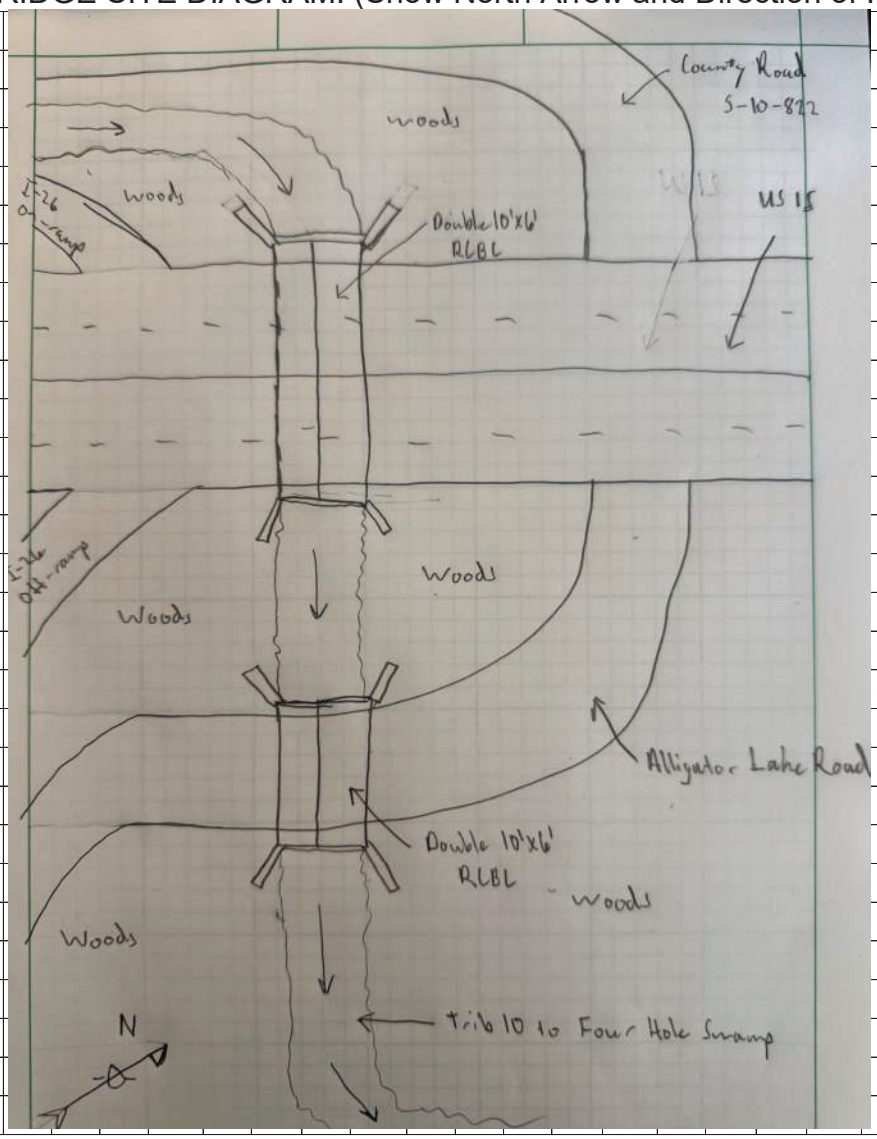
A. Proposed Bridge Recommendation: **Quadruple 12' x 12' x 250' Box Culvert**

Length: 250 ft. Width: 53 ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

ap is for use in administering the National Flood Insurance Program. It
t necessarily identify all areas subject to flooding, particularly from local
e sources of small size. The **community map repository** should be
od for possible updated or additional flood hazard information.

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

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

ries of the **floodways** were computed at cross sections and interpolated
n cross sections. The floodways were based on hydraulic considerations
ard to requirements of the National Flood Insurance Program. Floodway
and other pertinent floodway data are provided in the Flood Insurance
eport for this jurisdiction.

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

ojection used in the preparation of this map was State Plane South
e FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 spheroid.
nces in datum, spheroid, projection or State Plane zones used in
duction of FIRMs for adjacent jurisdictions may result in slight positional
ces in map features across jurisdiction boundaries. These differences
ffect the accuracy of this FIRM.

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

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

n current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit their website at
ww.ngs.noaa.gov/.

ap information shown on this FIRM was provided in digital format by
ster County, South Carolina.

p may reflect more detailed or up to date stream channel configurations
ose shown on the previous FIRM. The floodplains and floodways that
nsferred from the previous FIRM may have been adjusted to conform to
ew stream channel configurations and improved topographic data. The
aselines depicted on this map represent the hydraulic modeling baselines
tch the flood profiles and Floodway Data Tables if applicable, in the FIS
As a result, the profile baselines may deviate significantly from the new
p channel representation and may appear outside of the floodplain.

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

refer to the separately printed **Map Index** for an overview map of the
showing the layout of map panels; community map repository addresses;
isting of Communities table containing National Flood Insurance Program
r each community as well as a listing of the panels on which each
nity is located.

t the **FEMA Map Information eXchange (FMIX)** at 1-877-336-2627 for
tion on available products associated with this FIRM. Available products
lude previously issued Letters of Map Change, a Flood Insurance Study
and/or digital versions of this map. The FMIX may also be reached by
1-800-358-9620 and their website at http://www.msc.fema.gov/.

have **questions about this map** or questions concerning the National
surance Program in general, please call **1-877- FEMA MAP** (1-877-336-2627)
he FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

igital Flood Insurance Rate Map (FIRM) was produced through a unique
rative partnership between the State of South Carolina and the Federal
ency Management Agency (FEMA). The State of South Carolina has
rested a long-term approach of floodplain management to decrease the
ssociated with flooding. This is demonstrated by the State's commitment
p floodplain areas at the local level. As a part of this effort, the State of
Carolina has joined in a Cooperating Technical State agreement with
to produce and maintain this digital FIRM.

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

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT
INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is th
that has a 1% chance of being equaled or exceeded in any given year. The
Flood Hazard Area is the area subject to flooding by the 1% annual chance flood.
of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The
Flood Elevation is the water-surface elevation of 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
Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping
average depths determined. For areas of alluvial fan flooding, ve
also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1%
chance flood by a flood control system that was subse
decertified. Zone AR indicates that the former flood control sy
being restored to provide protection from the 1% annual cha
greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a
flood protection system under construction; no Base Flood El
determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood
determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood El
determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that
kept free of encroachment so that the 1% annual chance flood can be carried
substantial increases in flood heights.

OTHER FLOOD AREAS

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

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Area Zones
Base Flood Elevations, flood depths or flood vel
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
A — A — Cross section line
23 — 23 — 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 values, zone
5000-foot grid ticks: South Carolina State Plane coordinate s
zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 — Bench mark (see explanation in Notes to Users section of thi
FIRM panel)
River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD
INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood In
Study report.)

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

To determine if flood insurance is available in this community, contact your in
agent or call the National Flood Insurance Program at 1-800-61

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0045E

FIRM

FLOOD INSURANCE RATE M

DORCHESTER COUN
SOUTH CAROLINA
AND INCORPORATED ARE

PANEL 45 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0045

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

MAP NU
450350

EFFECTIVE
JULY 1

Federal Emergency Management

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: I-26 STREAM CROSSING: Four Hole Swamp Trib #10

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert under I-26 west of US15.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0045E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 18.312 Sheet No. 87, 88 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 18.312.2 Sheet No. 52 (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

Two (2) Double 10' x 6' x 82' Box Culverts joined by a filler culvert

Length: 215 ft. Width: 22.25 ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☑ Yes ☐ No

Describe: Buried fiber optic cable.

Debris Accumulation on Bridge: Percent Blocked Horizontally: 10 %

Percent Blocked Vertically: 10 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Minor bank erosion upstream.

g. Soil Type: Sandy

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.

None, swampy area upstream.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

Yes existing alignment of I-26 maintained.

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

Yes.

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

VI. Field Review (cont.)

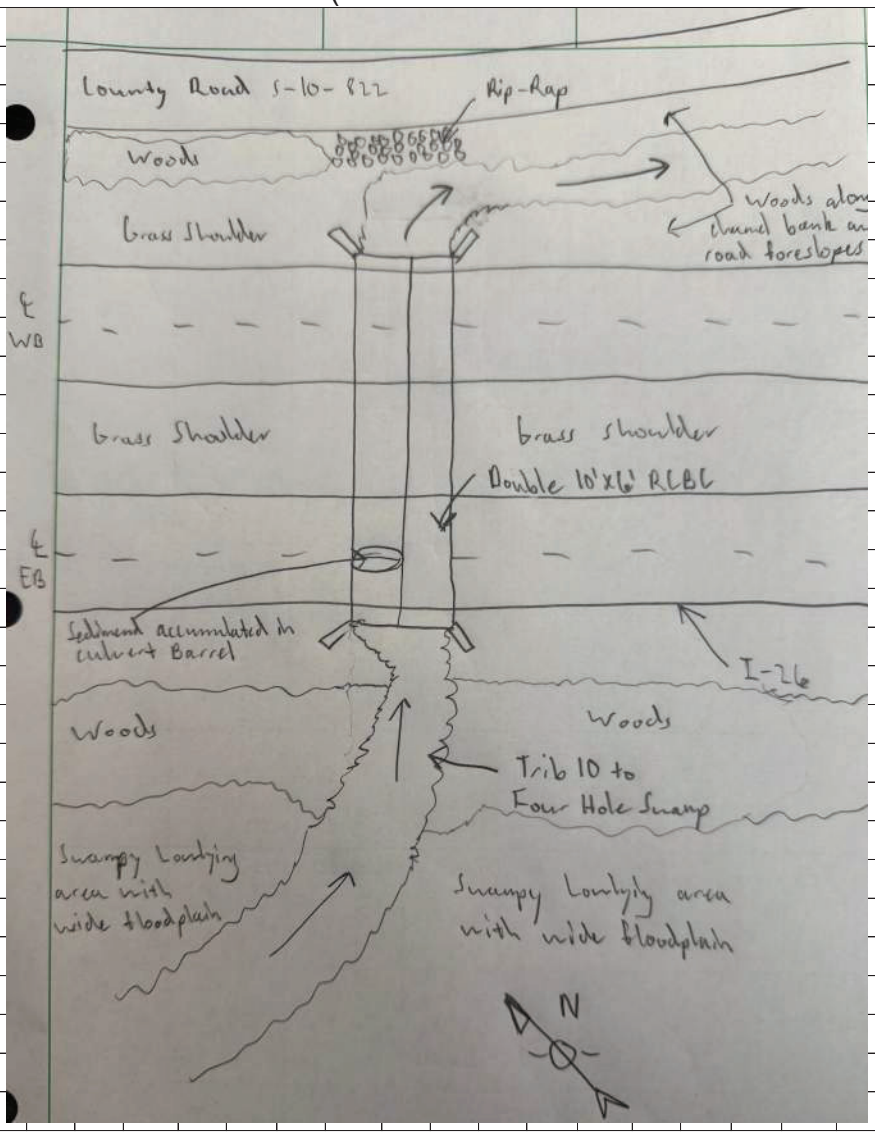
A. Proposed Bridge Recommendation: **Quadruple 12' x 12' x 258' Box Culvert**

Length: 258 ft. Width: 53 ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

ap is for use in administering the National Flood Insurance Program. It
t necessarily identify all areas subject to flooding, particularly from local
e sources of small size. The **community map repository** should be
ed for possible updated or additional flood hazard information.

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

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

ries of the **floodways** were computed at cross sections and interpolated
n cross sections. The floodways were based on hydraulic considerations
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and other pertinent floodway data are provided in the Flood Insurance
eport for this jurisdiction.

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

ojection used in the preparation of this map was State Plane South
e FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 spheroid.
nces in datum, spheroid, projection or State Plane zones used in
duction of FIRMs for adjacent jurisdictions may result in slight positional
ces in map features across jurisdiction boundaries. These differences
ffect the accuracy of this FIRM.

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

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

n current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit their website at
ww.ngs.noaa.gov/.

ap information shown on this FIRM was provided in digital format by
ster County, South Carolina.

p may reflect more detailed or up to date stream channel configurations
ose shown on the previous FIRM. The floodplains and floodways that
nsferred from the previous FIRM may have been adjusted to conform to
ew stream channel configurations and improved topographic data. The
aselines depicted on this map represent the hydraulic modeling baselines
tch the flood profiles and Floodway Data Tables if applicable, in the FIS
As a result, the profile baselines may deviate significantly from the new
p channel representation and may appear outside of the floodplain.

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nity is located.

the **FEMA Map Information eXchange (FMIX)** at 1-877-336-2627 for
tion on available products associated with this FIRM. Available products
lude previously issued Letters of Map Change, a Flood Insurance Study
and/or digital versions of this map. The FMIX may also be reached by
1-800-358-9620 and their website at http://www.msc.fema.gov/.

have **questions about this map** or questions concerning the National
surance Program in general, please call **1-877- FEMA MAP** (1-877-336-2627)
he FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

igital Flood Insurance Rate Map (FIRM) was produced through a unique
rative partnership between the State of South Carolina and the Federal
ency Management Agency (FEMA). The State of South Carolina has
rsented a long-term approach of floodplain management to decrease the
associated with flooding. This is demonstrated by the State's commitment
p floodplain areas at the local level. As a part of this effort, the State of
Carolina has joined in a Cooperating Technical State agreement with
to produce and maintain this digital FIRM.

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

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT
INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is th
that has a 1% chance of being equaled or exceeded in any given year. The
Flood Hazard Area is the area subject to flooding by the 1% annual chance flood.
of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The
Flood Elevation is the water-surface elevation of 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
Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping
average depths determined. For areas of alluvial fan flooding, ve
also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1%
chance flood by a flood control system that was subse
decertified. Zone AR indicates that the former flood control sy
being restored to provide protection from the 1% annual cha
greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a
flood protection system under construction; no Base Flood El
determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood
determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood El
determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that
kept free of encroachment so that the 1% annual chance flood can be carried
substantial increases in flood heights.

OTHER FLOOD AREAS

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

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Area Zones
Base Flood Elevations, flood depths or flood vel
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
A — A — Cross section line
23 — 23 — Transect line
97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4 276 000 mE — 1,000-meter Universal Transverse Mercator grid values, zone
600000 FT — 5000-foot grid ticks: South Carolina State Plane coordinate s
zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 — Bench mark (see explanation in Notes to Users section of thi
FIRM panel)
RIVER MILE — River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD
INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood In
Study report.)

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

To determine if flood insurance is available in this community, contact your in
agent or call the National Flood Insurance Program at 1-800-61

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0045E

FIRM

FLOOD INSURANCE RATE M

DORCHESTER COUN
SOUTH CAROLINA
AND INCORPORATED ARE

PANEL 45 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0045

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

MAP NU
450350

EFFECTIVE
JULY 1

Federal Emergency Management

DOUBLE 10x6 @ STA. 3352+00

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	DORCHESTER	18.3120	F262-1(7)	26	52	70

INTERSTATE

④ W. W. WEATHERS D. 5-13-59

⑤ ALLAN K. WEATHERS C. 6-2-59

P.O.T. = 3352+26 25 25 12" Pine

35' R/W

10 LS

11"

Mock Orange

175' R/W = 35' R/W

Frontage Road 22'

Place 92-24 R.C. Pipe

USC 2:00

Begin Frontage Road Sta. 3350+00

Const. Double 10'x6'x92' R.C. Box Culvert

Skew Angle 21½°

Const. Double 10'x6'x92' R.C. Box Culvert

Skew Angle 21½°

78'-06

S58°-32E

2"Gum 13 99

2"Gum 14 88

P.O.T. = 3356+93 Lt.

Chan. Change 30' Bottom

DITCH

See Sheet No. 62 for Detail of Intersection, R/W and drainage

Place 96-24 R.C. Pipe

175' R/W

R/W

195' R/W

195' R/W = 114' R/W

④ W. W. WEATHERS D. 5-13-59

⑤ ALLAN K. WEATHERS C. 6-2-59

3345 3350 3355 3360

B.M. No. 324 Nail in base 12" Gum Sta. 3347+00 Lt. El. 81.43

B.M. No. 325 Nail in base 12" Pine Sta. 3356+00 Lt. El. 81.08

Exc.			Emb.	40756	
Stripping	1601		B. Fill	19330	
Removal of Unstable Mat.	7600		Sta.	17931	
Bor.	60726		Stripping	2601	
			Waste	7600	
Tot.	79563		Tot.	79563	

Overhaul - None

Finish Grade

Strip 6" ±

0.20%

Dia. 7 ft. Mt. C.S.P.

Remove Unstable Material & Backfill with Suitable Material Sta. 3348+00 to Sta. 3349+00

Pipe

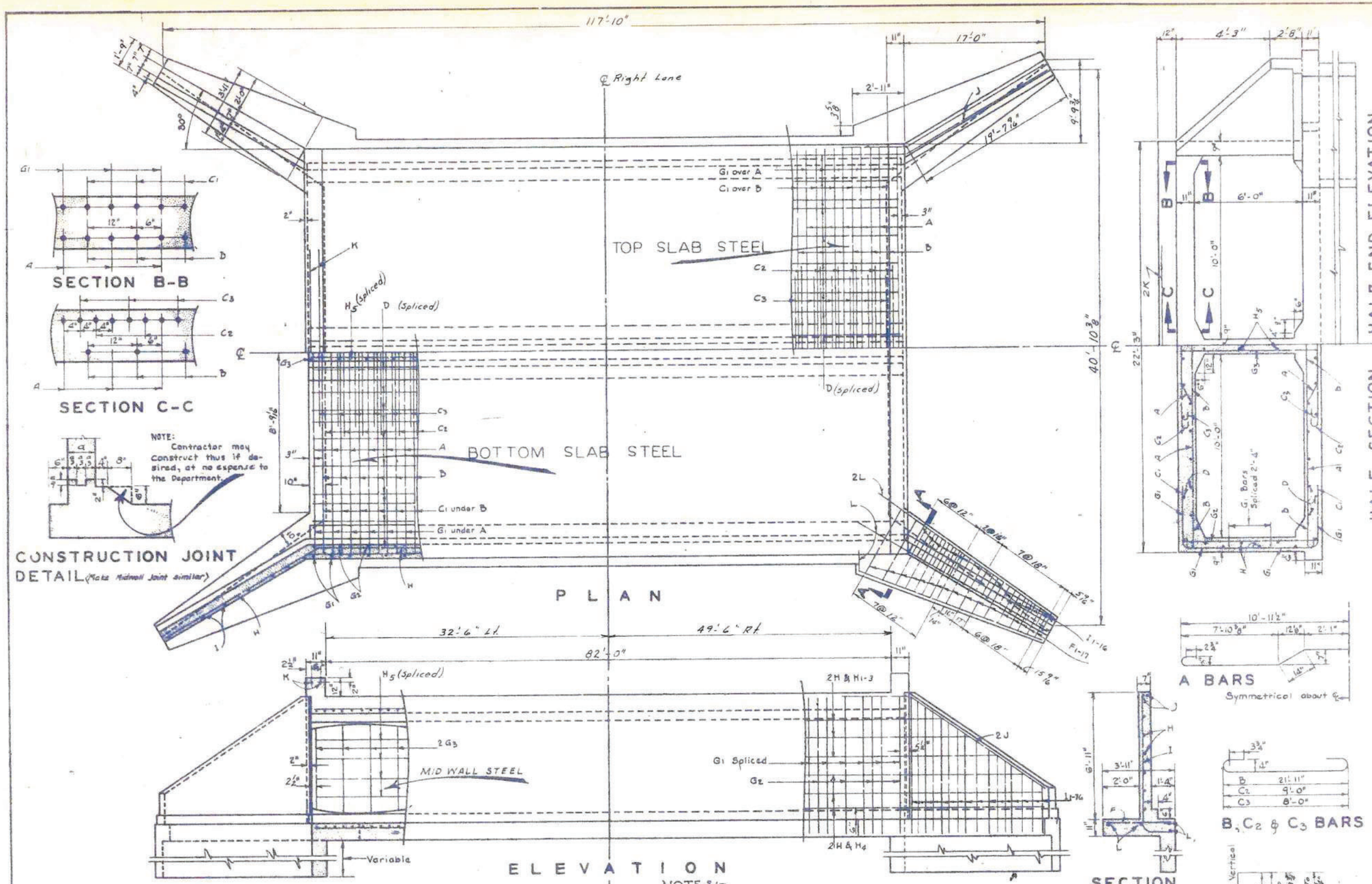
Dia. 48" C.S.P. 146 Ft. at 2.5% Skew 21½° Unstable Mat. Note

80 70

PLAN — SURVEYED, PLOTTED, NOTE BOOK, NO., DATE, BY

PROFILE — SURVEYED, PLOTTED CHECKED, NOTE BOOK, NO., DATE, BY, B. K.'s NOTED, STRUCTURE NOTATIONS CHKD

PLATE 1 - PLAN-PROFILE O.R.R.A.B. GROUND (SURVEY & USGS DATUM)



FED ROAD DIV. NO.	STATE	COUNTY	DOCKET NO	ROUTE NO.	SHEET NO	TOTAL SHEETS
3	SC	Dorchester	18.312	I-26	[illegible]	[illegible]

STEEL SCHEDULE

Mark	No.	Size	Length	Spacing	Location
A	168	1/2" φ	23'-3"	12" c.to c.	T. & B. Slabs.
B	166	3/4" φ	23'-3"	"	"
C1	332	1/2" φ	5'-3"	"	Corners
C2	166	3/4" φ	10'-4"	As Shown	T. & B. Slabs.
C3	166	3/4" φ	9'-4"	"	"
D	80	1/2" φ	42'-7"	"	"
F1 to F9	4 ea.	1/2" φ	1'-6" to 2'-10" Vary by 2"	"	Wing Footing
G1	336	5/8" φ	7'-8"	12" c.to c.	Slabs & S.W.
G2	112	1/2" φ	7'-6"	18" c.to c.	Sidewalls
G3	112	1/2" φ	7'-6"	18" c.to c. Each Face	Midwall
H	24	1/2" φ	40'-0"	12" Stag'd	Side & Wing Wall
H1	2	1/2" φ	19'-2"	"	"
H2	2	1/2" φ	28'-4"	"	"
H3	2	1/2" φ	37'-6"	"	"
H4	6	1/2" φ	46'-9"	"	"
H5	12	1/2" φ	42'-7"	"	Midwall
I1 to I9	4 ea	1/2" φ	3'-11 to 6'-11" Vary by 4 1/2"	As Shown	Wings
I10 to I16	4 ea	1/2" φ	7'-3" to 8'-11" Vary by 3 1/4"	"	"
F10 to F17	4 ea	1/2" φ	3'-0" to 3'-7" Vary by 1"	"	Wing Footing
J	8	5/8" φ	22'-6"	"	Top of Wings
K	4	3/8" φ	11'-0"	"	headwalls
L	16	1/2" φ	23'-0"	"	Footings

TOTAL QUANTITIES

CLASS "A" CONCRETE ..... 196.3 C.YDS.
REINFORCING STEEL ..... 22,770 LBS.

Concrete P.F.L. Barrel ..... 2.1312 Cu.Yds.
Concrete P.F.D. Cut-off wall (1 end) ..... 1.8643 Cu.Yds.
Excavation P.F.D. P.F.L. Barrel ..... 1.0093 Cu.Yds.

CONSTRUCT WEEP HOLES AND FRENCH DRAINS. SEE PAGE [illegible] OF STANDARD SPECIFICATIONS

[illegible]

AND ALSO MEETS REQUIREMENTS OF ALTERNATE INTERSTATE TANDEM AXLE LIVE LOAD

NOTE: 117 LF
CONSTRUCT UNTREATED TIMBER CUTOFF WALLS. SEE ACCOMPANYING SHEET

NOTES:-

Design Specifications: "Standard Specifications For Highway Bridges," A.A.S.H.O. 1941 (except fs.), fs = 20,000 #/in², fc = 1000 #/in², n = 10, v = 90 #/in², u = 165 #/in², H15 Loading, 10' Earth Fill (max).

Structural grade reinforcing steel not permitted.

Center of main reinforcing steel shall be 2" from the surface of the concrete.

All concrete shall be Class "A".

Chamfer all exposed edges 3/4".

Depth of cut-off walls shall be determined by the Engineer and quantities added to those shown.

All dimensions relative to reinforcing steel are to centers of bars

CONSTRUCTION JOINTS ARE PERMISSIBLE AT 50' INTERVALS PROVIDED THEY ARE BUILT AS DETAILED AND APPROVED BY THE ENGINEER.

Rev			
Rev	JDW	W.B.B.	2-59
	For 4:1 Wings		
Quant	W.B.B.	S.L.T.	6-45
Tr	W.R.T.	G.R.S.	6-45
Dr	W.B.B.	G.R.S.	6-45
Des.	W.B.B.	G.K.B.	4-45
	By	Chkd	Date

S.C. STATE HIGHWAY DEPARTMENT COLUMBIA

CONCRETE CULVERT

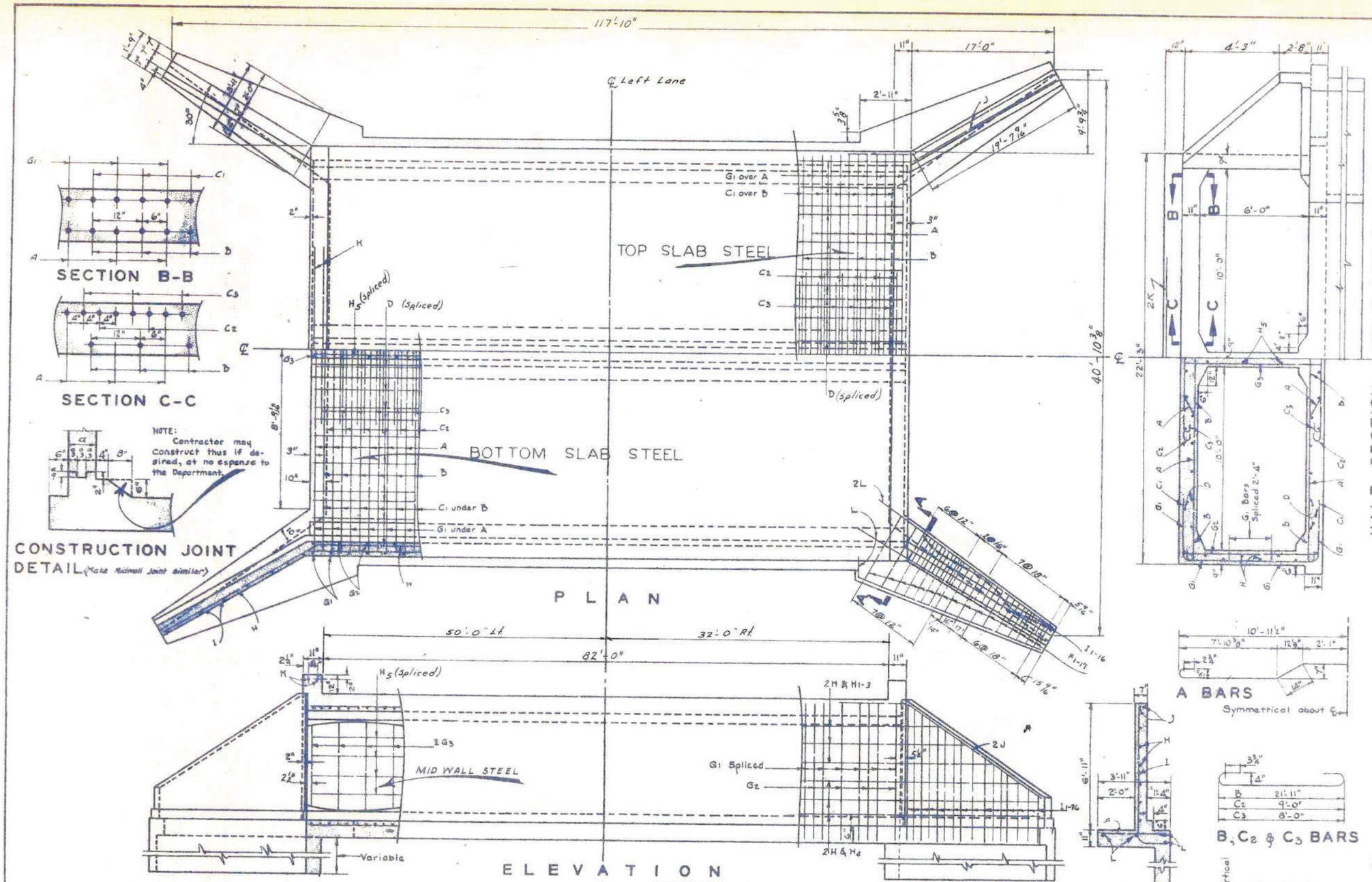
REINFORCED BOX TYPE

DOUBLE 10' x 6' x 82'-0"
4:1 WING SLOPE
STA. NO. 3352+00 (Right Lane)

S.C. DOCKET NO. 18.312 Dorchester COUNTY

ROUTE NO. I-26 DATE Feb. 1959

B 2.106



FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	Dorchester	18.312	I-26	5.5 / 212-A	223 / 126

STEEL SCHEDULE

Mark	No.	Size	Length	Spacing	Location
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C1	332	1/2" φ	5'-3"	"	Corners
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				"	"
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NOTE: 117 LF
CONSTRUCT UNTREATED TIMBER CUTOFF WALLS. SEE ACCOMPANYING SHEET

CONSTRUCT WEEP HOLES AND FRENCH DRAINS. SEE PARA. 7.1 DOR OF STANDARD SPECIFICATIONS.

THIS CULVERT DESIGNED FOR H15-S16 LIVE LOAD AND FOR H20-S16 LIVE LOAD. THE STRESSES ARE WITHIN THE ALLOWABLE STRESSES FOR H20-S16 LIVE LOAD WHEN DESIGNED IN ACCORDANCE WITH THE 1953 AASHTO SPECIFICATIONS AND ALSO MEETS REQUIREMENTS OF ALTERNATE INTERSTATE TANDEM AXLE LIVE LOAD.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA

CONCRETE CULVERT

REINFORCED BOX TYPE
DOUBLE 10' x 6' x 82'-0"
4:1 WING SLOPE
STA. NO. 3352+00 (Left Lane)

S.C. DOCKET NO. 18.312 Dorchester COUNTY
ROUTE NO. I-26 DATE Feb. 1959

B 2.106

NOTES:-

Design Specifications: "Standard Specifications For Highway Bridges," A.A.S.H.O. 1941 (except fs.), fs = 20,000 #/in², fc = 1,000 #/in², n = 10, v = 90 #/in², u = 165 #/in², H15 Loading, 10' Earth Fill (max).

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Depth of cut-off walls shall be determined by the Engineer and quantities added to those shown.

All dimensions relative to reinforcing steel are to centers of bars.

CONSTRUCTION JOINTS ARE PERMISSIBLE AT 50' INTERVALS PROVIDED THEY ARE BUILT AS DETAILED AND APPROVED BY THE ENGINEER

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Dr.	W.B.B.	G.K.B.	6-45
Des.	W.B.B.	G.K.B.	4-45
	B1	CHKd	Date

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: I-26 STREAM CROSSING: Spring Brnch-4HoleSwpTrib8

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert replacement under I-26 approximately 1,500' west of east bound weigh station.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0065E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 18.312 Sheet No. 91, 92 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 18.312.1 Sheet No. 15 (See Attached)

B. Historical Highwater Data

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

b. SCDOT/USGS Documented Highwater Elevations ☑ Yes ☐ No Results: 77.7' (File: 18.312.1, 1928)

c. Existing Plans ☑ Yes ☐ No See Above

V. Field Review

A. Existing Bridge

Two (2) Double 8' x 6' Box Culverts

Length: 82 ft. and 90 ft. Width: 18 ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☐ Yes ☑ No

Describe:

Debris Accumulation on Bridge: Percent Blocked Horizontally: 10 %

Percent Blocked Vertically: 10 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

b. Distance from F.G. to Normal Water Elevation: _____ ft.
c. Distance from Low Steel to Normal Water Elev.: _____ ft.
d. Distance from F.G. to High Water Elevation: _____ ft.
e. Distance from Low Steel to High Water Elev.: _____ ft.

f. Channel Banks Stable: ☑ Yes ☐ No
Describe: Banks protected by riprap in some locations, minor bank erosion upstream and downstream of culverts.

g. Soil Type: Sandy

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.
None, wide undeveloped floodplain upstream.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement
☑ Yes ☑ No
Describe:
Existing alignment of I-26 maintained.

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

If "No", will the proposed bridge be:
☐ Staged Constructed
☐ Replaced on New Alignment

VI. Field Review (cont.)

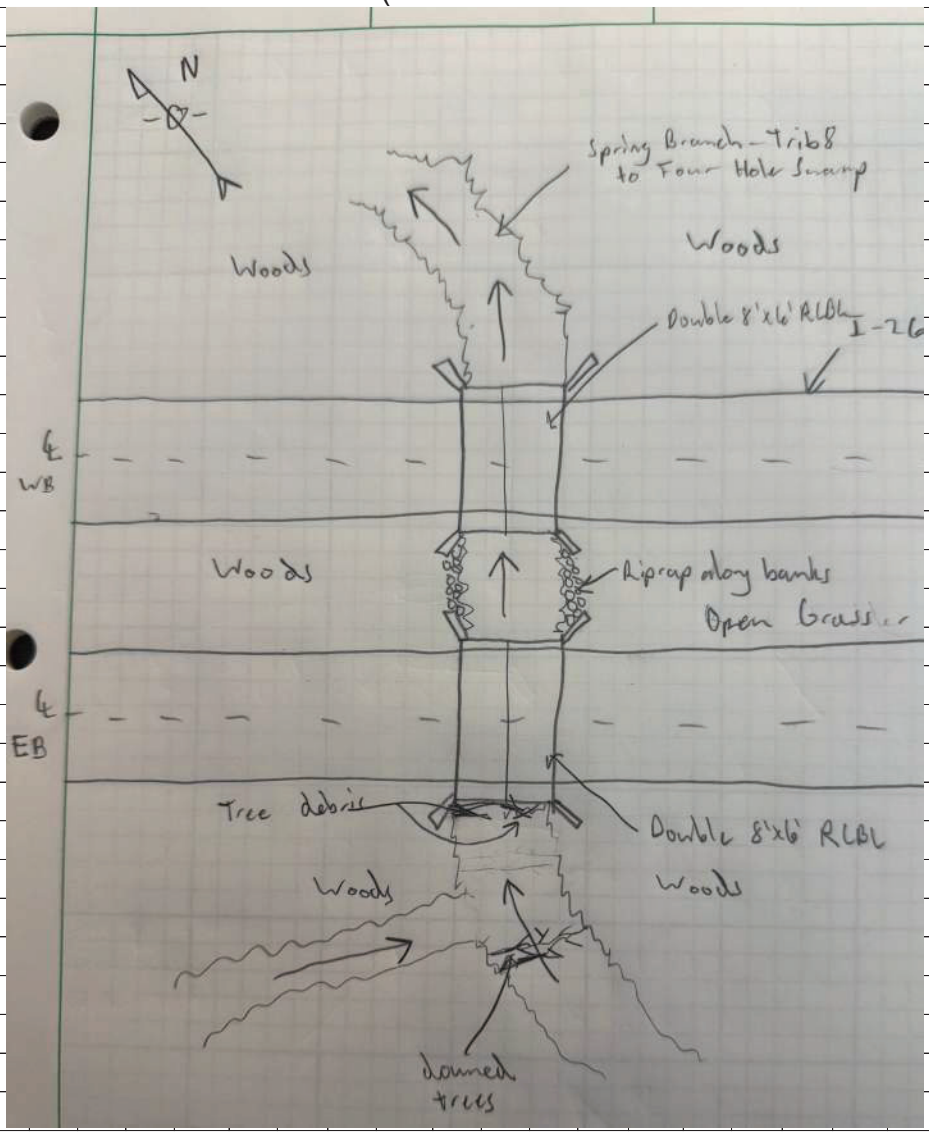
A. Proposed Bridge Recommendation: **Double 9' x 9' x 216' Box Culvert**

Length: 216 ft. Width: 21 ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

ap is for use in administering the National Flood Insurance Program. It
t necessarily identify all areas subject to flooding, particularly from local
e sources of small size. The **community map repository** should be
ed for possible updated or additional flood hazard information.

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

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

ries of the **floodways** were computed at cross sections and interpolated
n cross sections. The floodways were based on hydraulic considerations
ard to requirements of the National Flood Insurance Program. Floodway
and other pertinent floodway data are provided in the Flood Insurance
eport for this jurisdiction.

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

ojection used in the preparation of this map was State Plane South
e FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 spheroid.
ces in datum, spheroid, projection or State Plane zones used in
duction of FIRMs for adjacent jurisdictions may result in slight positional
ces in map features across jurisdiction boundaries. These differences
ffect the accuracy of this FIRM.

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

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

in current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit their website at
ww.ngs.noaa.gov/.

ap information shown on this FIRM was provided in digital format by
ster County, South Carolina.

p may reflect more detailed or up to date stream channel configurations
ose shown on the previous FIRM. The floodplains and floodways that
nsferred from the previous FIRM may have been adjusted to conform to
ew stream channel configurations and improved topographic data. The
aselines depicted on this map represent the hydraulic modeling baselines
ich the flood profiles and Floodway Data Tables if applicable, in the FIS
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he FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

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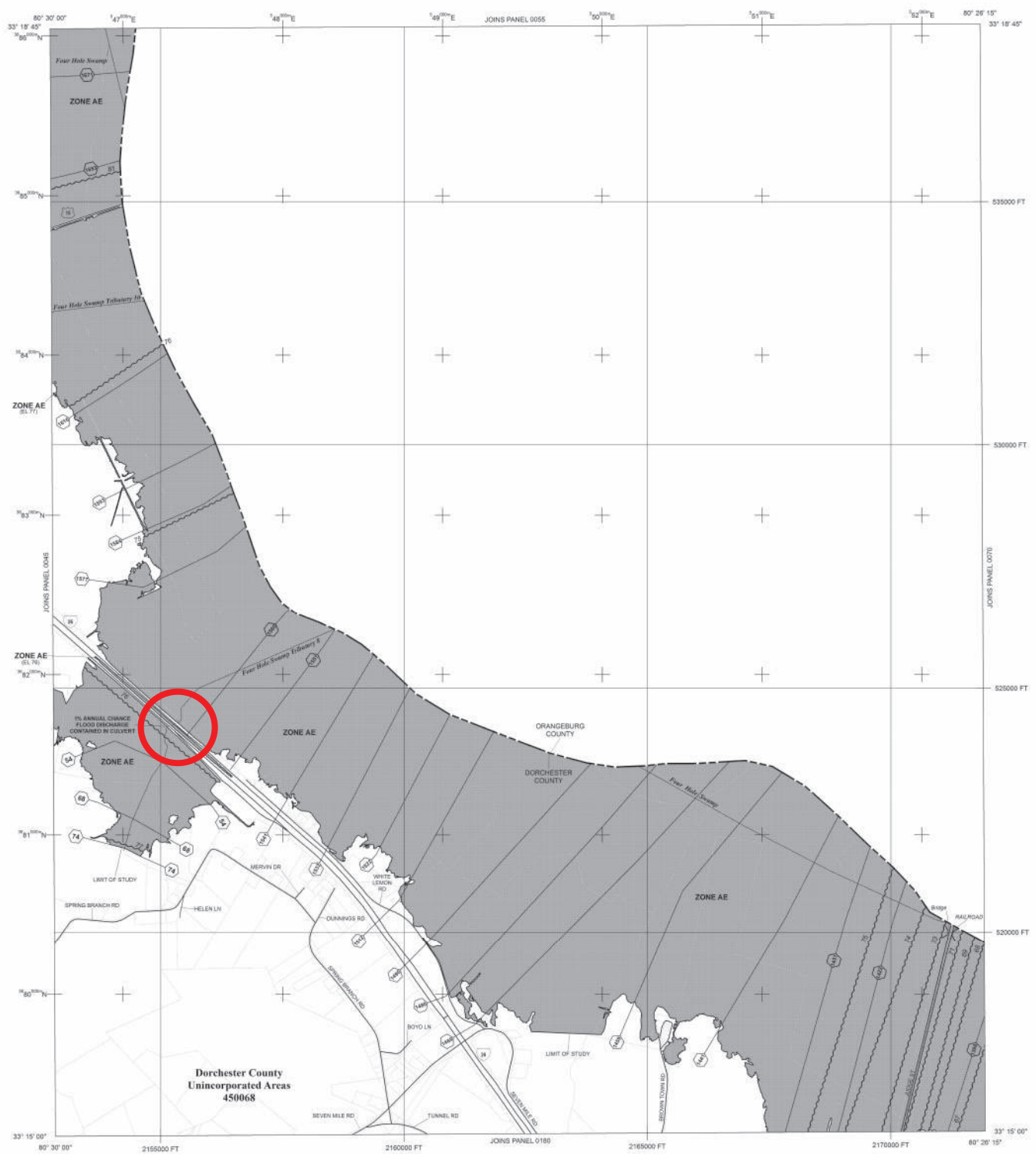
Carolina has joined in a Cooperating Technical State agreement with
to produce and maintain this digital FIRM.

