SCDOT

U.S. Department of Transportation
Federal Highway Administration

APPENDIX E

NATURAL RESOURCES TECHNICAL MEMORANDUM

FIX
INTERSTATE
26

Natural Resources Technical Memorandum

Interstate 26 (I-26) Corridor Improvements
Project MM 145-172

Orangeburg and Dorchester Counties, South Carolina

FHWA Project Number: EAXX-XSC-1733319228

SCDOT Project ID: P041967 & P042454

September 2025

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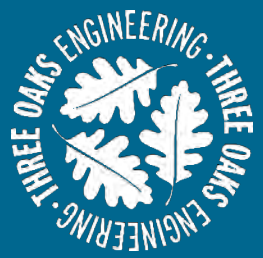

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LIST OF ACRONYMS

B

BCM	Bureau of Coastal Management
BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act

C

CFR	Code of Federal Regulations
CWA	Clean Water Act of 1972
CZC	Coastal Zone Consistency

E

EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended

F

FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act

G

GIS	Geographic Information Systems

H

HAPC	Habitat Areas of Particular Concern
HUC	hydrologic unit code

I

IPaC	Information for Planning and Consultation

M

MBTA	Migratory Bird Treaty Act
MM	Mile Marker

N

NPDES	National Pollutant Discharge Elimination System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NRI	National Rivers Inventory
NWI	National Wetlands Inventory

P

PSA	Project Study Area

S

SCDES	South Carolina Department of Environmental Services
SCDNR	South Carolina Department of Natural Resources
SCDOT	South Carolina Department of Transportation
SMU	Soil Map Unit

T

TMDL	Total Maximum Daily Load

U

USC	United States Code

USACE	US Army Corps of Engineers
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

W

WOTUS	Waters of the US

1 INTRODUCTION

The South Carolina Department of Transportation (SCDOT) in coordination with the Federal Highway Administration (FHWA) proposes corridor improvements along I-26 from mile marker (MM) 145 to MM 172 in Orangeburg and Dorchester Counties to improve capacity, mobility, and operations along the approximately 27-mile corridor of I-26 and to address operational deficiencies for interchanges within the study corridor. The I-26 project study area (PSA) is approximately 27 miles long extending from Exit 145 to Exit 172 (**Appendix A, Figures 1 and 2**).

The purpose of the project is to increase capacity within the project study limits to alleviate existing and future congestion, address geometric deficiencies along I-26 and at the interchanges by bringing them up to current interstate design standards, and improve corridor safety by addressing deficiencies that contribute to the corridor's crash rate.

1.1 Project Description

The proposed I-26 corridor improvements include the following elements: adding a travel lane in each direction of I-26 toward the existing median, median clearing, barrier walls and cable guardrail installation, addressing all structures, and improving the interchanges and ramps at Exits 149, 154, 159, and 165.

1.2 Methodology

A project study area (PSA) was developed to provide a review of the existing segment of I-26. The PSA includes the existing right of way plus 75 feet along the mainline section of I-26 from east of Exit 145 to west of Exit 172, as well as two rest areas and additional area at the four interchanges and at overpasses.

A geographic information system (GIS) based review of the PSA was conducted prior to field surveys. The GIS review consisted of compiling digital elevation models for Orangeburg and Dorchester Counties obtained from the SC Department of Natural Resources (SCDNR)[1] and US Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) maps[2] to create a composite map of natural resources spatial data within the PSA. This composite map was used to estimate the possible type and approximate location of various habitats prior to field verification surveys. Habitat types were confirmed or corrected during field surveys.

The PSA was physically investigated for the presence of wetlands, streams, and other potential waters of the United States (WOTUS) between June 2024 and February 2025. All wetlands were delineated using the methods outlined by the US Army Corps of Engineers (USACE) Atlantic and Gulf Coastal Plain Regional Supplement to determine jurisdictional boundaries.[3] Wetland habitat types were classified using the

[1] South Carolina Department of Natural Resources. 2024. LiDAR Data Access. https://scdnr.maps.arcgis.com/. Accessed October 2024.

[2] U.S. Fish and Wildlife Service. 2024. National Wetland Inventory. https://www.fws.gov/wetlands/. Accessed October 2024.

[3] US Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.

Cowardin naming convention.[4] Other habitat types were classified using the National Land Cover Database[5], aerial imagery, and investigator field notes.

The list of federally protected species that are known to occur in Orangeburg and Dorchester Counties, South Carolina, was obtained using the USFWS IPaC (IPaC Project Code 2025-0137140) on August 18th, 2025.[6] Each federally protected species was researched by the investigators to determine their respective suitable habitat requirements. Suitable habitats are those which meet the minimum needs of a species. Species utilization of the I-26 Corridor Improvements Project PSA was analyzed by comparing current conditions to necessary suitable habitat requirements. Suitable habitats for species were physically investigated over multiple field visits from June 2024 to February 2025. Species presence and suitable habitat were recorded as observed. The PSA boundaries were transferred to the SC Natural Heritage Species Reviewer and a report was generated on August 25th, 2025, through SCDNR's data files that provides project specific information about known occurrences of state and federally protected species within the PSA.[7] A buffer can be specified from 1 to 6 miles from the PSA boundaries. For the purposes of this study a 2-mile buffer around the PSA was requested.

2 PHYSICAL RESOURCES

2.1 Land Use

The PSA is in Orangeburg and Dorchester Counties, in the Lowcountry Region of the state, approximately 4.5 miles east of downtown Orangeburg centered along I-26. Land use is a mix of:

- Residential
- Commercial
- Industrial
- Agricultural
- Forested Uplands
- Wetlands

[4] U.S. Fish and Wildlife Service. 1979. Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. Classification of wetlands and deepwater habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

[5] Yang, L., S. S. Jin, P. Danielson, C. Homer, L. Gass, S.M. Bender, A. Case, C. Costello, J. Dewitz, J. Fry, M. Funk. 2018. A new generation of the United States Nation Land Cover Database: requirements, research priorities, design, and implementation strategies. Remote sens, 146, pp. 108-123.

[6] U.S. Fish and Wildlife Service. 2025. Information for Planning and Consultation (IPaC). https://ipac.ecosphere.fws.gov/ Accessed January 23, 2025.

[7] South Carolina Department of Natural Resources. 2025. SC Natural Heritage Species Reviewer. https://natural-heritage-program-scdnr.hub.arcgis.com/. Accessed January 24, 2025.

Table 1. Land Use Types within the PSA

Land Use Type	Acres within PSA
Developed, Low Intensity	772
Evergreen Forest	281
Developed, Open Space	270
Cultivated Crops	202
Woody Wetlands	160
Developed, Medium Intensity	146
Scrub/Shrub	37
Pasture/Hay	22
Grassland/Herbaceous	19
Developed, High Intensity	17
Deciduous Forest	12
Emergent Herbaceous Wetland	12
Open Water	4
Mixed Forest	3
Barren Land (Rock/Sand/Clay)	<1
Total	**~1,958**

Land use was classified using the USGS National Land Cover Classification.[8] In the PSA, land use is varied, and each type serves a distinct ecological and economic function. Developed, Low Intensity land is the largest category (772 acres) which primarily supports residential areas with relatively low-density housing and local businesses, playing a critical role in meeting housing and local commercial needs. Developed, Open Space (270 acres) includes parks, recreational areas, and other open lands within developed areas, providing green spaces that enhance quality of life for residents and visitors.

Evergreen Forest (281 acres) offers natural beauty, supports biodiversity, and plays a role in air quality. Developed, Medium Intensity (146 acres) areas, with more densely built structures, support a mixture of residential, commercial, and light industrial uses, contributing to local employment and economy. Woody Wetlands (160 acres) play a crucial role in flood mitigation and serve as vital habitats for wildlife.

Agricultural and transitional land uses include Cultivated Crops (202 acres), Pasture/Hay (22 acres), and Deciduous Forest (12 acres), all of which contribute to local ecological diversity. Open natural landscapes,

[8] U.S. Geological Survey. 2024. National Land Cover Database | U.S. Geological Survey. Accessed December 2024.

such as Scrub/Shrub (37 acres) and Grasslands (19 acres), provide essential habitats for native species and maintain the region's ecological balance.

High-density areas, labeled as Developed, High Intensity (17 acres), typically consist of highly built-up zones that include commercial and institutional facilities, essential for economic activity and regional connectivity. Emergent Herbaceous Wetlands (12 acres) play an essential role in water purification and flood control. Mixed Forest (3 acres) adds to the region's biodiversity by incorporating both evergreen and deciduous trees.

Minor land uses include Open Water (4 acres) and Barren Land (<1 acre), which have limited but notable contributions to the local landscape. In total, the PSA spans about 1,958 acres, featuring a complex and interdependent land use distribution.

The PSA corridor is flanked by an array of residential, medical, educational, and community services. Neighborhoods such as Chestnut Hill and Andrews Terrace offer a range of housing options, while the farmlands along the corridor highlight the community's strong ties to agriculture and its economic significance both locally and for the greater state of South Carolina. A variety of small commercial businesses and local services along US 301 and SC 33 that intersect the corridor cater to the needs of residents.

Medical facilities such as MUSC's Regional Medical Center in Orangeburg provide accessible healthcare services to the corridor's residents. Nearby schools such as Rivelon Elementary School serve the area's educational needs. Additionally, places of worship like St. Paul's Baptist Church and Pine Hill United Methodist Church reflect the area's vibrant spiritual community. Orangeburg and Dorchester County Parks and Recreation departments provide athletic, recreational, environmental, and cultural resources for residents to enrich quality of life.

This segment of I-26 also plays a crucial role in supporting statewide commerce by providing vital connectivity to the Port of Charleston. The corridor facilitates the efficient transport of goods between inland areas of the state and the port, reinforcing its importance as a backbone for South Carolina's economic activity and infrastructure. Additionally, this stretch of I-26 serves as a vital hurricane evacuation corridor for the coastal region of the state, ensuring safe and effective passage for residents during emergencies.

2.2 Physiography and Topography

The PSA is situated across three Level IV Ecoregions: Atlantic Southern Loam Plains (65l), Carolina Flatwoods (63h), and Mid-Atlantic Floodplains and Low Terraces (63n).