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



LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of 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 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

A — A Cross section line

23 — 23 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 values, zone 17

5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection

DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)

RIVER MILE River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0065E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA
AND INCORPORATED AREAS

PANEL 65 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0065

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 community.

MAP NUMBER
45035C0065E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

DOUBLE 8x6 @ STA. 3446+00

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	Dorchester	18.312.1	F-26-4(1)	52	15	62

INTERSTATE

PLAN: SURVEYED, PLOTTED, GRADES CHECKED, ALIGNMENT CHECKED, RT. OF WAY CHECKED. NOTE BOOK, PAGE NO. — BY — DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, ALIGNMENT CHECKED, STRUCTURE NOTATIONS (OPTD) — NOTE BOOK, PAGE NO. — BY — DATE

3435 195'±R/W 3440 195'±R/W R/W 3445 175'±R/W 3450 175'±R/W

6" Pipe 26 cc P.O.T. 3439+29± 29 LT 20" Pipe

6" Hickory 10 cc P.O.T. 3443+98± 12 LT 2" Hickory

HOLLY HILL LUMBER, CO. BY: PRES. & SEC. D. 5-13-59

HOLLY HILL LUMBER, CO. BY: PRES. & SEC. D. 5-13-59

195' R/W 195' R/W R/W 175' R/W

195' 195' 175' 175'

S 48°-06' E

N

Const. Double 8'x6'x82' R.C. Box Culvert See Sheet No. 213-A

Const. Double 8'x6'x 98' R.C. Box Culvert See Sheet No. 213

Const. Channel Change See Sheet No. 221 for plan

3+58.30±6 Edge of Stream

3+48.70±6 Edge of Stream

3+48.70±6 Edge of Stream

3+58.30±6 Edge of Stream

3+58-30±6 Fore Stream

3+11 Fore Stream

Existing Water

4+62 Fore Stream

4+20 Fore

4+06 Drain

Edge of Stream

Edge of Stream

175' R/W

R/W No 33A Nail in base 8" Pine 225 Lt. Sta 3459+20± Elev. 73.65

Exc.	122	Emb.	26,219
Stripping	200	Sand	18,300
Removal of Unsuitable Mat.	5,200	Silty	20,858
Bor.	4,257	Stripping	200
		Waste	15,000
Total	111,675	Total	111,675

Overhaul: 36,281 C.Y. Mass

100' 100'

400' V.C.

Finish Grade

-0.14%

+0.00%

Strip 6"±

P.I. 3438+00 E. = 81.56

-0.10%

High Water 97.9 (1928) Calculated from Bridge plans at Fore Hill Swamp at U.S. Rt. 15

Dd. 5.5% Adj.

Remove Unsuitable Material & Backfill with Suitable Material Sta 3440 ±on to Sta 3460±30

Ends Swale Ditch Rt. & Lt. Sta 3440+00± Use Typical Section No. 2 as shown on Sheet E-D

80 70

81.66 81.64 81.62 81.58 81.57 81.60 81.58 81.56 81.56 81.56

FED ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	Dorchester	18.312	I-26	2-A	32

STEEL SCHEDULE

MARK	NO	SIZE	LENGTH	SPACING	LOCATION
A	168	½" ϕ	18'-11"	12" C to C	T & B SLABS
B	166	¾" ϕ	19'-0"	12" "	"
C1	332	¾" ϕ	4'-9"	12" "	CORNERS
C2	166	¾" ϕ	8'-4"	12" "	T & B SLABS
C3	166	¾" ϕ	7'-4"	12" "	"
D	46	½" ϕ	42'-7"	AS SHOWN	TOP SLAB
E	46	½" ϕ	55'-9"	"	BOT. SLAB
F1	4	½" ϕ	31'-8"	12" C TO C	APRONS
F2 to F13	4 ea.	½" ϕ	32'-3" to 19'-8" Vary by 1'-1½"	"	"
G1	336	⅝" ϕ	7'-0"	12" c. to c.	S.W. & SLABS
G2	112	½" ϕ	7'-4"	18" "	SIDEWALLS
G3	112	½" ϕ	7'-4"	18" C TO C EA. FACE	MIDWALL
H	12	½" ϕ	60'-0"	12" STAG'D.	S.W. & WINGS
H1	2	½" ϕ	39'-11"	"	"
H2	2	½" ϕ	40'-10"	"	"
H3	2	½" ϕ	47'-9"	"	"
H4	6	½" ϕ	54'-11"	"	"
H5	12	½" ϕ	42'-7"	12" STAG'D.	MIDWALL
I1 to I6	4 ea.	½" ϕ	4'-5" to 6'-6" Vary by 5"	AS SHOWN	WING & APRON
I7 to I13	4 ea.	½" ϕ	6'-10" to 8'-7" Vary by 3½"	"	"
J	8	⅝" ϕ	17'-6"	AS SHOWN	WINGS
K	4	¾" ϕ	9'-0"	"	HEADWALL
L1	2	½" ϕ	12'-10"	"	Top APRON
L2	4	½" ϕ	12'-10"	"	BOT. "
L3	8	½" ϕ	11'-9"	"	TOP & BOT. "
L4	8	½" ϕ	9'-2"	"	"
L5	8	½" ϕ	6'-6"	"	"

TOTAL QUANTITIES

CLASS "A" CONCRETE	163.9	CU. YDS.
REINFORCING STEEL	22,460	LBS.

Concrete P.R.L., Bbl. 1.6111 Cu. Yds.
Concrete P.F.D., C.L.O.H. Wall (1 end) 1.1317 Cu. Yds.
Excavation P.F.D., P.R.L., Bbl. 0.8518 Cu. Yds.

3:1 WING SLOPE

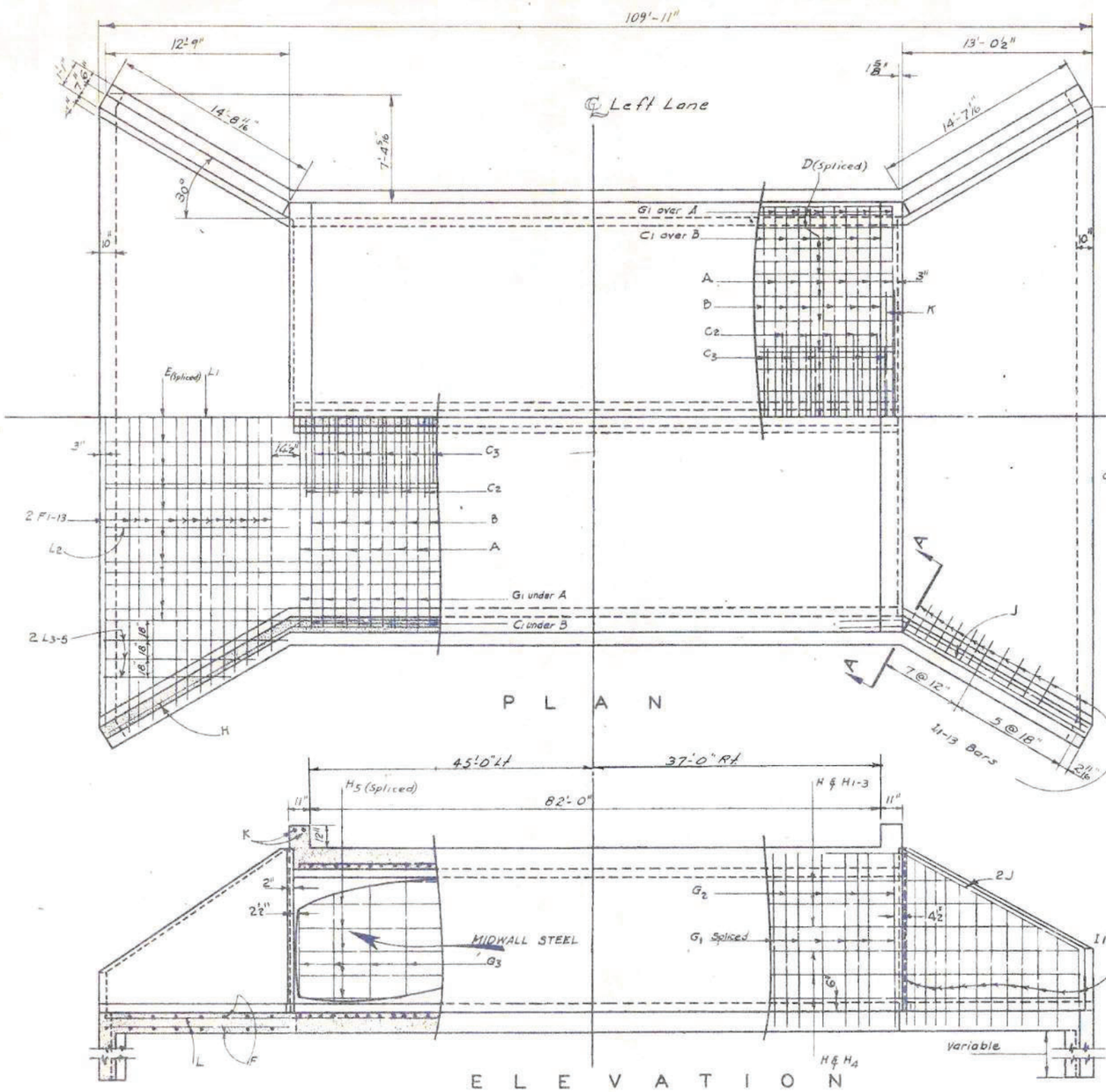
S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA

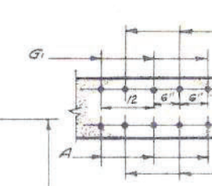
CONCRETE CULVERT

REINFORCED BOX TYPE
DOUBLE 8' X 6' X 82'-0"
STA. NO 3446+10 (Left Lane)
S.C. DOCKET NO. 18.312 Dorchester COUNTY
ROUTE NO. I-26 DATE Feb. 1959

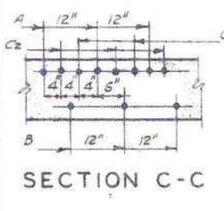
B2.86

Rev.			
REV.	W.B.B.	C.E.D.	2-59
	3:1 Wing Slope		
QUANT	W.B.B.	S.W.T.	7-45
TR.	W.R.T.	W.B.B.	6-45
DR.	W.R.T.	G.K.B.	5-45
DES.	W.B.B. ST	C.K.D.	4-45 DATE

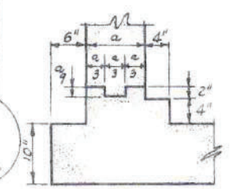




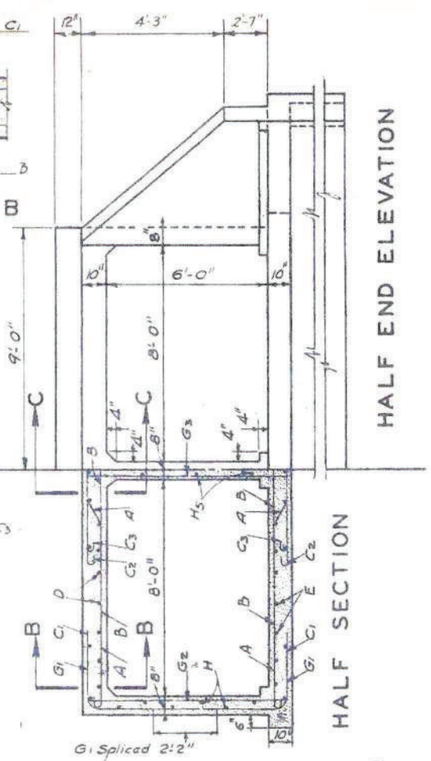
SECTION B-B



SECTION C-C

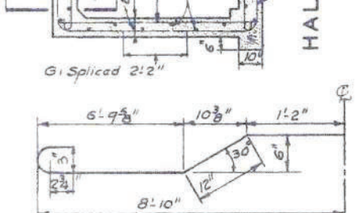


CONSTRUCTION JOINT DETAIL
(Midwall Joint Similar)



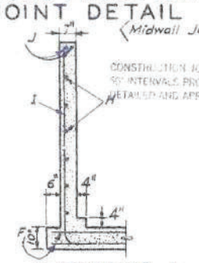
HALF END ELEVATION

HALF SECTION

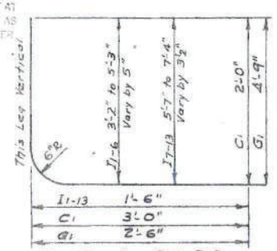


A BARS
Symmetrical about ℄

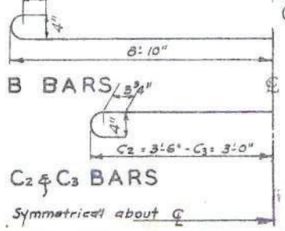
CONSTRUCTION JOINTS ARE TERMINOLOGY AT 50' INTERVALS PROVIDED THEY ARE BUILT AS DETAILED AND APPROVED BY THE ENGINEER



SECTION A-A



C1, G1 & I1-13 BARS



B BARS

C2 & C3 BARS

Symmetrical about ℄

NOTES:

Design Specifications: "Standard Specifications for Highway Bridges", A.A.S.H.O. 1941 (except fs) fs = 20,000#/in², fc = 1000#/in², n = 10, v = 90#/in², u = 165#/in², H15 Loading, 10' Earth Fill (max)

Structural grade reinforcing steel not permitted.

Center of main reinforcing steel shall be 2" from the surface of the concrete.

All concrete shall be Class "A".

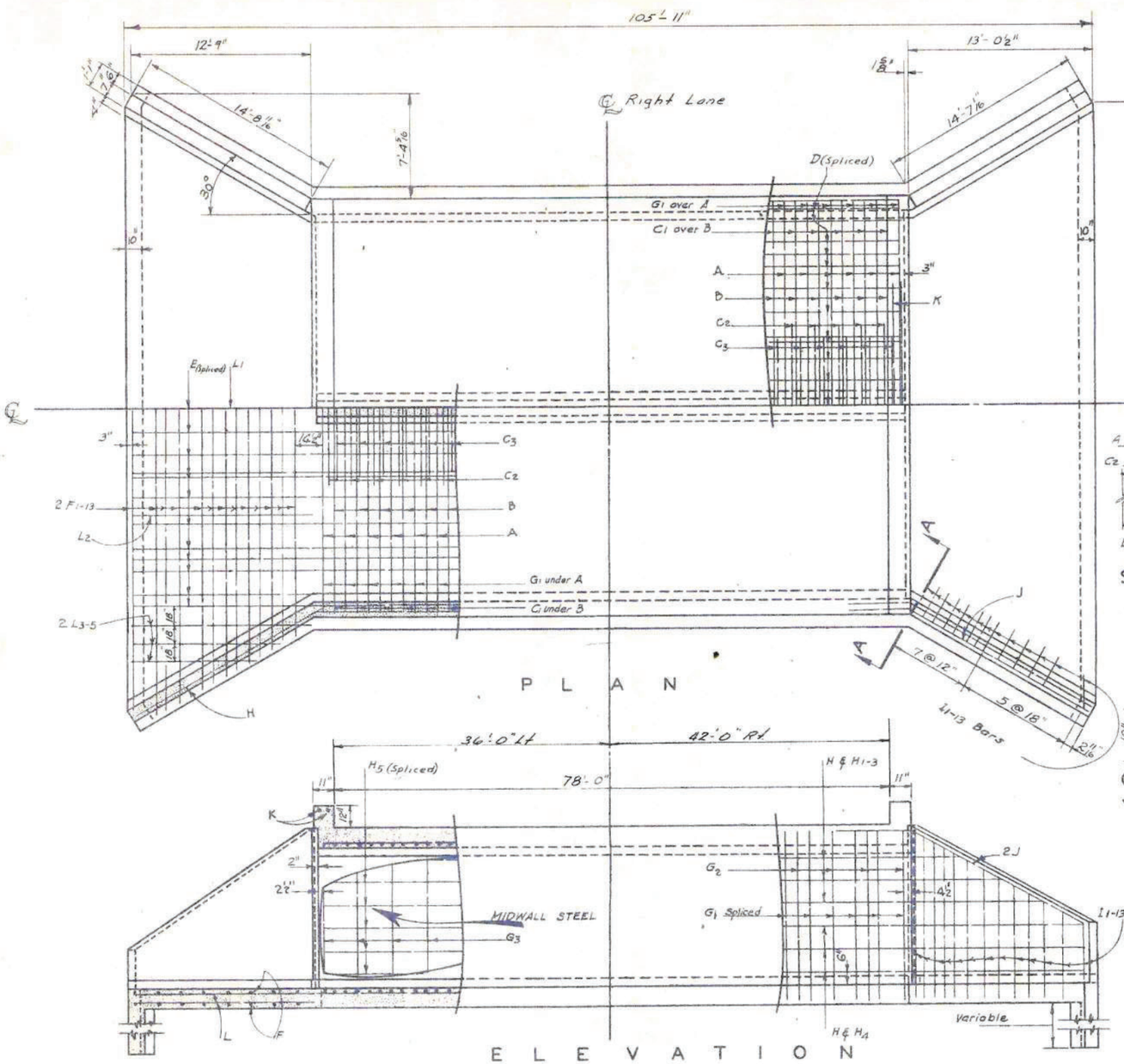
Chamfer all exposed edges ¾".

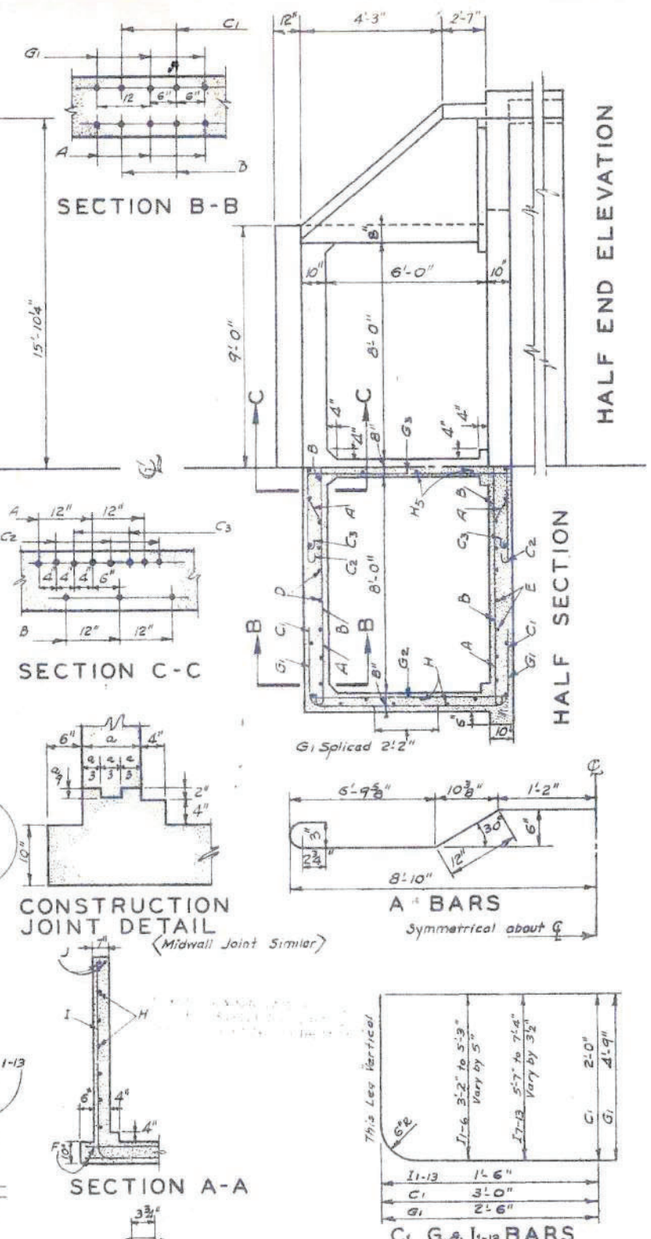
Depth of cut-off walls shall be determined by the Engineer and quantities added to those shown.

CONSTRUCT WEEP HOLES AND FRENCH DRAINS. SEE PARA. 7.02(3) OF STANDARD SPECIFICATIONS.

DESIGNED FOR H15 SIDE LOAD AND FILL HEIGHTS. THE STRUCTURES ARE WITHIN THE ALLOWABLE DEPENDENCE FOR H15 SIDE LOAD WHEN DESIGNED IN ACCORDANCE WITH THE 1953 A.A.S.H.O. SPECIFICATIONS AND ALSO MEETS REQUIREMENTS OF ALTERNATE INTERSTATE TANDEM AXLE LIVE LOAD.

FED ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S C	Dorchester	18312	I-26	523	523





STEEL SCHEDULE					
MARK	NO.	SIZE	LENGTH	SPACING	LOCATION
A	160	½" ϕ	18'-11"	12" C to C	T & B SLABS
B	158	¾" ϕ	19'-0"	12" "	"
C1	316	¾" ϕ	4'-9"	12" "	CORNERS
C2	158	¾" ϕ	8'-4"	12" "	T & B SLABS
C3	158	¾" ϕ	7'-4"	12" "	"
D	46	½" ϕ	40'-7"	AS SHOWN	TOP SLAB
E	46	½" ϕ	53'-9"	"	BOT. SLAB
F1	4	½" ϕ	31'-8"	12" C TO C	APRONS
F2 to F13	4 ea.	½" ϕ	32'-3" to 19'-8" Vary by 1'-1"	"	"
G1	320	⅝" ϕ	7'-0"	12" c. to c.	S.W. & SLABS
G2	106	½" ϕ	7'-4"	18" "	SIDEWALLS
G3	106	½" ϕ	7'-4"	18" C TO C EA. FACE	MIDWALL
H	12	½" ϕ	56'-0"	12" STAG'D.	S.W. & WINGS
H1	2	½" ϕ	33'-11"	"	"
H2	2	½" ϕ	40'-10"	"	"
H3	2	½" ϕ	47'-9"	"	"
H4	6	½" ϕ	54'-11"	"	"
H5	12	½" ϕ	42'-7"	12" STAG'D	MIDWALL
I1 to I6	4 ea.	½" ϕ	6'-5 to 6'-6 Vary by 5"	AS SHOWN	WING & APRON
I7 to I13	4 ea.	½" ϕ	6'-10" to 8'-7" Vary by 3½"	"	"
J	8	⅝" ϕ	17'-6"	AS SHOWN	WINGS
K	4	¾" ϕ	9'-0"	"	HEADWALL
L1	2	½" ϕ	12'-10"	"	Top APRON
L2	4	½" ϕ	12'-10"	"	BOT. "
L3	8	½" ϕ	11'-9"	"	TOP & BOT. "
L4	8	½" ϕ	9'-2"	"	"
L5	8	½" ϕ	6'-6"	"	"

TOTAL QUANTITIES	
CLASS "A" CONCRETE	157.5 CU.YDS.
REINFORCING STEEL	21,497 LBS.

Concrete R.B.L. Bbl.	1.6111	Cu.Yds.
Concrete R.F.D. CutOff Wall (1 End)	1.0317	Cu.Yds.
Excavation R.F.D., P.R.L., Bbl.	0.8518	Cu.Yds.

3:1 WING SLOPE

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA

CONCRETE CULVERT

REINFORCED BOX TYPE

DOUBLE 8' X 6' X 78'-0"

STA. NO. 3446+10 (Right Lane)

S.C. DOCKET NO. 18312 Dorchester COUNTY

ROUTE NO. I-26 DATE Feb. 1959

B2.86

Rev.	C.E.D. From 82' to 78'	W.B.B.	2-59
Rev.	W.B.B. 3:1 Wing Slope	C.E.D.	2-59
QUANT.	W.B.B.	S.L.T.	7-45
TR.	W.R.T.	W.B.B.	6-45
DR.	W.R.T.	G.K.B.	5-45
DES.	W.B.B.	G.K.B.	4-45
	BY	CK'D	DATE

NOTES:

Design Specifications "Standard Specifications for Highway Bridges" A.A.S.H.O. 1941 (except fs) fs = 20,000 #/in², fc = 1000 #/in², n = 10, v = 90 #/in², u = 165 #/in², H15 Loading, 10' Earth Fill (max).

Structural grade reinforcing steel not permitted.

Center of main reinforcing steel shall be 2" from the surface of the concrete.

All concrete shall be Class "A".

Chamfer all exposed edges ¾".

Depth of Cut-off Walls shall be determined by the Engineer and quantities added to those shown.

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: S-18-139 STREAM CROSSING: Cane Branch

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert replacement under Taylor Pond Road south of I-26.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0195E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

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

b. Road Plans ☑ Yes ☐ No File No. 18.301 Sheet No. 12 (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

36" Circular Pipe Culvert

Length: 49 ft. Width: N/A ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☑ Yes ☐ No Angle: 10°

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☑ Yes ☐ No

Describe: Overhead power, phone

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Well vegetated

g. Soil Type: Sandy

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.

Residential properties upstream.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

Taylor Pond Road alignment shifted slightly.

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

Yes.

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

VI. Field Review (cont.)

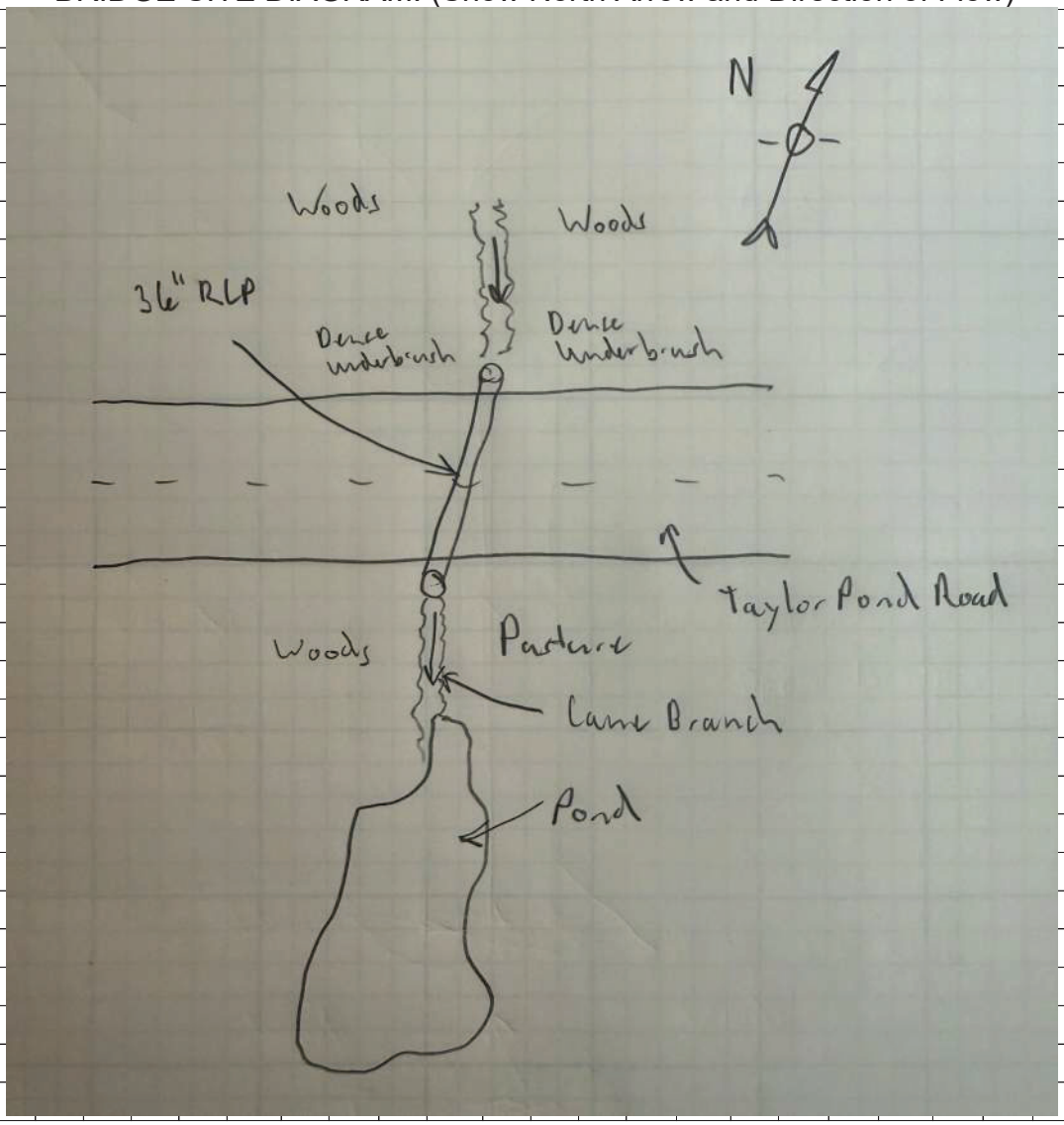
A. Proposed Bridge Recommendation: **Dual (2) 42" RCP**

Length: 116 ft. Width: N/A ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

ap is for use in administering the National Flood Insurance Program. It
t necessarily identify all areas subject to flooding, particularly from local
e sources of small size. The **community map repository** should be
ed for possible updated or additional flood hazard information.

in more detailed information in areas where **Base Flood Elevations**
and/or **floodways** have been determined, users are encouraged to
the Flood Profiles and Floodway Data and/or Summary of Stillwater
ns tables contained within the Flood Insurance Study (FIS) report that
anies this FIRM. Users should be aware that BFEs shown on the
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North American Vertical Datum of 1988, visit the National Geodetic
website at http://www.ngs.noaa.gov/ or contact the National Geodetic
at the following address:

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

in current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit their website at
ww.ngs.noaa.gov/.

ap information shown on this FIRM was provided in digital format by
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ose shown on the previous FIRM. The floodplains and floodways that
nsferred from the previous FIRM may have been adjusted to conform to
ew stream channel configurations and improved topographic data. The
selines depicted on this map represent the hydraulic modeling baselines
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As a result, the profile baselines may deviate significantly from the new
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r each community as well as a listing of the panels on which each
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tion on available products associated with this FIRM. Available products
lude previously issued Letters of Map Change, a Flood Insurance Study
and/or digital versions of this map. The FMIX may also be reached by
1-800-358-9620 and their website at http://www.msc.fema.gov/.

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DNR

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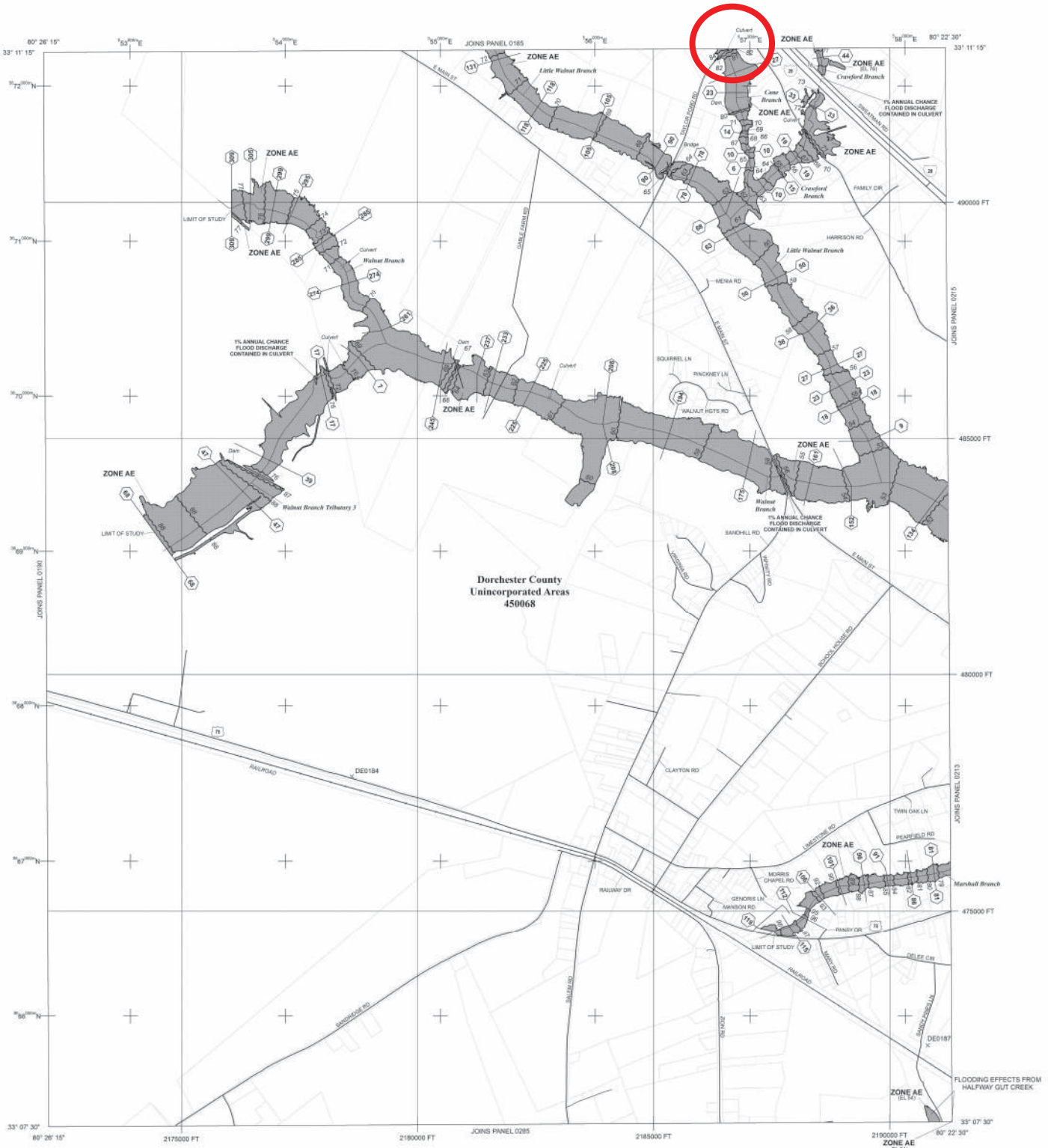
Carolina has joined in a Cooperating Technical State agreement with
to produce and maintain this digital FIRM.

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



LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of 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 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 Area Zones and Base Flood Elevations, flood depths or flood velocities
513 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
A — A Cross section line
23 — 23 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 values, zone 17
600000 FT 5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0195E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

PANEL 195 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0195E

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 community.

MAP NUMBER
45035C0195E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	DORCHESTER	18-301	S-1166 II	139	12	43

F. Post — F. Post — 38.75 — 3.30 — P.T. = 23°38'25"

F. Post — 6" Sherry — 82.90 — 95.00 — P.C. = 32°58'47"

10" Pine — 1705 — P.T. = 44°11'27" — 14.15 — 15" Pine

F. Post — 3.30 — P.O.T. = 44°11'96" — 54.20 — P.P.

JAMES LARY — Plant 30-18" R.C.Pipe

E. J. HERNDON — Place 20'-15" R.C. Pipe

P.I. = 21°43.8
Δ = 7°-51'.47
D = 2°-00'
T = 246.85'
L = 472.50'
E = 10.6

N 19°-07' E

Place 20'-15" R.C. Pipe

Relay 20'-15" R.C. Pipe

JESSIE JOHNSON

AMEN CARN

JAMES LARY

P.W. TAYLOR

Remove 24'-24" C.M.P. Pipe
Place 30'-18" R.C. Pipe

Clean Out Fill Ditch
Est 100 C.Y.

P.I. = 38°17.8'
Δ = 46°-21' Rt
D = 4°-00'
T = 613.225'
L = 1158.95'
E = 125.75'

Place 44'-36" R.C. Pipe

Remove 18"-30" C.M.P. Pipe

P.W. TAYLOR

Place 30'-15" R.C. Pipe

P. L. TAYLOR

Relay 24'-18" R.C. Pipe

Place 36'-15" R.C. Pipe

P.L. TAYLOR

3615 C.Y.
1400 C.Y.H.M.

PLAN — SURVEYED — DRAWN — TRACED — CHECKED — NOTE BOOK — R. M. NOTED — STRUCTURE NOTATION NO.

PROFILE — SURVEYED — DRAWN — TRACED — CHECKED — NOTE BOOK — R. M. NOTED — STRUCTURE NOTATION NO.

B.M. No. 3 Nail in Base 24" Pine
30 Rt. Sta. 20+10 El. = 75.56

B.M. No. 4 Nail in Base P. Pole
33 Lt. Sta. 30+80 El. = 86.79

B.M. No. 5 Nail in Base 12" Pine
33 Rt. Sta. 40+30 El. = 84.10

B.M. No. 6 Nail in Base P. Pole
30 Rt. Sta. 48+40 El. = 90.84

EXC. 2425 — EMB. 1132 — 40% 693 — TOT. 2422 — TOT. 2425

OVERHAUL 1,400 C.Y.H.M.

EXC. 1190 — EMB. 850 — 40% 340 — TOT. 1190 — TOT. 1190

P.I. 25+00 El. 83.08 — +1.94% — +0.34% — P.I. 31+00 El. 86.12 — 300 V.C. — 350 V.C. — -0.10% — SUBGRADE — 300 V.C. — +1.02% — P.I. 47+50 El. 84.09 — 300 V.C. — +1.22%

D.H. : 0.3 Rt.

D.H. : 0.0 Rt. C. : 0.3 P.I. 42+30 El. 83.97

20 1 2 3 4 5 6 7 8 9 30 1 2 3 4 5 6 7 8 9 40 1 2 3 4 5 6 7 8 9 50

75.38 75.32 77.26 79.20 80.92 81.11 82.39 82.35 82.20 83.54 83.47 83.16 84.10 84.44 84.11 84.76 84.88 84.86 85.00 85.00 84.97 84.92 84.82 84.72 84.62 84.58 84.42 84.37 84.27 84.12 84.12 84.41 84.39 84.67 85.04 85.50 85.52 87.54 88.02 88.43 88.79 89.07 89.28 89.42 89.64

PLATE 1 PLAN-PROFILE C.P.R. & R.E. STANDARD

Ditches for Co. Plate 1 139

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: S-18-139 STREAM CROSSING: Crawford Branch

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert under Taylor Pond Road north of I-26.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0185E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

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

b. Road Plans ☑ Yes ☐ No File No. 18.301 Sheet No. 13 (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

36" Circular Pipe Culvert

Length: 40.5 ft. Width: N/A ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☑ Yes ☐ No Angle: 20°

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☑ Yes ☐ No

Describe: Overhead power

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Well vegetated.

g. Soil Type: Sandy

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.

Residential properties upstream.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

Taylor Pond Road Alignment shifted slightly.

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

Yes.

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

VI. Field Review (cont.)

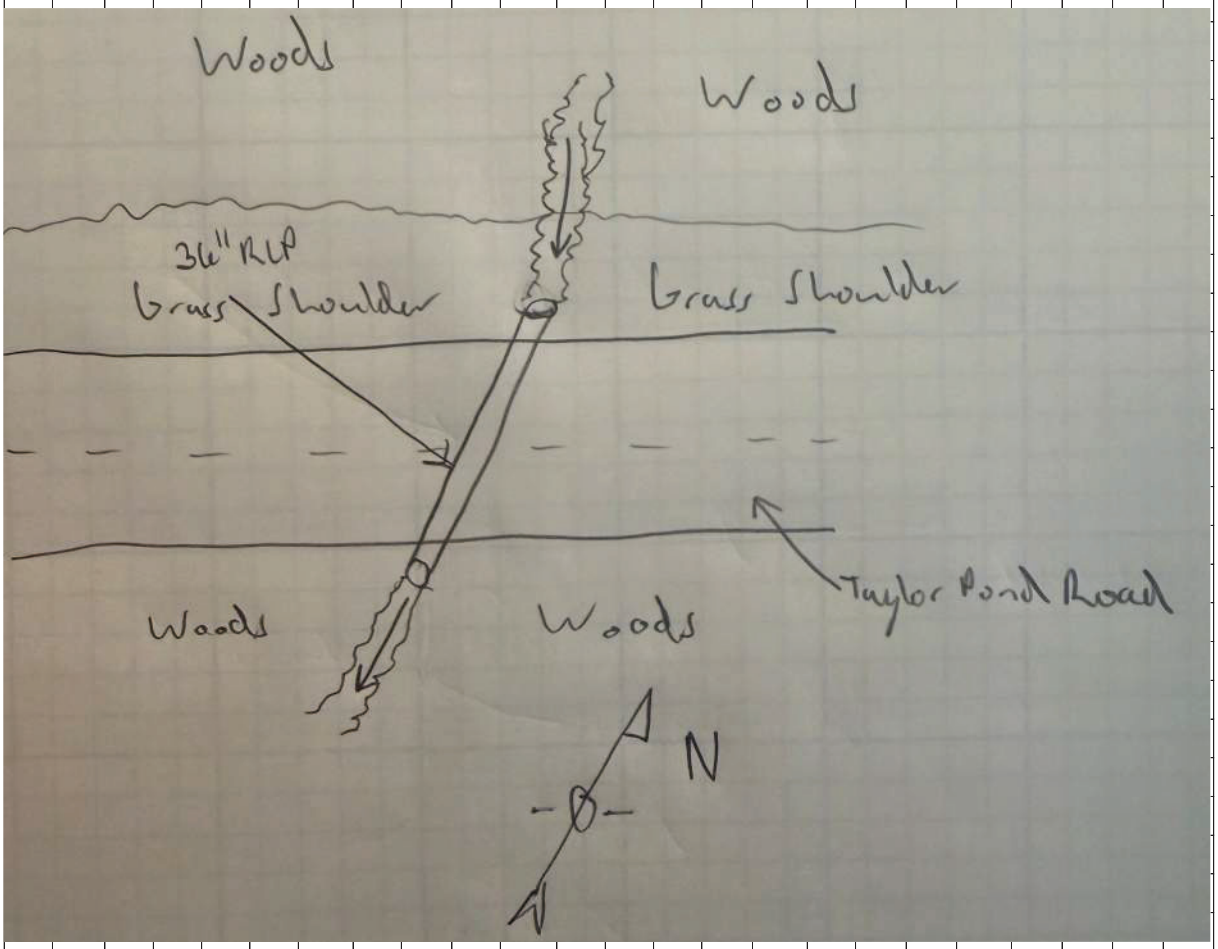
A. Proposed Bridge Recommendation: **Dual (2) 54" RCP**

Length: 119 ft. Width: N/A ft. Elevation: N/A ft.

Span Arangement: _____

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

ap is for use in administering the National Flood Insurance Program. It
t necessarily identify all areas subject to flooding, particularly from local
e sources of small size. The **community map repository** should be
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DNR

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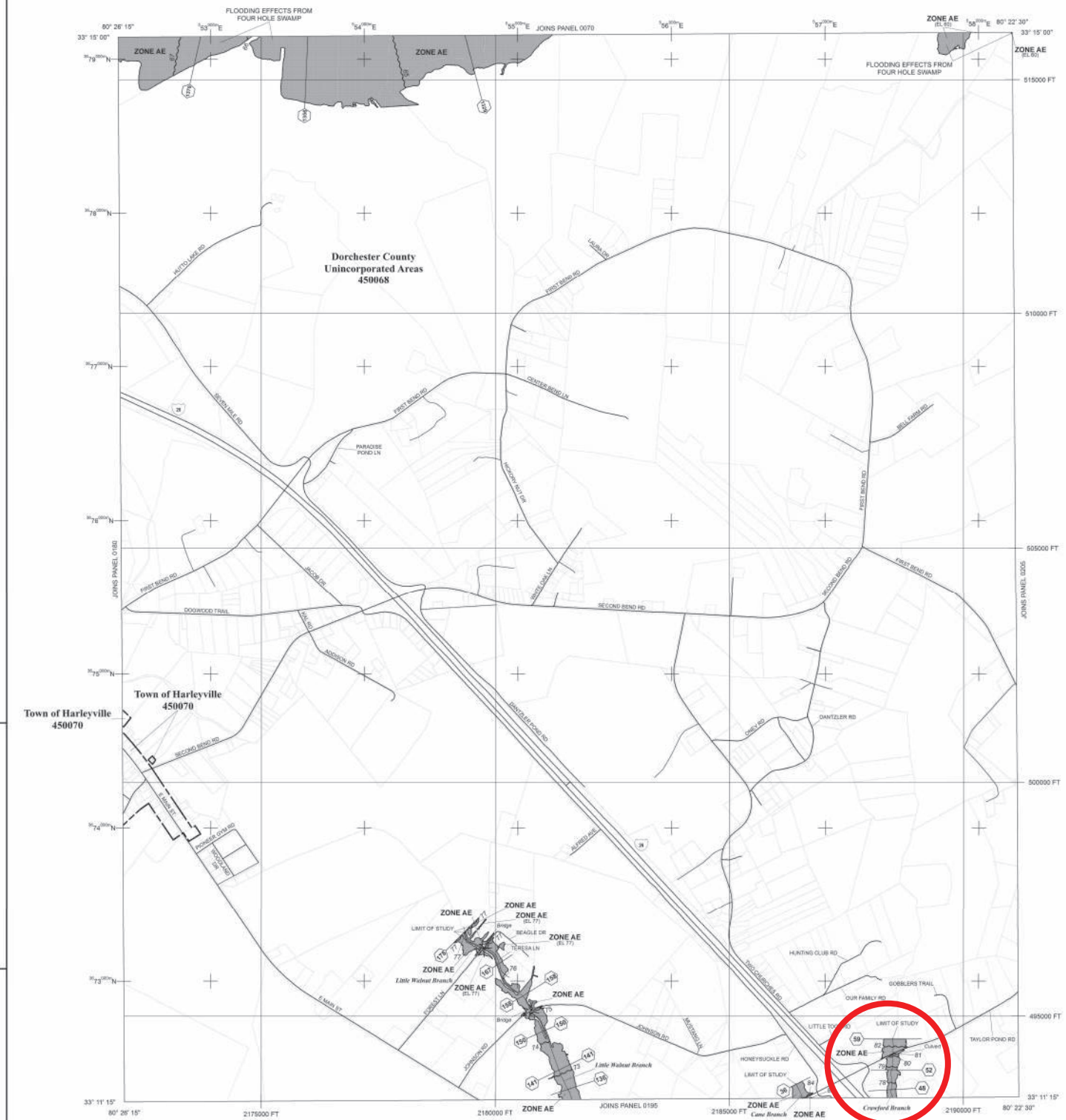

LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of 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.

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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 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.

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OTHERWISE PROTECTED AREAS (OPAs)

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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.
Base Flood Elevation line and value; elevation in feet*
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Base Flood Elevation value where uniform within zone; elevation in feet*
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A — A Cross section line
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600000 FT 5000-foot grid ticks: South Carolina State Plane coordinate system, zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
RIVER MILE

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood Insurance Study report.)

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
150 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0185E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA
AND INCORPORATED AREAS

PANEL 185 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0185
HARLEYVILLE, TOWN OF	450070	0185

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 community.

MAP NUMBER
45035C0185E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	DORCHESTER	18-301	S-114(11)	139	13	43

PLAN
SURVEYED
PLOTTED, CHECKED
RIGHT OF WAY APPROVED
RT. OF WAY CHECKED
NOTE BOOK
NO.

PROFILE
SURVEYED
PLOTTED, CHECKED
R. R. NOTED
STRUCTURE NO. AS SHOWN
NOTE BOOK
NO.

P.L. TAYLOR

P.L. TAYLOR

MRS. J. W. WILLIS

MRS. J. W. WILLIS

C. W. CRAWFORD

Place 2-8'-15" R.C. Pipe

Remove 25'-30" C.M. Pipe
Place 40'-30" R.C. Pipe

P.I. = 66+10.42
Δ = 11°53' Rt
D = 2°-00'
T = 299.15
L = 594.16
E = 15.6'

P.I. = 74+12.93
Δ = 14°-02.1'
D = 3°-00'
T = 295.066
L = 467.776'
E = 19.4'

33' R/W

N64°-30°E

N76°-03'E

N62°-21'E

Rt. 33+11.22

Lt. 33+11.22

Rt. 33+11.22

Lt. 33+11.22

2918 C.Y.
1000 C.Y.H.M.

B.M. No. 7 Nail in Base 18" Pine
50' Rt. Sta. 61+00 El.= 84.77

B.M. No. 8 Nail in Base P. Pole
25' Lt. Sta. 69+25 El.= 87.87

B.M. No. 9 Nail in Base P. Pole
150' Lt. Sta. 79+80 El.= 93.91

EXC. 491
TOT. 491

EMB. 329
ADD'L 132
TOT. 461

EXC. 2457
TOT. 2457

END. 1755
ADD'L 702
TOT. 2457

OVERHAUL 1000 C.Y.H.M.

+0.22%

P.I. 37+00
ELEV. 91.18

SUBGRADE

-1.30%

400 V.C.

300 V.C.

D.H. 40+00
C = 0.3
P.T. 43+00
ELEV. 88.72

+1.24%

P.I. 73+00
ELEV. 91.24

300 V.C.

+0.30%

P.I. 79+00
ELEV. 94.01

300 V.C.

-0.54%

PLATE 1 - PLAN - PROFILE O.P.R. & R. E. STANDARD

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: US 15 STREAM CROSSING: Four Hole Swamp Trib #10

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert replacement under US 15 and Alligator Lake Road.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0045E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

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

b. Road Plans ☑ Yes ☐ No File No. 115-A-REOP Sheet No. 11 (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 **Double 10' x 6' Box Culvert**

Length: 78 ft. Width: 22.25 ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☐ Yes ☑ No

Describe:

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

b. Distance from F.G. to Normal Water Elevation: _____ ft.
c. Distance from Low Steel to Normal Water Elev.: _____ ft.
d. Distance from F.G. to High Water Elevation: _____ ft.
e. Distance from Low Steel to High Water Elev.: _____ ft.

f. Channel Banks Stable: ☑ Yes ☐ No
Describe: Well vegetated, defined channel.

g. Soil Type: Sandy

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.
None, swampy area upstream of I-26.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement
☑ Yes ☐ No
Describe:
Existing alignment of US15 maintained.

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

If "No", will the proposed bridge be:
☐ Staged Constructed
☐ Replaced on New Alignment

VI. Field Review (cont.)

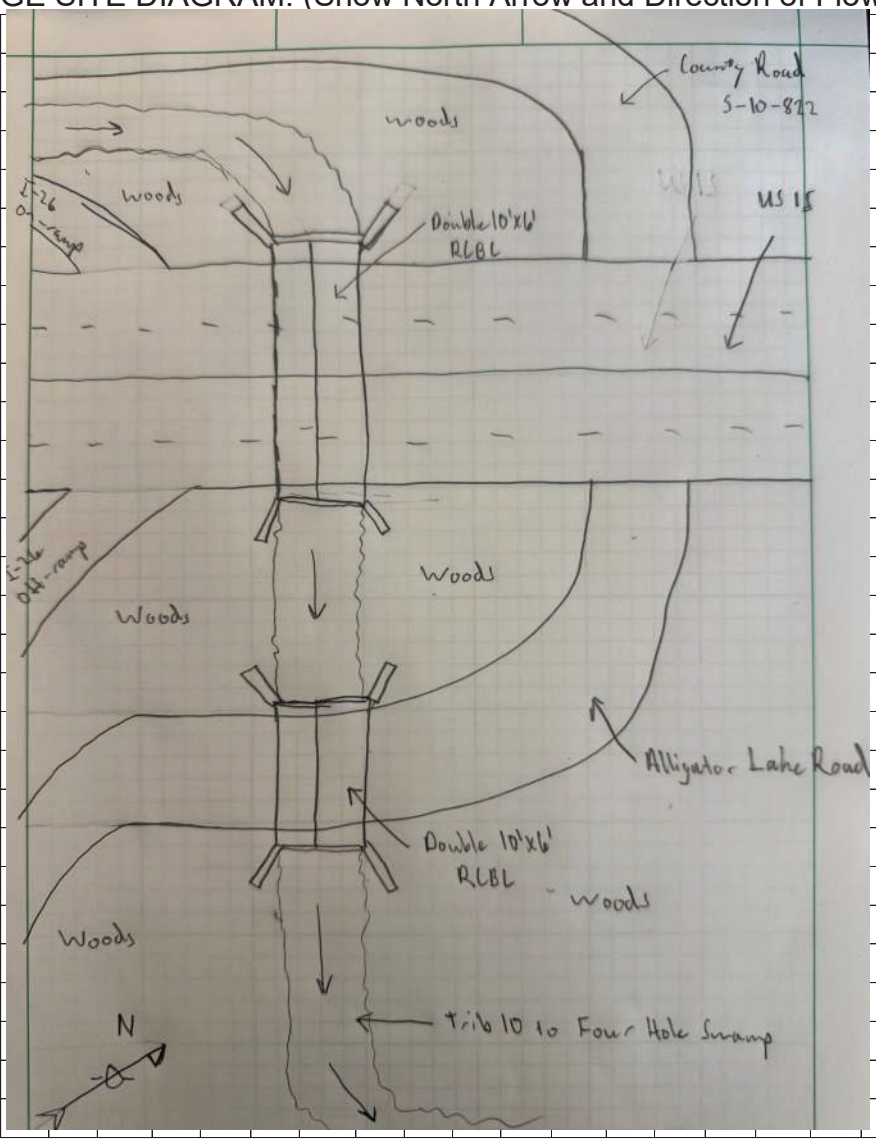
A. Proposed Bridge Recommendation: **Quadruple 12' x 12' x 250' Box Culvert**

Length: 250 ft. Width: 53 ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

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e sources of small size. The **community map repository** should be
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ain more detailed information in areas where **Base Flood Elevations**
and/or **floodways** have been determined, users are encouraged to
the Flood Profiles and Floodway Data and/or Summary of Stillwater
ns tables contained within the Flood Insurance Study (FIS) report that
anies this FIRM. Users should be aware that BFEs shown on the
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surance rating purposes only and should not be used as the sole
of flood elevation information. Accordingly, flood elevation data
ed in the FIS report should be utilized in conjunction with the FIRM
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North American Vertical Datum of 1988 (NAVD 88). Users of
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n cross sections. The floodways were based on hydraulic considerations
ard to requirements of the National Flood Insurance Program. Floodway
and other pertinent floodway data are provided in the Flood Insurance
eport for this jurisdiction.

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structures. Refer to Section 2.4 "Flood Protection Measures" of
od Insurance Study report for information on flood control structures
jurisdiction.

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e FIPS 3900. The **horizontal datum** was NAD 83, GRS1980 spheroid.
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duction of FIRMs for adjacent jurisdictions may result in slight positional
ces in map features across jurisdiction boundaries. These differences
ffect the accuracy of this FIRM.

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of 1988. These flood elevations must be compared to structure and
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North American Vertical Datum of 1988, visit the National Geodetic
website at http://www.ngs.noaa.gov/ or contact the National Geodetic
at the following address:

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

n current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit their website at
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ose shown on the previous FIRM. The floodplains and floodways that
nsferred from the previous FIRM may have been adjusted to conform to
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aselines depicted on this map represent the hydraulic modeling baselines
tch the flood profiles and Floodway Data Tables if applicable, in the FIS
As a result, the profile baselines may deviate significantly from the new
p channel representation and may appear outside of the floodplain.

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ve occurred after this map was published, map users should contact
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r each community as well as a listing of the panels on which each
nity is located.

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tion on available products associated with this FIRM. Available products
lude previously issued Letters of Map Change, a Flood Insurance Study
and/or digital versions of this map. The FMIX may also be reached by
1-800-358-9620 and their website at http://www.msc.fema.gov/.

have **questions about this map** or questions concerning the National
surance Program in general, please call **1-877- FEMA MAP** (1-877-336-2627)
he FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

igital Flood Insurance Rate Map (FIRM) was produced through a unique
rative partnership between the State of South Carolina and the Federal
ency Management Agency (FEMA). The State of South Carolina has
rested a long-term approach of floodplain management to decrease the
ssociated with flooding. This is demonstrated by the State's commitment
p floodplain areas at the local level. As a part of this effort, the State of
Carolina has joined in a Cooperating Technical State agreement with
to produce and maintain this digital FIRM.

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

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT
INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is th
that has a 1% chance of being equaled or exceeded in any given year. The
Flood Hazard Area is the area subject to flooding by the 1% annual chance flood.
of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The
Flood Elevation is the water-surface elevation of 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
Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping
average depths determined. For areas of alluvial fan flooding, ve
also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1%
chance flood by a flood control system that was subse
decertified. Zone AR indicates that the former flood control sy
being restored to provide protection from the 1% annual cha
greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a
flood protection system under construction; no Base Flood El
determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood
determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood El
determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that
kept free of encroachment so that the 1% annual chance flood can be carried
substantial increases in flood heights.

OTHER FLOOD AREAS

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

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Area Zones
Base Flood Elevations, flood depths or flood vel
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
A — A — Cross section line
23 — 23 — 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 values, zone
5000-foot grid ticks: South Carolina State Plane coordinate s
zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 — Bench mark (see explanation in Notes to Users section of thi
FIRM panel)
River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD
INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood In
Study report.)

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

To determine if flood insurance is available in this community, contact your in
agent or call the National Flood Insurance Program at 1-800-61

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0045E

FIRM

FLOOD INSURANCE RATE M

DORCHESTER COUN
SOUTH CAROLINA
AND INCORPORATED ARE

PANEL 45 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0045

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

MAP NU
450350

EFFECTIVE
JULY 1

Federal Emergency Management

FED. ROAD DIST. NO.	STATE	COUNTY	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S.C.	DORCHESTER	115-A	'27	10	36 15

REOP

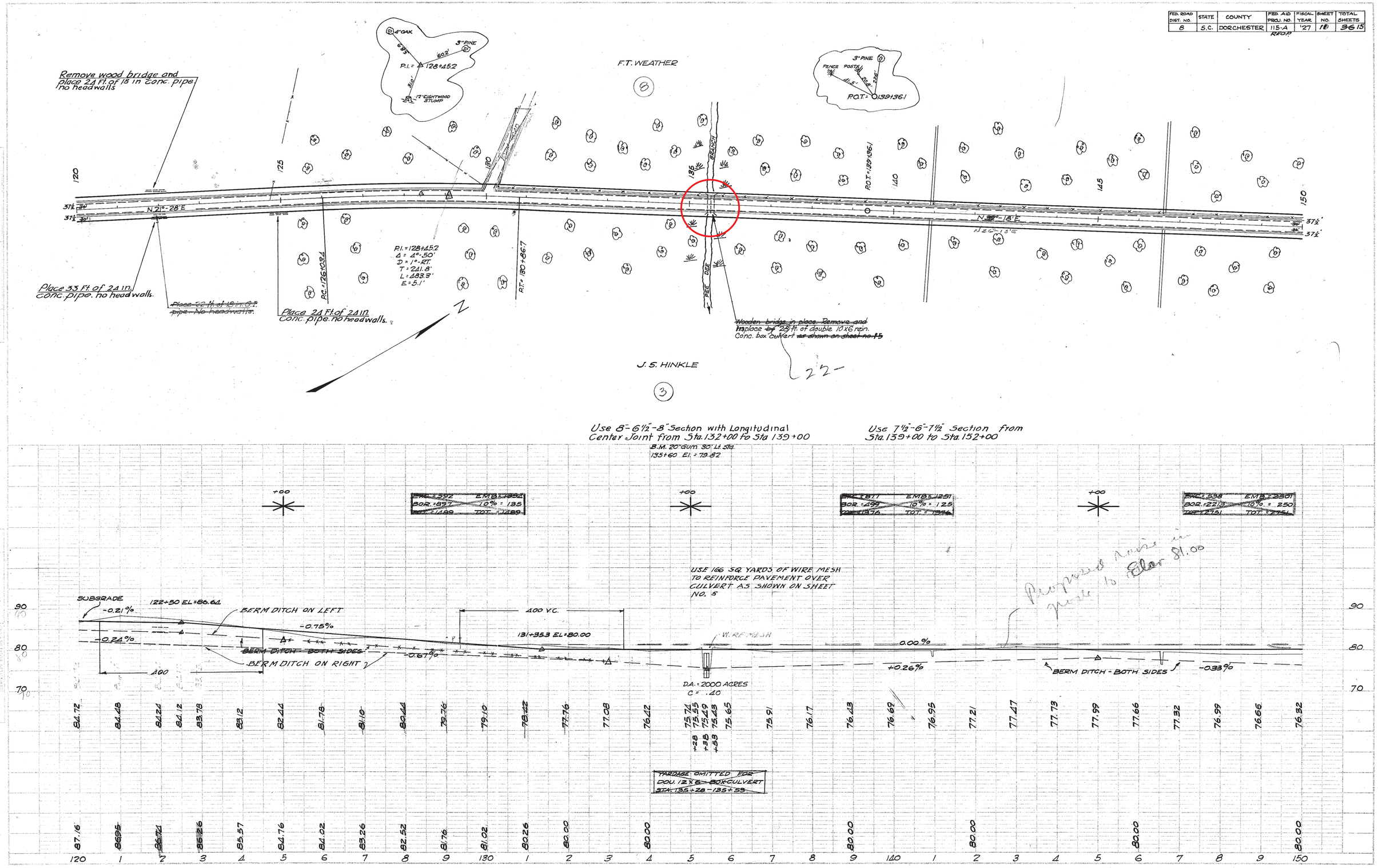


PLATE 1 - PLAN - PROFILE

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/15/2025

ROAD #: US 15 STREAM CROSSING: Un Trib (650' N of Deer Hunt)

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert replacements under US15 north of Deer Hunt Road.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0045E Effective Date: 07/18/2017 (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: Increasing culvert size will reduce backwater.

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

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

b. Road Plans ☑ Yes ☐ No File No. 115-A-REOP Sheet No. 12 (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

Double 6' x 6' Box Culvert

Length: 50 ft. Width: 14 ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☑ Yes ☐ No

Describe: Overhead power and buried fiber optic cable.

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☑ Yes ☐ No

Describe: Culvert undersized for existing conditions.

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Well vegetated, defined channel.

g. Soil Type: Sandy

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.

Residential property upstream.

C. Existing Roadway Geometry

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

☑ Yes ☐ No

Describe:

Existing alignment of US15 maintained.

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

Yes.

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

VI. Field Review (cont.)

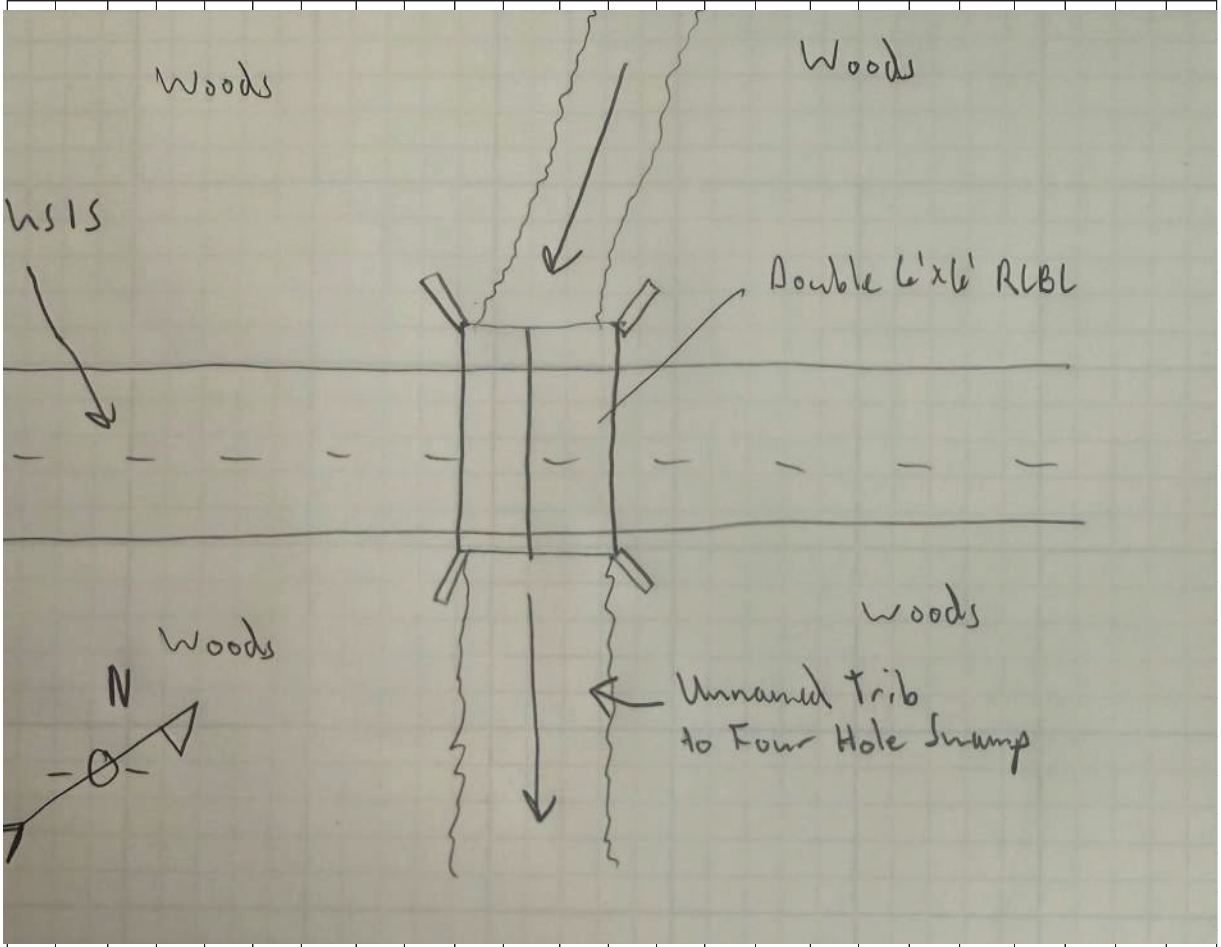
A. Proposed Bridge Recommendation: **Double 8' x 7' x 105' Box Culvert**

Length: 105 ft. Width: 19 ft. Elevation: N/A ft.

Span Arangement: N/A

Notes: _____

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



Performed By: Christian Duncan

Title: Water Resources Designer

NOTES TO USERS

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at the following address:

formation Services
NGS12
l Geodetic Survey
3, #9202
ast-West Highway
pring, MD 20910-3282

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1-800-358-9620 and their website at http://www.msc.fema.gov/.

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he FEMA website at http://www.fema.gov/national-flood-insurance-program.

DNR

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to produce and maintain this digital FIRM.

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

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is th that has a 1% chance of being equaled or exceeded in any given year. The Flood Hazard Area is the area subject to flooding by the 1% annual chance flood of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Flood Elevation is the water-surface elevation of 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 Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping t average depths determined. For areas of alluvial fan flooding, ve also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% chance flood by a flood control system that was subse decertified. Zone AR indicates that the former flood control sy being restored to provide protection from the 1% annual cha greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a flood protection system under construction; no Base Flood El determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood El determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that kept free of encroachment so that the 1% annual chance flood can be carried substantial increases in flood heights.

OTHER FLOOD AREAS

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

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Area Zones a
Base Flood Elevations, flood depths or flood ve
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
A — A — Cross section line
23 — 23 — Transect line
97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4 276 000 mE — 1,000-meter Universal Transverse Mercator grid values, zone
600000 FT — 5000-foot grid ticks: South Carolina State Plane coordinate s zone 17 (FIPSZONE 3900), Lambert Projection
DX5510 — Bench mark (see explanation in Notes to Users section of thi FIRM panel)
RIVER MILE — River Mile

MAP REPOSITORIES
Refer to Listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2017

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

(For description of revisions listed above, see Notice to Users page in the Flood In Study report.)

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

To determine if flood insurance is available in this community, contact your in agent or call the National Flood Insurance Program at 1-800-61

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0045E

FIRM

FLOOD INSURANCE RATE M

DORCHESTER COUN
SOUTH CAROLINA
AND INCORPORATED ARE

PANEL 45 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL
DORCHESTER COUNTY	450068	0045

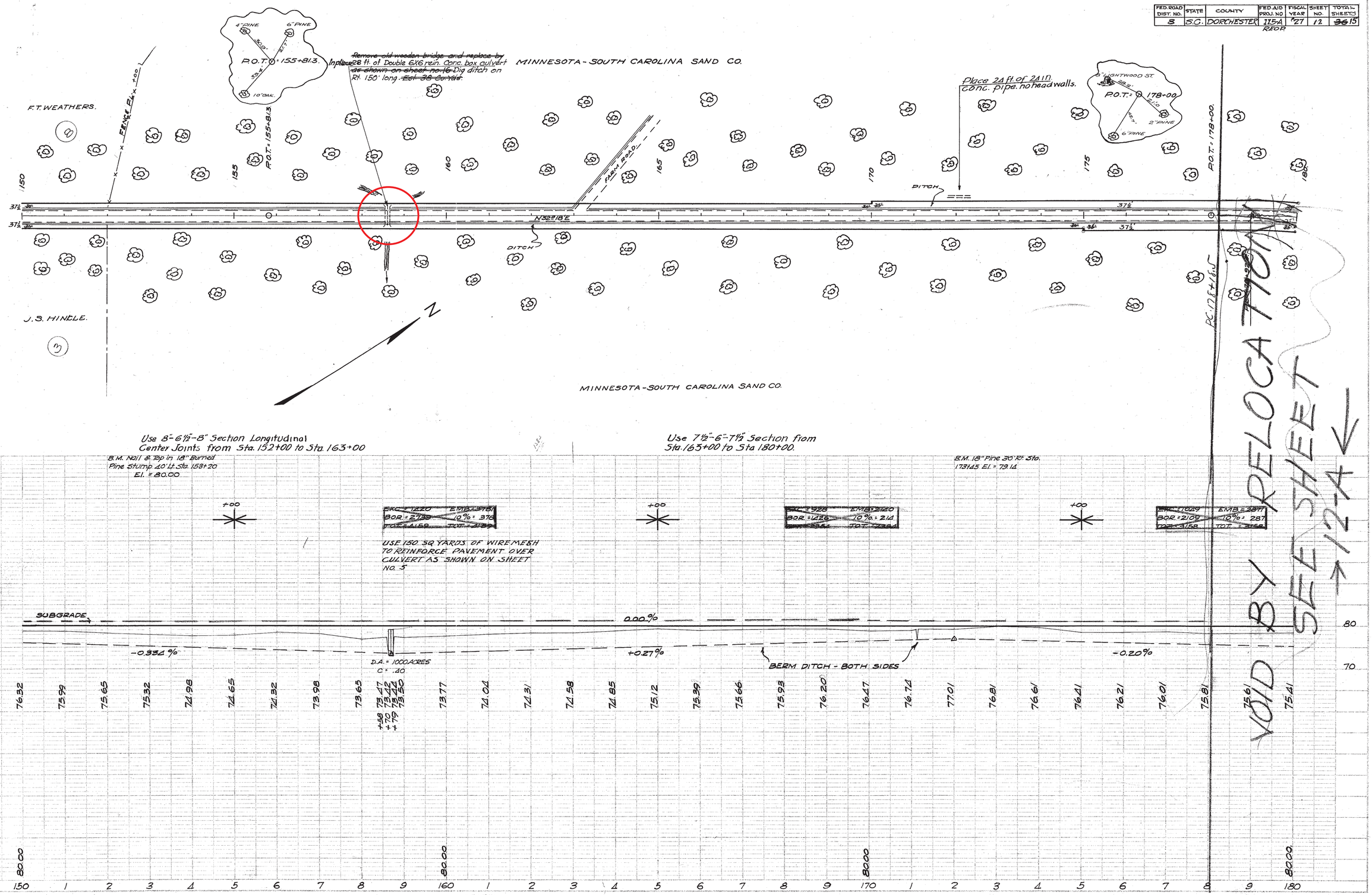
Notice to User: The Map Number shown below shou when placing map orders; the Community Nu above should be used on insurance applications for community.

MAP NU
450350

EFFECTIVE
JULY 1

Federal Emergency Management

FED. ROAD DIST. NO.	STATE	COUNTY	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S.C.	DORCHESTER	115-A REOP.	'27	12	~~36~~ 15



BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 08/21/2025

ROAD #: I-26 STREAM CROSSING: Crawford Branch

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Culvert under I-26 east of Taylor Pond Road.

I. FEMA Acknowledgement

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

Panel Number: 45035C0195E Effective Date: 07/18/2017 (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: Preliminary calculations show we are only adding an additional 20 cfs, approximately, to the 566 cfs flowing through the culvert presently

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 18.313 Sheet No. 151, 152 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 18.313.2 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

Single - 10' x 6' Box Culvert

Length: 320 ft. Width: _____ ft. Max. span Length: N/A ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☑ Yes ☐ No Angle: 30°

End Abutment Type: N/A

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

Superstructure Type: N/A

Substructure Type: N/A

Utilities Present: ☐ Yes ☑ No

Describe:

Debris Accumulation on Bridge: Percent Blocked Horizontally: N/A %

Percent Blocked Vertically: N/A %

Hydraulic Problems: ☐ Yes ☑ No

Describe:

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☐ Yes ☐ No

Describe:

g. Soil Type: Sandy

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

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

C. Existing Roadway Geometry

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

☐ Yes ☑ No

Describe:

Interstate route

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

If "No", will the proposed bridge be:

☑ Staged Constructed

☐ Replaced on New Alignment

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

VI. Field Review (cont.)

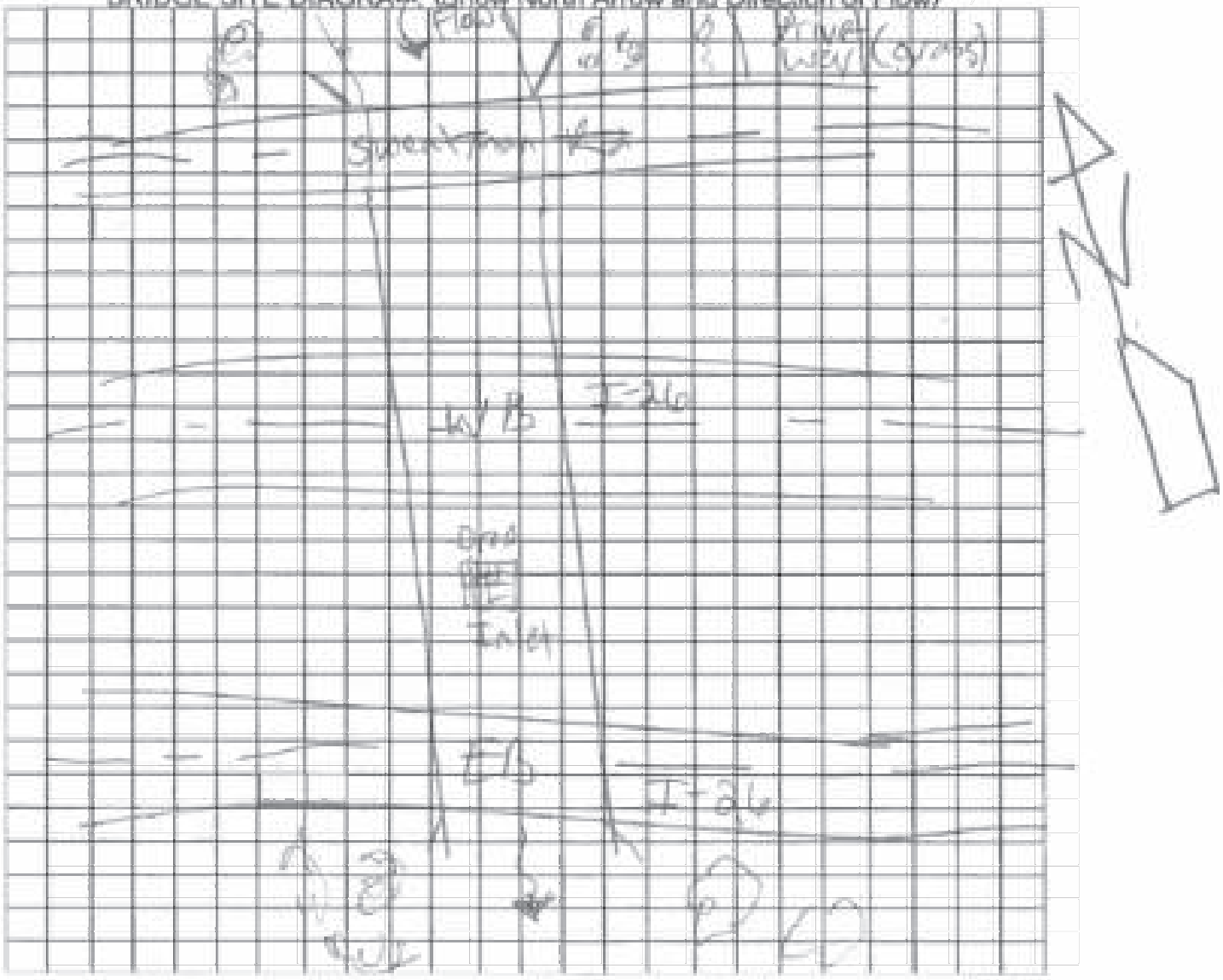
A. Proposed Bridge Recommendation:

Length: 320 ft. Width: _____ ft. Elevation: _____ ft.

Span Arangement: Single

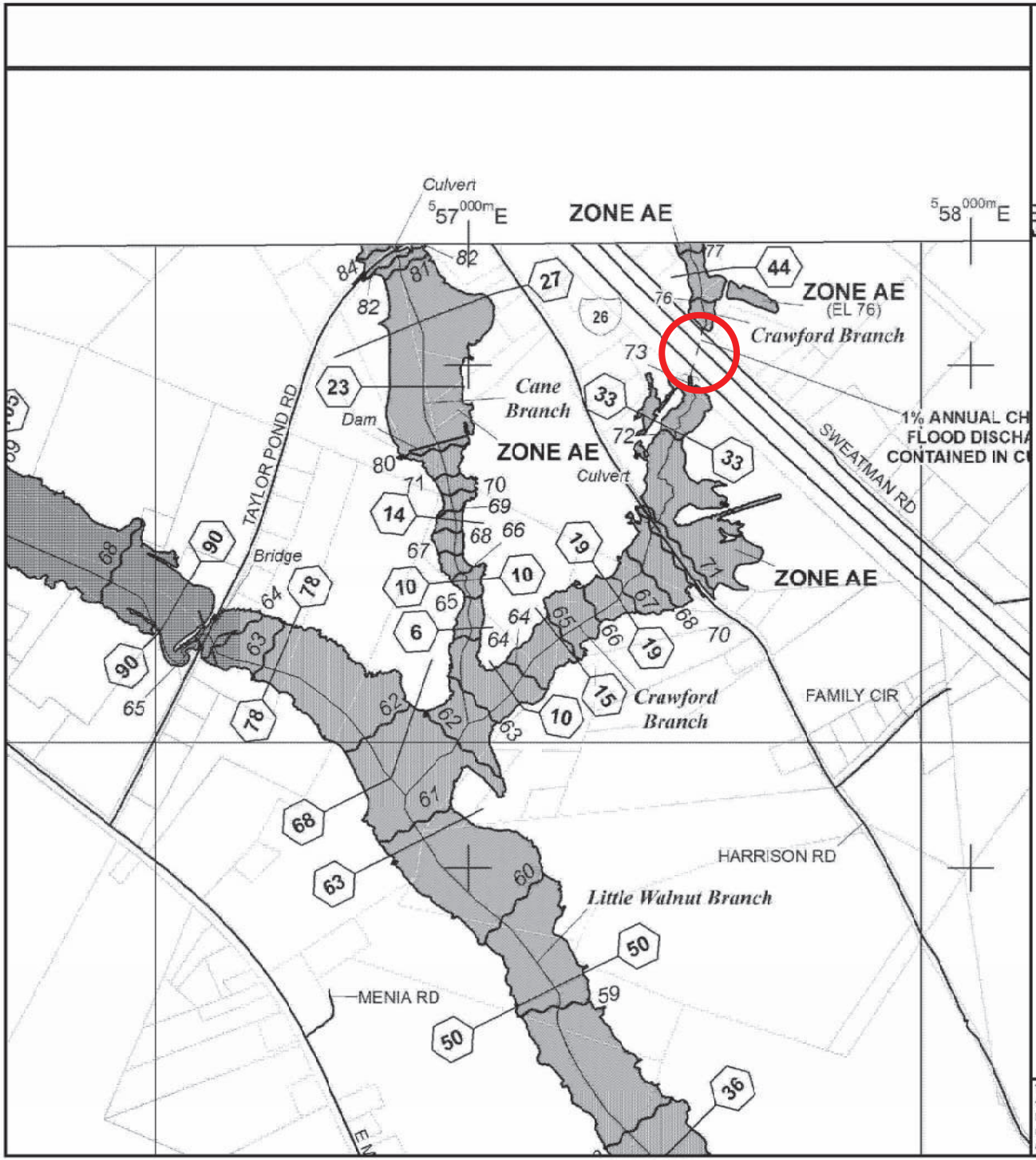
Notes: Proposed to retain existing 10' X 6' Box Culvert

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



Performed By: Lorenzo Worthy, Sr.