The Atlantic Southern Loam Plains (65l) ecoregion is defined by the US Environmental Protection Agency (EPA) as: "lower, flatter, more gently rolling, with finer textured soils than 65c [Sand Hills]. It is a major agricultural zone, with deep, well-drained soils, and more cropland than 65c or 63h [Carolina Flatwoods]. The sedimentary formations are younger than those of the Sand Hills (65c) and older and more dissected than the flatter terraces of the Carolina Flatwoods (63h). The flora is varied due to the variety of edaphic conditions, but is generally more mesic than found in 65c, and more xeric than in 63h. The region has a

high concentration of Carolina bays... Carolina bays not drained for agriculture often contain rare or endangered plant and animal species."[9]

The EPA defines the Caroline Flatwoods (63h) ecoregion as "The nearly level coastal plain of the Carolina Flatwoods has less relief, wider upland surfaces, and larger areas of poorly drained soils than the adjacent, higher elevation ecoregion 65l [Atlantic Southern Loam Plains]. Covered by shallow coastal waters during the Pleistocene, the resultant terraces and shoreline-related landforms are covered typically by fine-loamy and coarse-loamy soils, with periodically high water tables. Other areas have clayey, sandy, or organic soils, contributing to the region's plant diversity. Carolina bays and pocosins are abundant in some areas. The region is a significant center of endemic biota, with more biological diversity and rare species compared to adjacent 63e [Mid-Atlantic Flatwoods] to the north in North Carolina and Virginia. Pine flatwoods, pine savannas, freshwater marshes, pond pine woodlands, pocosins, and some sandhill communities were once common. Loblolly pine plantations are now widespread with an active forest industry. Artificial drainage for forestry and agriculture is common."[9]

"The Mid-Atlantic Floodplains and Low Terraces [63n] are mostly a continuation of the riverine ecoregion 65p [Southeastern Floodplains and Low Terraces], although a few floodplains mapped in this region originate within ecoregion 63 [Middle Atlantic Coastal Plain]. Large, sluggish rivers, deep-water swamps, and some oxbow lakes characterize 63n. The alluvial deposits of the floodplains and terraces tend to have abrupt textural changes. Brownwater floodplains originate in or cross the Piedmont (45) and the sediments contain more weatherable minerals than the blackwater floodplains that have their watersheds entirely within the coastal plain. Cypress-gum swamps are common, along with bottomland hardwoods of wetland oaks, green ash, red maple, and hickories."[9]

The PSA lies within the Edisto River Basin. Most of the PSA is within the Upper Four Hole Swamp watershed (Hydrologic Unit Code (HUC): 0305020501), while the southern end is within the Lower Four Hole Swamp watershed (HUC: 0305020503).

2.3 Geology and Soils

According to the US Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Orangeburg and Dorchester Counties, 38 soil map units (SMU) and water are mapped within the PSA.[10]

Farmland classification and hydric rating for each SMU is noted in Table 2. Soils are also shown in **Appendix A, Figures 4a-4o**.

[9] Griffith, G., J. Omernik and J. Comstock. 2002. Ecoregions of South Carolina.

[10] Natural Resources Conservation Service. 1997. Natural Resources Conservation Service Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed November 17, 2024.

Table 2. Soil Types within the PSA

Map Soil Symbol	Map Unit Type	Farmland Classification	Hydric Rating	Acres within PSA
AeC	Ailey Sand, 6 to 10 percent slopes	Not Prime Farmland	Hydric Inclusions	**4**
Bb	Bibb sandy loam	Not Prime Farmland	Hydric	**38**
BlB	Blanton sand, 0 to 6 percent slopes	Not Prime Farmland	Not Hydric	**27**
BoB	Bonneau sand, 0 to 4 percent slopes	Farmland of Statewide Importance	Hydric Inclusions	**60**
By	Byars Loam	Farmland of Statewide Importance	Hydric	**7**
CdA	Clarendon loamy sand, 0 to 2 percent slopes	All Areas are Prime Farmland	Hydric Inclusions	**11**
Cx	Coxville sandy loam	Farmland of Statewide Importance	Hydric	**54**
DaA	Dothan loamy sand, 0 to 2 percent	All Areas are Prime Farmland	Not Hydric	**107**
Dn	Dunbar sandy loam	Farmland of Statewide Importance	Hydric Inclusions	**4**
Eo	Elloree loamy sand	Not Prime Farmland	Hydric	**16**
FaB	Faceville loamy sand, 2 to 6 percent slopes	All Areas are Prime Farmland	Hydric Inclusions	**11**
FuB	Fuquay sand, 0 to 6 percent slopes	Not Prime Farmland	Not hydric	**90**
GoA	Goldsboro sandy loam, 0 to 2 percent slopes	All Areas are Prime Farmland	Hydric Inclusions	**340**
Hp	Haplaquents, loamy	Not Prime Farmland	Hydric Inclusions	**<1**
Js	Johnston sandy loam	Not Prime Farmland	Hydric Inclusions	**35**
LcB	Lucy loamy sand, 0 to 6 percent slopes	Farmland of Statewide Importance	Not Hydric	**9**
LcC	Lucy loamy sand 6 to 10 percent slopes	Not Prime Farmland	Hydric Inclusions	**2**

Map Soil Symbol	Map Unit Type	Farmland Classification	Hydric Rating	Acres within PSA
Ln	Lynchburg loamy sand, 0 to 2 percent slopes	Prime Farmland if Drained	Hydric Inclusions	**33**
Ly	Lynchburg fine sandy loam, 0 to 2 percent slopes	Prime Farmland if Drained	Hydric Inclusions	**283**
Mo	Mouzon fine sandy loam	Not Prime Farmland	Hydric	**27**
NeC	Neeses loamy sand, 6 to 10 percent	Not Prime Farmland	Not Hydric	**2**
NoA	Noboco loamy sand, 0 to 2 percent slopes	All Areas are Prime Farmland	Hydric Inclusions	**280**
NoB	Noboco loamy sand, 2 to 6 percent slopes	All Areas are Prime Farmland	Hydric Inclusions	**40**
OcA	Ocilla loamy sand, 0 to 2 percent slopes	Farmland of Statewide Importance	Hydric Inclusions	**76**
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	All Areas are Prime Farmland	Not Hydric	**20**
OrC	Orangeburg loamy sand, 6 to 10 percent slopes	Farmland of Statewide Importance	Not Hydric	**5**
Pa	Pantego fine sandy loam	Farmland of Statewide Importance	Hydric	**<1**
Ph	Pelham loamy sand, 0 to 2 percent slopes	Farmland of Statewide Importance	Hydric	**5**
Ra	Rains sandy loam	Farmland of Statewide Importance	Hydric	**27**
RnA	Rains sandy loam, 0 to 2 percent slopes, Atlantic Coast Flatwoods	Farmland of Statewide Importance	Hydric	**214**
Sa	Stallings loamy sand	Prime farmland if protected from flooding or not frequently flooded during the growing season	Hydric Inclusions	**5**
Se	Seagate sand	Not Prime Farmland	Hydric Inclusions	**10**

Map Soil Symbol	Map Unit Type	Farmland Classification	Hydric Rating	Acres within PSA
TpB	Troup sand, 0 to 6 percent slopes, Southern Coastal Plain	Not Prime Farmland	Not Hydric	**99**
TpC	Troup sand, 6 to 10 percent slopes, Southern Coastal Plain	Not Prime Farmland	Not Hydric	**2**
Ud	Udorthents, loamy	Not Prime Farmland	Not Hydric	**9**
W	Water	Not Prime Farmland	Not Hydric	**6**
			Total PSA	**~1,958**

Hydric soils account for approximately 388 acres of the PSA, soils with hydric inclusions account for approximately 1,195 acres of the PSA, not hydric soils account for approximately 375 acres of the PSA and water accounts for approximately 6 acres.

2.4 Farmlands

The Farmland Protection Policy Act (FPPA) of 1981 (7 USC 4201 and 7 CFR Ch. VI Part 658) requires evaluation of farmland conversions to nonagricultural uses.[11] Farmland can be prime farmland, unique farmland, or farmland of statewide importance. The PSA is comprised of approximately 1,958 acres of land within Orangeburg and Dorchester Counties. Of the total area, approximately 810 acres are prime farmland, approximately 460 acres are designated as farmland of statewide importance, and 366 acres are designated as not prime farmland. Soils designated as prime farmland within and adjacent to the PSA are primarily undeveloped and exist as woodland habitats. The conversion of prime farmland has previously occurred through construction of roadways, residences, and commercial developments. In accordance with the FPPA, a Farmland Impact Conversion Rating Form for Corridor Type Projects (NRCS-CPA-106) was completed for the Preferred Alternative. The purpose of the Farmland Impact Conversion Rating Form is to help identify and approximate the amount of farmland that would be converted by the Preferred Alternative. Coordination with NRCS is not required since Part IV of the NRCS-CPA-106 form is assumed to be 100. When Part IV is added to Part VI, the total impact assessment points remain below the threshold of 160.

[11] Natural Resources Conservation Service. Farmland Protection Policy Act Rule. https://www.nrcs.usda.gov/sites/default/files/2022-06/FPPA_Rule_7cfr658.pdf. Accessed October 2024.

2.5 Water Resources

SCDES divides South Carolina into eight major river basins. A basin can be described as a geographic area in which all surface waters drain to a common point. A Watershed and Water Quality Information report is found in **Appendix C**.

According to SCDES's SC Watershed Atlas, the PSA lies within the Edisto River Basin. Most of the PSA is within the Upper Four Hole Swamp watershed (Hydrologic Unit Code (HUC): 0305020501), while the southern end is within the Lower Four Hole Swamp watershed (HUC: 0305020503) (SCDES 2024).[12]

The Edisto River basin in South Carolina spans over two million acres across 12 counties and flows from the Sandhills region to the Upper and Lower Coastal Plain and Coastal Zone regions. The Edisto River Basin includes the four eight-digit HUC-Code watersheds including the South Fork Edisto River Basin (HUC 03050203), the North Fork Edisto River Basin (HUC 03050204), the Four Hole Swamp Basin (HUC 03050205), and the Edisto River Basin (HUC 03050206). The entire Edisto River Basin has approximately 5,177 stream miles, 11,489 acres of lake waters, and 20,615 acres of estuarine areas.

The Edisto River begins near South Carolina's fall line as two forks, the North and South, and flows through the Low Country to the Atlantic Ocean, covering a total of 310 miles. The South Fork starts in Johnston, SC, and flows southeast for 105 miles before meeting the North Fork near Branchville. The North Fork forms from Chinquapin and Lightwood Knot Creeks near Batesburg and Wagener, flowing 66 miles to Orangeburg and another 20 miles to join the South Fork, creating the Main Stem, or Big Edisto. The 109-mile Big Edisto continues southeast, passing landmarks like Givhans Ferry State Park and the ACE Basin, before reaching the ocean at Edisto Beach.[13]

2.6 Water Quality

SCDES monitors the water quality of streams and open waters of South Carolina. SCDES develops a priority list of waterbodies that do not currently meet state water quality standards pursuant to Section 303(d) of the NPDES (National Pollutant Discharge Elimination System) (CWA) and 40 CFR § 130.7. It is commonly referred to as the 303(d) List of Impaired Waters. Cow Castle Creek is designated as a 303(d) Listed and Impaired Water where it intersects with the PSA, as well as extending northwest and southeast of the PSA, due to *Escherichia coli* bacteria. Cow Castle Creek is a tributary to Upper Four Hole Swamp, which is also 303(d) listed due to *Escherichia coli* bacteria.

According to SCDES, monitoring stations are used for "determining long-term water quality trends, assessing attainment of water quality standards, identifying locations in need of additional attention, and providing background data for planning and evaluating stream classifications and standards."[14] SCDES has a monitoring station (E-050), at the Wamer Road (S-170) crossing of Cow Castle Creek, upstream of the PSA.

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[12] South Carolina Department of Environmental Services. SC Watershed Atlas. https://gis.dhec.sc.gov/watersheds/. Accessed January 2025.

[13] Edisto Friends. Edisto River. https://www.edistofriends.org/edisto-river. Accessed January 2025.

[14] South Carolina Department of Environmental Services. Surface Water Quality. 2024. https://des.sc.gov/sites/des/files/media/document/Surface%20Water%20Quality.pdf. Accessed January 2025.

According to SCDES, NPDES discharge permits are obtained by businesses and limited by the allowance of discharge within acceptable limits to protect lakes and streams. NPDES permits "allow businesses to discharge a range of waste pollutants into rivers, streams, and lakes in ways that minimize the potential for harm to fish and other aquatic life and to humans who use the water for drinking, fishing, recreation and other purposes".[15] As per the SC Watershed Atlas, there is a NPDES discharge (SC0040037) in Cow Castle Creek upstream from where the stream crosses into the PSA. The SIC description for the NPDES discharge is for sewerage systems.

The PSA lies across three different Total Maximum Daily Load (TMDL) watersheds; Four Hole Swamp (015-06-Fecal), Upper Four Hole Swamp (010-2020-Ecoli), and the watershed encompassing Cow Castle Creek, Lower Four Hole Swamp, and Tributaries (020-2020-Ecoli).

There is a USACE Section 408 civil works project on Cow Castle Creek in the Town of Bowman, approximately 4.5 miles upstream of the I-26 crossing. The project consisted of the clearing and snagging of the existing channel of Cow Castle Creek for a distance of 8,085 feet in the vicinity of the SC 210 crossing. Additionally, the project included clearing of all brush and trees smaller than 12 inches in diameter from the right creek bank. The County of Orangeburg cleared 1.7 miles of Even Branch (tributary to Cow Castle Creek) as part of the total project. The project was completed in 1984.[16]

2.7 Wild and Scenic Rivers

The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) of 1968 allows for preservation of reaches of selected rivers that are recognized for scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, be preserved in free-flowing condition, and that they and their immediate environments be protected for the benefit and enjoyment of present and future generations. Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Each river is administered by either a federal or state agency. Designated segments need not include the entire river and may include tributaries. There are no Wild and Scenic Rivers in the PSA.

Four Hole Swamp is included in the Nationwide Rivers Inventory (NRI) from one mile above US 301 bridge to its confluence with the Edisto River. The designated Outstandingly Remarkable Values for this segment of Four Hole Swamp include cultural, fish, historic, recreational, scenic, and wildlife resources. The proposed project would not have impacts to the values that qualify Four Hole Swamp for listing in the NRI.

[15] South Carolina Department of Environmental Services. National Polluant Discharge Elinination System Permits. 2024. https://des.sc.gov/programs/bureau-water/national-pollutant-discharge-elimination-system-npdes/fact-sheet-getting-national-pollutant-discharge-elimination-system-npdes-permit. Accessed January 2025.

[16] U.S. Army Corps of Engineers. Project Maps – Charleston District. 1991. https://www.sac.usace.army.mil/Portals/43/docs/regulatory/Project%20Maps-Charleston%20District.pdf. Accessed February 2025.

3 BIOTIC RESOURCES

3.1 Biotic Communities

Biotic communities within the PSA were identified by combining remote sensing data such as recent aerial imagery from Earthstar Geographics obtained through ESRI's GIS database, digital elevation models for Orangeburg and Dorchester Counties, and USFWS National Wetland Inventory (NWI) mapping, along with field observations and data collected during the survey efforts and the delineation of WOTUS, conducted between June 2024 and February 2025.

Identified biotic communities within the PSA include urban development, forested uplands, wetland, and pond habitat types. Much of the I-26 corridor is adjacent to undeveloped tracts except for areas around interchanges and overpass bridges where scattered residential and developed land is located. Wetland habitat types were classified using the Cowardin naming convention.[17] WOTUS delineated in the PSA can be seen in **Appendix A Figures 5a-5o.** Photographs of habitats in the PSA are included in **Appendix D**.

3.1.1 Non-Wetland Habitats

Urban Development - In the PSA, urban development includes residences, commercial buildings, and roadways. These areas typically have very little natural habitat since they are frequently maintained and landscaped. These areas typically do not provide a significant source of food or shelter for wildlife. The unpaved but maintained areas around the pavement and buildings are typically planted in native and exotic grasses, shrubs, and trees.

Forested Uplands - Forested uplands are a mix of pine dominated forests, mixed hardwood/deciduous forests, and mixed hardwood/pine forests. The pines within the PSA are primarily loblolly pine. The hardwoods include water oak (*Quercus nigra*), white oak (*Quercus alba*), sweetgum (*Liquidambar stryraciflua*), tulip poplar (*Liriodendrum tulipifera*) red maple (*Acer rubrum*), pignut hickory (*Carya glabra*), mockernut hickory (*Carya tomentosa*), and southern magnolia (*Magnolia grandiflora*). The understory includes sourwood (*Oxydendrum arboreum*), flowering dogwood (*Cornus florida*), horse-sugar (*Symplocos tinctoria*), devil's walking stick (*Aralia spinosa*), sassafras (*Sassafras albidum*), greenbrier (*Smilax rotundifolia*), Japanese honeysuckle (*Lonicera japonica*) and various grass species. Areas near roadways and other disturbed areas have denser understory vegetation when compared to forested areas further from disturbed areas.

3.1.2 Freshwater Habitats

Palustrine Wetlands - Palustrine forested wetlands are wetlands with mature forest canopy and a regular flood regime.[17] Palustrine forested wetlands within the PSA predominantly have a mixed canopy of hardwoods and loblolly pines (*Pinus taeda*). and are seasonally flooded (PFO4/1C). The forests appear to be secondary successional with intermediate species, likely due to past logging activities and their proximity to highways and development. Common hardwood species include sweetgum, red maple, water oak, and willow oak (*Quercus phellos*). Coniferous canopy species include loblolly pine and longleaf

[17] U.S. Fish and Wildlife Service. 1979. Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. Classification of wetlands and deepwater habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

pine (*Pinus palustris*). The understory is moderately dense with young tree species and shrubs, most commonly wax myrtle (*Morella cerifera*), privet (*Ligustrum* spp.), fetterbush (*Lyonia lucida*), and groundsel bush (*Baccharis halimifolia*). The presence of herbaceous species varies in density, with common species including wood oats (*Chasmanthium laxum*), netted chain fern (*Woodwardia areolata*), soft stem rush (*Juncus effusus*), and various sedges (*Carex* spp.). Seasonally flooded, palustrine forested wetlands are abundant in and around Four Hole Swamp and its tributaries.

Other palustrine forested wetlands within the PSA experience semi-permanent flooding, particularly those deep within Four Hole Swamp. These areas have similar species to those observed in seasonally flooded wetlands but have canopies that include virgin bald cypress (*Taxodium distichum*) and tupelo (*Nyssa aquatica*). Semipermanent flooded, palustrine forested wetlands within the PSA have a more spacious understory than those that are seasonally flooded and are more successionally mature.

Palustrine emergent wetlands are wetlands dominated by perennial, herbaceous plants that are present for most of the year.[17] One palustrine emergent wetland within the PSA is a permanently flooded beaver dam impoundment. Common species found in these areas include non-woody species such as cattail (*Typha* spp.) and plumegrass (*Saccharum brevibarbe*).

Open Water - Palustrine unconsolidated bottom ponds are ponded habitats that are permanently flooded, typically due to excavation or impounding. [18] Eleven excavated ponds were identified within the PSA: all of which are located between the central PSA and southeastern PSA. They appear to be manmade and formerly forested wetlands.

Riverine – Stream habitats within the PSA are riverine lower perennial,[17] which are streams with low flow velocity, well-defined floodplain areas, and have sandy to silty substrate. Within the PSA, riverine habitats flow through the uplands and palustrine forested wetlands. They are typically non-vegetated or minimally vegetated. Streams increase in flow with increased precipitation. They often provide connection between wetlands and major waterbodies within the watershed.

3.1.3 Essential Fish Habitat

Essential Fish Habitat (EFH) is the aquatic habitat required for marine species to spawn, breed, feed, and grow to maturity. EFH and managed marine species are under the jurisdiction of the National Oceanic and Atmospheric (NOAA) National Marine Fisheries Service (NMFS); they must be consulted before construction activities can begin. No EFH is located in the PSA.[19]

3.1.4 Habitat Areas of Particular Concern

Habitat areas of particular concern (HAPC) are discreet subsets of EFH that are considered high priority areas for conservation, management, or research. HAPCs receive such designation because they are rare, sensitive, stressed by development, or important to overall ecosystem function. HAPC for a given fishery

[18] US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.

[19] National Oceanic and Atmospheric Administration. 2024. Essential fish habitat mapper [web app]. https://www.habitat.noaa.gov/apps/efhmapper/. Accessed November 17, 2024.

can include intertidal habitats, estuarine habitats, and deep-water habitats used for migration, spawning, and rearing of fish or other managed organisms.

According to the EFH Mapper, there are no HAPC within the PSA.[19]

3.1.5 Other Fishes

Highly migratory pelagic species such as Atlantic blacktip shark (*Carcharhinus limbatus*), Scalloped hammerhead shark (*Sphyrna lewini*), Spinner shark (*Carcharhinus brevipinna*), and Tiger shark (*Galeocerdo cuvier*) are also managed by NOAA NMFS, and spatial data from the EFH mapper indicates there is no presence of EFH for highly migratory pelagic species within the PSA. [19]

4 JURISDICTIONAL WATERS

4.1 Waters of the United States

Waters of the US (WOTUS) are defined by 40 CFR § 230.3(s) and protected by Section 404 of the Clean Water Act (CWA, 33 US Code [USC] 1344), which is administered and enforced by the US Army Corps of Engineers (USACE). The term "waters of the United States," is currently defined as:[20]

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

   a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

   b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   c. Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

[20] U.S. Environmental Protection Agency. 2025. Pre-2015 Regulatory Regime. https://www.epa.gov/wotus/pre-2015-regulatory-regime. Accessed March 2025.

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.[21]

Wetland habitats are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions".[21] USACE utilizes specific hydrology, soil, and vegetation criteria in defining the boundary of wetlands within their jurisdiction. Wetlands generally include swamps, marshes, bogs, and similar areas. South Carolina Department of Environmental Services (SCDES) Bureau of Coastal Management (BCM) maintains jurisdiction over "critical areas" which can include certain types of wetlands, coastal waters, tidelands, and beach/dune systems, and isolated wetlands that are not regulated by USACE.

After delineations, it was determined that there are approximately 115 acres of wetlands, 9 acres of non-wetland waters (open water), 8,166 linear feet (3 acres) of non-wetland waters (streams), and 548 linear feet (2 acres) of non-wetland waters (ditch) within the PSA. These features are shown in **Appendix A, Figures 5a-5o**.