Title: RPG Hydro Eng.



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METE

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0195E

FIRM

FLOOD INSURANCE RATE MAP

DORCHESTER COUNTY, SOUTH CAROLINA

AND INCORPORATED AREAS

PANEL 195 OF 510

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DORCHESTER COUNTY	450063	0195	E

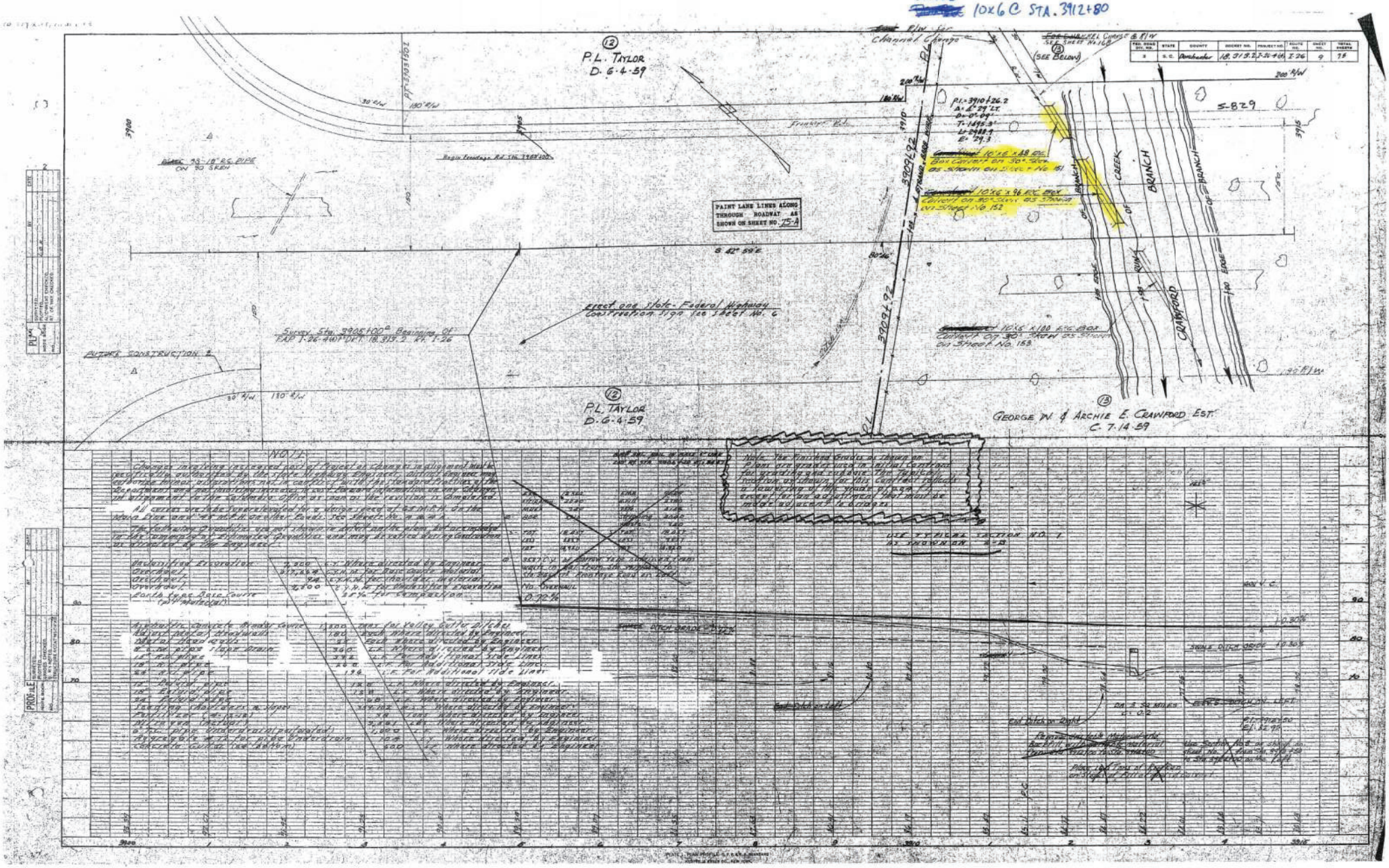
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

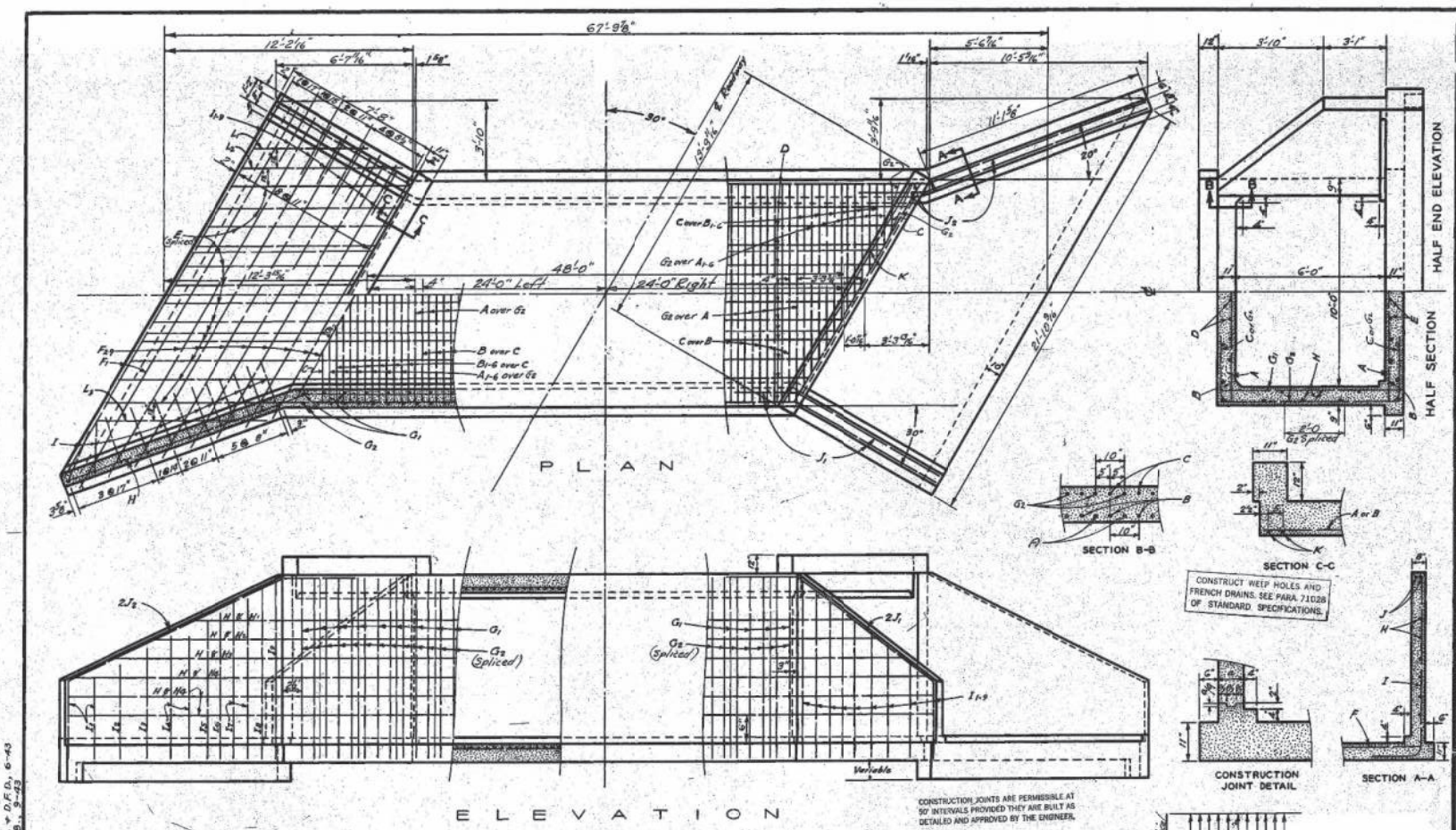
MAP NUMBER
45035C0195E

EFFECTIVE DATE
JULY 18, 2017

Federal Emergency Management Agency

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


SINGLE 10x6 @ STA. 3912+80
P.L. TAYLOR D. 6-4-59
PAINT LANE LINES ALONG THROUGH ROADWAY AS SHOWN ON SHEET NO. 75-A
S 42° 59' E
Erect one State-Federal Highway Construction Sign See Sheet No. 6
Survey Sta. 3905+00 Beginning of F.A.P. I-26-4(4) DET. 18.313.2 Rt. I-26
FUTURE CONSTRUCTION
P.L. TAYLOR D. 6-4-59
GEORGE W. & ARCHIE E. CRAWFORD EST. C. 7-14-59
CRAWFORD BRANCH
CREEK
S-829
NOTE
Note: The Finished Grades as shown on Plans are graded used in initial Contract for grading and cubbage. The Typical Section as shown for this Contract reflects a lowering of the grade of 0.24 ft. except for an adjustment that must be made adjacent to bridges.
USE TYPICAL SECTION NO. 1 AS SHOWN ON
No. OVERHAUL
0.72%
End Ditch on Left
End Ditch on Right
SWALE DITCH GRADE +0.30%
PROFILE



CONSTRUCTION JOINTS ARE PERMISSIBLE AT 50' INTERVALS PROVIDED THEY ARE BUILT AS DETAILED AND APPROVED BY THE ENGINEER.

NOTES:-

Specifications: "Standard Specifications for Highway Bridges", A.A.S.H.O. 1957 - f_s = 20,000 #/in.², f_c = 1,200 #/in.², n = 10, v = 90 #/in.², u = 300 #/in.², H20-S16 Loading 10 Ft. Earth Fill (max).
Center of Main reinforcing steel shall be 2" from the surface.
All concrete shall be class "A".
Chamfer all exposed edges ¾".
Depth of cut-off walls shall be determined by the Engineer and quantities added to those shown.
Also meets requirements of Alternate Interstate Tandem Axle Live Load.

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	Dorchester	18.313	I-26	151	280

F.R.

STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	SPACING	LOCATION
A	106	7/8"φ	11'-2"	10" c. to c.	T. & B. Slabs
A1	4	7/8"φ	9'-6"	"	"
A2	4	7/8"φ	8'-0"	"	"
A3	4	7/8"φ	6'-6"	"	"
A4	4	7/8"φ	5'-2"	"	"
A5	4	7/8"φ	3'-8"	"	"
A6	4	7/8"φ	2'-3"	"	"
B	104	3/4"φ	11'-2"	"	"
B1	4	3/4"φ	10'-3"	"	"
B2	4	3/4"φ	8'-3"	"	"
B3	4	3/4"φ	7'-3"	"	"
B4	4	3/4"φ	5'-10"	"	"
B5	4	3/4"φ	4'-5"	"	"
B6	4	3/4"φ	3'-0"	"	"
C	236	1/2"φ	5'-6"	"	Corners
D	14	1/2"φ	49'-4"	As Shown	Top Slab
E	28	1/2"φ	34'-9"	"	Bot. Slab
F1	4	1/2"φ	21'-9"	11" c. to c.	Apron
F2	2	1/2"φ	20'-10"	"	"
F3	2	1/2"φ	19'-9"	"	"
F4	2	1/2"φ	18'-8"	"	"
F5	2	1/2"φ	17'-7"	"	"
F6	2	1/2"φ	16'-6"	"	"
F7	2	1/2"φ	15'-5"	"	"
F8	2	1/2"φ	14'-4"	"	"
F9	2	1/2"φ	12'-10"	As Shown	Bot. Slab
G1	82	1/2"φ	7'-6"	15" c. to c.	Side Walls
G2	244	3/4"φ	8'-6"	10" c. to c.	S.W.& Slabs
H	12	1/2"φ	50'-0"	12" Staged	Side Walls & Wings
H1	2	1/2"φ	8'-3"	"	"
H2	2	1/2"φ	13'-2"	"	"
H3	2	1/2"φ	18'-1"	"	"
H4	6	1/2"φ	20'-8"	"	"
I1	6	1/2"φ	5'-6"	As Shown	Wings
I2	4	1/2"φ	6'-3"	"	"
I3	4	1/2"φ	6'-10"	"	"
I4	6	1/2"φ	7'-3"	"	"
I5	4	1/2"φ	7'-9"	"	"
I6	4	1/2"φ	8'-1"	"	"
I7	6	1/2"φ	8'-5"	"	"
I8	4	1/2"φ	8'-9"	"	"
I9	4	1/2"φ	9'-2"	"	"
J1	4	3/8"φ	11'-0"	"	"
J2	4	3/8"φ	14'-0"	"	"
K	4	3/4"φ	12'-10"	"	Top Slab
L1	2	1/2"φ	5'-0"	12" c. to c.	Apron
L2	2	1/2"φ	7'-4"	"	"
L3	2	1/2"φ	8'-0"	"	"

TOTAL QUANTITIES

CLASS "A" CONCRETE ..... 73.8 C.Y.
REINFORCING STEEL ..... 11,387 LB.

Concrete P.F.L. Barrel ..... 1.1605 C.Y.
Concrete P.F.D. Cut-off Wall (1-End) ..... 0.6993 C.Y.
Excavation P.F.D. P.F.L. Barrel ..... 0.6111 C.Y.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA

CONCRETE CULVERT

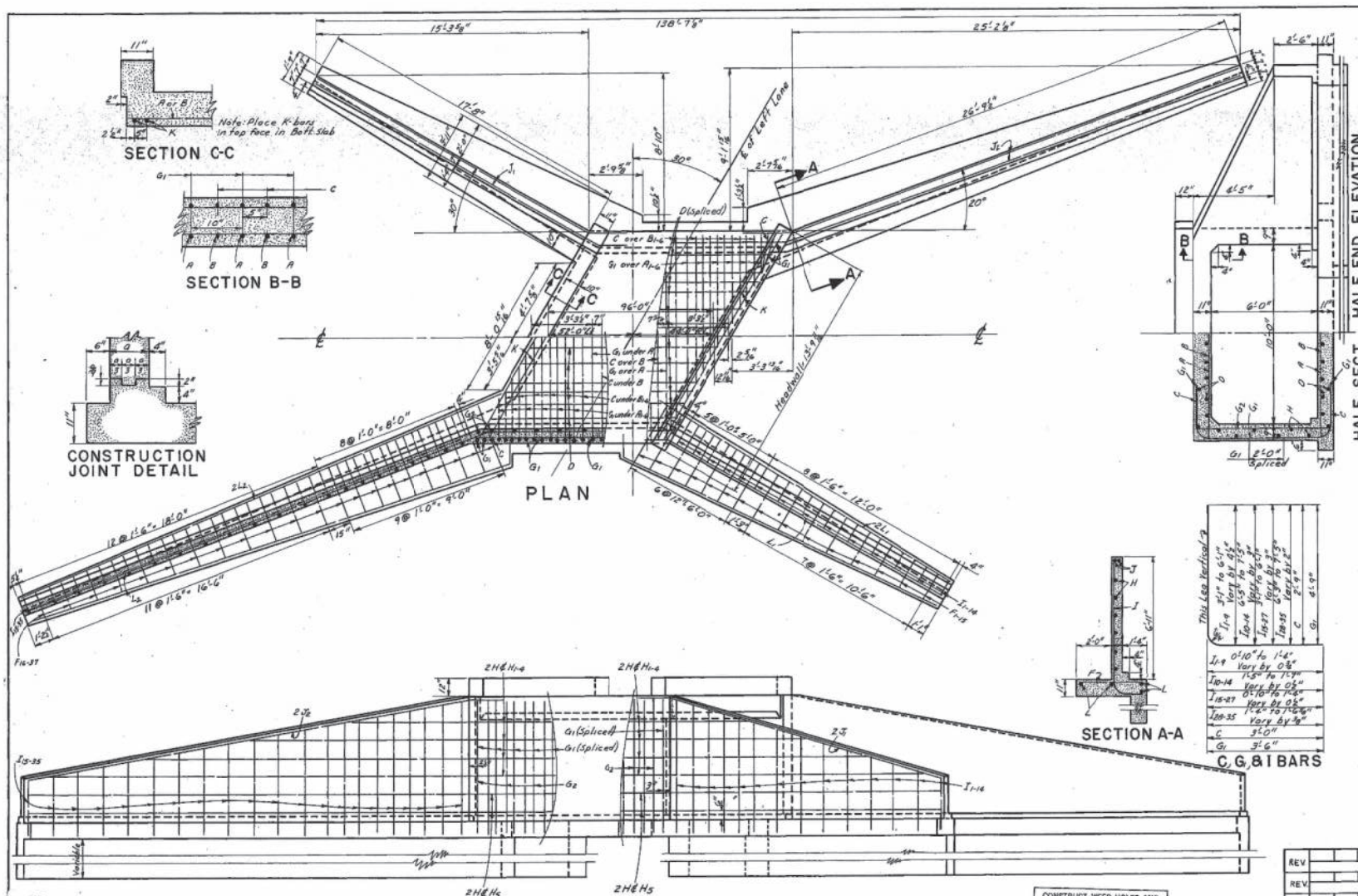
REINFORCED BOX TYPE
10'x6'x48'-0" SKEWED 30°

STA. NO. 3912+85
S.C. DOCKET NO. 18.313 Dorchester COUNTY
ROUTE NO. I-26 DATE 4-3-59

B1106 S 30

Designed by W.B.B., 6-43 Checked by G.K.B. + D.F.D., 6-43
Traced by Carl W. Metz, 8-43 Checked by W.B.B., 9-43

Adapted by: G.K.B. 4-59
Checked by: W.B.B. 4-59



FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	Dorchester	18.313	I-26	152	280

STEEL SCHEDULE

MARK	SIZE NO.	NO. REQ'D	LENGTH	SPACING	LOCATION
A	7	220	11'-2"	10" c. to c.	T.&B. Slabs
A_1 to A_6	7	4 ea.	4'-6" to 2'-0" Vary by 1'-6"	"	"
B	6	218	11'-2"	"	"
B_1 to B_6	6	4 ea.	10'-3" to 2'-9" Vary by 1'-6"	"	"
C	4	464	5'-6"	10" c. to c.	Corners
D	4	56	49'-8"	As Shown	T.&B. Slabs
F_1 to F_9	4	2 ea.	1'-6" to 2'-10" Vary by 2"	"	Sh. Wing Footings
F_{10} to F_{15}	4	2 ea.	3'-1" to 3'-7" Vary by 1¼"	"	"
F_{16} to F_{28}	4	2 ea.	1'-6" to 2'-11" Vary by 1⅜"	"	Long Wing Footings
F_{29} to F_{37}	4	2 ea.	3'-0" to 3'-8" Vary by 1"	"	"
G_1	6	472	8'-0"	10" c. to c.	S.W.& Slabs
G_2	4	158	7'-6"	15" c. to c.	Sidewalls
H	4	24	54'-0"	12" Stag'd	S.W.& Wings
H_1 to H_6	4	2 ea.	10'-9" to 41'-0" Vary by 10'-1"	"	"
H_5	4	4	42'-2"	"	"
I_1 to I_9	4	2 ea.	3'-8" to 7'-2" Vary by 5¼"	As Shown	Sh. Wings
I_{10} to I_{14}	4	2 ea.	7'-7" to 8'-9" Vary by 3½"	"	"
I_{15} to I_{27}	4	2 ea.	3'-8" to 7'-2" Vary by 3½"	"	Long Wings
I_{28} to I_{35}	4	2 ea.	7'-4" to 8'-9" Vary by 2⅜"	"	"
J_1	5	4	20'-0"	"	Sh. Wings
J_2	5	4	29'-6"	"	Long Wings
K	7	8	12'-10"	"	T.&B. Slabs
L_1	4	8	21'-0"	"	Sh. Wg. Footings
L_2	4	8	31'-0"	"	Long Wg. Ftg's

CLASS "A" CONCRETE ..... 133.1 C.Y.
REINFORCING STEEL ..... 21,462 LBS.

Concrete P.F.L. Barrel ..... 1.1605 Cu. Yd.
Concrete P.F.D. Cut-Off Wall (1 End) ..... 1.7457 Cu. Yd.
Excavation P.F.D.; P.F.L. Barrel ..... 0.6111 Cu. Yd.

4:1 WING SLOPE

S.C. STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
COLUMBIA S.C.

CONCRETE CULVERT STANDARD
REINFORCED BOX TYPE
SINGLE 10' X 6' X 96'-0" SK. 30°
STA. 3912+85 Left Lane

REV.			
REV.			
REV.			
REV.			
REVIEWED	G.K.B.		
	IN CHARGE		
QUAN.	J.D.W.	W.B.B.	4-59
TR.	J.D.W.	W.B.B.	4-59
DR.	J.D.W.	W.B.B.	4-59
DES.	A.T.B.	R.R.S.	4-59
	BY	CHKD	DATE

DOCKET NO.	COUNTY	ROUTE NO.	DATE
18.313	Dorchester	I-26	4-59

APPROVED BY: [signature] BRIDGE DESIGN & PLANS ENGINEER
APPROVED BY: [signature] BRIDGE ENGINEER

CONSTRUCT WEEP HOLES AND FRENCH DRAINS. SEE PARA. 71028 OF STANDARD SPECIFICATIONS.

CONSTRUCTION JOINTS ARE PERMISSIBLE AT 50' INTERVALS PROVIDED THEY ARE BUILT AS DETAILED AND APPROVED BY THE ENGINEER.

Notes:
Specifications - Standard Specifications for Highway Bridges. "A.R.S.H.O. - 1957
f_s = 20,000 #/in², f_c = 1200 #/in²; n = 10, v = 90 #/in²; u = 300 #/in². H20-S16 Loading, 10' Earth Fill (Max) and also meets requirements of alternate interstate tandem axle Live Load.
Center of main reinforcing steel shall be 2" from the surface of the concrete.
Chamfer all exposed edges ¾".
Depth of cut-off walls shall be determined by the Engineer and quantities added to those shown.
All concrete shall be Class "A" Concrete.

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Dorchester DATE: 07/18/2024

ROAD #: I-26 STREAM CROSSING: Four Hole Swamp

Purpose & Need for the Project:

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Bridge crossing consists of dual bridges.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? [X] Yes [ ] No

Panel Number: 45035C0215E Effective Date: 07/18/2017 (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: The existing design storm event (50-Yr.) is already approx. 4.5 ft. below the existing low-chord therefore; we will try to maintain the existing low-chord and extend the proposed bridge minimally

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

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans ☑ Yes ☐ No File No. 18.315.5 Sheet No. 9 (See Attached)

b. Road Plans ☑ Yes ☐ No File No. 18.313 Sheet No. 38 (See Attached)

B. Historical Highwater Data

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

b. SCDOT/USGS Documented Highwater Elevations ☑ Yes ☐ No Results: 52.5' (File: 18.313, 1959)

c. Existing Plans ☑ Yes ☐ No See Above

V. Field Review

A. Existing Bridge

Length: 750 ft. Width: 42.7 ft. Max. span Length: 30 ft.

Alignment: ☑ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☑ No Angle: _____

End Abutment Type: Spill-through

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

Superstructure Type: Flat Slab

Substructure Type: Concrete w/ prestress pilings

Utilities Present: ☐ Yes ☑ No

Describe:

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %

Percent Blocked Vertically: 0 %

Hydraulic Problems: ☐ Yes ☑ No

Describe:

V. Field Review (cont.)

B. Hydraulic Features

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

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

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

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

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

f. Channel Banks Stable: ☑ Yes ☐ No

Describe: Good vegetation growth and only one fallen tree

g. Soil Type: Sandy

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.

None - swampy area

C. Existing Roadway Geometry

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

☐ Yes ☑ No

Describe:

Interstate route

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

VI. Field Review (cont.)

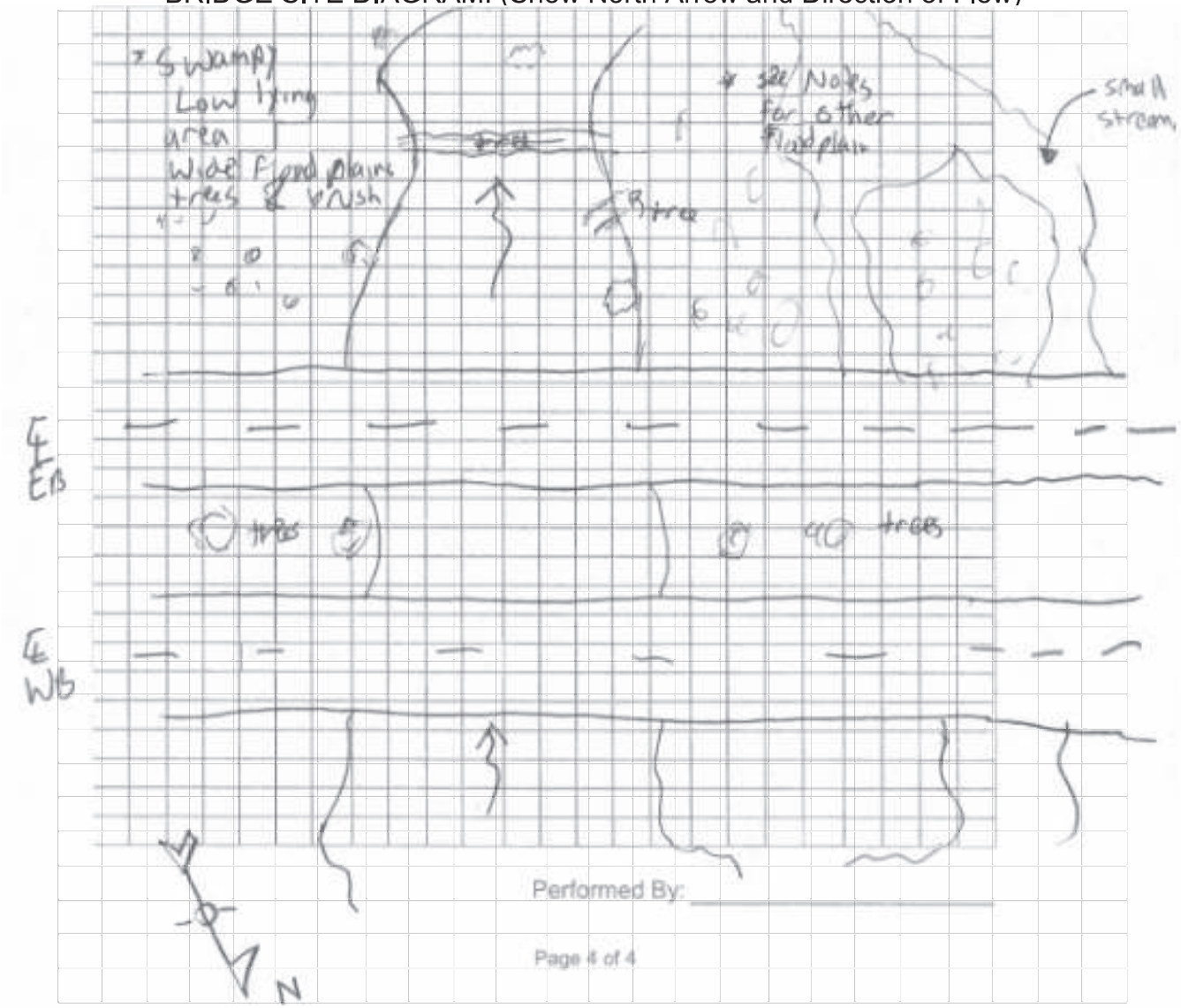
A. Proposed Bridge Recommendation:

Length: 765 ft. Width: 66.25 ft. Elevation: 66.55 ft.

Span Arangement: 9-85's

Notes: Same proposed bridge for both EB and WB bridges - Maintain existing low-chord (54.8')

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



Performed By: Lorenzo Worthy, Sr.

Title: RPG Hydro Eng.

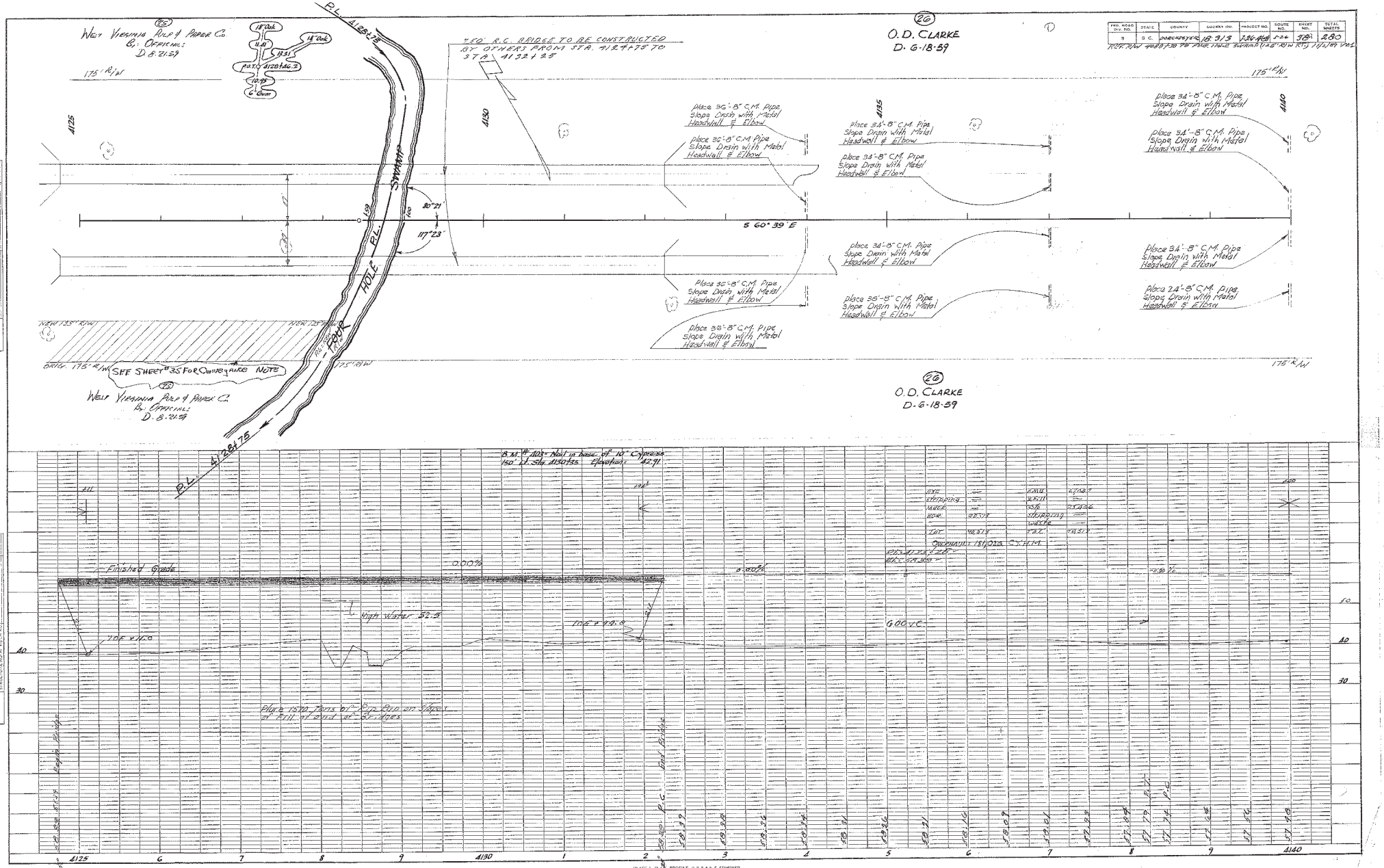
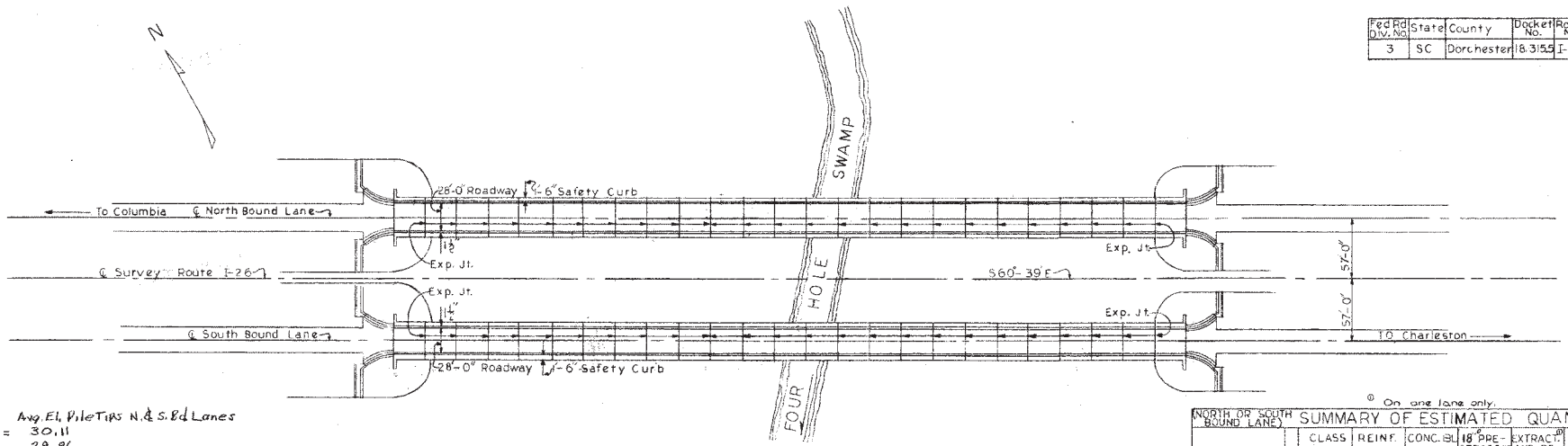


PLATE 3 - PLAN - PROFILE O.P.R.R.R.C. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

Fed Rd Div. No.	State	County	Docket No.	Route No.	Sheet No.	Total Sheets
3	SC	Dorchester	18.3155	I-26	9	12



Bent No.	Avg. El. Pile Tips N. & S. Bd Lanes
1 thru 11	30.11
12	29.86
13	28.96
14	28.94
15	29.44
16	29.57
17	29.85
18	29.90
19	29.75
20	29.99
21	30.43
22 thru 26	30.11

B.M. No. 402 Nail in base of 10" pine 170' Rt. sta 4119+95 El. 45.66

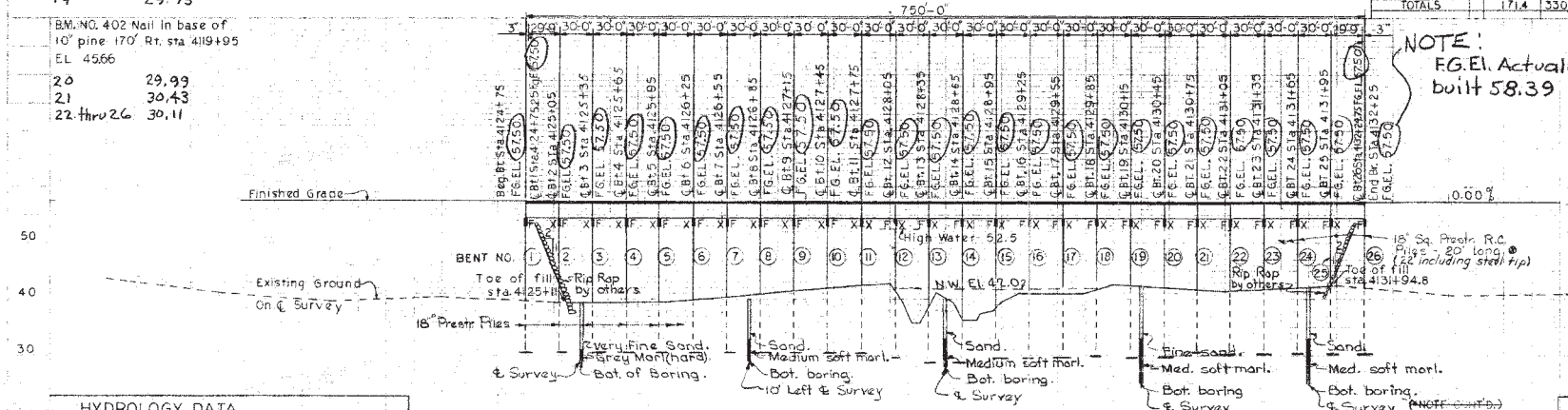
B.M. No. 403 Nail in base of 10" cypress 150' Lt. sta. 4130+35 El. 42.91

SUMMARY OF ESTIMATED QUANTITIES

(NORTH OR SOUTH BOUND LANE)

ITEM	NO	CLASS "A" CONC.	REINF. STEEL	CONC. BL. SLOPE DRAINS	18" PRE-STRESSED CONCRETE PILING	EXTRACT AND RE-DRIVING ONE PILE ①	CLASS "X" CONC.
UNIT		C.Y.	LBS.	L.F.	L.F.	EACH	C.Y.
BENTS I-26	26	169.0	22,186	—	2,288	—	—
END SPANS	2	—	24,388	—	—	—	81.8
INT. SPANS	23	—	284,257	—	—	—	908.5
CURB & GUT.	2	2.4	158	175			
TOTALS		171.4	330,989	175	2,288	1	990.3

① On one lane only.



SECTION ON ℄

NOTE: F.G.El. Actually built 58.39

Notes:

Construct flared curb & gutter on both sides of roadway at both ends of bridges. For details see sheet no. 3.

Construct concrete block slope drains on both sides of roadway at beginning and end of both bridges. For details see sheet no. 4

NOTE:

THE CONTRACTOR SHALL DRIVE ONE CONCRETE COMPOSITE PILE AND EXTRACT IT BEFORE DRIVING SUBSEQUENT PILES. THE RESULTS OF THIS OPERATION SHALL DETERMINE WHETHER OR NOT THE REMAINING PILE TIPS WILL BE REINFORCED AS SHOWN IN DETAILS ON THE PLANS. ALL COSTS OF EXTRACTING AND REDRIVING WILL BE INCLUDED IN THE LUMP SUM BID FOR EXTRACTING AND REDRIVING PILE. *

(*NOTE CONT'D) ~~THE COST OF REINFORCING THE PILE TIPS SHALL BE REIMBURSED AT THE CONTRACT UNIT PRICE FOR 1 LINEAR FOOT OF CONCRETE PILE~~

(*NOTE CONT'D) IF THE ENGINEER DECIDES TO USE THE REINFORCING OF THE STEEL PILE TIP, THE CONTRACTOR SHALL BE REIMBURSED FOR SUCH REINFORCING BY BEING PAID FOR ONE ADDITIONAL LINEAR FOOT OF CONCRETE PILE AT THE CONTRACT UNIT PRICE.

② THE DEPARTMENT RESERVES THE RIGHT TO VARY THE LENGTHS OF THE CONCRETE PILES ORDERED TO BE CAST FROM THOSE SHOWN IF THE RESULTS OF THE PILE DRIVING AND EXTRACTION SO INDICATES.

HYDROLOGY DATA

Q_{50} = 26,000 CFS
D.A. = 601 sq.mi.
*C = 0.4
*Opening Required = 6172 sq.ft.
Opening furnished under H.W. = 8360 sq.ft.
V = 3.1 ft/sec.

* Talbot's formula adjusted for S.C. conditions.

S.C. STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
COLUMBIA, S.C.

TWIN BRIDGES OVER FOUR HOLE SWAMP

REVIEWED CHF IN CHARGE				DOCKET NO.	COUNTY	ROUTE NO.	DATE
QUAN.				18.3155	DORCHESTER	I-26	3/59
TR				APPROVED BY		APPROVED BY	
DR	T.W.	JRC	3/59				
DES				BY	CK'D DATE	BRIDGE DESIGN & PLANS ENGR.	BRIDGE ENGR.

4121+00 +50 4122+00 +50 4123+00 +50 4124+00 +50 4125+00 +50 4126+00 +50 4127+00 +50 4128+00 +50 4129+00 +50 4130+00 +50 4131+00 +50 4132+00 +50 4133+00 +50 4134+00 +50 4135+00 +50 4136+00

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 improve traffic operations and existing geometry associated with roadways and bridges along I-26 between mile marker (MM) 172 and 187. The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Bridge crossing consists of dual bridges

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 existing dual bridges are functional but, will need to be upgraded and widened to accommodate projected traffic flow. The project will replace the existing Dual 750' X 42.7" Flat Slab bridges with Dual 765' X 66.25' Type III bridges, add an additional lane both Eastbound and West bound towards the median, and improve both sideline and median ditches. There are no major issues and/or concerns known at this time

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?