4.2 Permitting

Impacts to WOTUS would require permits and approvals from state and federal agencies. The expected permits and authorizations required prior to beginning construction include an Individual USACE Section 404 permit and SCDES 401 Water Quality Certification. The Dorchester County portion of the project will also require Coastal Zone Consistency (CZC) review by SCDES BCM. The SCDOT Permit Determination Form is attached (**Appendix E**).

Impact avoidance and minimization efforts will be applied during the final design phase; however, compensatory mitigation would be required for unavoidable WOTUS impacts. It is anticipated that SCDOT would purchase mitigation credits from one or more of the approved mitigation banks that provide coverage for the PSA and have freshwater wetland credits available. The mitigation banks that fit these criteria are Swallow Savannah Mitigation Bank and Brosnan Forest Coldwater Branch Mitigation Bank. Swallow Savannah Mitigation Bank has limited wetland credits available. Brosnan Forest Coldwater Mitigation Bank has both stream and wetland credits available. The PSA is within the Tertiary Service Area for Roberts Swamp Mitigation Bank, which has limited wetland credits available.

[21] US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.

5 PROTECTED SPECIES

5.1 Federally Listed Species

Section 7 of the Endangered Species Act (ESA) directs all federal agencies to participate in conserving ecosystems upon which endangered and threatened species depend and provides a program for the conservation of such species. The USFWS and NMFS are responsible for the enforcement of federal wildlife laws and the protection of endangered species. Listed animals are protected from "take" and being traded or sold. A "take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill trap, capture, or collect, or to attempt to engage in any such conduct." Section 7 of the ESA does not provide protection for the candidate/at-risk species. However, they are listed in Table 3 in the event their status changes prior to completion of the project. Additionally, species that are proposed for listing are not subject to Section 7 compliance until they are formally listed. A Biological Evaluation (BE) was prepared for USFWS review to document potential effects to protected species, appended to the EA.

The list of federally protected species that are known to occur in Dorchester and Orangeburg Counties, South Carolina, was obtained using the USFWS IPaC (IPaC Project Code 2025-0137140) on August 18th, 2025. Suitable habitats for species were physically investigated over multiple field visits from June 2024 to February 2025. Species presence or suitable habitat was recorded as observed. Threatened and endangered species that are under the USFWS and NMFS jurisdiction that may potentially be present within the PSA are presented in Table 3.

Table 3. IPaC List of Federally Protected Species

Common Name	Scientific Name	Federal Status
Bird Species		
Bald eagle	*Haliaeetus leucocephalus*	BGEPA; MBTA
Red-cockaded woodpecker	*Dryobates borealis*	Threatened; MBTA
Insect Species		
Monarch butterfly*	*Danaus Plexippus*	Proposed Threatened
Mammal Species		
Northern long-eared bat	*Myotis septentrionalis*	Endangered
Tricolored bat**	*Perimyotis subflavus*	Proposed Endangered
Plant Species		
Canby's dropwort	*Oxypolis canbyi*	Endangered
Pondberry	*Lindera melissifolia*	Endangered

BGEPA = Bald and Golden Eagle Protection Act; MBTA = Migratory Bird Treaty Act
**Proposed for listing as Threatened by USFWS December 12, 2024*
*** Proposed for listing as endangered by USFWS on September 14, 2022*

On September 14, 2022, USFWS issued a proposed rule to list the tricolored bat (*Perimyotis subflavus*) as endangered (87 FR 56381). Their presence and potential effects are addressed in the Biological Evaluation.

On December 12, 2024, the USFWS issued a proposed rule to list the monarch butterfly (*Danaus Plexippus*) as threatened (89 FR 100662). Their presence and potential effects are addressed in the BE.

Bald eagles are protected by the Bald and Golden Eagle Protection Act (BGEPA) and are also addressed in the BE. The USFWS also has jurisdiction over species protected under the Migratory Bird Treaty Act (MBTA).

Suitable habitat for four species under USFWS jurisdiction was observed in the PSA (bald eagle, monarch butterfly, northern long-eared bat, and tricolored bat). The only protected species observed within the PSA is the tricolored bat. A total of 18 individual tricolored bats were observed within two concrete box culverts in the PSA. Detailed analysis is documented in the BE.

5.2 Migratory Birds

Migratory birds listed in 50 CFR § 10.13 of the MBTA are protected from the "take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations." The USFWS migratory bird list contains 1,093 species.[22] All the bird species listed as endangered, threatened, or At-Risk-Species in Orangeburg and Dorchester Counties by USFWS are also protected by the MBTA.

Bridges within the PSA were inspected for the presence of migratory birds, or their nests. Barn swallow (*Hirundo rustica*) and cliff swallow (*Petrochelidon pyrrhonota*) nests were observed sporadically on various bridge structures within the PSA. It is assumed migratory birds may be present within the PSA; however, by implementing SCDOT's standard migratory bird measures, it is anticipated that the proposed project would not result in the unauthorized take of any migratory birds.

5.3 Bald Eagles

Bald eagles were once listed in the ESA but are now protected by the MBTA, as well as the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA (16 U.S.C. 668-668c) prohibits the take of bald eagles, eagle "parts, nests, or eggs." Suitable bald eagle foraging habitat was observed in the PSA. Suitable nest trees are present, however no nests were observed. According to the SC Natural Heritage viewer, there are no known nests within a two-mile buffer of the PSA. It was determined that the proposed project would not result in the take of any bald eagles.

[22] U.S. Fish and Wildlife Service. 2024. U.S. Fish and Wildlife Service List of Birds Protected by the Migratory Bird Treaty Act. https://www.fws.gov/media/list-birds-protected-migratory-bird-treaty-act-2020. Accessed November 17, 2024.