Yes – approximately 4.5 to 7 feet because of the proposed bridge being on a slope

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

N/A

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?

The associated risks of this action will be minimized because we are only increasing the length of the proposed bridge by 7.5 feet on each end. Upon the field review we did not see any risk(s) associated with this action.

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

While only lengthening the bridge by 15 feet the velocities of the water should change very little; therefore the new bridges should not affect the natural and beneficial floodplain values.

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

We used the minimal length difference so the floodplains are not affected at all or very little.

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

We maintained the existing channel and used riprap on the proposed spill-thru slopes to retain existing floodplains both upstream and downstream.

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

N/A

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.

Not yet but, a “No-Impact” letter will be sent to the local floodplain manager in the near future

Lorenzo R. Worthy, Sr., P.E. 7-18-24

SCDOT Hydraulic Engineer Date

Appendix D

SC Department of Environmental Services
Water Quality Information Report

SC Department of Environmental Services

Watershed and Water Quality Information

General Information

Applicant Name: SCDOT
Permit Type: MS4
Address: 267 SEVEN MILE RD, HARLEYVILLE, SC, 29448
Latitude/Longitude: 33.229255 / -80.437895
MS4 Designation: Not in designated area
Monitoring Station: RS-20523
Within Coastal Critical Area: No
Water Classification (Provisional): FW
Waterbody Name: DEEP BRANCH
Entered Waterbody Name:

Parameter Description

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

Impaired Status (downstream sites)

Station	NH3N	CD	CR	CU	HG	NI	PB	ZN	DO	PH	TURBIDITY	ECOLI	FC	BIO	TP	TN	CHLA	ENTERO	HGF	PCB
RS-20523	X	F	F	F	F	F	F	F	N	F	F	F	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)

DO - Dissolved Oxygen

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes
TMDL Report No: 008-07
TMDL Document Link: undefined

TMDL Site: RS-10373
TMDL Parameter: Fecal

Report Date: August 6, 2025

Appendix E

Structural and Acoustic Bat Survey Reports

U.S. Fish and Wildlife Service

Study Plan Form for Bat Surveys and Monitoring (v. 2.2)[1]

PROJECT & SURVEY INFORMATION

Project Name: SCDOT Bridges and Culverts

Proposed Survey Start Date: 1/13/2025

Project Proponent's Name (e.g., client/company/institution): SC Dept. of Transportation

Project Location: State(s): SC

County(s): All

Latitude: _____

Longitude: _____

REQUIRED: Attach or provide links to Google Earth® KMZ files (preferred) and/or shapefiles (mapping must show project boundaries, impacted forest habitat (if known) and all proposed survey sites)
Files are attached: Yes ☐ No ☐
File Links: _____

Project Summary. In the space provided below, please provide a description of the proposed action, including any activities that will permanently or temporarily alter the current environment and existing habitat features.

SCDOT is proposing to do visual assessments of various transportation structures to determine whether or nots bats are using the structure. This information is needed to complete the biological assessments for projects requiring a NEPA document or Department of the Army permit. It is also a requirement to complete the determination key in IPaC for federally listed bat species. The attached work plan describes the methods SCDOT is proposing to use for the structure surveys and assessments.

CONTACT INFORMATION

Project Manager/Primary Point of Contact (POC): Chris Beckham

Phone: (803)737-1332

Field Survey Crew Leader (if different from POC): _____

Cell Phone: (803)609-9464

Institution/Company Name: Sc Department of Transportation

Mailing Address: 955 Park Street, Columbia, SC

POC Email Address: beckhamjc@scdot.org

USFWS Sec. 10(a)(1)(A) Permit No.(s) (if applicable): _____

State Permit No.(s) (if applicable): _____

[1] Unless otherwise directed by the Service, surveyors may complete this fillable form, in lieu of a traditional narrative format, and submit it (and supporting files) to the Ecological Services Field Office in the state(s) where the work is to be completed (https://www.fws.gov/our-facilities). Use of this form is not a requirement at this time. Our goal is to improve pre-survey coordination and to expedite the Field Office review and approval process. Please submit your study plan at least 15 working days in advance of your proposed survey start date. Suggestions for improving this document may be sent to R4_Bat_Survey_Guidance@fws.gov.

Have project proponents been informed that abiding by protective time-of-year restrictions (where available) may be sufficient to avoid take of federally listed bats and (in some cases) may negate the need for a bat survey? Yes☑ No☐

Have project proponents been informed that the Service does not require presence/probable absence surveys for federally listed species and that presence can be assumed in a project area containing suitable habitat? Yes☑ No☐

Will this survey be conducted on private or public lands? *(Check both if applicable)*: Private☐ Public☑

Has permission of all necessary landowners/managing agencies been obtained? Yes☑ No☐

If no, explain: _____

Does this project have a federal nexus[2]? Yes☑ No☐ Unsure☐

If yes, explain: SCDOT has to complete NEPA for Fed Highway Administration and/or obtain a permit from the Dept. of the Army.

IPaC[3] Consultation Code (if applicable): _____

Purpose of Survey: Official P/A Survey☑ Research☐ Monitoring☐
Educational Outreach/Training Other: _____

Survey Target Species: Indiana bat (IBAT)☑ Northern long-eared bat (NLEB)☑
Tricolored bat (TCB)☑ Other: gray bat (GB)

Has a Phase-1 Habitat Assessment* of the project area been conducted? Yes☐ No☑
If yes, how was the habitat assessment conducted? Field☐ Desktop☐ Combo☐
*(*if available, attach a written report)*

Is suitable habitat[4] present (or assumed present) for all "target" species? Yes☑ No☐

If no, explain: _____

Does this project fall within the outer-tier[5] of any "target" species known home range? Yes☐ No☐ Unsure☑

If yes, which species: _____

Project Configuration

Is this project **linear** (>1 km in total length)? Yes☐ No☐ Combo☑ Unsure☐

If yes, how many 1-km sections containing suitable IBAT/NLEB habitat will be impacted? _____

Is this project **non-linear**? Yes☐ No☐ Combo☑ Unsure☐

If yes, how many acres of suitable IBAT/NLEB habitat is in the overall project area? _____

If yes, how many acres of suitable IBAT/NLEB habitat will be directly impacted/cleared? _____

PROPOSED METHODS & SURVEY LEVEL OF EFFORT[6]

ACOUSTICS

Total number of detector sites proposed to be surveyed: N/A Number of detector nights/site: _____

[2] A project or action that is carried out, authorized, funded, and/or permitted by a federal agency.
[3] https://ipac.ecosphere.fws.gov/
[4] See Appendix A of the Guidelines regarding suitable habitat definitions.
[5] See Appendix G of the Guidelines if you are unclear what the out-tier of a known range includes.
[6] Survey level of effort (acoustic or netting) must be spread over at least two calendar nights/survey site.

Total number of detector nights for entire survey: _____

Total proposed number of calendar nights to complete the entire survey: _____

Detector(s) (Brand, Model): _____ Microphone(s): directional☐ omnidirectional☐

Recording Format: Full Spectrum☐ Zero-Crossing☐

FWS-Approved[7] Acoustic Bat ID Software: KPro vers.____ KPro Classifier, NA vers. ____ BCID vers.____
Other Candidate Programs (e.g., Sonobat) vers.: _____

Species to be included for automatic software ID classification analysis:

EPFU☐ CORA☐ COTO☐ LABO☐ LACI☐ LANO☐ LASE☐ TABR☐ MYCI☐ MYEV☐ MYGR☐ MYLU☐
MYLE☐ MYSE☐ MYSO☐ MYTH☐ MYVO☐ NYHU☐ PESU☐ Others:_____

Will qualitative analysis (i.e., manual vetting) be used? Yes☐ No☐ Unsure☐

Name(s) of qualified biologist(s) conducting qualitative/manual identifications (attach resume or link with qualifications):

_____

MIST-NETTING

Total number of net sites to be surveyed: N/A Total number of net nights/site: _____

Total number of net nights for entire survey (No. of sites X No. of net nights/site): _____

Total proposed number of calendar nights to complete the entire survey: _____

A) Maximum number of net set-ups that will be operated/checked (10-min interval) on a given calendar night at a given survey site: _____
B) Minimum Number of personnel present to operate/check X (see A) net set-ups on a given site: _____
C) Proposed Staffing Rate (A divided by B): _____

Staffing Rate

Number of Section 10-permitted biologists per net site (or state-permitted in USFWS R5): _____

Do you propose to band bats? Yes☐ No☐

If yes, please answer the following:

What species will be banded? COTO☐ MYGR☐ MYLU☐ MYSE☐ MYSO☐ PESU☐
Others:_____ All captured bats:
If banding *Myotis* sp. or PESU, specify band size: _____
Describe your proposed bands (color and letter-numbers) and banding scheme: _____
Will banding pliers be used? Yes☐ No☐

Will any biological samples be collected from captured bats (e.g., guano, hair, swab, wing punch)? Yes☐ No☐

If yes, explain: _____

Name of institution or facility to conduct DNA analysis: _____

RADIO-TRACKING

Will any bats be radio-tagged and tracked? Yes☐ No☑

[7] https://www.fws.gov/media/automated-acoustic-bat-id-software-programs

If yes, please answer following:

Which species will be radio-tagged? _____
Name of USFWS Section 10 permitted biologist(s) who will apply transmitter(s): _____
Make/model and approximate weight of transmitter(s) to be used: _____
Manufacturer date and estimated life-span of transmitters to be used: _____
Frequency range (MHz) of transmitters (e.g., 150.xxx or 172.xxx): _____
If radio-tracking multiple targeted bats/species, what criteria will be used in selecting which bats will be tracked?
_____
Will all radio-tagged bats be tracked (min. of 4-hrs. search effort/day) to their diurnal roosts for the minimum recommended period of 7 days? Yes☐ No☐
If no, explain: _____
Will night-time foraging data/telemetry be collected? Yes☐ No☐
Glue used for attaching transmitters: Type: Silicone-based Surgical Adhesive Name: Uro-Bond III 5000
Manufacturer: 3M Other: _____

EMERGENCE SURVEYS

After diurnal roost sites of radio-tagged bats are identified, will emergence surveys be conducted at each identified roost (assuming landowner permission is obtained)? Yes☐ No☑

If yes, how many emergence surveys/roost? _____

Have you identified a small number (e.g., ≤10) of potentially suitable roost trees* that you propose to conduct emergence surveys for? Yes☐ No☑

*(*If yes, provide photographs of each tree documenting that all of the tree can be observed by the surveyor along with coordinates (lat/long and/or KML/shapefile) of all trees to be surveyed.)*

POTENTIAL HIBERNACULA SURVEYS

Are you aware of any known hibernacula used by the target species within the project area itself or nearby?

Yes☐ No☑ Unknown☐

If yes or unknown, list sites or explain: _____

Has your desktop analysis identified any natural or man-made features that could be used as a hibernaculum by any of the target bat species? Yes☐ No☑ Unknown☐

If yes, underground features (e.g., caves, mines, tunnels, bunkers, cisterns) present: Yes☐ No☐
If yes, above-ground features* (e.g., crawl spaces) present: Yes☐ No☐
If unknown, explain: _____

Are you requesting approval of a field survey for potential hibernacula at this time? Yes*☐ No☑
*(*If yes, attach a separate narrative explaining how the project area(s) will be surveyed for potential hibernacula.)*

Are you submitting the results of a Phase 1 Habitat Assessment of potentially suitable hibernacula identified from field surveys? Yes*☐ No☑
*(*If yes, provide a Phase 1 Habitat Assessment Data Sheet for each potential hibernaculum/portal(s)[8] identified to be surveyed.)*

BRIDGE & CULVERT ASSESSMENTS

Will any bridges or culverts be surveyed for bat presence? Yes☑ No☐

If yes, please answer the following:

[8] If multiple cave entrances/portals, please list all locations.

Structure type(s) (check all that apply): Bridge ☑ Culvert ☑ Other ☐
If "other", explain: _____

Survey methodology for structure(s) (check all that apply):
Visual inspection ☑ Guano collection ☐ Emergence survey ☐ Acoustics* ☐
Mist-net* ☐ Harp-trap* ☐ Other _____
*(*Due to site-specific conditions of structures, coordination with the local USFWS Field Office and appropriate state agency(ies) is necessary before proceeding with these survey methodologies)*

Will guano be collected and analyzed to confirm species ID? Yes ☐ No ☑
If "yes", name of institution/entity performing analysis: _____

ADDITIONAL SURVEY INFORMATION[9]

Will the proposed bat survey deviate from the current version of the USFWS Survey Guidelines?[10] Yes ☑ No ☐

If yes, provide justification for any departures or modifications to the guidelines (if applicable) below:

This survey plan is programmatic in nature and is intended to cover all bridge and culvert bat surveys done by SCDOT in the state of South Carolina.

I hereby acknowledge that the information being provided to the Service is accurate and complete as of today's date.

Signature: _____ Date: 1/13/2025

[9] Attach additional pages to this form, if needed.

[10] Proposed surveys deviating from the current Range-wide IBAT & NLEB Survey Guidelines will only be accepted with a thoroughly described justification. Coordinate with your local USFWS Field Office (https://www.fws.gov/our-facilities) for acceptable modifications.

********FOR U.S. FISH AND WILDLIFE SERVICE USE ONLY**********

United States Department of the Interior

Fish and Wildlife Service

South Carolina ES Field Office

176 Croghan Spur Road, Suite 200

General Office Phone: 843-727-4707

SITE-SPECIFIC AUTHORIZATION - BAT WORK

Our Field Office has reviewed your study plan and found it to contain sufficient information for our approval. When signed, this statement serves as your site-specific authorization to conduct the proposed activities at the specified locations included in the attached Study Plan Form and supporting files and must be carried with your federal permit when conducting work for this project. All activities must be carried out with strict adherence to permit conditions and authorizations specified in your federal permit as well as your state permit(s) (if needed). The section 10(a)(1)(A) permit authorizing the activities must remain with the surveyor at all times. This authorization is not valid if you have not obtained permission from the owner of the lands where activities will occur.

For federal permit reporting purposes, please use the appropriate USFWS bat survey data spreadsheet, available on the IBAT and NLEB Summer Survey Guidance website[1]. To mitigate the risk of humans transmitting viruses (e.g., SARS-CoV-2) to bats or viral transmission from bats to humans, the U.S. Fish and Wildlife Service requests anyone directly handling or working in close proximity to bats follow current guidelines prepared by the CDC[2] and IUCN Bat Specialist Group[3] in addition to the following the standard WNS decontamination protocols[4].

If the work expands beyond the scope of your original study plan or if there are adverse effects to bats that were not anticipated, cease all survey and/or research activities, and contact this office prior to continuing. Additionally, if a federally listed bat is captured, this USFWS Field Office must be notified within 48 hours with information regarding species, sex, age, and whether or not the bat has a transmitter attached.

Field Office POC: Jessica Hinson

email: jessica_hinson@fws.gov phone: 854-253-0441

☑ **Authorized as Proposed**

☐ **Authorized with Conditions** (see below)

You are authorized to proceed provided that the following adjustment(s) and/or conditions are met.

☐ **Not Authorized.**

Comments:

Signature & Date:

NOTE: Please check the appropriate box above before signing/locking the document.

[1] https://www.fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines
[2] https://www.cdc.gov/healthypets/covid-19/wildlife.html
[3] https://www.iucnbsg.org/uploads/6/5/0/9/6509077/amp_recommendations_for_researchers_final.pdf
[4] https://www.whitenosesyndrome.org/mmedia-education/national-wns-decontamination-protocol-u-s

Acoustic Bat Survey Report

South Carolina Department of Transportation
I-26 Corridor Improvement Project (Mile Marker 172-187), P042567
Dorchester and Berkeley County, South Carolina

Prepared by:

Jackson Group
1586 Boonesborough Rd
Richmond, KY 40475
jacksongroupco.com

August 2025

Prepared for:
ICE, Infrastructure, Consulting & Engineering, LLC

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APPENDIX B ACOUSTIC SITE PHOTOS
APPENDIX C ACOUSTIC SITE LOCATION MAPS
APPENDIX D NORTHERN LONG-EARED BAT POSITIVE SITE LOCATION MAPS
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APPENDIX G ACOUSTIC DATA SHEETS
APPENDIX H WEATHER CONDITIONS

Table 1 Acoustic Survey Location Coordinates

Table 2 BCID Acoustic Survey Summary Results

LIST OF FIGURES

Figure 1 Vicinity Map

Figure 2 Acoustic Survey Site Locations

1. INTRODUCTION

The South Carolina Department of Transportation (SCDOT) proposes to upgrade the existing Interstate 26 (I-26) corridor from just west of mile marker (MM) 172 to just west of MM 187 in Dorchester and Berkeley Counties (Figures 1 and 2).

The purpose of the project is to improve traffic operations and existing geometry associated with roadways and bridges along I-26 between MM 172 and 187 (project). The project is needed due to existing and projected traffic volumes and operating conditions along this section of I-26. Specifically, the existing and projected traffic volumes indicate that I-26 would be operating beyond capacity and would experience an increase in traffic congestion and operational deficiencies if no improvements are made.

As part of the assessing potential environmental impacts related to the project, SCDOT contracted Infrastructure, Consulting & Engineering (ICE-ENG) and Jackson Group to evaluate which bat species are potentially present and/or absent along the project Right-Of-Way (ROW). An acoustical bat monitoring survey was conducted with a focus on the federally threatened species and/or species of concern; including the northern long-eared bat (*Myotis septentrionalis*), also referred to as MYSE and/or NLEB, currently listed as endangered and the tricolored bat (*Perimyotis subflavus*) also referred to as PESU and/or TCB, currently proposed endangered. The purpose of the bat survey was to evaluate presence and/or probable absence of T&E bat species and bat species listed as a species of concern.

1.1 Regulatory Concurrence

A work plan was submitted to the U.S. Fish & Wildlife Service (USFWS) on 28 April 2025. Concurrence was received from USFWS on 15 May 2025 USFWS Permit ES102292-14 (Appendix A).

2. DESCRIPTION OF THE PROJECT AREA

The project area, which consists of a proposed construction ROW of approximately 26 Km in length and approximately 983 acres. Ecologically, the project ROW is located within the Level III Atlantic Southern Loam Plains. More specifically, the ROW is within the Level IV Mid-Atlantic Coastal Plain and Carolina Flatwoods Ecoregion (EPA 2022). The vegetation types of this ecoregion typically consist of long-leaf pine (*Pinus palustruis*) and Loblolly pine (*P. taeda*) stands (EPA 2022).

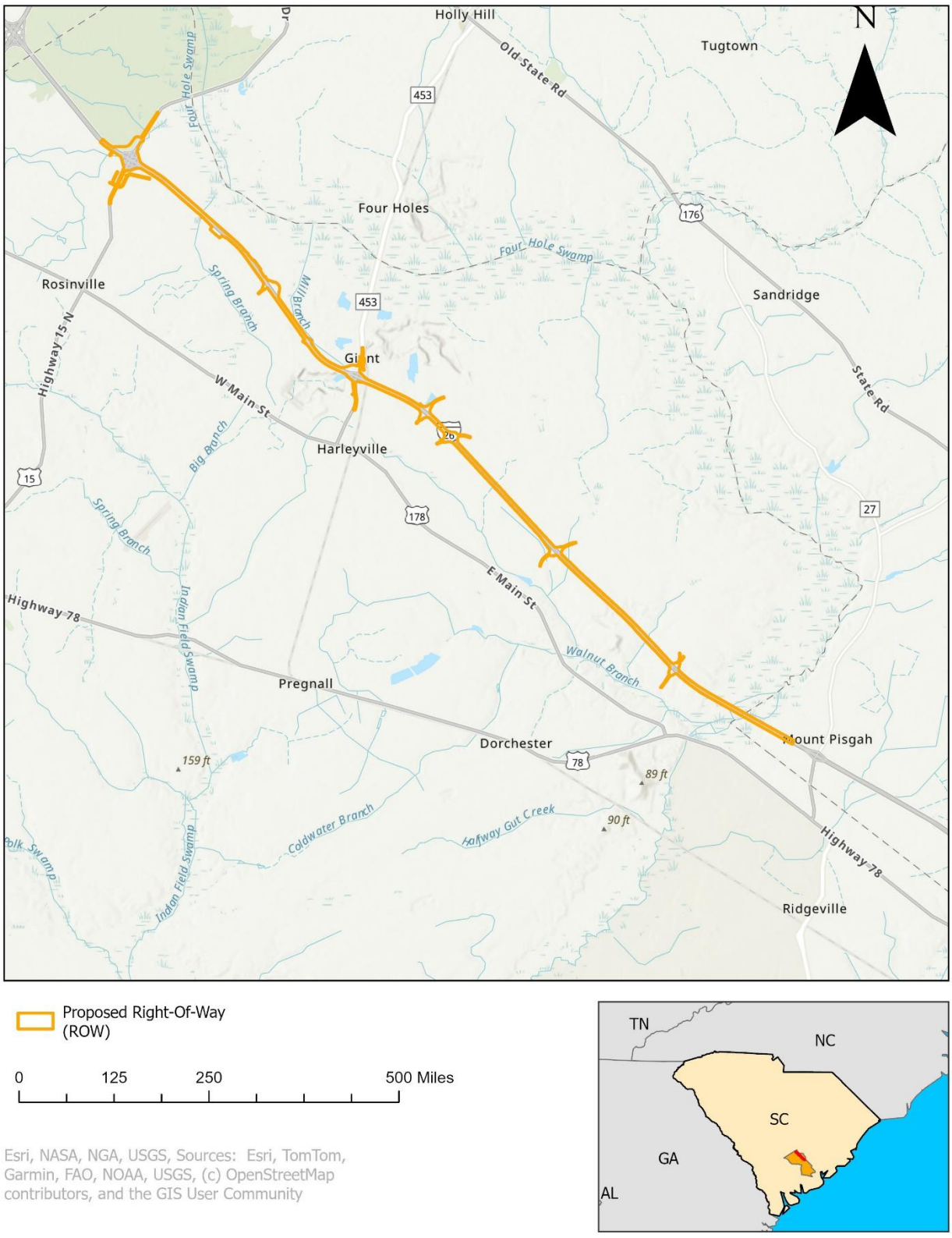


Figure 1. Project Vicinity Map

3. METHODS

Acoustic detectors were deployed in habitats suitable to record the echolocation calls of bat species with potential to occur along the project ROW. Detectors were deployed in habitats suitable for the northern long-eared bat and tricolored bat and other common bat species to document the bat community along the project ROW. Sampling occurred during suitable weather for foraging bats (USFWS 2024). Hourly weather conditions for each sampling event were recorded using weatherunderground.com for Orangeburg, SC and is provided in Appendix H.

3.1 Acoustic Surveys

The original study plan proposed included conducting an acoustic survey for 104 detector nights distributed across 31 detector sights. Four detector nights at one acoustic site were proposed per km of the project ROW. In addition, two detector nights were proposed at each side of the interstate where each overpass was to be located. Specific locations were to be determined by on-site biologists. Based on project ROW habitat conditions and locations of two of the eight overpasses, the survey effort was modified. Specifically, two of the eight overpasses were located near the center of a kilometer reach; therefore, only the overpass was surveyed with four detector nights, and additional acoustic sites were not added in those kilometer reaches. All other overpasses were located towards the end of kilometer reach and therefore, at least eight detector nights were surveyed in those reaches. Additional modifications were made to the survey effort due to habitat conditions.

The project ROW is located in the low country of South Carolina, which consists of low-lying topography dissected with swamps, wetlands, and rivers. Within this low-lying topography, a diverse microtopography exists that promotes various wetland and swamp types, as well as large pine forest that has a mixture of sweet gum (*Liquidambar styraciflua*) and maples (*Acer spp*.) distributed throughout. In order to target the diverse habitat, an additional 17 detector nights and 25 sites were surveyed. The modified survey effort totaled 121 detector nights distributed across 56 acoustic sites.

Jackson Group biologists surveyed 56 acoustic detector monitoring locations distributed across 26 km project ROW. Within each kilometer reach, acoustic monitoring occurred for at least 4 detector nights. In locations where overpasses were proposed and located at the edge of a kilometer reach, an additional 4 detector nights were established. Sampling occurred for 11 nights in May, June, and July (20-22 May, 2-4 June, 7-9 July, and 26-27 July) for a total of 121 detector nights. Prior to setting up the acoustic monitoring stations, biologists reviewed aerial and topographic maps along the project area to determine approximate locations for the monitoring stations. A total of 56 acoustic detector survey locations were determined by selecting the best possible detector placement (forest-canopy openings, near water sources/corridors, forested corridors, forested edge, etc.) that are typically the most effective places to survey. Final acoustic detector monitoring locations were determined by Jackson Group biologists in the field, following USFWS (March 2024) guidelines for acoustic surveys. Detector locations were chosen with the intent of observing differential habitat and spatial use along the project ROW by bats.

3.1.1 Detectors and Set-up

The acoustic monitoring equipment deployed consisted of 20 AnaBat SD2 bat detectors utilizing individual directional microphones. Each acoustic monitoring location contained a directional microphone and an Anabat SD2 bat detector encased in a weather protective case. The detectors were deployed during the day and pre-programmed to begin recording 30 minutes before sunset and conclude recording 30 minutes after sunrise for each survey night. The detectors directional microphones were installed atop poles so that they were at least 3 meters above ground level vegetation to improve recording quality. In addition, a 90-degree polyvinyl chloride (PVC) elbow was used to protect the microphones from any potential overnight precipitation.

3.1.2 Survey Locations

Jackson Group biologists conducted field reconnaissance, in addition to reviewing mapping along the project ROW to select the most effective sites prior to deploying the acoustic monitoring equipment. Jackson Group biologists chose each monitoring site based on acoustic site characteristics such as but not limited to: forest canopy openings, water sources (ponds, lakes, streams, wetlands); wooded fence lines adjacent to large openings or connect larger blocks of suitable habitat; forest edge adjacent to large openings, recently logged forest where some potential roost trees remain, road and/or stream corridors with open tree canopies and/or canopy height of more than 33 feet. Acoustic surveys were conducted at 56 sites along the project ROW, as shown in Figure 2 and Appendices C, D, and E. Coordinates for each survey site are provided in Table 1. Photographs of each survey site are provided in Appendix B.

Table 1. Acoustic Survey Location Coordinates

Anabat Detector Site Name	Latitude	Longitude	Anabat Detector Site Name	Latitude	Longitude
ABS-20	33.288793	-80.5188620	ABS-17	33.163672	-80.3568010
ABS-3B	33.283885	-80.5146740	ABS-32	33.163411	-80.3578500
ABS-01	33.289093	-80.5121690	ABS-25	33.159383	-80.3522250
ABS-33	33.281072	-80.5022620	ABS-44	33.158782	-80.3532560
ABS-02	33.274109	-80.4941510	ABS-18	33.155972	-80.3472910
ABS-37	33.267509	-80.4840170	ABS-12	33.151667	-80.3412120
ABS-03	33.262173	-80.4790350	ABS-11	33.146577	-80.3287810
ABS-12B	33.254923	-80.4739720	ABS-36A	33.141804	-80.3213690
ABS-04	33.247248	-80.4668870	ABS-07	33.226166	-80.4316140
ABS-35	33.241349	-80.4600900	ABS-22	33.256390	-80.4720700
ABS-30	33.234091	-80.4521300	ABS-37b	33.269846	-80.4865370
ABS-06	33.235870	-80.4531520	ABS-37c	33.270651	-80.4877610
ABS-06B	33.229916	-80.4466750	ABS-26	33.193412	-80.3933640
ABS-43	33.220602	-80.4298270	ABS-23	33.241342	-80.4623620
ABS-24	33.226041	-80.4235800	ABS-29	33.175869	-80.3701760
ABS-13	33.220703	-80.4220580	ABS-31	33.234020	-80.4452700
ABS-05	33.215990	-80.4216610	ABS-41	33.230132	-80.4426980
ABS-50	33.218070	-80.4167170	ABS-07B	33.212614	-80.4146130
ABS-39	33.213807	-80.4152520	ABS-45	33.289335	-80.5168270
ABS-40	33.208057	-80.4079250	ABS-46	33.274669	-80.4926340
ABS-14	33.204711	-80.4058930	ABS-21	33.260364	-80.4778850
ABS-08	33.201634	-80.4021020	ABS-47	33.230852	-80.4403370
ABS-19	33.194910	-80.3937170	ABS-34	33.227601	-80.4299450
ABS-14B	33.188407	-80.3866550	ABS-48	33.208056	-80.4095710
ABS-09	33.188542	-80.3881010	ABS-27	33.181547	-80.3801640
ABS-16	33.183533	-80.3807650	ABS-47	33.149071	-80.3331660
ABS-10	33.175590	-80.3720590	ABS-28	33.155795	-80.3495120
ABS-15	33.170581	-80.3644860	ABS-36B	33.142245	-80.3226930

3.1.3 Software Analysis

All recorded call files were analyzed using Bat Call Identification, Inc. Version 2.8b (BCID). BCID is a USFWS (2024) approved program for the automated identification of frequency division call data of threatened and endangered bat species. The appropriate set of regional bat species classifiers were used in analysis for recorded calls (i.e., "South Carolina" was selected for BCID. Default analysis settings were used for BCID. A maximum likelihood estimate (MLE) was generated for each species identified from the software. The MLE is a probabilistic estimate and not an absolute determination of presence. The calculation is based on a null hypothesis of absence, with 0 inferring a probability of presence and 1 a probability of absence.

Bat echolocation variability within individuals of a single species and the overlap of echolocation call parameters in similar species sometimes makes differentiating between similar species difficult. In addition, the effects of sound attenuation under fluctuating environmental conditions such as temperature, relative humidity, and bat location relative to the microphone location as the call is produced plus identification of bat species by echolocation is often an inexact science. Thus, acoustic data should be viewed as an indicator of bat species activity in the area and should not be considered alone as confirmation of species presence where similar species calls are concerned.

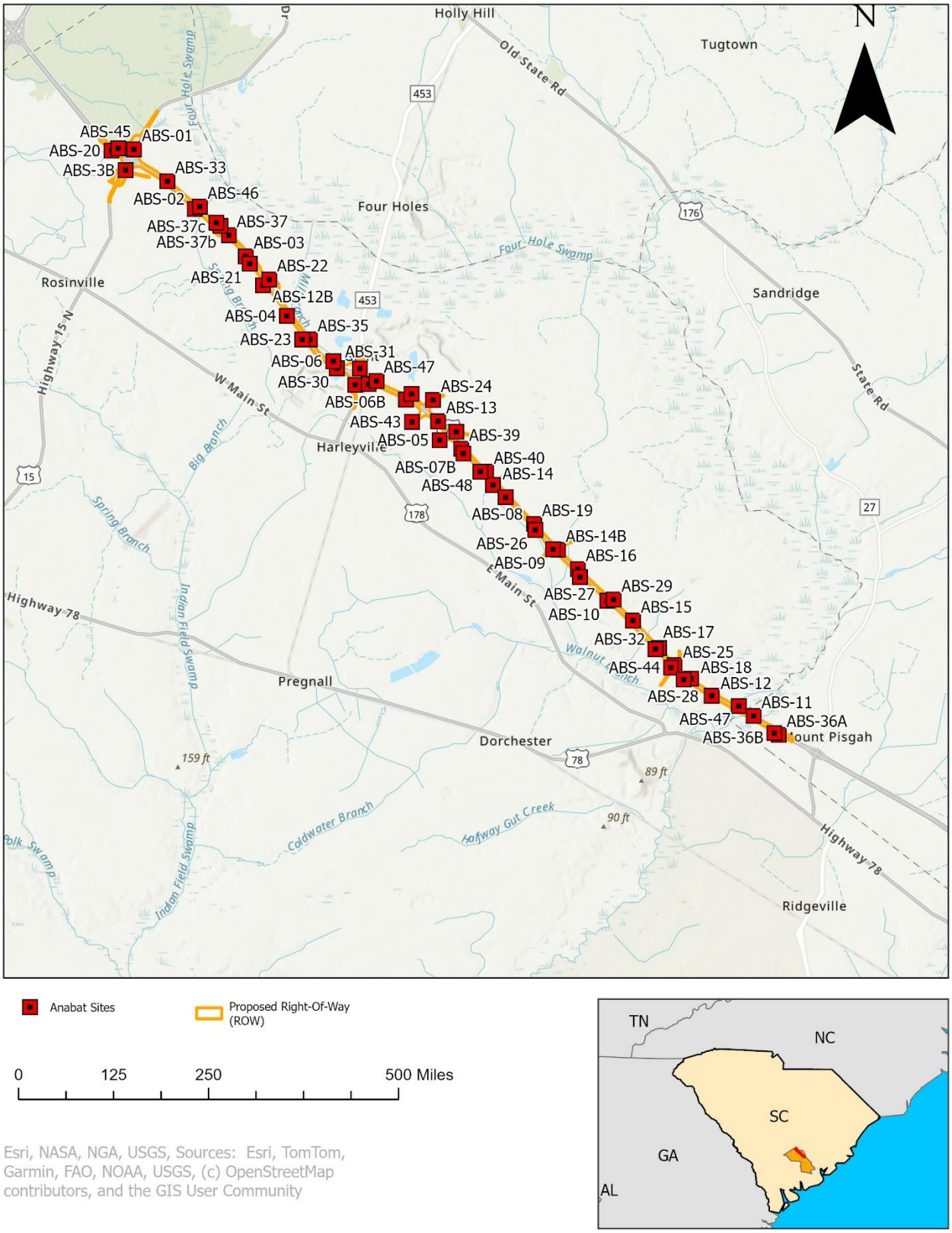


Figure 2. Acoustic Detectors Survey Location Overview

4. RESULTS

The original study plan proposed conducting an acoustic survey for 104 detector nights distributed across 31 detector nights. However, based on project ROW habitat conditions, the survey effort was modified. Specifically, the project ROW is located in the low country of South Carolina, which consists of low-lying topography dissected with swamps, wetlands, and rivers. Within this low-lying topography, a diverse microtopography exists that promotes various wetland and swamp types, as well as large pine forest that has a mixture of sweet gum and maples distributed throughout. In order to target the diverse habitat, 121 detectors distributed across 56 acoustic sites were surveyed.

The USFWS requested that the project survey for 13 possible bat species . These species included:

- EPFU, *Eptesicus fuscus*, big brown bat
- CORA, *Corynorhinus rafinesquii*, Rafinesque's big-eared bat
- LABO, *Lasiurus borealis*, eastern red bat
- LACI, *Lasiurus cinereus*, hoary bat
- LANO, *Lasionycteris noctivagans*, silver-haired bat
- LASE, *Lasiurus seminolus*, Seminole bat
- TABR, *Tadarida brasiliensis mexicana*, Brazilian free-tailed bat
- MYLU, *Myotis lucifugus*, little brown bat
- MYSE, *Myotis septentrionalis*, northern long-eared bat
- NYHU, *Nycticeius humeralis*, evening bat
- PESU, *Perimyotis subflavus*, tricolored bat
- MYAU, *Myotis austroriparius,* southeastern bat
- LAIN, *Lasiurus intermedius,* Northern yellow bat

This survey effort determined that there were likely 10 species of bats who were likely to be present during survey efforts. The acoustic analysis software BCID, indicated one federal listed bat species and one bat species proposed as endangered were detected during survey efforts. Species detected during survey efforts were consistent with expected species for this region and habitat conditions.

The Quantitative analysis conducted by BCID, identified 10 of the 13 bat species requested to be surveyed by the USFWS (Table 2). BCID identified the big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionnycteris noctivagans*), eastern red bat (*Lasiurus borealis*), hoary bat (*L. cinereus*), Southeastern bat (*M. austroriparius*), little brown bat (*M. lucifugus*) , northern long-eared bat (federally listed as endangered), evening bat (*Nycticeius humeralis*), and tricolored bat (proposed endangered), Rafinesque's big-eared bat *Corynorhinus rafinesquii*). Software analysis outputs for each detector night are provided in Appendix F.

Northern long-eared bats were detected at 18 acoustic sites and tricolor bats were detected at 37 acoustic sites. Both species were generally distributed throughout the project ROW. Tricolored bats were one of the more prevalent species captured, along with eastern red bats.

Based upon the inner- and outer-tier guidance outlined in the USFWS Range-wide IBAT and NLEB Survey Guidelines (v. March 2024), the conservation buffer zone for NLEB and TCB is defined as

3-miles around captures and detections, and thus 1.5-miles is defined as inner-tier zone within this buffer. It is assumed that NLEB and TCB will use the habitat within 1.5-miles from a roost tree and therefore captures or detections are assigned a 3-mile conservation buffer and that its roost tree is located somewhere within 1.5 miles of the capture/detection site. Therefore, the USFWS assumes presence of NLEB or TCB within a 1.5-mile buffer around any positive detection or capture site. Based upon this guidance a 1.5-mile buffer was established around NLEB and TCB, which places nearly all of the project ROW within roosting and foraging habitat for these two species. Buffers for these species are included in Appendix D and E, respectively.

.

Table 2. BCID Acoustic Survey Summary Results

Km Reach	General Location	Site ID	Detector Night Per Site	EPFU	LANO	LABO	LACI	MYAU	MYLU	*MYSE	NYHU	*PESU	CORA	Unknown
1	Interstate	ABS-20	3			X		X			X	X		
1	Interstate	ABS-45	1	X	X	X		X	X		X	X		X
2	Overpass	ABS-03 B	2								X			
2	Overpass	ABS-01	2	X		X	X		X		X	X		
3	Interstate	ABS-33	4					X	X	X	X	X		X
4	Interstate	ABS-02	3		X				X	X	X	X		X
4	Interstate	ABS-46	1	X	X									
5	Interstate	ABS 37C	1			X		X	X	X	X	X		X
5	Interstate	ABS-37B	1	X		X		X	X	X	X	X		
5	Interstate	ABS-37	2											
6	Interstate	ABS-03	2						X	X	X			
6	Interstate	ABS-21	2	X				X	X	X	X	X		X
7	Overpass	ABS-22	2											
7	Overpass	ABS-12B	2									X		
8	Interstate	ABS-04	4	X	X	X			X		X			X
9	Interstate	ABS-35	2	X		X			X		X	X		
9	Interstate	ABS-23	2	X	X	X		X	X	X	X	X	X	X
10	Interstate	ABS-30	3						X			X		X
10	Interstate	ABS-06	1			X					X	X		X
11	Overpass	ABS-31	2							X				
11	Overpass	ABS-6B	2			X					X			X
11	Interstate	ABS-41	3			X		X	X		X	X		X
11	Interstate	ABS-47	1	X	X									
12	Interstate	ABS-07	2			X		X	X	X	X	X		X
12	Interstate	ABS-34	2			X		X	X		X	X	X	X
13	Overpass	ABS-43	2											
13	Overpass	ABS-24	2	X	X									
13	Interstate	ABS-13	4			X			X		X	X		

Species Key: EPFU = big brown bat, LABO = eastern red bat, LANO = silver-haired bat, LACI = hoary bat, MYAU = Southeastern bat, MYLU = little brown bat, MYSE = northern long-eared bat, NYHU = evening bat, PESU = tricolored bat, CORA = Rafinesque' s big-eared bat, * = federally listed species

Table 2 (continued). BCID Acoustic Survey Summary Results

Km Reach	General Location	Site ID	Detector Night Per Site	EPFU	LANO	LABO	LACI	MYAU	MYLU	*MYSE	NYHU	*PESU	CORA	Unknown
14	Overpass	ABS-05	2	X	X	X	X		X		X	X		X
14	Overpass	ABS-50	2	X		X		X	X	X	X	X		X
14	Interstate	ABS-39	3						X		X	X		X
14	Interstate	ABS-07B	1									X		
15	Interstate	ABS-40	3											
15	Interstate	ABS-48	1											X
16	Interstate	ABS-08	1		X	X			X		X	X		X
16	Interstate	ABS-14	3			X			X	X	X	X		X
17	Interstate	ABS-19	2								X			
17	Interstate	ABS-26	2					X	X	X	X	X		X
18	Overpass	ABS-09	2			X			X		X			X
18	Overpass	ABS-14B	2											
19	Interstate	ABS-27	2			X		X	X	X	X	X		X
19	Interstate	ABS-16	2		X						X	X		X
20	Interstate	ABS-10	2											X
20	Interstate	ABS-29	2											
21	Interstate	ABS-15	4			X		X	X	X	X	X		X
22	Interstate	ABS-32	3			X			X		X	X		X
22	Interstate	ABS-17	2									X		
23	Interstate	ABS-18	2		X	X		X	X		X	X		X
23	Interstate	ABS-28	2									X		
23	Overpass	ABS-44	2			X			X	X	X	X		X
23	Overpass	ABS-25	2		X	X		X	X	X	X	X		X
24	Interstate	ABS-12	4			X		X		X	X	X		
25	Interstate	ABS-11	2	X		X			X		X	X		X
25	Interstate	ABS-37	2											
26	Interstate	ABS-36A	1									X		
26	Interstate	ABS-36B	3	X	X			X	X	X		X		X
Total			121	X	X	X	X	XX	X	X	X	X	X	X

Species Key: EPFU = big brown bat, LABO = eastern red bat, LANO = silver-haired bat, LACI = hoary bat, MYAU = Southeastern bat, MYLU = little brown bat, MYSE = northern long-eared bat, NYHU = evening bat, PESU = tricolored bat, CORA = Rafinesque' s big-eared bat, * = federally listed species

5. DISCUSSION

The acoustic bat survey conducted along the proposed I-26 construction ROW detected 10 of 13 possible bat species potentially occurring in region. Species detected included big brown bat, silver-haired bat, eastern red bat, hoary bat, Southeastern bat, little brown bat, Northern long-eared bat (federally listed as endangered), evening bat, tricolored bat (proposed endangered), and Rafinesque's big-eared bat.