APPENDIX A

FIGURES

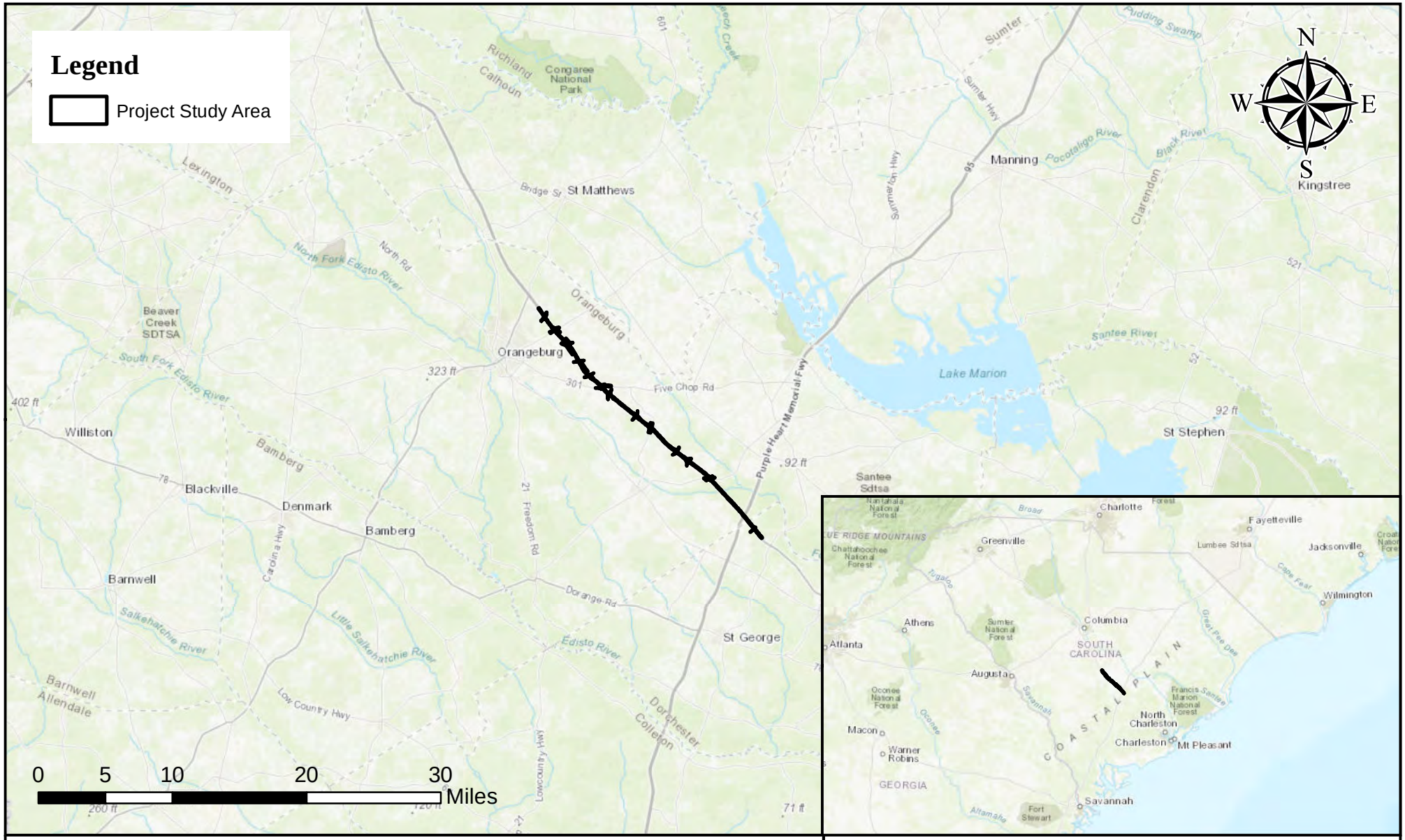

Figure 1 - Location Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

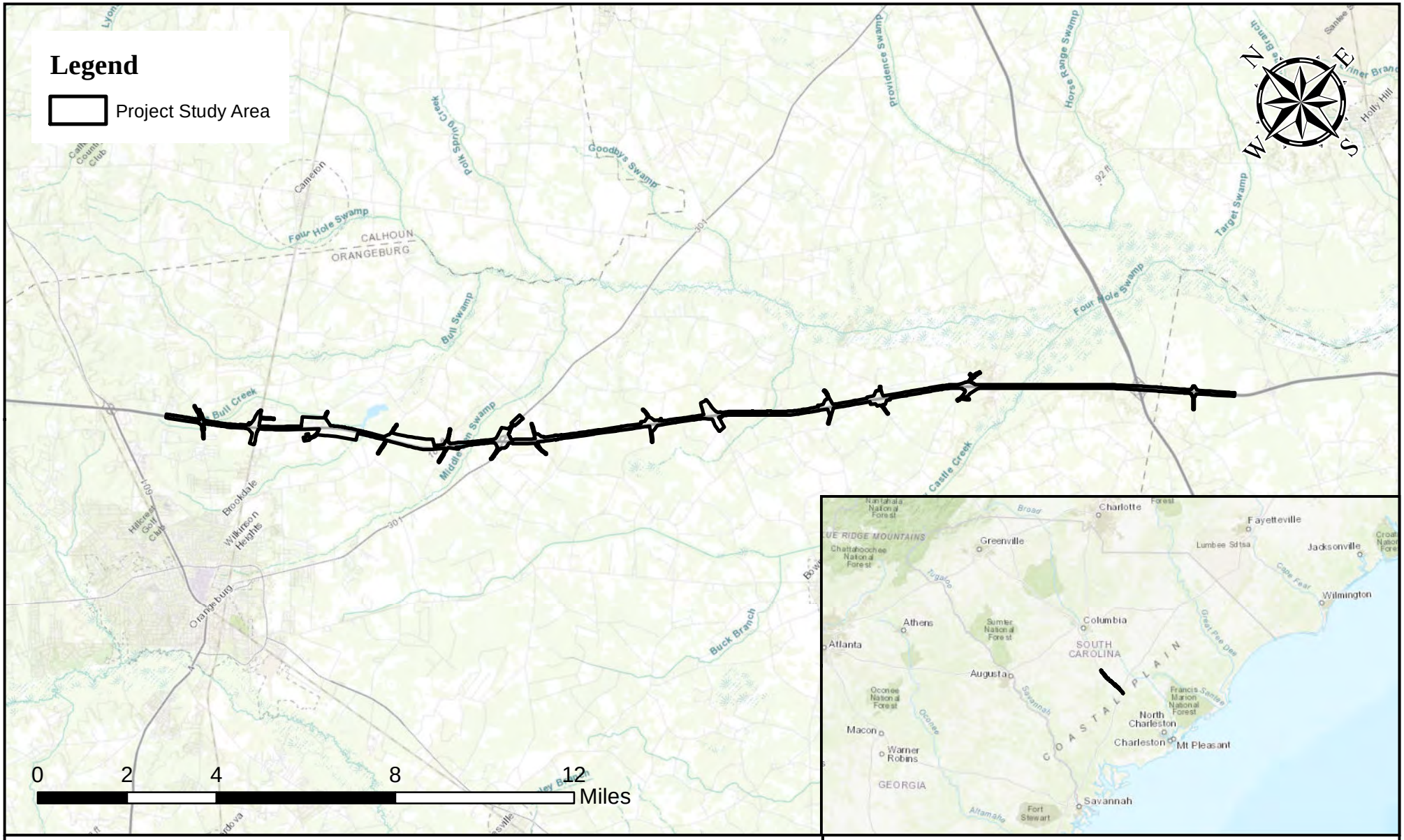

Figure 2 - Project Location Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

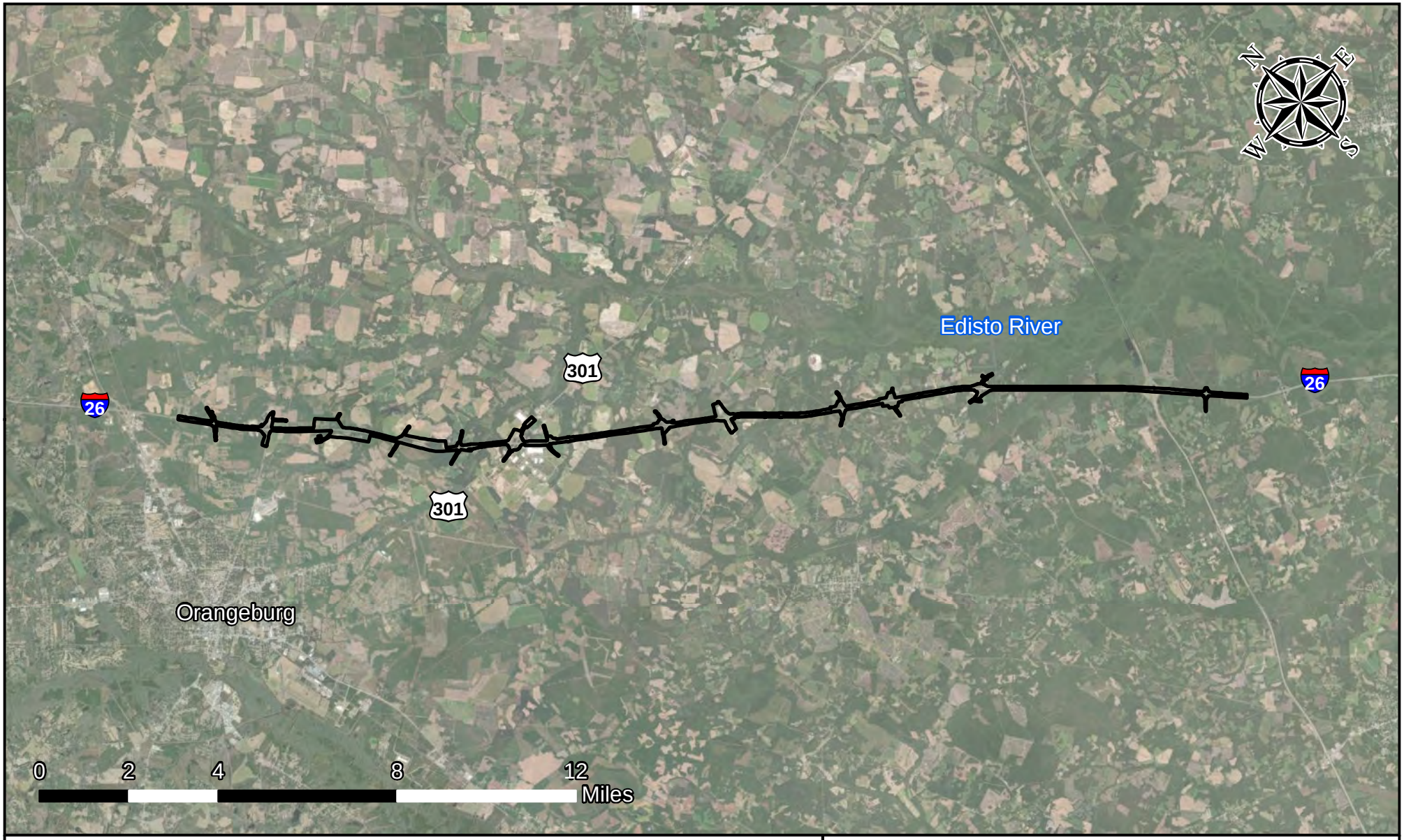