Northern long-eared bats were detected at 18 acoustic sites and tricolor bats were detected at 37 acoustic sites. Both species were generally distributed throughout the project ROW. Tricolored bats were one of the more prevalent species captured, along with eastern red bats. Bats detected during survey efforts are consistent with species expected to occur based on habitat conditions in this region.

6. REFERENCES

BCID. Bat Call Identification, Inc. Version 2.8a

Titley Scientific. AnaBat SD2 Compact Flash Bat Detector User Manual. Manual Version 1.8

United States Environmental Protection Agency (USEPA). 2020. Level III and IV Ecoregions of the Continental United States. Website accessed June 2020. https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states

United States Fish and Wildlife Service (USFWS). 2024. Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines..

United States Geological Survey (USGS). 2020. National Wildlife health Center, White-nose Syndrome. Website accessed June 2020. https://www.usgs.gov/centers/nwhc/science/white-nose-syndrome?qt-science_center_objects=0#qt-science_center_objects

Weatherunderground.com, Orangeburg, SC.

Appendix A. Permits and Study Design USFWS Approval

NATIVE ENDANGERED SPECIES RECOVERY

Permit Number: ES102292

Version Number: 14

Effective: 2025-04-22 **Expires:** 2030-04-30

Issuing Office:

Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

ES Atlanta Permit Office
1875 Century Boulevard
Atlanta, Georgia 30345
permitsR4ES@fws.gov

Jennifer Garland

ESA section 10/Mitigation Coordinator

Digitally signed by
Jennifer Garland
2025-04-21 09:54:34

Permittee:

JEREMY JACKSON
3945 SIMPSON LANE
RICHMOND, KY 40475
US

Authority: Statutes and Regulations: 16 U.S.C. 1539 (a) 50 CFR 17.22, 50 CFR 13

Location where authorized activity may be conducted:

Alabama, Arkansas, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

Reporting requirements:

Annual reports are due by January 31 following each year that this permit is in effect.

Authorizations and Conditions:

A. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accordance with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

*********FOR U.S. FISH AND WILDLIFE SERVICE USE ONLY**********

United States Department of the Interior

Fish and Wildlife Service

South Carolina Ecological Services Field Office
176 Croghan Spur Rd., Suite 200, Charleston, SC 29407
843-727-4707

SITE-SPECIFIC AUTHORIZATION - BAT SURVEYS **FWS Project Code: 2025-0057191**

Our Field Office has reviewed your study plan and found it to contain sufficient information for our approval. When signed, this statement serves as your site-specific authorization to conduct the proposed activities at the specified locations included in the attached Study Plan Form and supporting files and must be carried with your federal permit when conducting work for this project. All activities must be carried out with strict adherence to permit conditions and authorizations specified in your federal permit as well as your state permit(s) (if needed). The section 10(a)(1)(A) permit authorizing the activities (if applicable) must remain with the surveyor at all times. For proposed activities on private lands, this authorization is not valid without explicit private landowner permission.

In addition to the final survey report, please use the appropriate U.S. Fish and Wildlife Service (USFWS) bat survey data spreadsheet, available on the Range-wide Bat Survey Guidelines website[8], for reporting live capture and acoustic survey results. To mitigate the risk of viral transmission between bats and humans (e.g., SARS-CoV-2), USFWS requests anyone directly handling or working in close proximity to bats follow current guidelines prepared by the CDC[9] and IUCN Bat Specialist Group[10] in addition to the following the standard WNS decontamination protocols[11].

If the work expands beyond the scope of your original study plan or if there are adverse effects to bats that were not anticipated, cease all survey and/or research activities, and contact this office prior to continuing. Additionally, if a federally listed bat is captured, this USFWS Field Office must be notified within 48 hours .

Field Office POC: Jessica Hinson

email: jessica_hinson@fws.gov **phone:** 854-253-0441

Authorized as Proposed ☑

Authorized with Conditions (see below)

Not Authorized. ***(see** comments)*

Signature: _____ **Date:**_____

[8] https://www.fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines
[9] https://www.cdc.gov/healthypets/covid-19/wildlife.html
[10] https://www.iucnbsg.org/uploads/6/5/0/9/6509077/amp_recommendations_for_researchers_final.pdf
[11] https://whitenosesyndrome.org/mmedia-education/national-wns-decontamination-protocol-u-s

Appendix B. Acoustic Site Photos

ABS-20

ABS-3B

ABS-01

ABS-33

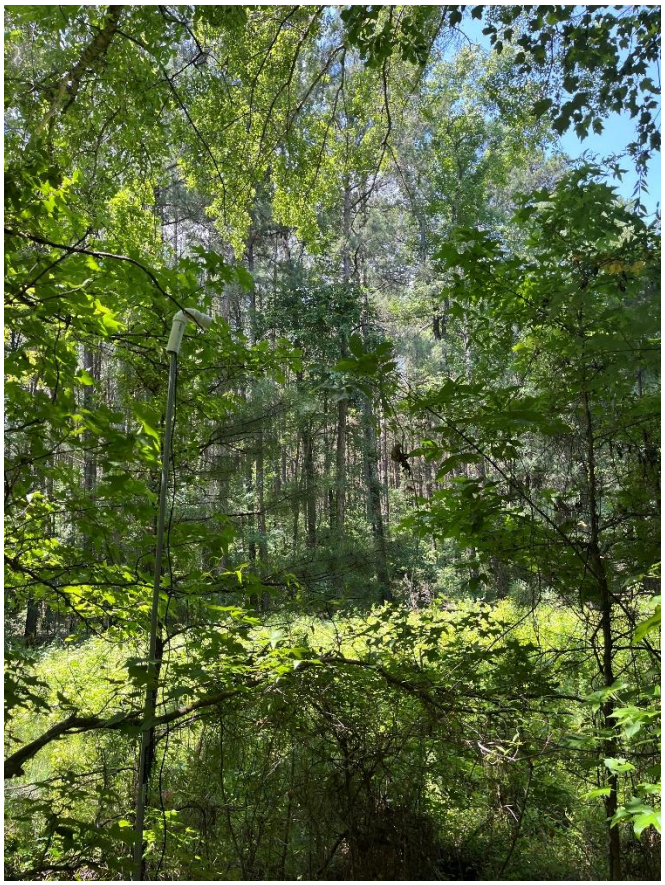
ABS-02

ABS-46

ABS-37

ABS-46

ABS-37B



ABS-37C

ABS-03

ABS-21

ABS-12B

ABS-22

ABS-04

ABS-23

ABS-35

ABS-06

ABS-30

ABS-06B

ABS-31

ABS-41

ABS-47

ABS-07

ABS-34

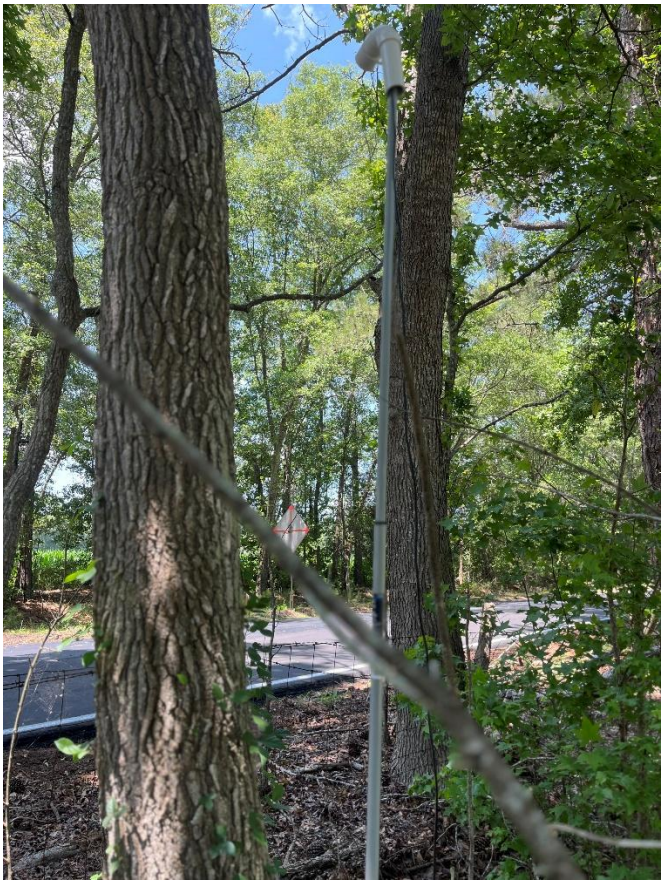
ABS-13

ABS-24

ABS-43

ABS-05

ABS-07B

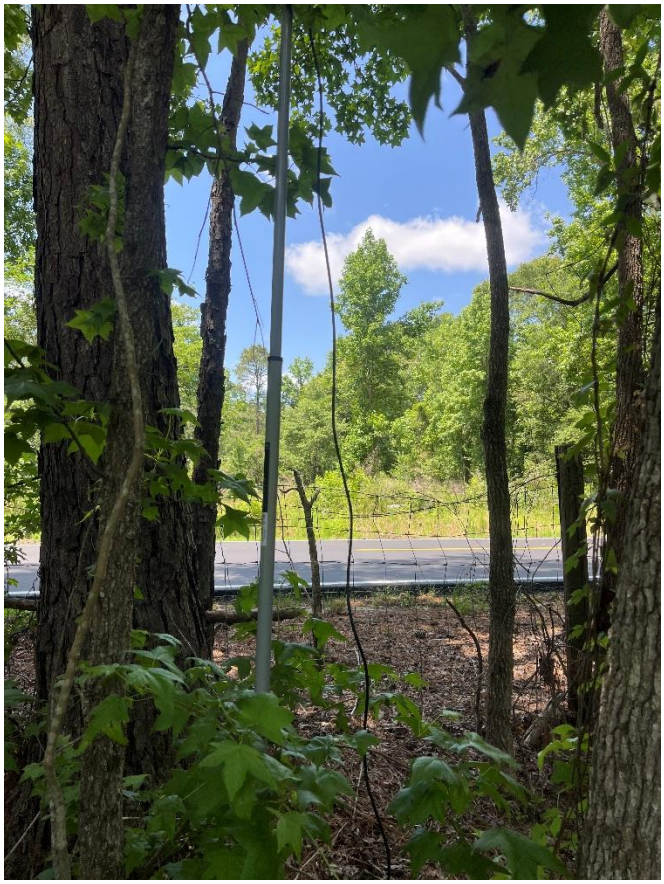


ABS-39

ABS-50

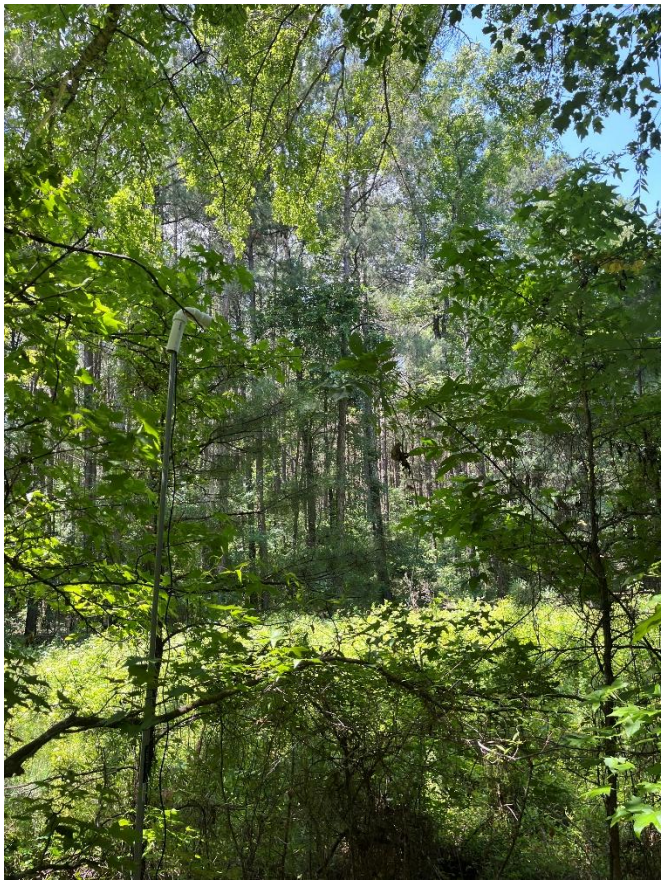
ABS-40

ABS-48



ABS-08

ABS-14



ABS-19

ABS-26

ABS-09

ABS-14B

ABS-16

ABS-27

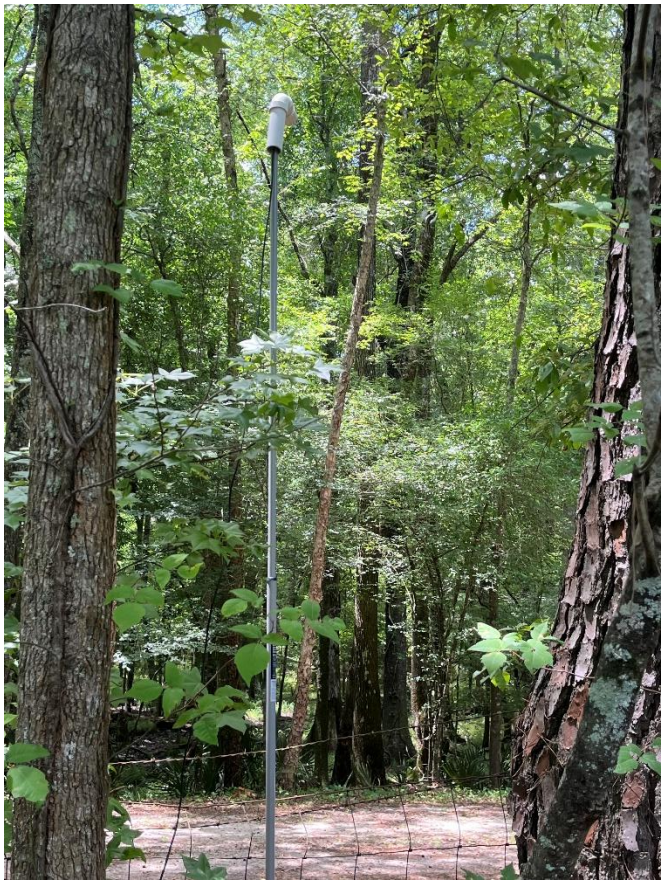
ABS-10

ABS-29

ABS-15

ABS-17

ABS-32



ABS-18

ABS-28

ABS-12

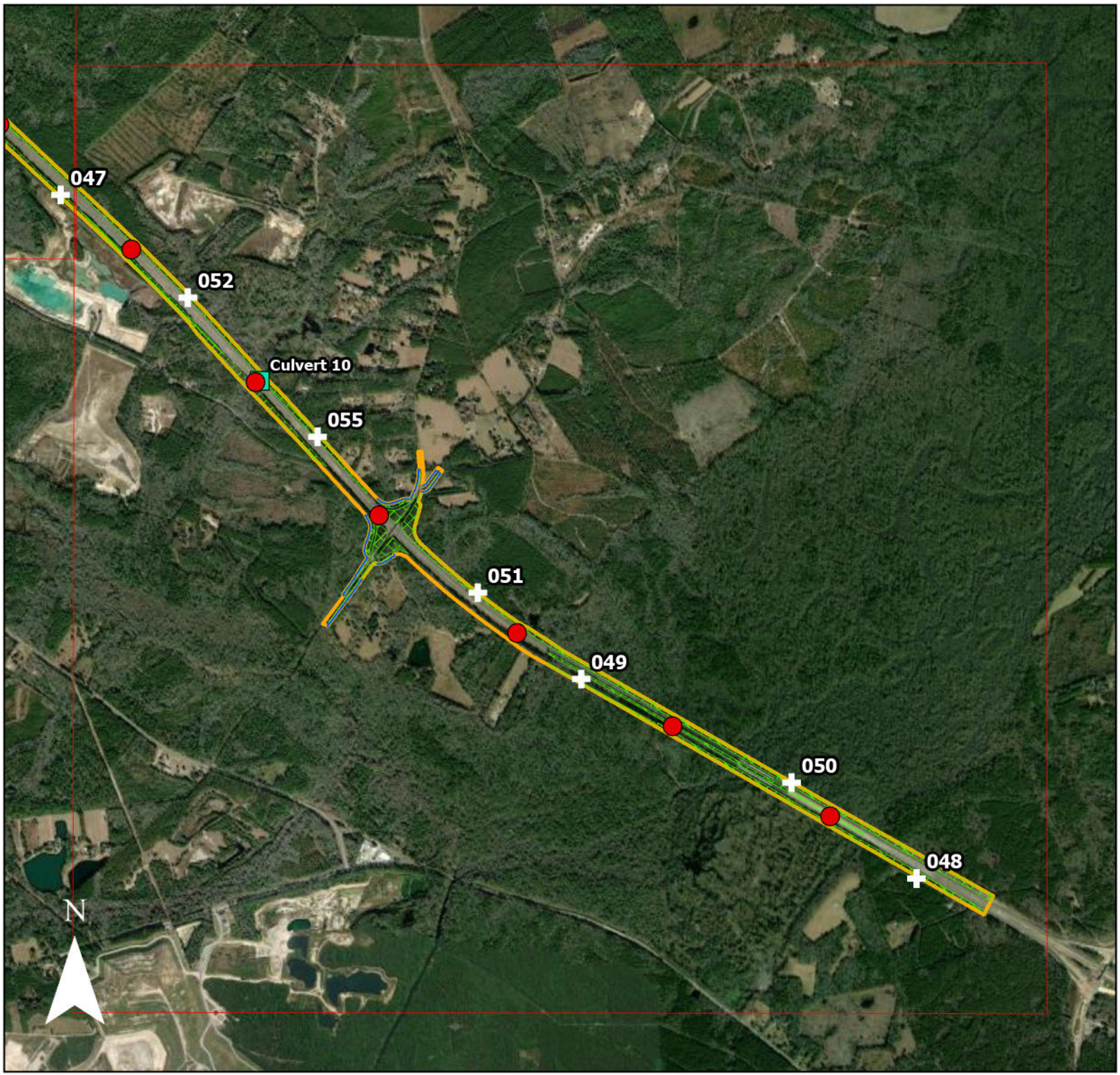
ABS-11

ABS-47

ABS-36A

ABS-36B

Appendix C. Acoustic Site Location Maps



1-Kilometer Stations
Overpass Bridge
Culverts With Bat Signs
Map Index
Estimated Tree Clearing
Proposed Alt Design Outline

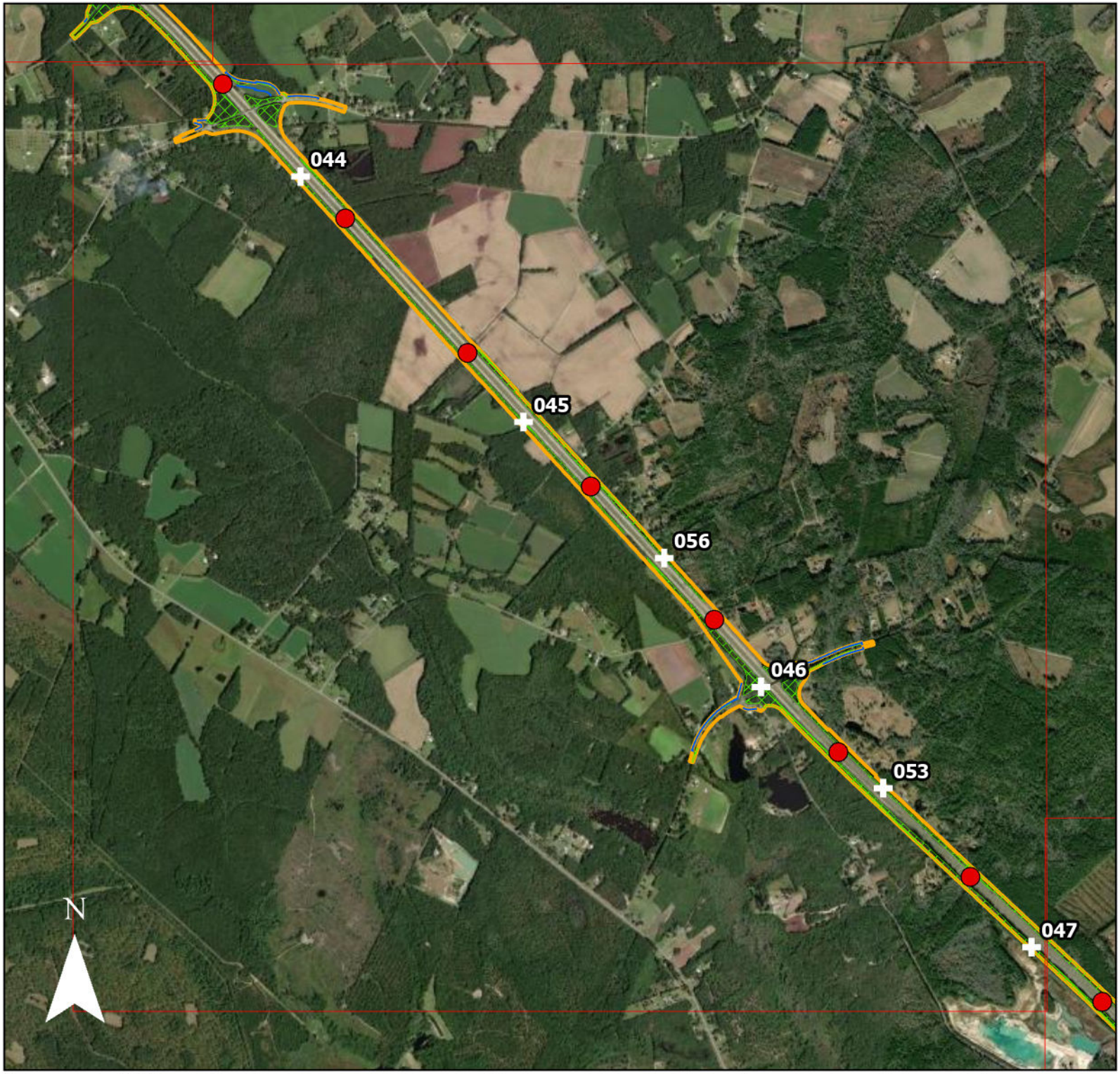
Points

SymbolID

0

Sheet 1 of 4

Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap



1-Kilometer Stations
Overpass Bridge
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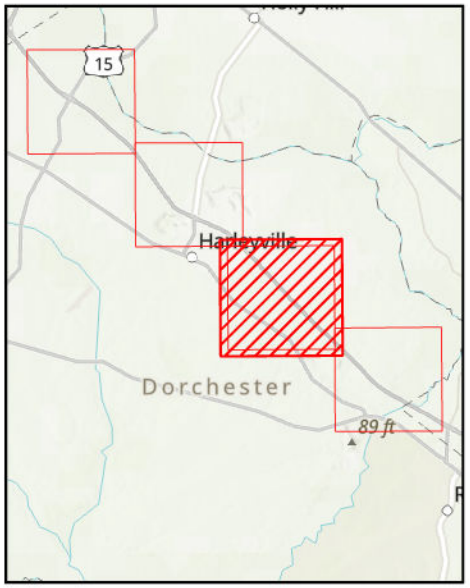
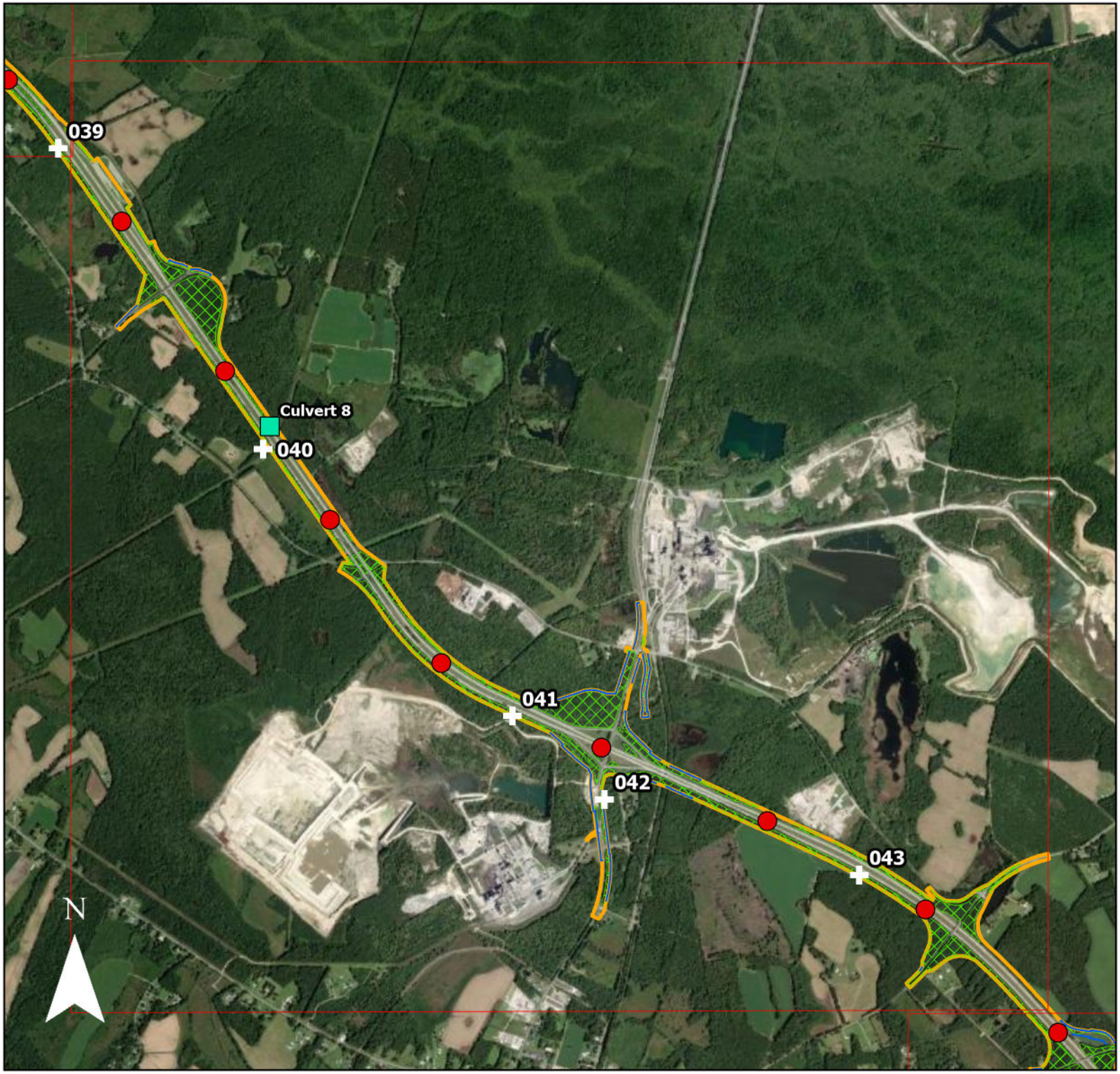


Sheet 2 of 4

Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and



1-Kilometer Stations
Overpass Bridge
Culverts With Bat Signs
Map Index
Estimated Tree Clearing
Proposed Alt Design Outline

Points

SymbolID

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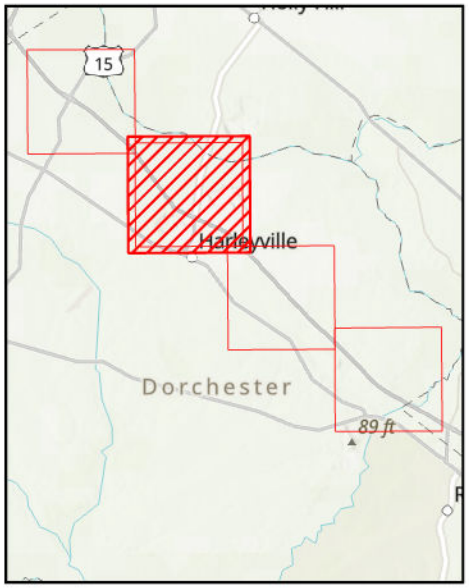
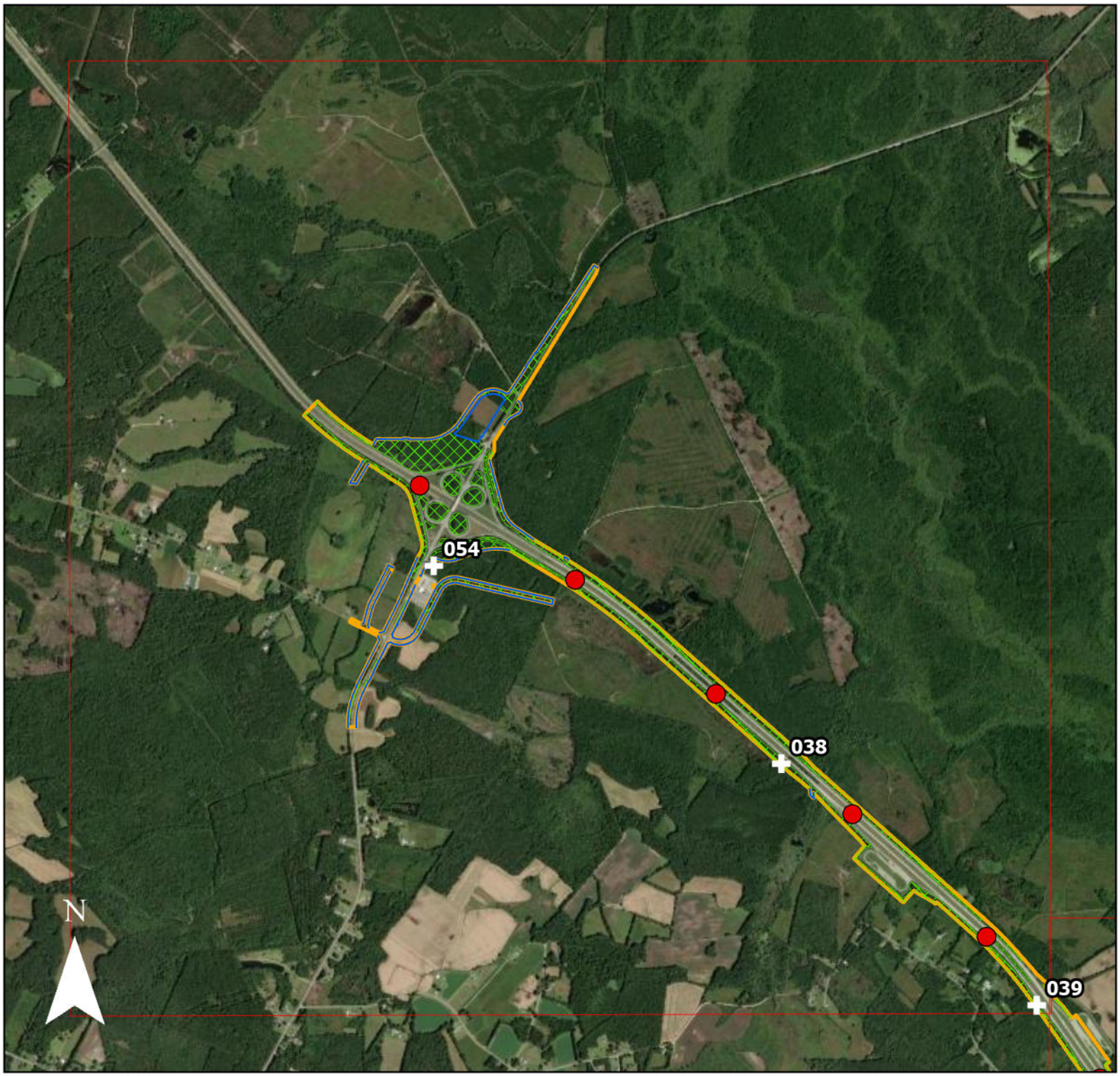


Sheet 3 of 4

Esri, NASA, NGA, USGS, Earthstar Geographics, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS,



1-Kilometer Stations
Overpass Bridge
Culverts With Bat Signs
Map Index
Estimated Tree Clearing
Proposed Alt Design Outline

Points

SymbolID

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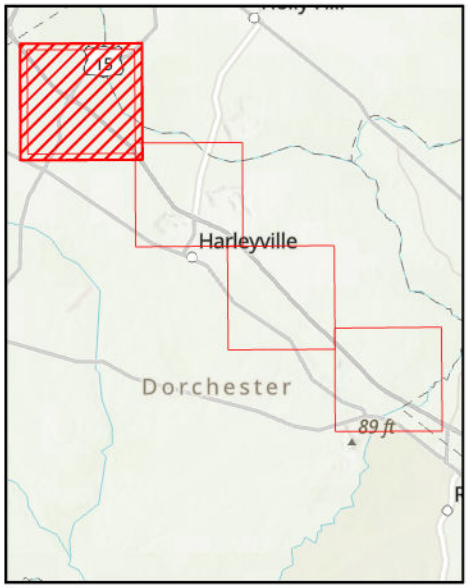
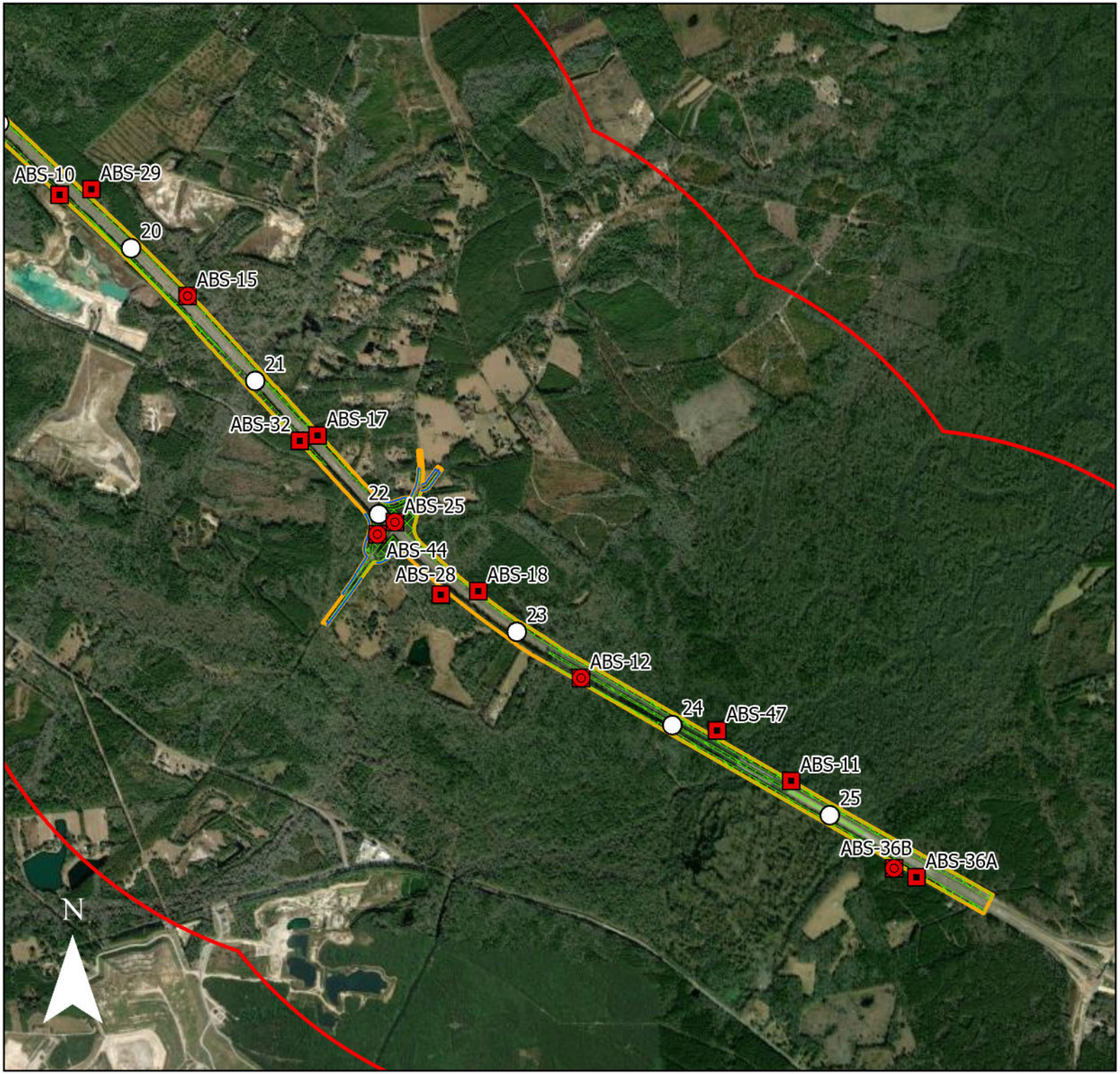


Sheet 4 of 4

Earthstar Geographics, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c)

Appendix D. Northern Long-eared Bat Positive Site Location Maps



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

Proposed Right-Of-Way (ROW)