Figure 3 - Aerial Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

Figure 4A - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

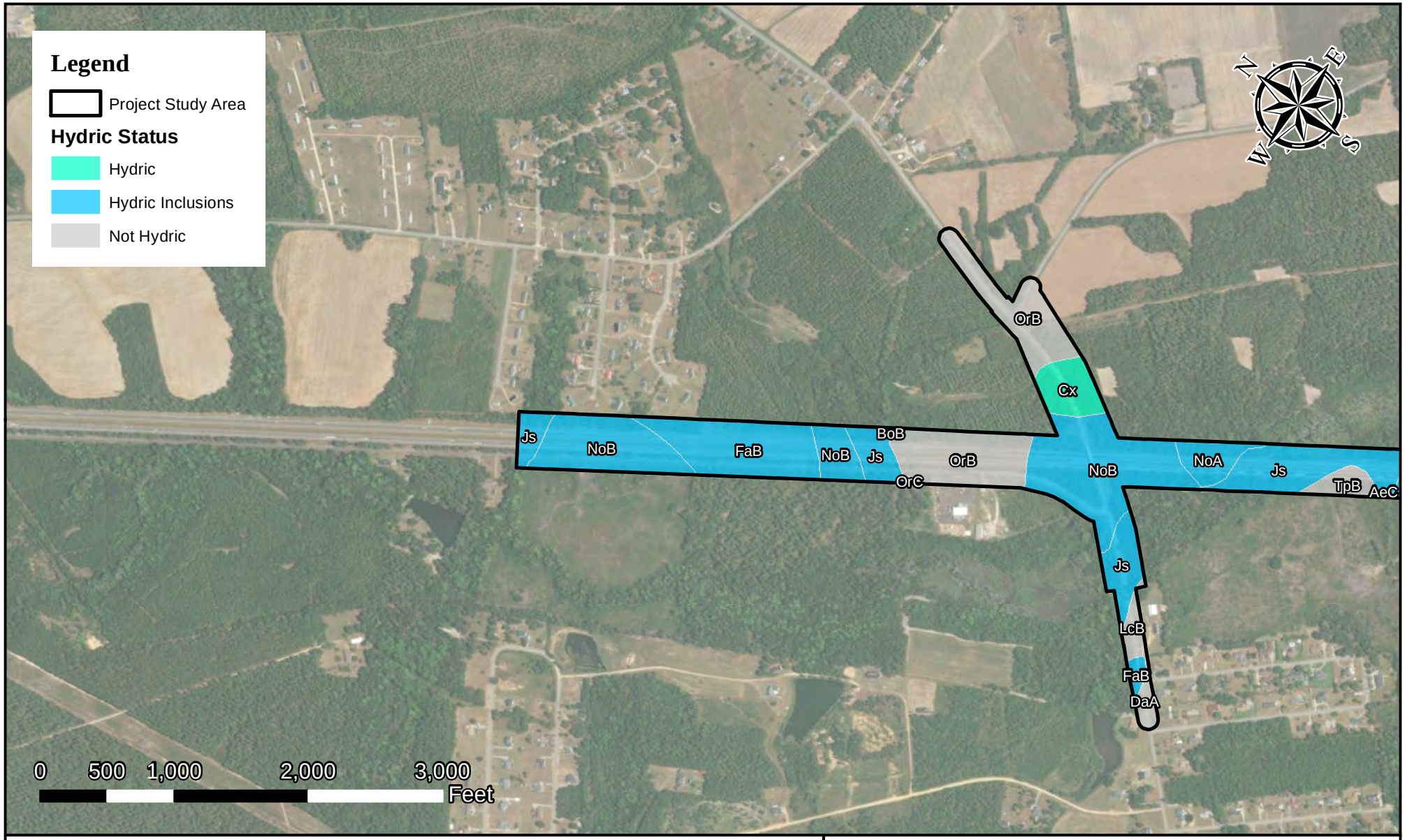

Figure 4B - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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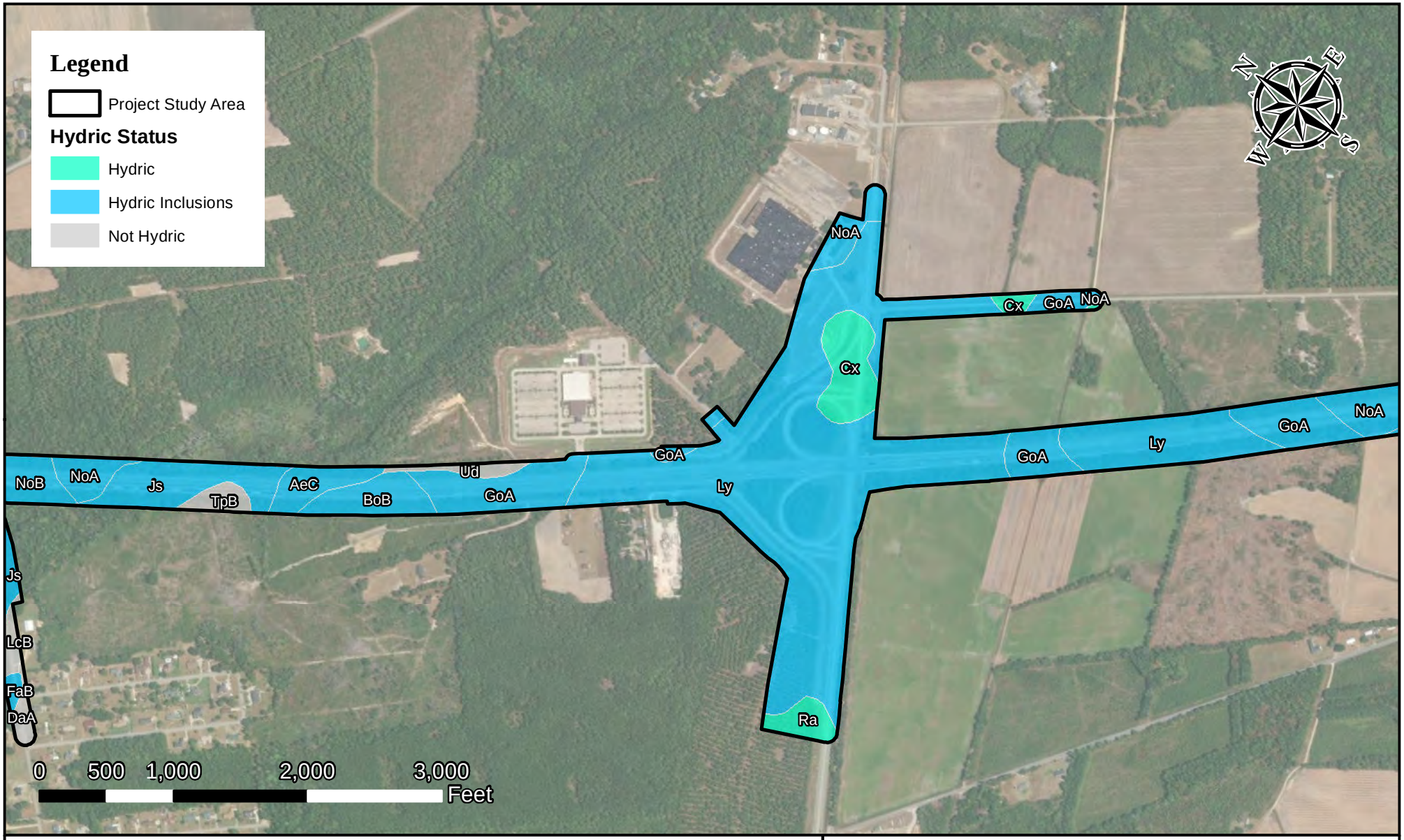