MYSE Positive Sites

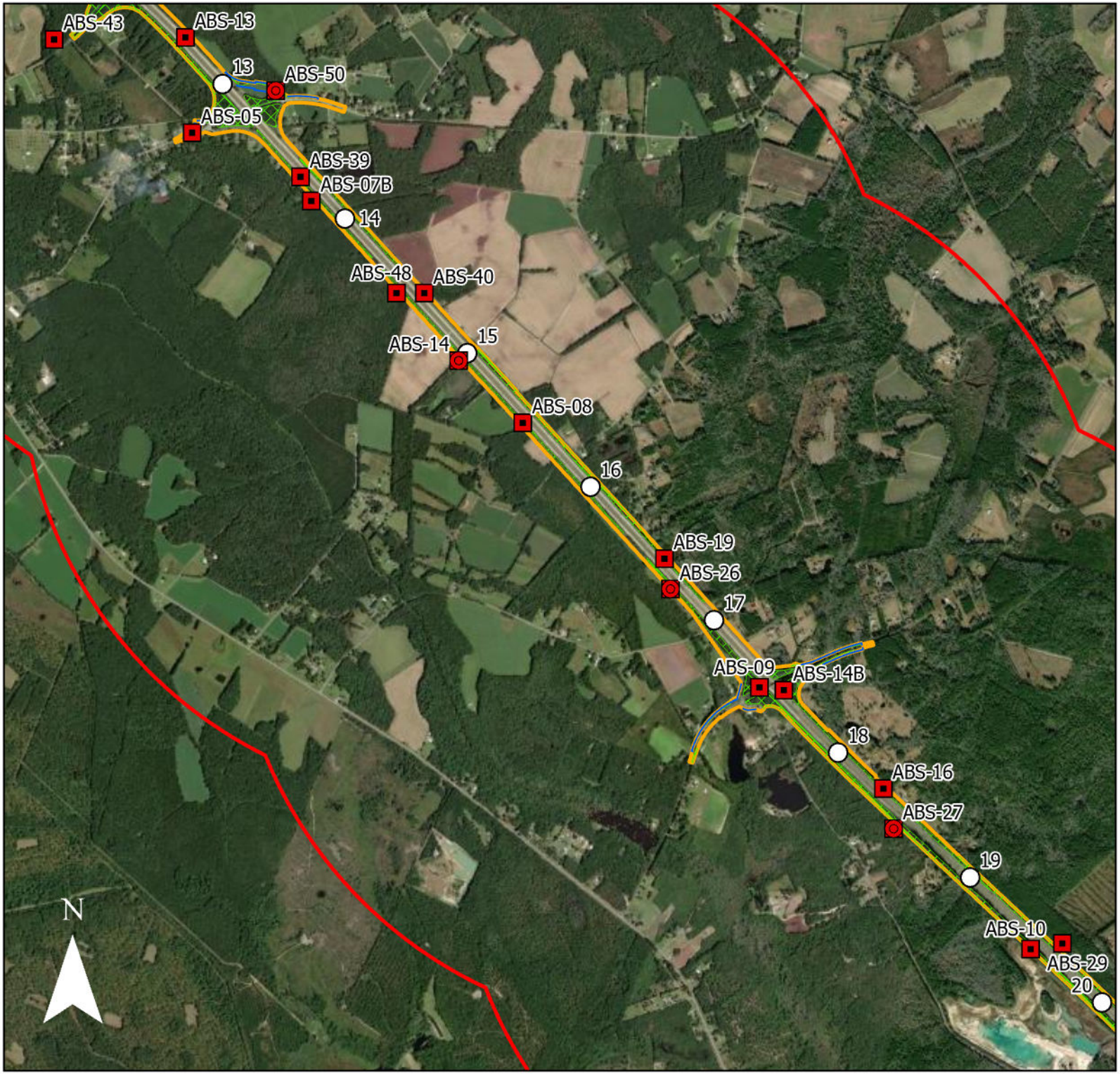
1.5 Mile Buffer of MYSE Positive Sites

Anabat Sites

Anabat Sites

Sheet 1 of 4

Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

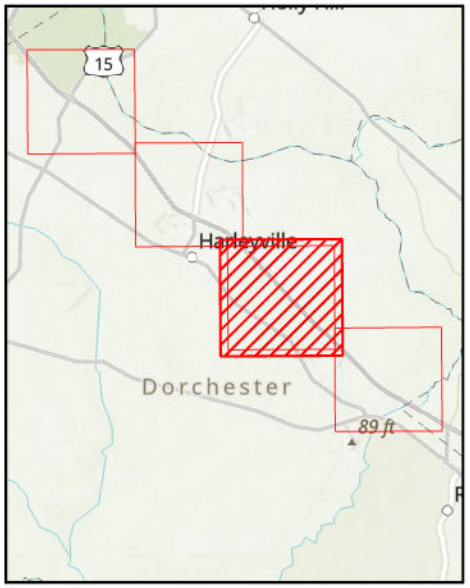
Proposed Right-Of-Way (ROW)

MYSE Positive Sites

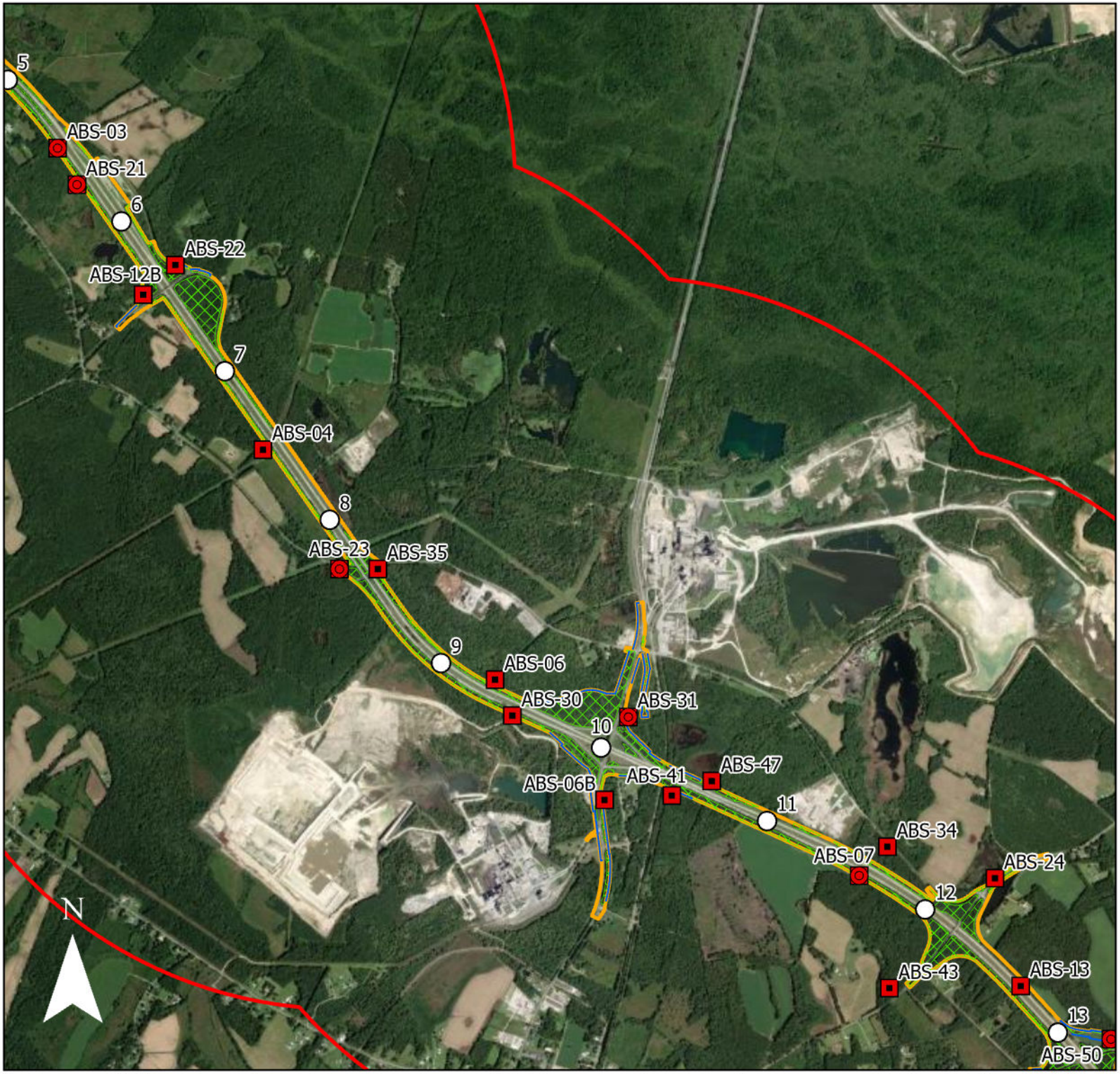
1.5 Mile Buffer of MYSE Positive Sites

Anabat Sites

Anabat Sites



Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

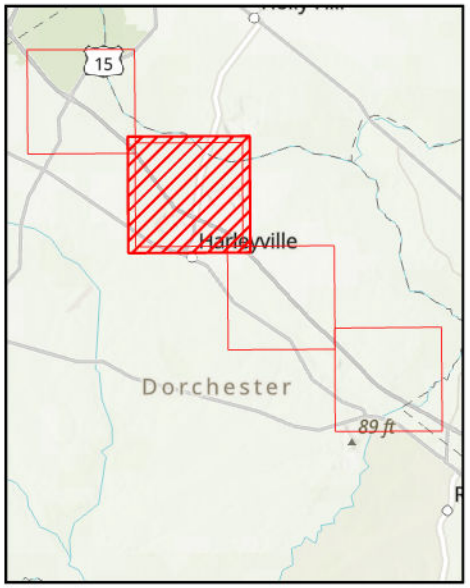
Proposed Right-Of-Way (ROW)

MYSE Positive Sites

1.5 Mile Buffer of MYSE Positive Sites

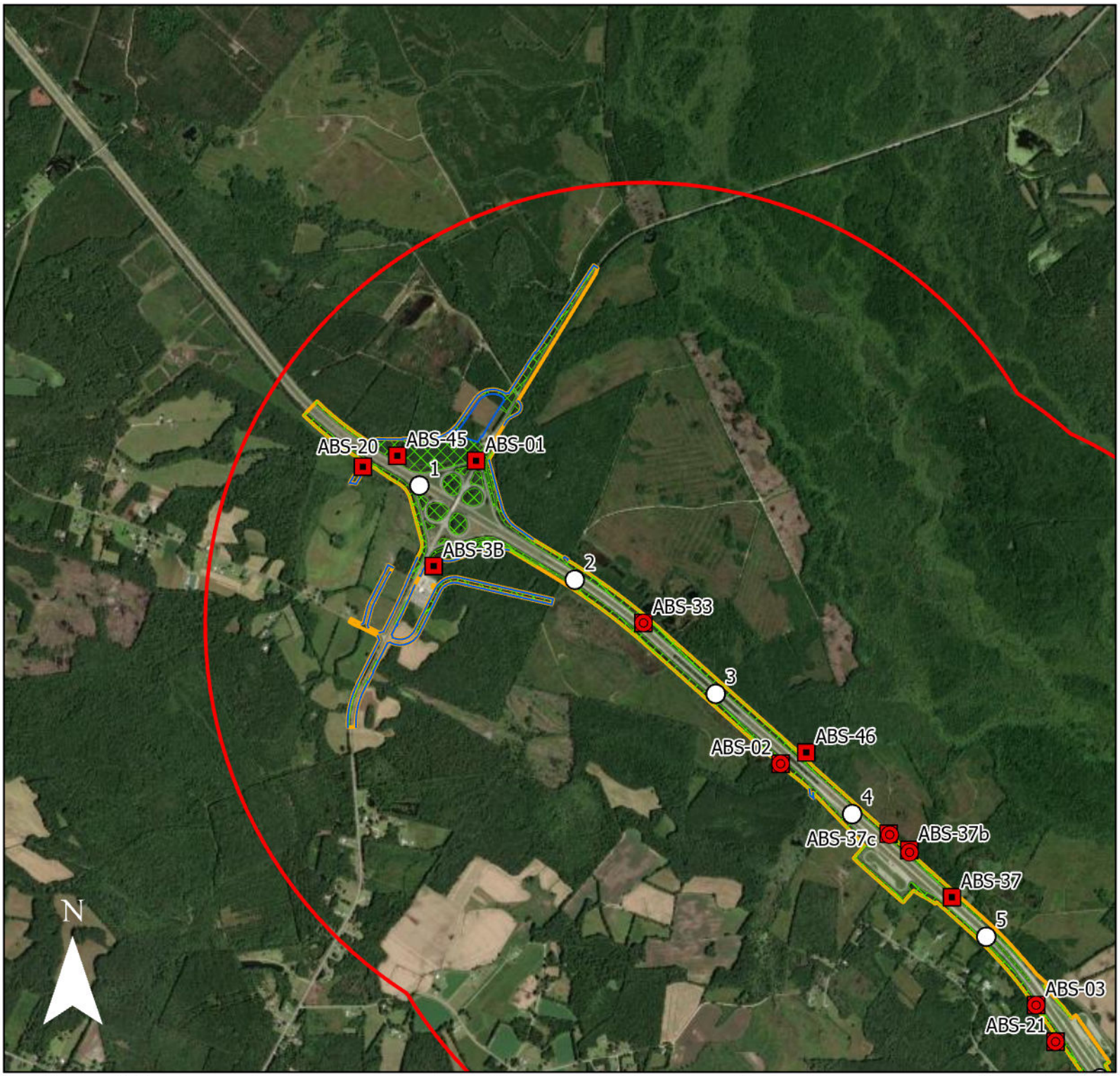
Anabat Sites

Anabat Sites



Sheet 3 of 4

Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

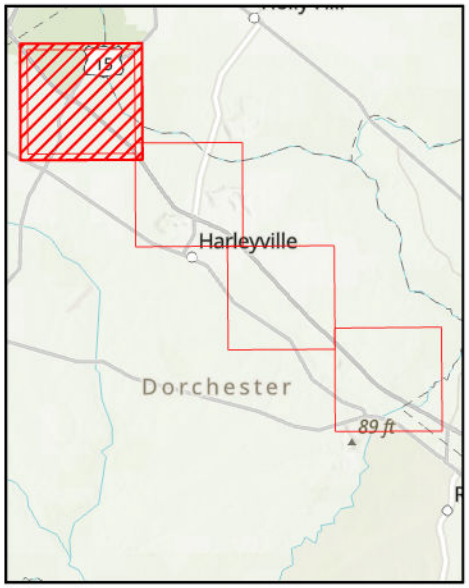
Proposed Right-Of-Way (ROW)

MYSE Positive Sites

1.5 Mile Buffer of MYSE Positive Sites

Anabat Sites

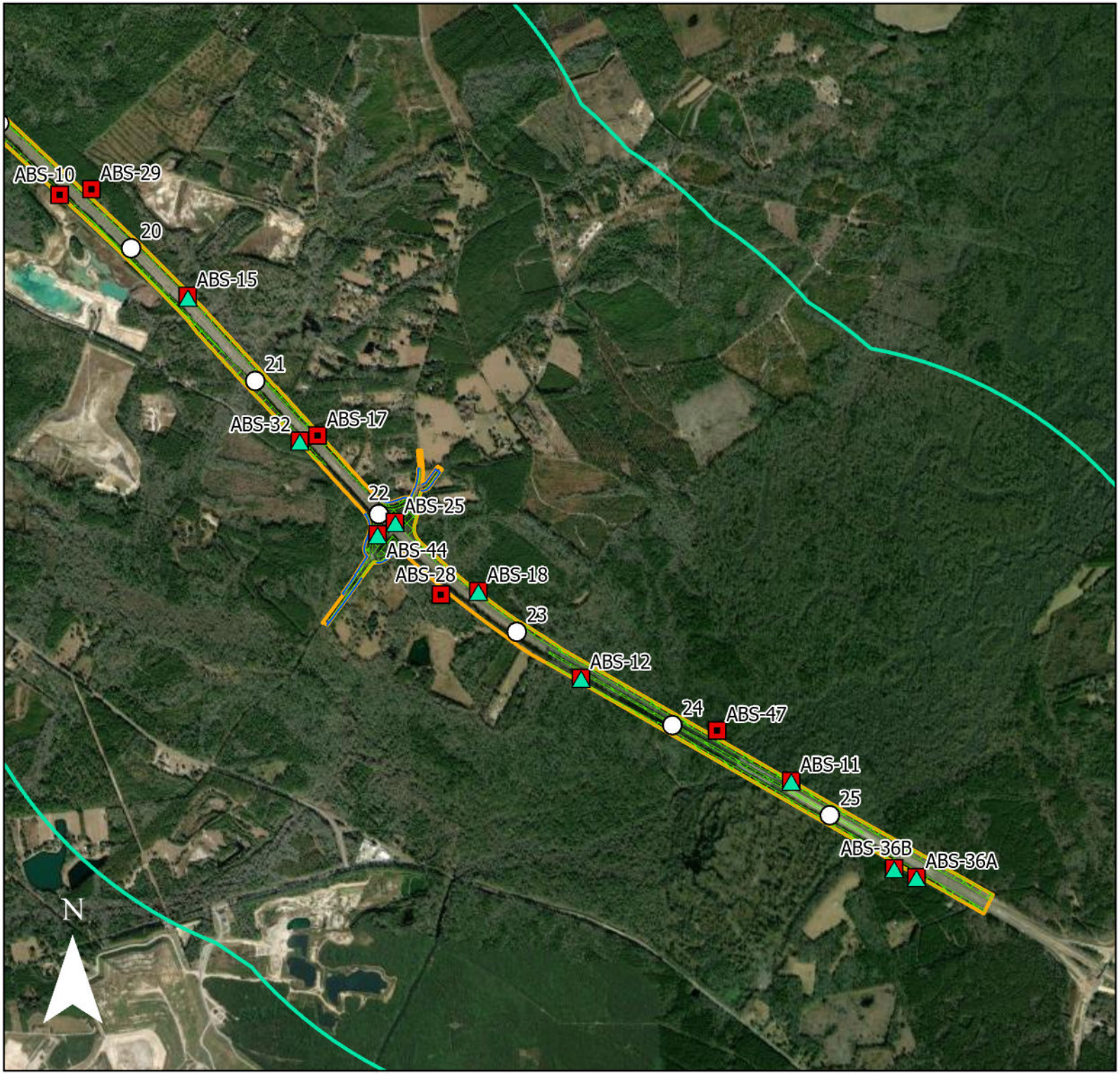
Anabat Sites



Sheet 4 of 4

Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and

Appendix E. Tricolor Bat Positive Site Location Maps



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

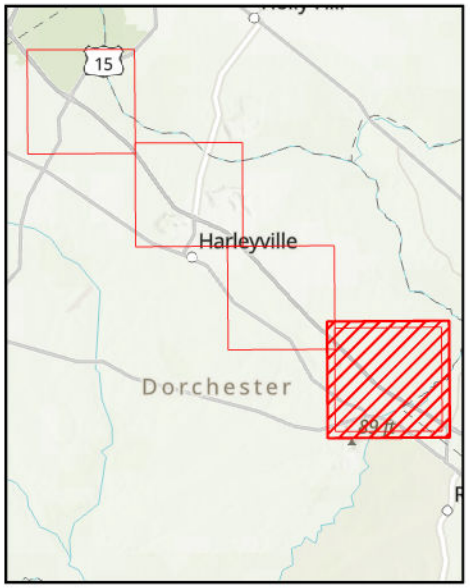
Proposed Right-Of-Way (ROW)

PESU Positive Sites

1.5 Mile Buffer of PESU Positive Sites

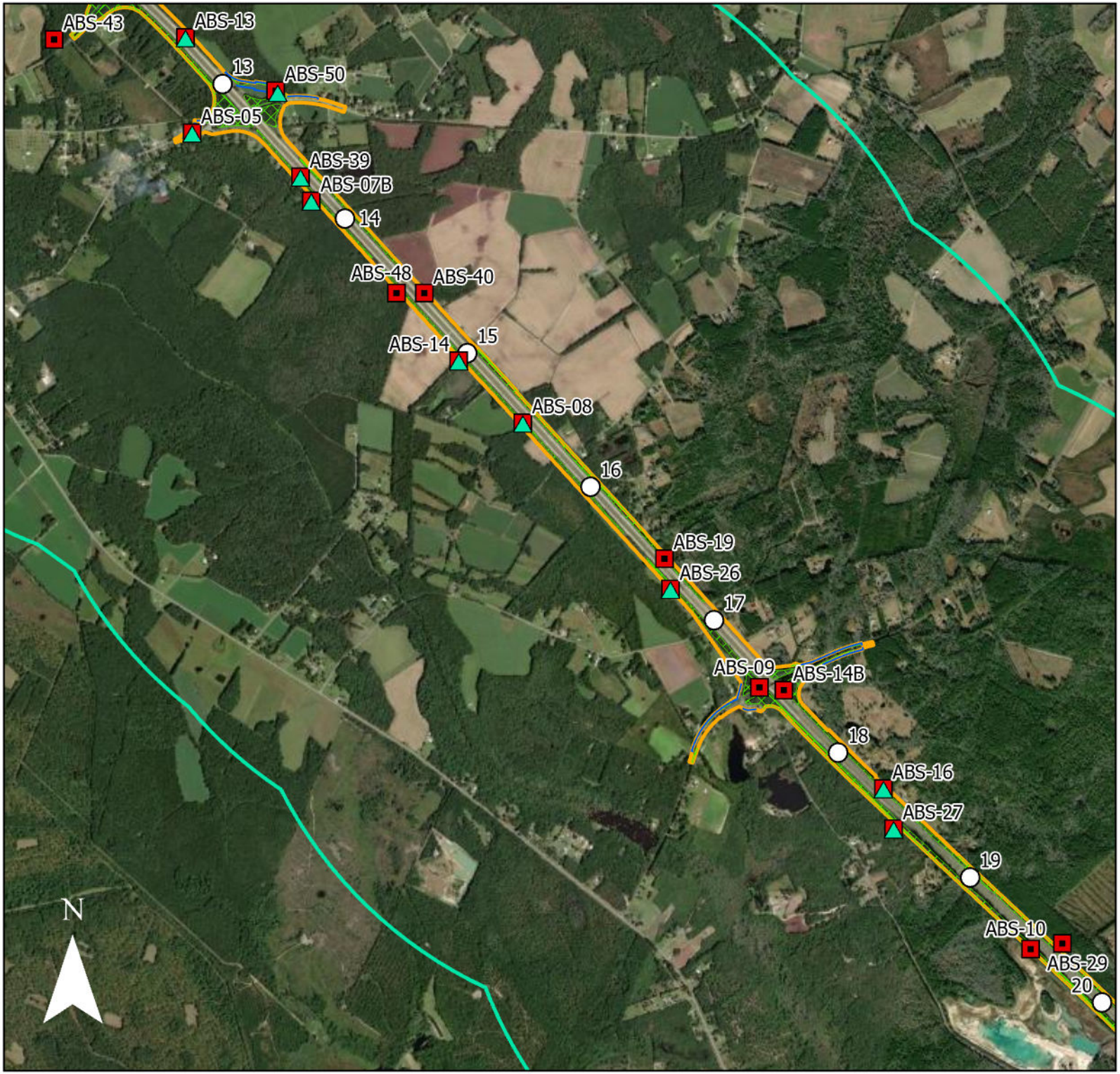
Anabat Sites

Anabat Sites



Sheet 1 of 4

Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

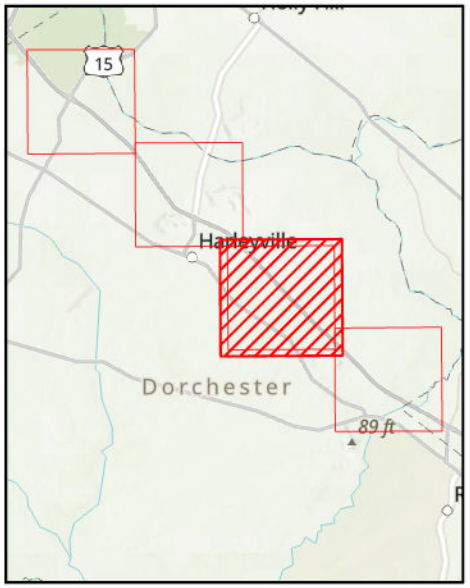
Proposed Right-Of-Way (ROW)

PESU Positive Sites

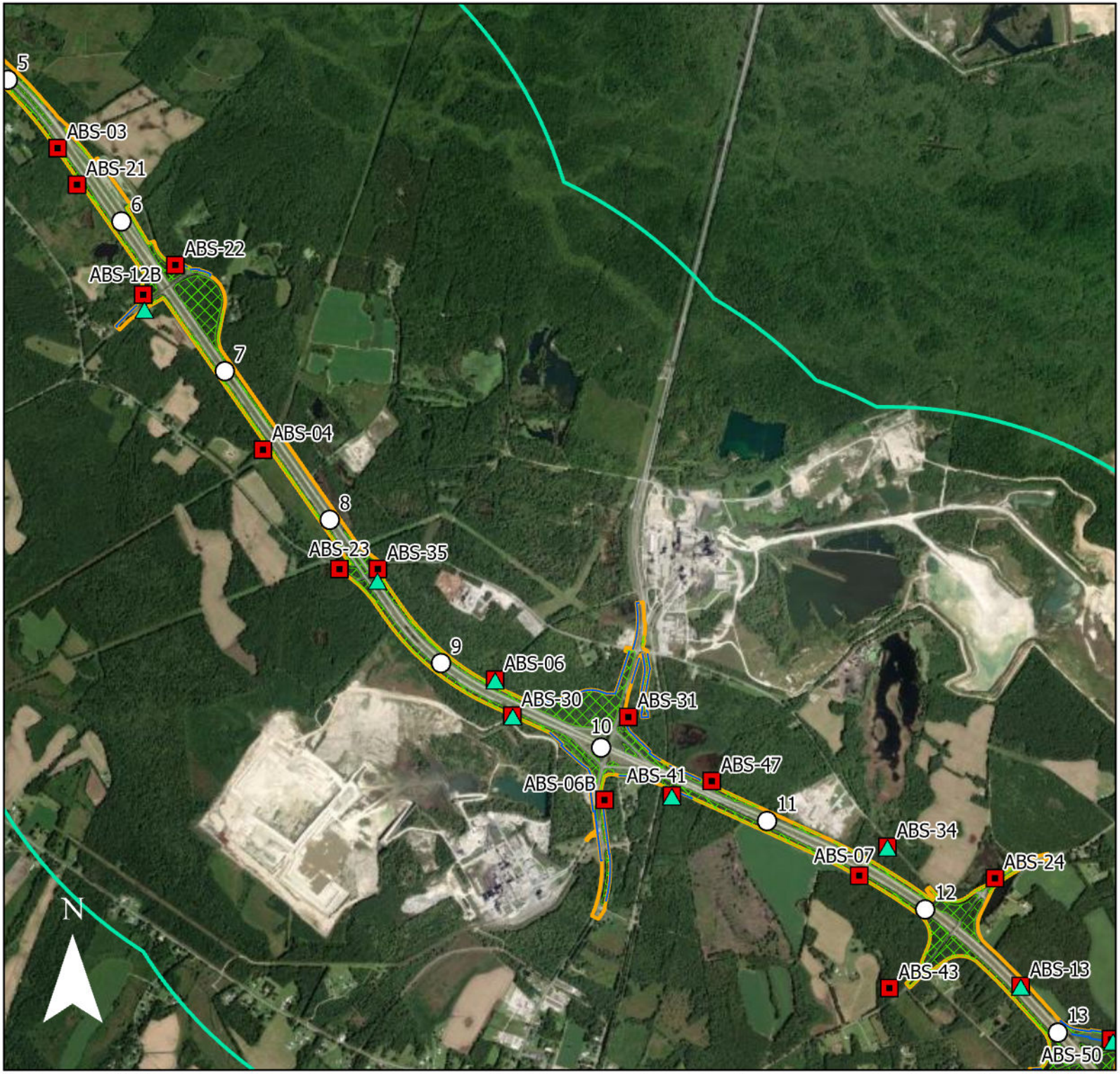
1.5 Mile Buffer of PESU Positive Sites

Anabat Sites

Anabat Sites



Esri, NASA, NGA, USGS, Earthstar Geographics, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS,



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

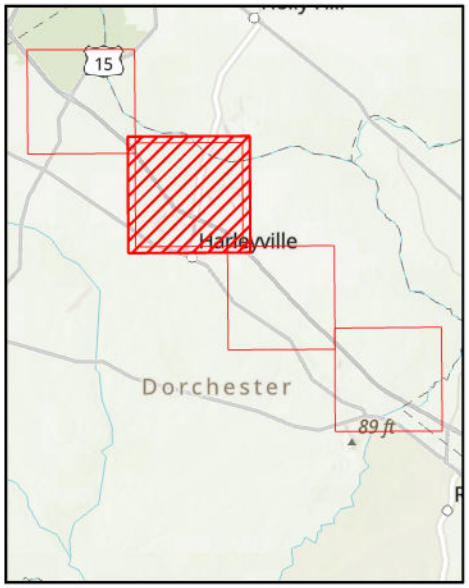
Proposed Right-Of-Way (ROW)

PESU Positive Sites

1.5 Mile Buffer of PESU Positive Sites

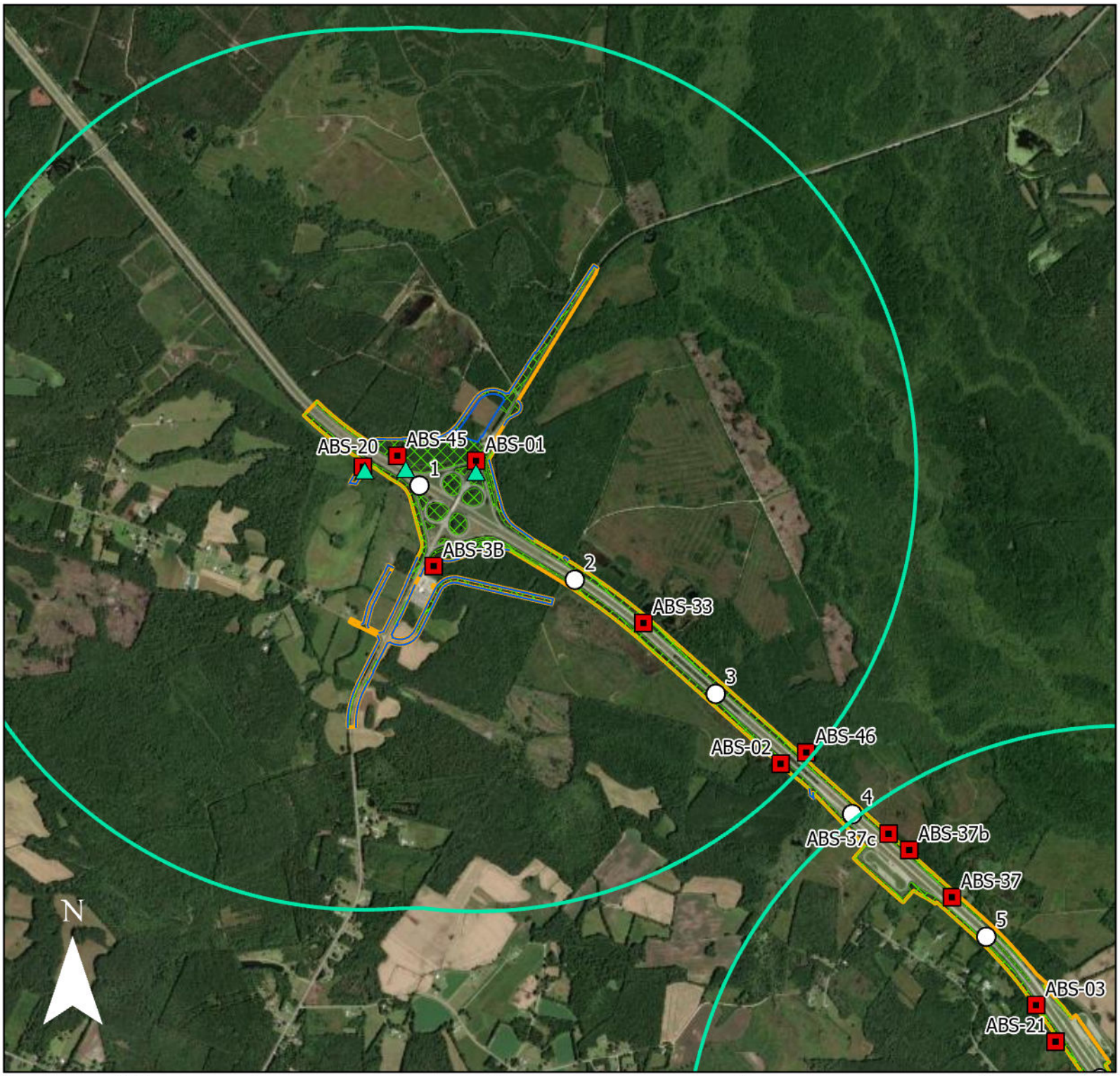
Anabat Sites

Anabat Sites



Sheet 3 of 4

Earthstar Geographics, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c)



1-Kilometer Stations

Overpass Bridge

Estimated Tree Clearing

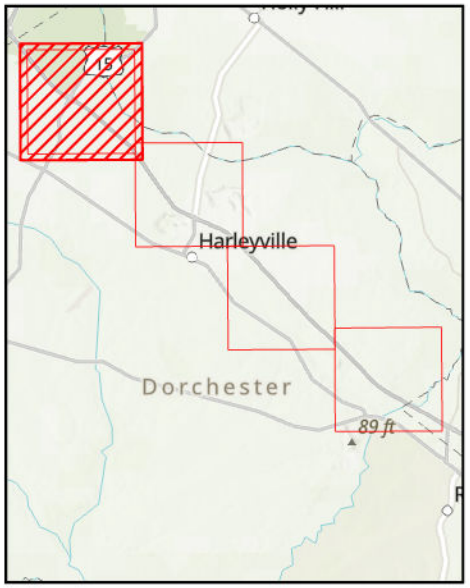
Proposed Right-Of-Way (ROW)

PESU Positive Sites

1.5 Mile Buffer of PESU Positive Sites

Anabat Sites

Anabat Sites



Sheet 4 of 4

Earthstar Geographics, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c)

Appendix F. Automated Acoustic Classifier Outputs

Will be digitally provided upon request

Appendix G. Acoustic Data Sheets

Will be digitally provided upon request

Appendix H. Weather Conditions

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
20-May-25	12:56 AM	74 °F	69 °F	85 %	W	3 mph	0 mph	29.66 in	0.0 in	Mostly Cloudy
20-May-25	1:56 AM	74 °F	69 °F	85 %	CALM	0 mph	0 mph	29.64 in	0.0 in	Fair
20-May-25	2:56 AM	73 °F	69 °F	87 %	SSE	3 mph	0 mph	29.63 in	0.0 in	Fair
20-May-25	3:56 AM	72 °F	69 °F	91 %	CALM	0 mph	0 mph	29.63 in	0.0 in	Partly Cloudy
20-May-25	4:56 AM	72 °F	70 °F	93 %	CALM	0 mph	0 mph	29.64 in	0.0 in	Cloudy
20-May-25	5:56 AM	70 °F	68 °F	93 %	CALM	0 mph	0 mph	29.64 in	0.0 in	Cloudy
20-May-25	6:56 AM	73 °F	70 °F	90 %	CALM	0 mph	0 mph	29.65 in	0.0 in	Mostly Cloudy
20-May-25	7:56 AM	74 °F	70 °F	87 %	ESE	3 mph	0 mph	29.65 in	0.0 in	Mostly Cloudy
20-May-25	8:56 AM	79 °F	71 °F	77 %	ESE	7 mph	0 mph	29.61 in	0.0 in	Haze
20-May-25	9:56 AM	81 °F	72 °F	74 %	CALM	0 mph	0 mph	29.66 in	0.0 in	Haze
20-May-25	10:56 AM	85 °F	71 °F	63 %	CALM	0 mph	0 mph	29.65 in	0.0 in	Haze
20-May-25	11:56 AM	88 °F	72 °F	59 %	CALM	0 mph	0 mph	29.64 in	0.0 in	Haze
20-May-25	12:56 PM	91 °F	67 °F	45 %	SSW	8 mph	0 mph	29.63 in	0.0 in	Haze
20-May-25	1:56 PM	91 °F	64 °F	41 %	SW	10 mph	0 mph	29.62 in	0.0 in	Partly Cloudy
20-May-25	2:56 PM	92 °F	62 °F	37 %	W	9 mph	18 mph	29.60 in	0.0 in	Mostly Cloudy
20-May-25	3:56 PM	93 °F	63 °F	37 %	SW	7 mph	0 mph	29.58 in	0.0 in	Mostly Cloudy
20-May-25	4:56 PM	92 °F	63 °F	38 %	WSW	6 mph	0 mph	29.56 in	0.0 in	Partly Cloudy
20-May-25	5:56 PM	92 °F	64 °F	39 %	SW	10 mph	0 mph	29.56 in	0.0 in	Partly Cloudy
20-May-25	6:56 PM	91 °F	65 °F	42 %	SSW	6 mph	0 mph	29.55 in	0.0 in	Partly Cloudy
20-May-25	7:56 PM	88 °F	66 °F	48 %	CALM	0 mph	0 mph	29.54 in	0.0 in	Partly Cloudy
20-May-25	8:56 PM	85 °F	68 °F	57 %	ESE	3 mph	0 mph	29.56 in	0.0 in	Partly Cloudy
20-May-25	9:56 PM	83 °F	67 °F	58 %	SSW	3 mph	0 mph	29.57 in	0.0 in	Partly Cloudy
20-May-25	10:56 PM	81 °F	66 °F	60 %	SW	5 mph	0 mph	29.57 in	0.0 in	Partly Cloudy
20-May-25	11:56 PM	80 °F	64 °F	58 %	SW	7 mph	0 mph	29.56 in	0.0 in	Partly Cloudy
21-May-25	12:56 AM	78 °F	64 °F	62 %	WSW	5 mph	0 mph	29.55 in	0.0 in	Partly Cloudy
21-May-25	1:56 AM	77 °F	64 °F	64 %	WSW	5 mph	0 mph	29.55 in	0.0 in	Cloudy
21-May-25	2:56 AM	76 °F	64 °F	67 %	WSW	5 mph	0 mph	29.53 in	0.0 in	Cloudy
21-May-25	3:56 AM	78 °F	64 °F	62 %	WSW	10 mph	0 mph	29.54 in	0.0 in	Cloudy
21-May-25	4:56 AM	73 °F	68 °F	84 %	WSW	7 mph	0 mph	29.54 in	0.0 in	T-Storm
21-May-25	5:11 AM	72 °F	68 °F	87 %	W	10 mph	0 mph	29.56 in	0.0 in	Light Rain
21-May-25	5:56 AM	72 °F	68 °F	87 %	SW	7 mph	0 mph	29.53 in	0.0 in	Cloudy

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
21-May-25	6:56 AM	70 °F	66 °F	87 %	SW	13 mph	0 mph	29.54 in	0.0 in	Light Rain
21-May-25	7:56 AM	71 °F	67 °F	87 %	W	12 mph	0 mph	29.54 in	0.0 in	Partly Cloudy
21-May-25	8:56 AM	75 °F	68 °F	79 %	WSW	9 mph	22 mph	29.54 in	0.0 in	Partly Cloudy
21-May-25	9:56 AM	80 °F	68 °F	67 %	WSW	14 mph	0 mph	29.55 in	0.0 in	Partly Cloudy
21-May-25	10:56 AM	84 °F	69 °F	61 %	W	18 mph	25 mph	29.55 in	0.0 in	Partly Cloudy
21-May-25	11:56 AM	86 °F	66 °F	51 %	W	20 mph	31 mph	29.54 in	0.0 in	Partly Cloudy
21-May-25	12:56 PM	87 °F	62 °F	43 %	W	20 mph	31 mph	29.53 in	0.0 in	Partly Cloudy
21-May-25	1:56 PM	88 °F	63 °F	43 %	W	20 mph	0 mph	29.51 in	0.0 in	Partly Cloudy
21-May-25	2:56 PM	88 °F	62 °F	42 %	WSW	20 mph	28 mph	29.50 in	0.0 in	Light Rain
21-May-25	3:56 PM	88 °F	59 °F	37 %	WSW	20 mph	30 mph	29.50 in	0.0 in	Partly Cloudy
21-May-25	4:56 PM	87 °F	59 °F	39 %	WSW	21 mph	28 mph	29.50 in	0.0 in	Partly Cloudy / Windy
21-May-25	5:56 PM	88 °F	59 °F	37 %	W	18 mph	28 mph	29.50 in	0.0 in	Partly Cloudy
21-May-25	6:56 PM	85 °F	57 °F	38 %	W	20 mph	29 mph	29.50 in	0.0 in	Fair
21-May-25	7:56 PM	83 °F	56 °F	39 %	W	17 mph	24 mph	29.52 in	0.0 in	Partly Cloudy
21-May-25	8:56 PM	80 °F	54 °F	40 %	W	20 mph	30 mph	29.55 in	0.0 in	Partly Cloudy
21-May-25	9:56 PM	78 °F	52 °F	40 %	W	15 mph	26 mph	29.57 in	0.0 in	Fair
21-May-25	10:56 PM	76 °F	50 °F	40 %	W	18 mph	0 mph	29.59 in	0.0 in	Fair
21-May-25	11:56 PM	73 °F	49 °F	42 %	W	12 mph	0 mph	29.59 in	0.0 in	Fair
22-May-25	12:56 AM	70 °F	50 °F	49 %	W	9 mph	0 mph	29.60 in	0.0 in	Fair
22-May-25	1:56 AM	70 °F	49 °F	47 %	W	8 mph	0 mph	29.60 in	0.0 in	Fair
22-May-25	2:56 AM	70 °F	49 °F	47 %	WNW	10 mph	0 mph	29.60 in	0.0 in	Fair
22-May-25	3:56 AM	66 °F	50 °F	56 %	WSW	6 mph	0 mph	29.60 in	0.0 in	Fair
22-May-25	4:56 AM	62 °F	51 °F	67 %	W	5 mph	0 mph	29.60 in	0.0 in	Fair
22-May-25	5:56 AM	63 °F	50 °F	63 %	SW	6 mph	0 mph	29.63 in	0.0 in	Fair
22-May-25	6:56 AM	61 °F	52 °F	72 %	WSW	5 mph	0 mph	29.66 in	0.0 in	Partly Cloudy
22-May-25	7:56 AM	66 °F	54 °F	65 %	SW	5 mph	0 mph	29.68 in	0.0 in	Fair
22-May-25	8:56 AM	71 °F	52 °F	51 %	W	9 mph	0 mph	29.69 in	0.0 in	Partly Cloudy
22-May-25	9:56 AM	76 °F	49 °F	38 %	WSW	10 mph	0 mph	29.70 in	0.0 in	Fair
22-May-25	10:56 AM	80 °F	49 °F	34 %	WSW	10 mph	18 mph	29.70 in	0.0 in	Fair
22-May-25	11:56 AM	82 °F	50 °F	33 %	W	15 mph	0 mph	29.68 in	0.0 in	Fair
22-May-25	12:56 PM	86 °F	50 °F	29 %	W	20 mph	31 mph	29.67 in	0.0 in	Fair
22-May-25	1:56 PM	85 °F	53 °F	33 %	W	20 mph	32 mph	29.65 in	0.0 in	Fair