Figure 4C - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

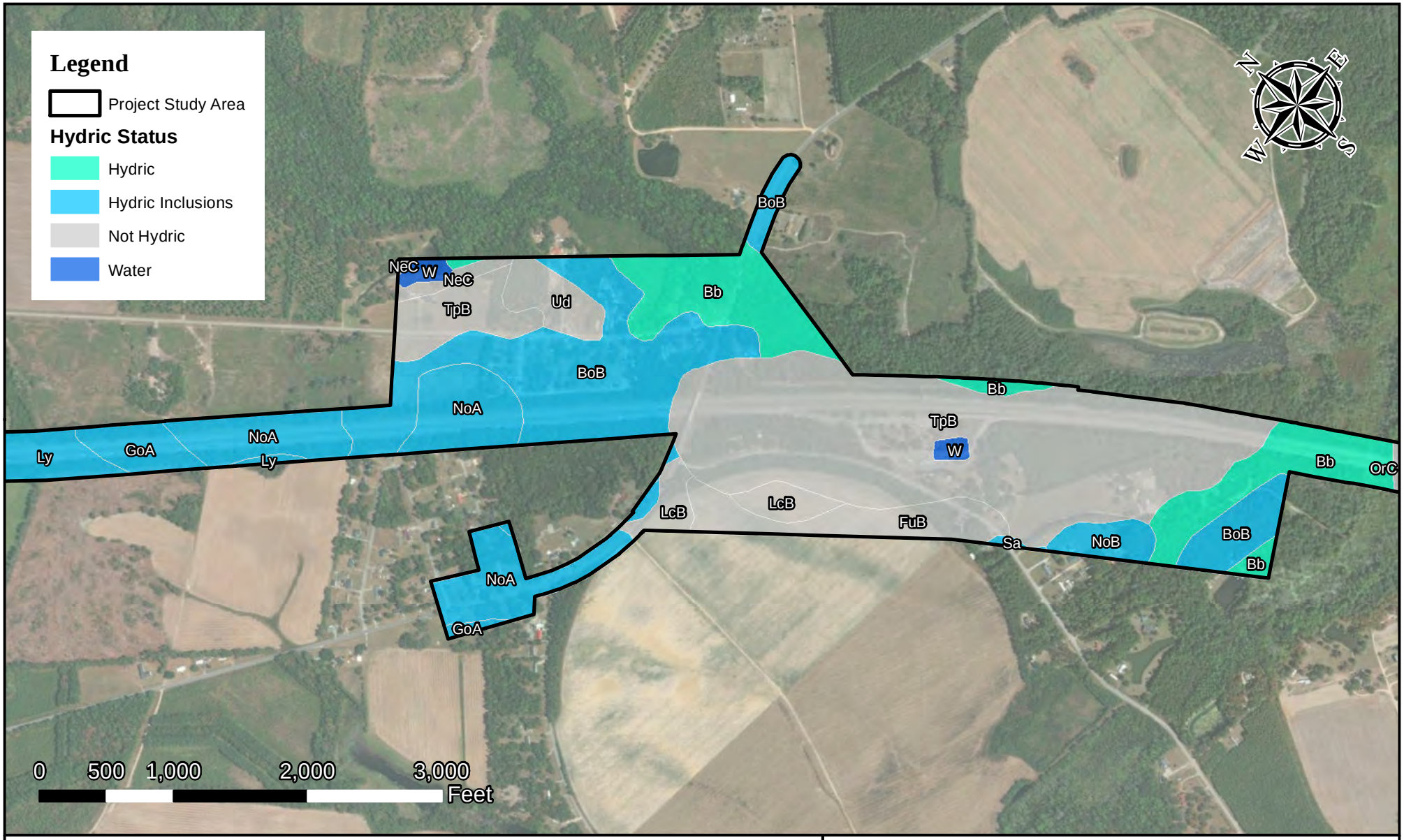

Figure 4D - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

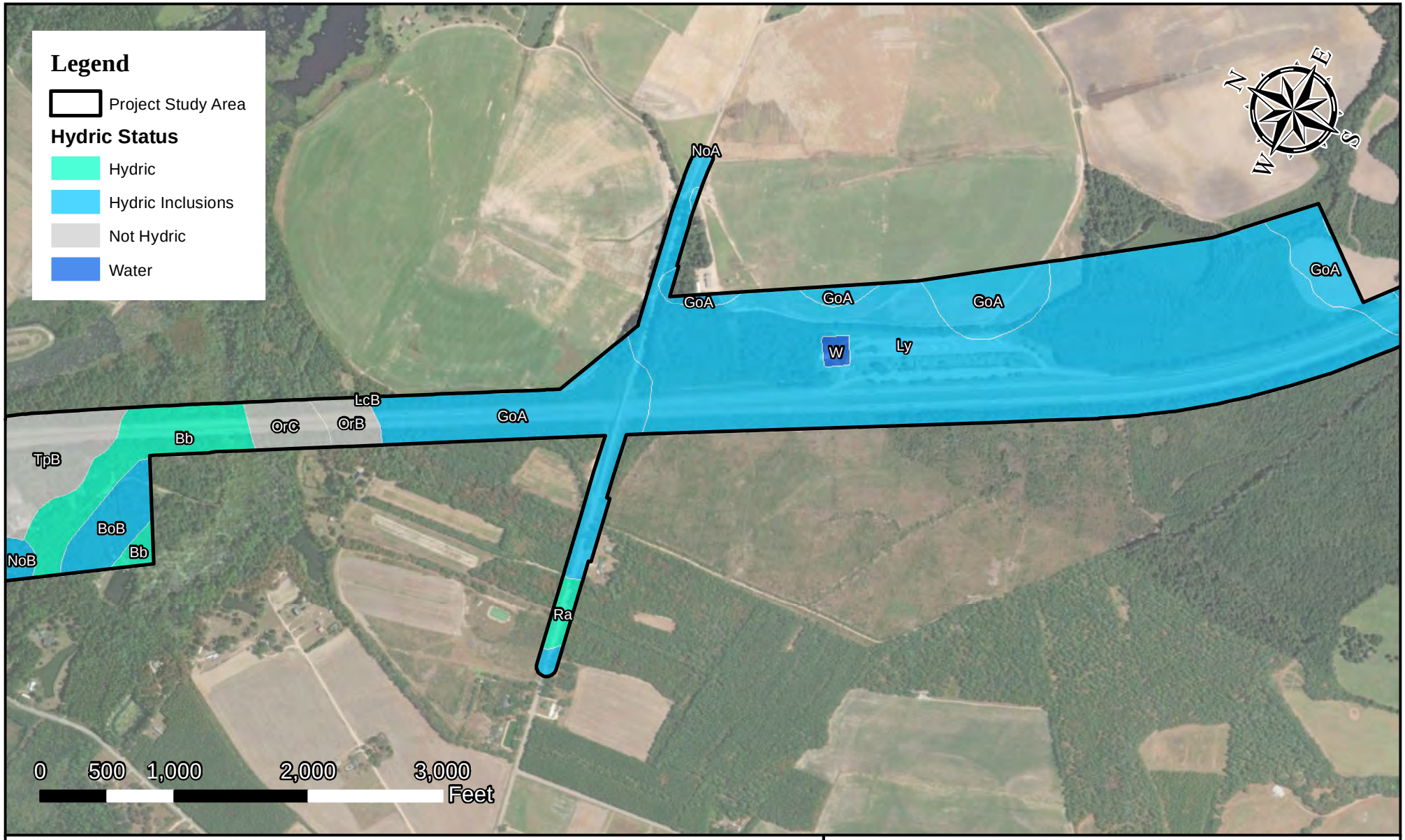

Figure 4E - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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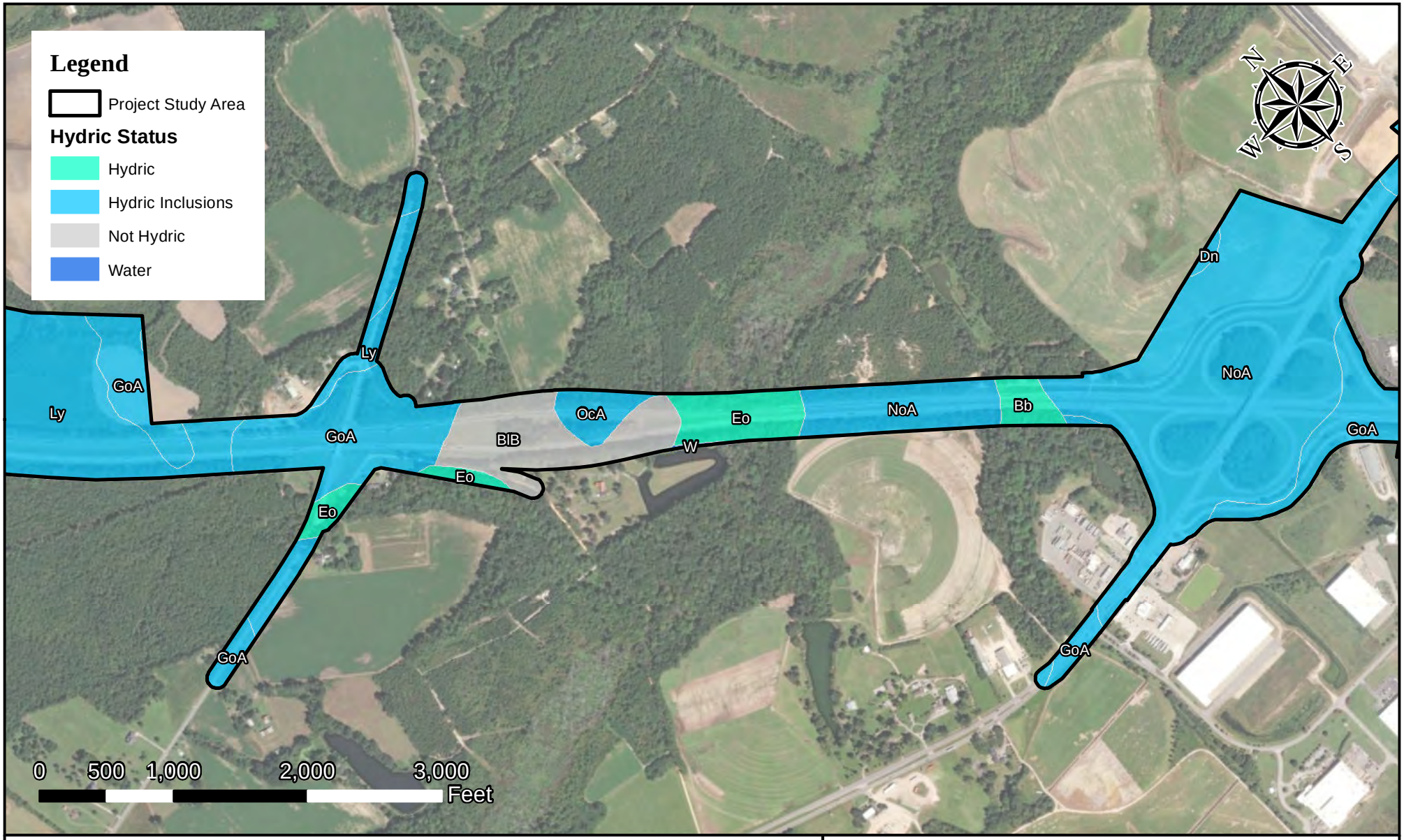

Figure 4F - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

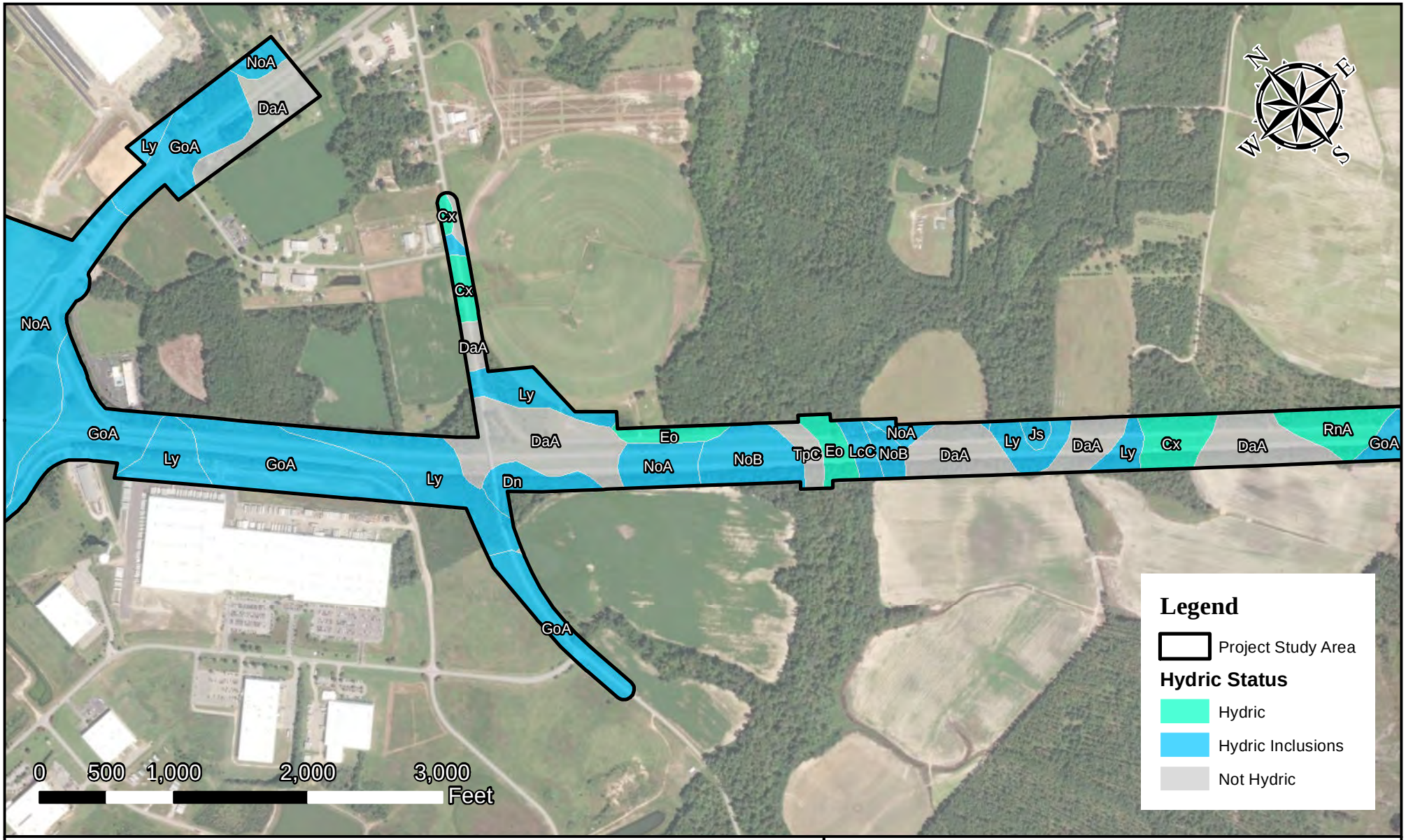

Figure 4G - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
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Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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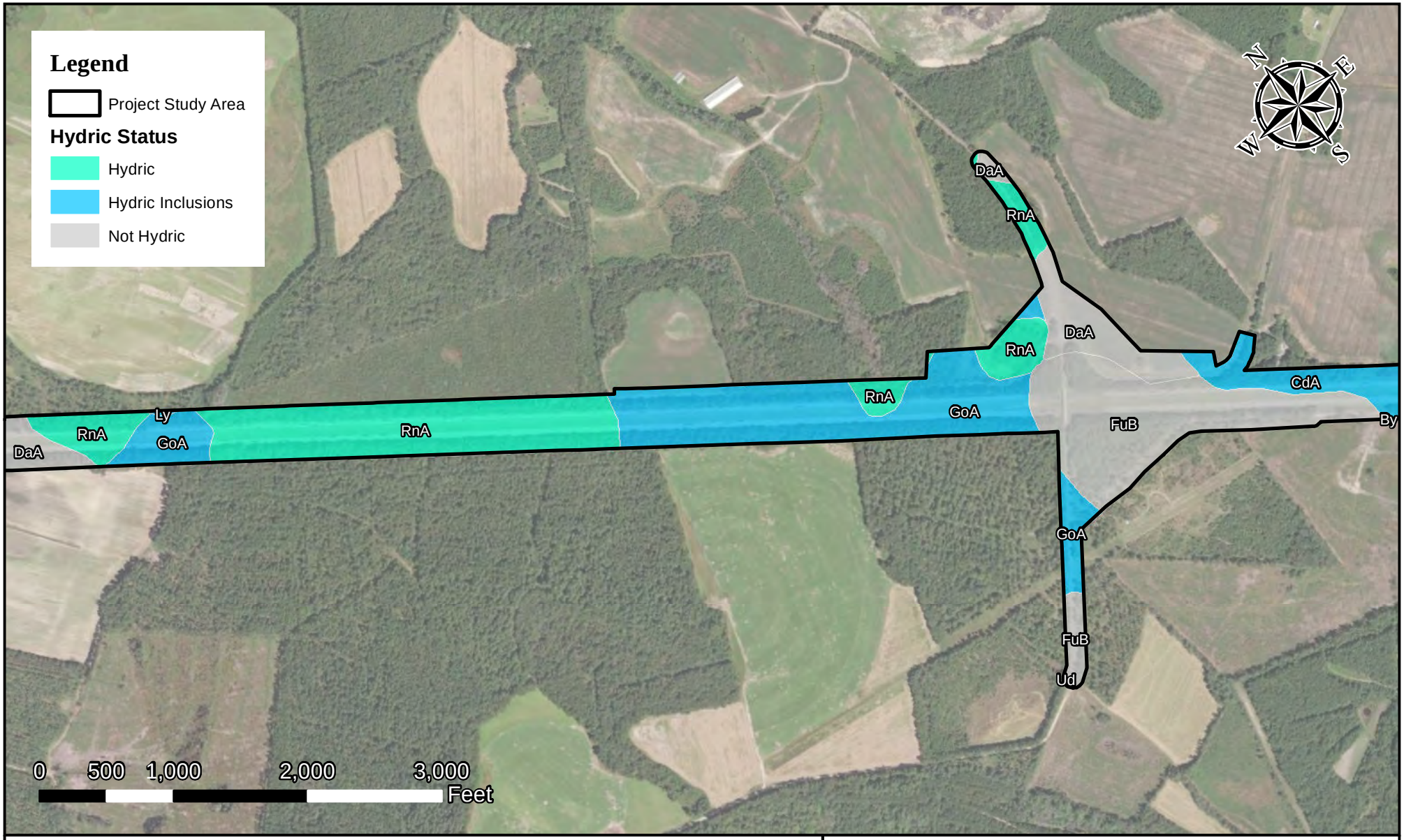