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
22-May-25	2:56 PM	87 °F	52 °F	30 %	WNW	17 mph	28 mph	29.63 in	0.0 in	Fair
22-May-25	3:56 PM	87 °F	52 °F	30 %	WSW	16 mph	29 mph	29.61 in	0.0 in	Fair
22-May-25	4:56 PM	87 °F	51 °F	29 %	W	24 mph	30 mph	29.60 in	0.0 in	Fair / Windy
22-May-25	5:56 PM	86 °F	50 °F	29 %	W	21 mph	32 mph	29.60 in	0.0 in	Fair / Windy
22-May-25	6:56 PM	84 °F	51 °F	32 %	W	18 mph	28 mph	29.61 in	0.0 in	Fair
22-May-25	7:56 PM	81 °F	50 °F	34 %	W	13 mph	24 mph	29.63 in	0.0 in	Fair
22-May-25	8:56 PM	79 °F	49 °F	35 %	W	14 mph	0 mph	29.65 in	0.0 in	Fair
22-May-25	9:56 PM	75 °F	50 °F	41 %	W	8 mph	0 mph	29.66 in	0.0 in	Fair
22-May-25	10:56 PM	72 °F	51 °F	48 %	WSW	6 mph	0 mph	29.68 in	0.0 in	Fair
22-May-25	11:56 PM	68 °F	53 °F	59 %	W	5 mph	0 mph	29.69 in	0.0 in	Fair
2-Jun-25	12:56 AM	67 °F	60 °F	79 %	W	5 mph	0 mph	29.68 in	0.0 in	Mostly Cloudy
2-Jun-25	1:56 AM	65 °F	60 °F	84 %	CALM	0 mph	0 mph	29.68 in	0.0 in	Mostly Cloudy
2-Jun-25	2:56 AM	65 °F	59 °F	81 %	W	6 mph	0 mph	29.68 in	0.0 in	Mostly Cloudy
2-Jun-25	3:56 AM	64 °F	60 °F	87 %	SW	3 mph	0 mph	29.67 in	0.0 in	Mostly Cloudy
2-Jun-25	4:56 AM	63 °F	59 °F	87 %	CALM	0 mph	0 mph	29.68 in	0.0 in	Mostly Cloudy
2-Jun-25	5:56 AM	63 °F	59 °F	87 %	CALM	0 mph	0 mph	29.70 in	0.0 in	Partly Cloudy
2-Jun-25	6:56 AM	62 °F	59 °F	90 %	WSW	5 mph	0 mph	29.72 in	0.0 in	Fair
2-Jun-25	7:56 AM	66 °F	61 °F	84 %	W	3 mph	0 mph	29.73 in	0.0 in	Fair
2-Jun-25	8:56 AM	71 °F	61 °F	70 %	N	5 mph	0 mph	29.75 in	0.0 in	Fair
2-Jun-25	9:56 AM	74 °F	61 °F	64 %	NNE	8 mph	0 mph	29.77 in	0.0 in	Fair
2-Jun-25	10:56 AM	77 °F	60 °F	56 %	NNE	7 mph	0 mph	29.77 in	0.0 in	Fair
2-Jun-25	11:56 AM	79 °F	60 °F	52 %	N	5 mph	0 mph	29.78 in	0.0 in	Fair
2-Jun-25	12:56 PM	81 °F	59 °F	47 %	NNE	10 mph	0 mph	29.78 in	0.0 in	Fair
2-Jun-25	1:56 PM	83 °F	57 °F	41 %	E	6 mph	0 mph	29.77 in	0.0 in	Fair
2-Jun-25	2:56 PM	84 °F	57 °F	40 %	VAR	6 mph	0 mph	29.76 in	0.0 in	Fair
2-Jun-25	3:56 PM	84 °F	56 °F	38 %	VAR	7 mph	0 mph	29.76 in	0.0 in	Fair
2-Jun-25	4:56 PM	85 °F	54 °F	34 %	NNE	9 mph	0 mph	29.76 in	0.0 in	Partly Cloudy
2-Jun-25	5:56 PM	84 °F	54 °F	35 %	N	6 mph	0 mph	29.76 in	0.0 in	Fair
2-Jun-25	6:56 PM	82 °F	57 °F	42 %	N	3 mph	0 mph	29.75 in	0.0 in	Fair
2-Jun-25	7:56 PM	80 °F	60 °F	50 %	ESE	6 mph	0 mph	29.76 in	0.0 in	Fair
2-Jun-25	8:56 PM	76 °F	61 °F	60 %	ESE	6 mph	0 mph	29.78 in	0.0 in	Fair
2-Jun-25	9:56 PM	75 °F	61 °F	62 %	NE	3 mph	0 mph	29.79 in	0.0 in	Fair

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
2-Jun-25	10:56 PM	69 °F	62 °F	78 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
2-Jun-25	11:56 PM	70 °F	62 °F	76 %	CALM	0 mph	0 mph	29.83 in	0.0 in	Fair
3-Jun-25	12:56 AM	65 °F	62 °F	90 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
3-Jun-25	1:56 AM	67 °F	61 °F	81 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
3-Jun-25	2:56 AM	65 °F	61 °F	87 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
3-Jun-25	3:56 AM	64 °F	59 °F	84 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
3-Jun-25	4:56 AM	65 °F	59 °F	81 %	CALM	0 mph	0 mph	29.84 in	0.0 in	Fair
3-Jun-25	5:56 AM	61 °F	58 °F	90 %	CALM	0 mph	0 mph	29.87 in	0.0 in	Fair
3-Jun-25	6:56 AM	62 °F	59 °F	90 %	CALM	0 mph	0 mph	29.89 in	0.0 in	Mostly Cloudy
3-Jun-25	7:56 AM	66 °F	60 °F	81 %	CALM	0 mph	0 mph	29.90 in	0.0 in	Haze
3-Jun-25	8:56 AM	71 °F	64 °F	78 %	E	5 mph	0 mph	29.91 in	0.0 in	Haze
3-Jun-25	9:56 AM	76 °F	66 °F	71 %	ESE	7 mph	0 mph	29.91 in	0.0 in	Haze
3-Jun-25	10:56 AM	79 °F	66 °F	64 %	ESE	3 mph	0 mph	29.90 in	0.0 in	Haze
3-Jun-25	11:56 AM	83 °F	60 °F	46 %	ESE	13 mph	0 mph	29.90 in	0.0 in	Fair
3-Jun-25	12:56 PM	84 °F	61 °F	46 %	ESE	9 mph	20 mph	29.89 in	0.0 in	Haze
3-Jun-25	1:56 PM	86 °F	60 °F	41 %	SE	10 mph	0 mph	29.87 in	0.0 in	Haze
3-Jun-25	2:56 PM	87 °F	58 °F	37 %	ESE	8 mph	18 mph	29.86 in	0.0 in	Fair
3-Jun-25	3:56 PM	87 °F	52 °F	30 %	SE	13 mph	0 mph	29.85 in	0.0 in	Haze
3-Jun-25	4:56 PM	87 °F	52 °F	30 %	ESE	9 mph	0 mph	29.85 in	0.0 in	Fair
3-Jun-25	5:56 PM	86 °F	56 °F	36 %	E	10 mph	0 mph	29.85 in	0.0 in	Fair
3-Jun-25	6:56 PM	85 °F	58 °F	40 %	E	10 mph	0 mph	29.85 in	0.0 in	Partly Cloudy
3-Jun-25	7:56 PM	83 °F	61 °F	47 %	ESE	10 mph	0 mph	29.87 in	0.0 in	Partly Cloudy
3-Jun-25	8:56 PM	81 °F	66 °F	60 %	ESE	12 mph	0 mph	29.88 in	0.0 in	Mostly Cloudy
3-Jun-25	9:56 PM	79 °F	65 °F	62 %	SE	8 mph	0 mph	29.90 in	0.0 in	Mostly Cloudy
3-Jun-25	10:56 PM	76 °F	65 °F	69 %	ESE	5 mph	0 mph	29.92 in	0.0 in	Partly Cloudy
3-Jun-25	11:56 PM	73 °F	65 °F	76 %	E	6 mph	0 mph	29.93 in	0.0 in	Partly Cloudy
4-Jun-25	12:56 AM	73 °F	65 °F	76 %	ENE	5 mph	0 mph	29.92 in	0.0 in	Fair
4-Jun-25	1:56 AM	71 °F	66 °F	84 %	E	3 mph	0 mph	29.90 in	0.0 in	Fair
4-Jun-25	2:56 AM	71 °F	67 °F	87 %	ENE	6 mph	0 mph	29.89 in	0.0 in	Mostly Cloudy
4-Jun-25	3:41 AM	70 °F	67 °F	90 %	ENE	5 mph	0 mph	29.88 in	0.0 in	Fair
4-Jun-25	3:56 AM	70 °F	67 °F	90 %	ENE	5 mph	0 mph	29.88 in	0.0 in	Partly Cloudy
4-Jun-25	4:19 AM	70 °F	67 °F	90 %	E	6 mph	0 mph	29.89 in	0.0 in	Mostly Cloudy

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
4-Jun-25	4:56 AM	69 °F	67 °F	93 %	E	3 mph	0 mph	29.89 in	0.0 in	Cloudy
4-Jun-25	5:35 AM	69 °F	67 °F	93 %	E	5 mph	0 mph	29.89 in	0.0 in	Partly Cloudy
4-Jun-25	5:56 AM	69 °F	67 °F	93 %	E	6 mph	0 mph	29.89 in	0.0 in	Mostly Cloudy
4-Jun-25	6:03 AM	69 °F	67 °F	93 %	E	6 mph	0 mph	29.89 in	0.0 in	Mist
4-Jun-25	6:56 AM	70 °F	68 °F	93 %	E	5 mph	0 mph	29.90 in	0.0 in	Mist
4-Jun-25	7:51 AM	72 °F	68 °F	88 %	E	7 mph	0 mph	29.92 in	0.0 in	Mostly Cloudy
4-Jun-25	7:56 AM	71 °F	68 °F	90 %	ESE	6 mph	0 mph	29.92 in	0.0 in	Mostly Cloudy
4-Jun-25	8:56 AM	75 °F	69 °F	82 %	E	10 mph	0 mph	29.92 in	0.0 in	Mostly Cloudy
4-Jun-25	9:56 AM	76 °F	69 °F	79 %	ESE	12 mph	0 mph	29.93 in	0.0 in	Haze
4-Jun-25	10:42 AM	78 °F	69 °F	74 %	E	8 mph	0 mph	29.92 in	0.0 in	Cloudy
4-Jun-25	10:56 AM	78 °F	69 °F	74 %	E	12 mph	0 mph	29.92 in	0.0 in	Haze
4-Jun-25	11:56 AM	79 °F	69 °F	72 %	E	9 mph	0 mph	29.92 in	0.0 in	Haze
4-Jun-25	12:29 PM	80 °F	69 °F	69 %	ENE	9 mph	0 mph	29.91 in	0.0 in	Haze
4-Jun-25	12:56 PM	81 °F	69 °F	67 %	E	10 mph	0 mph	29.91 in	0.0 in	Haze
4-Jun-25	1:56 PM	81 °F	66 °F	60 %	ENE	10 mph	0 mph	29.89 in	0.0 in	Haze
4-Jun-25	2:56 PM	81 °F	65 °F	58 %	E	13 mph	0 mph	29.88 in	0.0 in	Light Rain
4-Jun-25	3:56 PM	79 °F	68 °F	69 %	E	7 mph	0 mph	29.87 in	0.0 in	Light Rain
4-Jun-25	4:56 PM	76 °F	70 °F	82 %	E	12 mph	0 mph	29.87 in	0.0 in	Light Rain
4-Jun-25	5:56 PM	74 °F	69 °F	85 %	E	9 mph	0 mph	29.86 in	0.0 in	Light Rain
4-Jun-25	6:56 PM	73 °F	69 °F	87 %	ENE	6 mph	0 mph	29.87 in	0.0 in	Light Rain
4-Jun-25	7:56 PM	73 °F	68 °F	84 %	NE	6 mph	0 mph	29.86 in	0.0 in	Cloudy
4-Jun-25	8:56 PM	73 °F	67 °F	81 %	NE	8 mph	0 mph	29.85 in	0.0 in	Cloudy
4-Jun-25	9:56 PM	73 °F	65 °F	76 %	ENE	9 mph	0 mph	29.85 in	0.0 in	Mostly Cloudy
4-Jun-25	10:56 PM	73 °F	66 °F	79 %	ENE	14 mph	0 mph	29.84 in	0.0 in	Cloudy
4-Jun-25	11:56 PM	70 °F	68 °F	93 %	ENE	9 mph	0 mph	29.84 in	0.1 in	Cloudy
7-Jul-25	12:56 AM	79 °F	74 °F	84 %	CALM	0 mph	0 mph	29.73 in	0.0 in	Fair
7-Jul-25	1:56 AM	77 °F	73 °F	88 %	E	3 mph	0 mph	29.73 in	0.0 in	Fair
7-Jul-25	2:56 AM	76 °F	73 °F	91 %	CALM	0 mph	0 mph	29.73 in	0.0 in	Fair
7-Jul-25	3:56 AM	77 °F	73 °F	88 %	CALM	0 mph	0 mph	29.72 in	0.0 in	Partly Cloudy
7-Jul-25	4:56 AM	75 °F	72 °F	90 %	W	3 mph	0 mph	29.74 in	0.0 in	Fair
7-Jul-25	5:56 AM	75 °F	73 °F	94 %	CALM	0 mph	0 mph	29.74 in	0.0 in	Partly Cloudy
7-Jul-25	6:56 AM	74 °F	72 °F	93 %	CALM	0 mph	0 mph	29.75 in	0.0 in	Partly Cloudy

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
7-Jul-25	7:56 AM	77 °F	73 °F	88 %	SSE	6 mph	0 mph	29.77 in	0.0 in	Mostly Cloudy
7-Jul-25	8:56 AM	80 °F	73 °F	79 %	W	3 mph	0 mph	29.79 in	0.0 in	Mostly Cloudy
7-Jul-25	9:56 AM	83 °F	73 °F	72 %	CALM	0 mph	0 mph	29.79 in	0.0 in	Mostly Cloudy
7-Jul-25	10:56 AM	88 °F	72 °F	59 %	CALM	0 mph	0 mph	29.79 in	0.0 in	Fair
7-Jul-25	11:56 AM	93 °F	68 °F	44 %	WNW	6 mph	0 mph	29.79 in	0.0 in	Fair
7-Jul-25	12:56 PM	94 °F	68 °F	43 %	VAR	5 mph	0 mph	29.78 in	0.0 in	Fair
7-Jul-25	1:56 PM	96 °F	68 °F	40 %	VAR	3 mph	0 mph	29.77 in	0.0 in	Mostly Cloudy
7-Jul-25	2:56 PM	94 °F	68 °F	43 %	NNW	6 mph	0 mph	29.75 in	0.0 in	Mostly Cloudy
7-Jul-25	3:56 PM	93 °F	70 °F	47 %	ESE	12 mph	0 mph	29.74 in	0.0 in	Mostly Cloudy
7-Jul-25	4:56 PM	91 °F	70 °F	50 %	SE	9 mph	0 mph	29.73 in	0.0 in	Mostly Cloudy
7-Jul-25	5:56 PM	93 °F	71 °F	49 %	ENE	7 mph	0 mph	29.72 in	0.0 in	Partly Cloudy
7-Jul-25	6:56 PM	91 °F	72 °F	53 %	E	6 mph	0 mph	29.73 in	0.0 in	Mostly Cloudy
7-Jul-25	7:56 PM	87 °F	72 °F	61 %	VAR	5 mph	0 mph	29.74 in	0.1 in	Cloudy
7-Jul-25	8:56 PM	83 °F	75 °F	77 %	S	5 mph	0 mph	29.75 in	0.0 in	Mostly Cloudy
7-Jul-25	9:56 PM	84 °F	75 °F	74 %	S	5 mph	0 mph	29.79 in	0.0 in	Mostly Cloudy
7-Jul-25	10:56 PM	83 °F	74 °F	74 %	CALM	0 mph	0 mph	29.81 in	0.0 in	Partly Cloudy
7-Jul-25	11:56 PM	82 °F	75 °F	79 %	S	3 mph	0 mph	29.82 in	0.0 in	Fair
8-Jul-25	12:56 AM	81 °F	75 °F	82 %	S	6 mph	0 mph	29.83 in	0.0 in	Fair
8-Jul-25	1:56 AM	81 °F	75 °F	82 %	SSW	5 mph	0 mph	29.82 in	0.0 in	Fair
8-Jul-25	2:56 AM	80 °F	75 °F	85 %	SW	5 mph	0 mph	29.81 in	0.0 in	Fair
8-Jul-25	3:56 AM	80 °F	74 °F	81 %	CALM	0 mph	0 mph	29.80 in	0.0 in	Mostly Cloudy
8-Jul-25	4:56 AM	78 °F	74 °F	87 %	S	3 mph	0 mph	29.80 in	0.0 in	Mostly Cloudy
8-Jul-25	5:56 AM	78 °F	74 °F	87 %	CALM	0 mph	0 mph	29.81 in	0.0 in	Fair
8-Jul-25	6:56 AM	77 °F	74 °F	90 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
8-Jul-25	7:56 AM	79 °F	74 °F	84 %	SSE	3 mph	0 mph	29.83 in	0.0 in	Fair
8-Jul-25	8:56 AM	81 °F	75 °F	82 %	CALM	0 mph	0 mph	29.84 in	0.0 in	Fair
8-Jul-25	9:56 AM	86 °F	74 °F	67 %	W	5 mph	0 mph	29.84 in	0.0 in	Fair
8-Jul-25	10:56 AM	90 °F	74 °F	59 %	W	3 mph	0 mph	29.85 in	0.0 in	Fair
8-Jul-25	11:56 AM	93 °F	74 °F	54 %		0 mph	0 mph	29.85 in	0.0 in	Haze
8-Jul-25	12:38 PM	95 °F	73 °F	49 %	VAR	7 mph	0 mph	29.84 in	0.0 in	Thunder in the Vicinity
8-Jul-25	12:56 PM	93 °F	70 °F	47 %	VAR	3 mph	0 mph	29.84 in	0.0 in	Thunder in the Vicinity

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
8-Jul-25	1:05 PM	91 °F	69 °F	48 %	SW	14 mph	20 mph	29.84 in	0.0 in	Light Rain with Thunder
8-Jul-25	1:43 PM	85 °F	70 °F	61 %	WSW	13 mph	0 mph	29.83 in	0.0 in	T-Storm
8-Jul-25	1:56 PM	85 °F	71 °F	63 %	SE	14 mph	18 mph	29.83 in	0.0 in	Thunder in the Vicinity
8-Jul-25	2:56 PM	81 °F	72 °F	74 %	SSW	6 mph	0 mph	29.81 in	0.0 in	Cloudy
8-Jul-25	3:56 PM	82 °F	72 °F	71 %	ESE	14 mph	20 mph	29.83 in	0.0 in	Cloudy
8-Jul-25	4:56 PM	80 °F	73 °F	79 %	SSE	8 mph	0 mph	29.81 in	0.0 in	Mostly Cloudy
8-Jul-25	5:14 PM	80 °F	73 °F	79 %	SSW	5 mph	0 mph	29.82 in	0.0 in	Thunder in the Vicinity
8-Jul-25	5:56 PM	80 °F	72 °F	76 %	SSE	5 mph	0 mph	29.80 in	0.0 in	Light Rain
8-Jul-25	6:56 PM	78 °F	73 °F	84 %	S	6 mph	0 mph	29.80 in	0.0 in	Cloudy
8-Jul-25	7:56 PM	78 °F	73 °F	84 %	S	3 mph	0 mph	29.80 in	0.0 in	Mostly Cloudy
8-Jul-25	8:56 PM	78 °F	73 °F	84 %	S	3 mph	0 mph	29.81 in	0.0 in	Mostly Cloudy
8-Jul-25	9:56 PM	77 °F	73 °F	88 %	ESE	5 mph	0 mph	29.81 in	0.0 in	Mostly Cloudy
8-Jul-25	10:56 PM	77 °F	72 °F	84 %	CALM	0 mph	0 mph	29.84 in	0.0 in	Mostly Cloudy
8-Jul-25	11:56 PM	76 °F	72 °F	87 %	CALM	0 mph	0 mph	29.84 in	0.0 in	Mostly Cloudy
9-Jul-25	12:56 AM	76 °F	72 °F	87 %	SE	3 mph	0 mph	29.83 in	0.0 in	Cloudy
9-Jul-25	1:56 AM	75 °F	72 °F	90 %	ESE	3 mph	0 mph	29.83 in	0.0 in	Mostly Cloudy
9-Jul-25	2:56 AM	74 °F	72 °F	93 %	SE	3 mph	0 mph	29.81 in	0.0 in	Fair
9-Jul-25	3:56 AM	74 °F	72 °F	93 %	CALM	0 mph	0 mph	29.81 in	0.0 in	Partly Cloudy
9-Jul-25	4:56 AM	75 °F	72 °F	90 %	CALM	0 mph	0 mph	29.79 in	0.0 in	Fair
9-Jul-25	5:56 AM	74 °F	72 °F	93 %	CALM	0 mph	0 mph	29.80 in	0.0 in	Fair
9-Jul-25	6:56 AM	74 °F	72 °F	93 %	ESE	3 mph	0 mph	29.81 in	0.0 in	Fair
9-Jul-25	7:56 AM	76 °F	72 °F	87 %	SE	5 mph	0 mph	29.82 in	0.0 in	Partly Cloudy
9-Jul-25	8:56 AM	80 °F	73 °F	79 %	S	7 mph	0 mph	29.84 in	0.0 in	Partly Cloudy
9-Jul-25	9:56 AM	81 °F	74 °F	79 %	SW	3 mph	0 mph	29.86 in	0.0 in	Mostly Cloudy
9-Jul-25	10:56 AM	85 °F	75 °F	72 %	VAR	3 mph	0 mph	29.84 in	0.0 in	Mostly Cloudy
9-Jul-25	11:56 AM	89 °F	76 °F	65 %	VAR	3 mph	0 mph	29.83 in	0.0 in	Partly Cloudy
9-Jul-25	12:56 PM	92 °F	75 °F	58 %	CALM	0 mph	0 mph	29.80 in	0.0 in	Partly Cloudy
9-Jul-25	1:56 PM	94 °F	73 °F	51 %	VAR	5 mph	0 mph	29.76 in	0.0 in	Haze
9-Jul-25	2:31 PM	94 °F	72 °F	49 %	SSE	10 mph	0 mph	29.74 in	0.0 in	Thunder in the Vicinity
9-Jul-25	2:36 PM	94 °F	72 °F	49 %	S	9 mph	0 mph	29.74 in	0.0 in	Thunder

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
9-Jul-25	2:56 PM	92 °F	73 °F	54 %	SE	6 mph	0 mph	29.73 in	0.0 in	Thunder
9-Jul-25	3:56 PM	79 °F	71 °F	77 %	VAR	6 mph	0 mph	29.73 in	0.1 in	T-Storm
9-Jul-25	4:56 PM	79 °F	75 °F	88 %	SSW	10 mph	0 mph	29.73 in	0.0 in	T-Storm
9-Jul-25	5:56 PM	77 °F	74 °F	90 %	SSW	6 mph	0 mph	29.73 in	0.0 in	T-Storm
9-Jul-25	6:56 PM	74 °F	71 °F	91 %	SW	9 mph	17 mph	29.75 in	0.1 in	Light Rain
9-Jul-25	7:56 PM	73 °F	70 °F	90 %	SSE	3 mph	0 mph	29.77 in	0.1 in	Rain
9-Jul-25	8:56 PM	72 °F	70 °F	93 %	CALM	0 mph	0 mph	29.73 in	0.0 in	Cloudy
9-Jul-25	9:56 PM	73 °F	70 °F	90 %	WNW	5 mph	0 mph	29.74 in	0.0 in	Cloudy
9-Jul-25	10:56 PM	73 °F	71 °F	93 %	SE	7 mph	0 mph	29.80 in	0.0 in	Mostly Cloudy
9-Jul-25	11:56 PM	73 °F	71 °F	93 %	SW	6 mph	0 mph	29.77 in	0.0 in	Mostly Cloudy
26-Jul-25	12:56 AM	82 °F	75 °F	79 %	SW	6 mph	0 mph	29.84 in	0.0 in	Fair
26-Jul-25	1:56 AM	81 °F	75 °F	82 %	WSW	6 mph	0 mph	29.83 in	0.0 in	Fair
26-Jul-25	2:56 AM	80 °F	75 °F	85 %	WSW	3 mph	0 mph	29.83 in	0.0 in	Fair
26-Jul-25	3:56 AM	80 °F	75 °F	85 %	WSW	5 mph	0 mph	29.82 in	0.0 in	Fair
26-Jul-25	4:56 AM	79 °F	75 °F	88 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
26-Jul-25	5:56 AM	78 °F	75 °F	90 %	WSW	3 mph	0 mph	29.82 in	0.0 in	Fair
26-Jul-25	6:56 AM	77 °F	75 °F	94 %	WSW	3 mph	0 mph	29.83 in	0.0 in	Fair
26-Jul-25	7:56 AM	80 °F	75 °F	85 %	W	3 mph	0 mph	29.84 in	0.0 in	Haze
26-Jul-25	8:56 AM	85 °F	76 °F	74 %	W	5 mph	0 mph	29.85 in	0.0 in	Fair
26-Jul-25	9:56 AM	90 °F	75 °F	61 %	W	5 mph	0 mph	29.84 in	0.0 in	Fair
26-Jul-25	10:56 AM	92 °F	73 °F	54 %	WNW	6 mph	0 mph	29.85 in	0.0 in	Fair
26-Jul-25	11:56 AM	94 °F	71 °F	47 %	W	12 mph	0 mph	29.85 in	0.0 in	Fair
26-Jul-25	12:56 PM	96 °F	72 °F	46 %	NW	9 mph	0 mph	29.84 in	0.0 in	Partly Cloudy
26-Jul-25	1:56 PM	97 °F	71 °F	43 %	W	7 mph	0 mph	29.82 in	0.0 in	Partly Cloudy
26-Jul-25	2:56 PM	97 °F	70 °F	41 %	VAR	3 mph	0 mph	29.81 in	0.0 in	Partly Cloudy
26-Jul-25	3:56 PM	98 °F	70 °F	40 %	WSW	5 mph	0 mph	29.79 in	0.0 in	Partly Cloudy
26-Jul-25	4:56 PM	97 °F	71 °F	43 %	SSW	7 mph	0 mph	29.77 in	0.0 in	Partly Cloudy
26-Jul-25	5:56 PM	97 °F	71 °F	43 %	SW	6 mph	0 mph	29.76 in	0.0 in	Partly Cloudy
26-Jul-25	6:56 PM	96 °F	70 °F	43 %	SW	8 mph	0 mph	29.76 in	0.0 in	Fair
26-Jul-25	7:56 PM	94 °F	71 °F	47 %	SW	7 mph	0 mph	29.77 in	0.0 in	Fair
26-Jul-25	8:56 PM	89 °F	73 °F	59 %	SW	5 mph	0 mph	29.78 in	0.0 in	Fair
26-Jul-25	9:56 PM	87 °F	72 °F	61 %	WSW	3 mph	0 mph	29.80 in	0.0 in	Fair

Date	Time	Temperatur	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
26-Jul-25	10:56 PM	85 °F	73 °F	67 %	WSW	5 mph	0 mph	29.81 in	0.0 in	Fair
26-Jul-25	11:56 PM	83 °F	73 °F	72 %	W	5 mph	0 mph	29.81 in	0.0 in	Fair
27-Jul-25	12:56 AM	83 °F	72 °F	69 %	WSW	7 mph	0 mph	29.81 in	0.0 in	Fair
27-Jul-25	1:56 AM	82 °F	72 °F	71 %	WSW	5 mph	0 mph	29.81 in	0.0 in	Fair
27-Jul-25	2:56 AM	83 °F	72 °F	69 %	SW	3 mph	0 mph	29.80 in	0.0 in	Fair
27-Jul-25	3:56 AM	79 °F	73 °F	82 %	CALM	0 mph	0 mph	29.79 in	0.0 in	Fair
27-Jul-25	4:56 AM	78 °F	72 °F	81 %	WSW	3 mph	0 mph	29.79 in	0.0 in	Fair
27-Jul-25	5:56 AM	78 °F	72 °F	81 %	CALM	0 mph	0 mph	29.80 in	0.0 in	Fair
27-Jul-25	6:56 AM	76 °F	73 °F	91 %	SSW	6 mph	0 mph	29.81 in	0.0 in	Fair
27-Jul-25	7:56 AM	80 °F	73 °F	79 %	SW	5 mph	0 mph	29.83 in	0.0 in	Fair
27-Jul-25	8:56 AM	85 °F	74 °F	69 %	WNW	7 mph	0 mph	29.84 in	0.0 in	Fair
27-Jul-25	9:56 AM	88 °F	74 °F	63 %	VAR	3 mph	0 mph	29.83 in	0.0 in	Fair
27-Jul-25	10:56 AM	90 °F	75 °F	61 %	CALM	0 mph	0 mph	29.83 in	0.0 in	Fair
27-Jul-25	11:56 AM	93 °F	74 °F	54 %	CALM	0 mph	0 mph	29.82 in	0.0 in	Fair
27-Jul-25	12:56 PM	95 °F	72 °F	47 %	WNW	5 mph	0 mph	29.82 in	0.0 in	Partly Cloudy
27-Jul-25	1:56 PM	97 °F	70 °F	41 %	VAR	3 mph	0 mph	29.80 in	0.0 in	Partly Cloudy
27-Jul-25	2:56 PM	99 °F	66 °F	34 %	VAR	3 mph	0 mph	29.78 in	0.0 in	Partly Cloudy
27-Jul-25	3:56 PM	99 °F	68 °F	36 %	SW	6 mph	0 mph	29.75 in	0.0 in	Partly Cloudy
27-Jul-25	4:56 PM	100 °F	70 °F	38 %	WSW	7 mph	0 mph	29.73 in	0.0 in	Partly Cloudy
27-Jul-25	5:56 PM	100 °F	71 °F	39 %	WSW	10 mph	0 mph	29.71 in	0.0 in	Fair
27-Jul-25	6:56 PM	98 °F	72 °F	43 %	WSW	7 mph	0 mph	29.72 in	0.0 in	Fair
27-Jul-25	7:56 PM	96 °F	74 °F	49 %	SW	6 mph	0 mph	29.74 in	0.0 in	Fair
27-Jul-25	8:56 PM	92 °F	74 °F	55 %	WSW	5 mph	0 mph	29.74 in	0.0 in	Fair
27-Jul-25	9:56 PM	89 °F	74 °F	61 %	W	7 mph	0 mph	29.75 in	0.0 in	Fair
27-Jul-25	10:56 PM	91 °F	72 °F	53 %	VAR	5 mph	0 mph	29.78 in	0.0 in	Fair
27-Jul-25	11:56 PM	88 °F	73 °F	61 %	NNE	5 mph	0 mph	29.79 in	0.0 in	Fair

Appendix F

Information for Planning and Consultation (IPaC) List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407-7558
Phone: (843) 727-4707 Fax: (843) 727-4218

In Reply Refer To: 10/28/2025 12:26:48 UTC
Project Code: 2025-0131772
Project Name: I-26 Corridor Improvement Project Mile Marker 172-187

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407-7558
(843) 727-4707

PROJECT SUMMARY

Project Code: 2025-0131772
Project Name: I-26 Corridor Improvement Project Mile Marker 172-187
Project Type: Road/Hwy - Maintenance/Modification
Project Description: The proposed project would add an additional lane to I-26 east bound and west bound, and improve/replace overpasses as well as the interchanges at US 15 and SC 453. This project is from approximately mile marker 172 to to mile marker 187 and the proposed widening would take place in the existing median to the greatest extent possible.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.220711949999995,-80.42237951684845,14z

Counties: Berkeley and Dorchester counties, South Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/5TP7IJYVDREPRHJ7V3HJ7NGW2M/documents/generated/9721.pdf	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515 General project design guidelines: https://ipac.ecosphere.fws.gov/project/5TP7IJYVDREPRHJ7V3HJ7NGW2M/documents/generated/9721.pdf	Proposed Endangered

BIRDS

NAME	STATUS
Red-cockaded Woodpecker *Dryobates borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Threatened

REPTILES

NAME	STATUS
Southern Hognose Snake *Heterodon simus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3248	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Canby's Dropwort *Oxypolis canbyi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7738 General project design guidelines: https://ipac.ecosphere.fws.gov/project/5TP7IJYVDREPRHJ7V3HJ7NGW2M/documents/generated/9753.pdf	Endangered

NAME	STATUS
Pondberry *Lindera melissifolia*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1279
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/5TP7IJYVDREPRHJ7V3HJ7NGW2M/documents/generated/9753.pdf

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/

activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles 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.

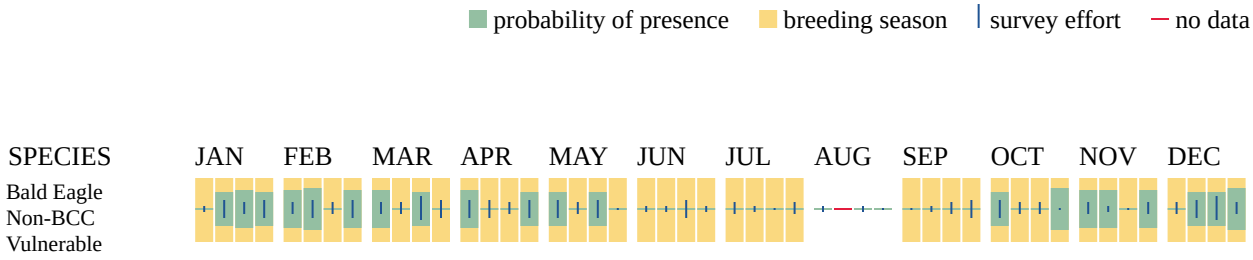
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



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 avoidance and minimization 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

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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
American Kestrel *Falco sparverius paulus* 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/9587	Breeds Apr 1 to Aug 31
Bachman's Sparrow *Peucaea aestivalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6177	Breeds May 1 to Sep 30
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
Brown-headed Nuthatch *Sitta pusilla* 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/9427	Breeds Mar 1 to Jul 15
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Chuck-will's-widow *Antrostomus carolinensis* 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/9604	Breeds May 10 to Jul 10
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
Henslow's Sparrow *Centronyx henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds elsewhere
Kentucky Warbler *Geothlypis formosa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5

NAME	BREEDING SEASON
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds elsewhere
Least Tern *Sternula antillarum antillarum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Painted Bunting *Passerina ciris* 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/9511	Breeds Apr 25 to Aug 15
Prairie Warbler *Setophaga discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 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. https://ecos.fws.gov/ecp/species/9398	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 https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	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.

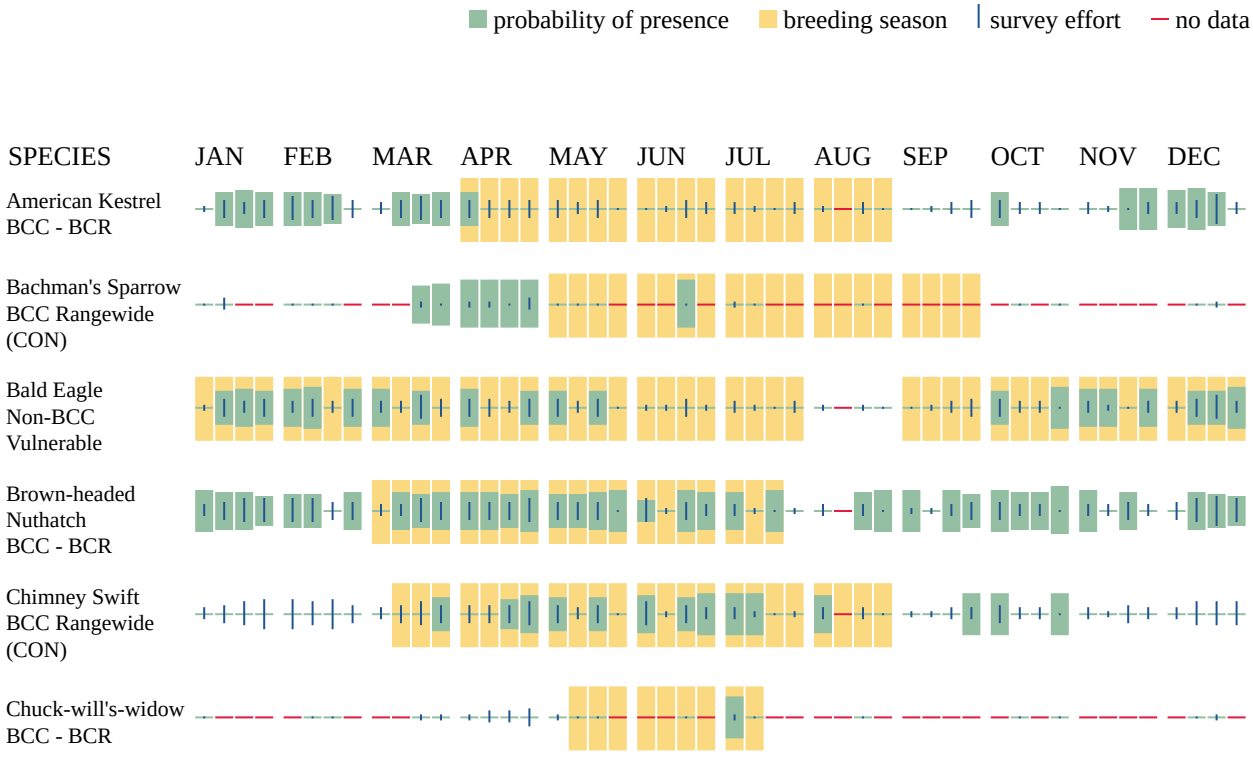
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



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 avoidance and minimization measures for birds
- 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

WETLANDS

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/2F
- PSS1Ch
- PSS1F
- PFO1Ch
- PSS1C
- PFO1/2C
- PFO1Ad
- PFO4A
- PFO1/4A
- PFO4B
- PFO4Ch
- PFO1C
- PFO4Ad
- PSS1Fx
- PFO1B
- PFO1Ah
- PFO4/SS1A
- PSS1A
- PFO1A
- PFO1F

- PFO1/2Fh
- PSS1/FO4A
- PFO4/1A
- PFO3/1B
- PFO1/4Ch

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1Ch
- PEM1C
- PEM1Ad
- PEM1F

RIVERINE

- R2UBHx
- R4SBC
- R4SBCx
- R2UBH
- R5UBH
- R5UBFx

FRESHWATER POND

- PUSCx
- PUBHx

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Daniel Koon
Address: 110 Midlands Court
City: West Columbia
State: SC
Zip: 29169
Email daniel.koon@ice-eng.com
Phone: 8033693834

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

Appendix G

NLEB and TCB Avoidance and Minimization Measures

NLEB and TCB Avoidance and Minimization Table	
Species	**Avoidance/Minimization Measure**
NLEB & TCB	The proposed design will reduce clearing limits to the greatest extent practical.
NLEB & TCB	SCDOT will utilize BMPs for water resources including silt fence, rip rap armor, and rock checks.
NLEB & TCB	The proposed Design will reduce fill limits to the greatest extent practical.
NLEB & TCB	SCDOT will preserve suitable habitat through 404 wetland mitigation, in the Four Hole Swamp Watershed.
NLEB & TCB	The proposed project will direct temporary lighting away from suitable habitat.
NLEB	SCDOT will implement a clearing/structure work moratorium from December 15 - February 15, and from April 1 - July 15.
NLEB	SCDOT proposes use of the South Carolina Bat Conservation Pooled Fund mitigation to offset impacts from clearing of suitable habitat.
TCB	SCDOT will implement a clearing/structure work moratorium from December 15 - February 15, and from May 1 - July 15.
TCB	A P/A survey of structures will be conducted prior to demolition.
TCB	SCDOT will use exclusionary barriers on suitable roost structures prior to demolition as needed.