Figure 4H - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

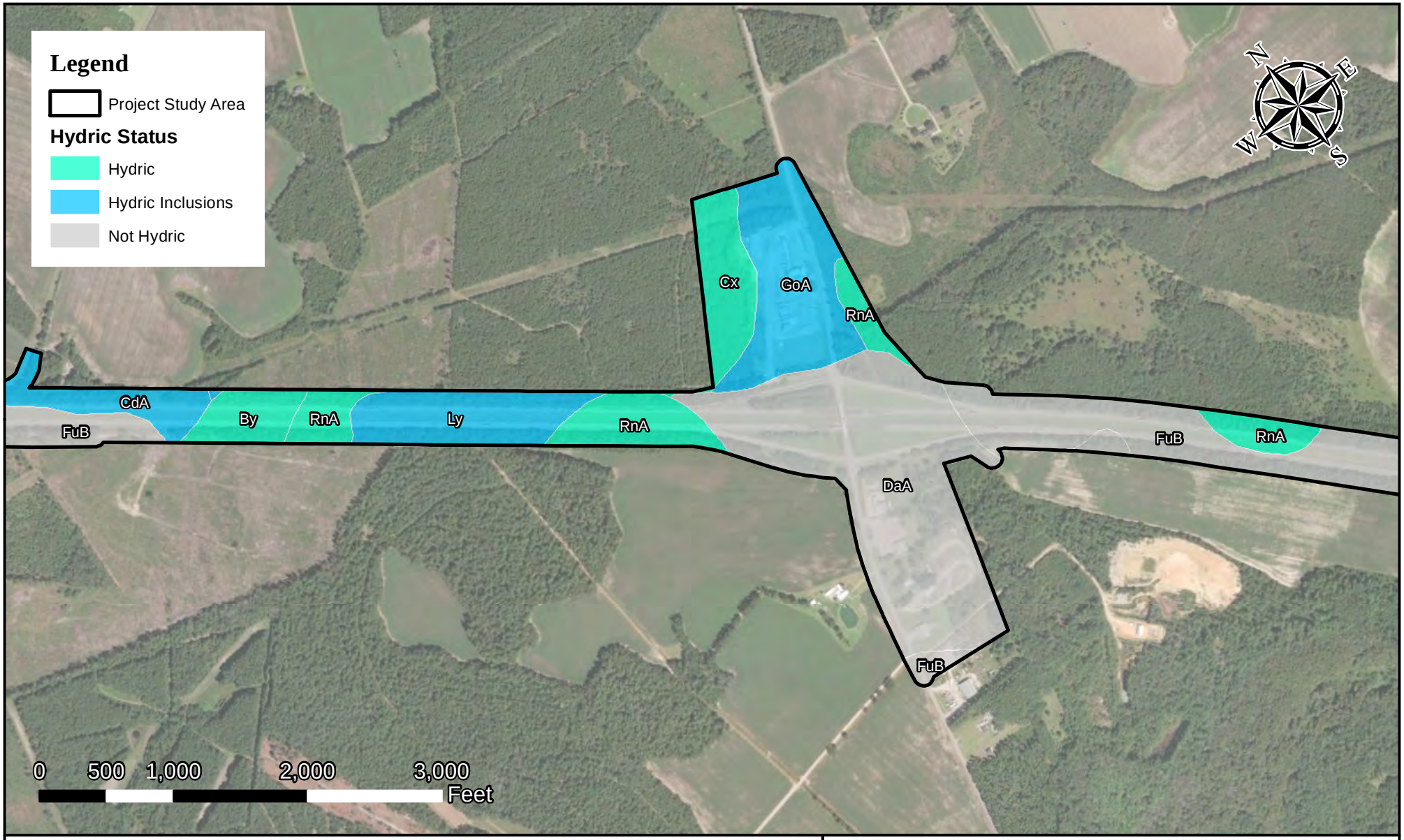

Figure 4I - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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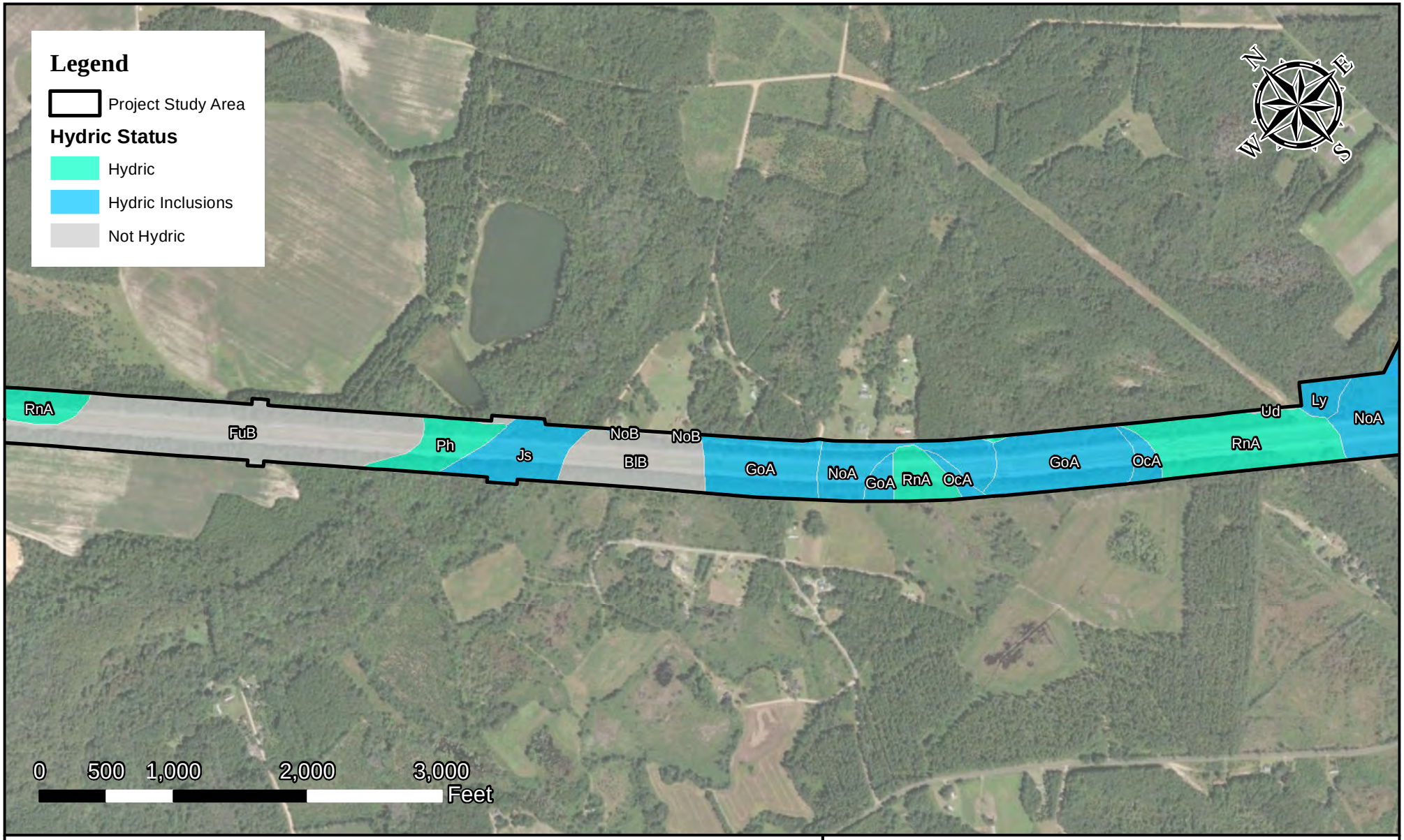

Figure 4J - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

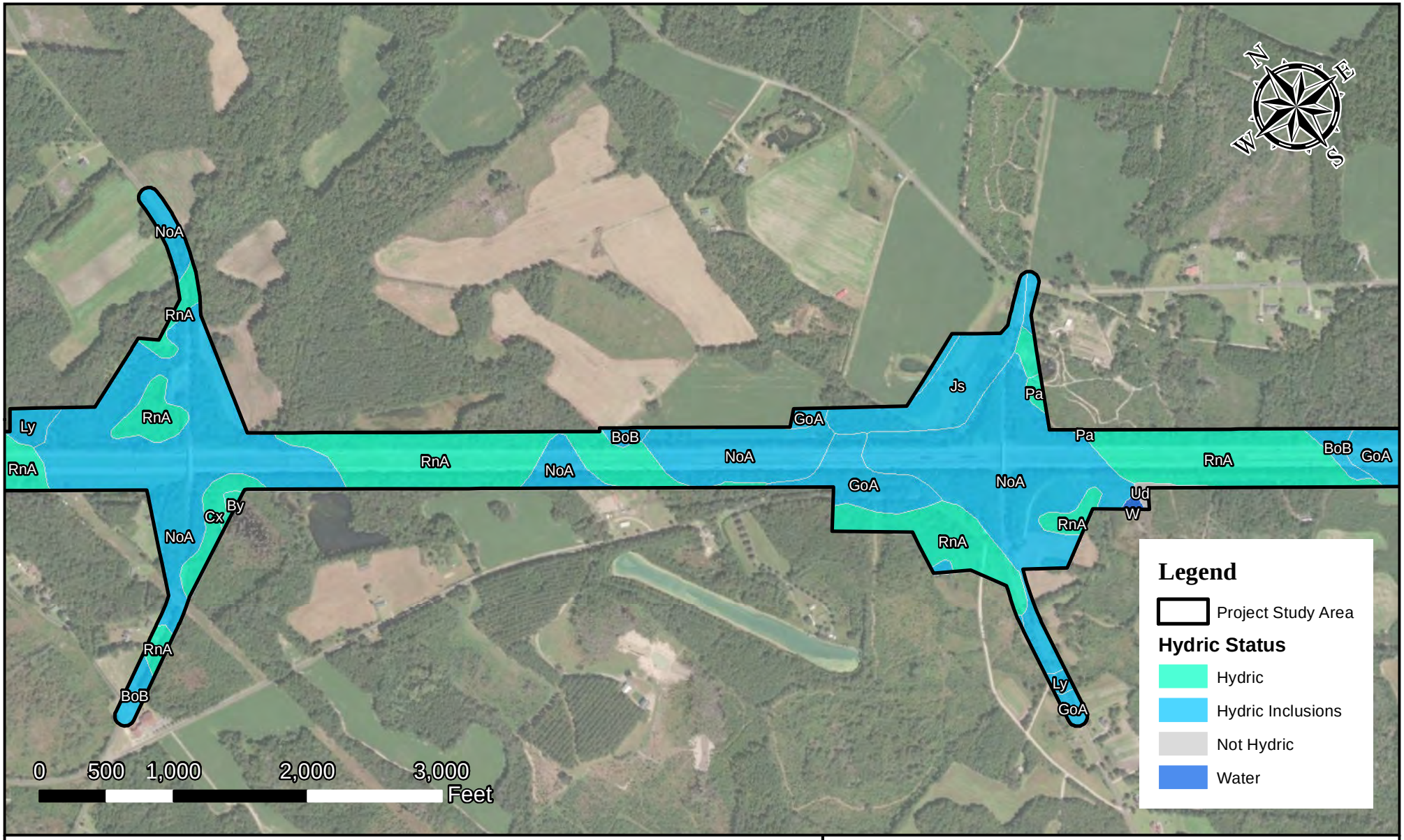

Figure 4K - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

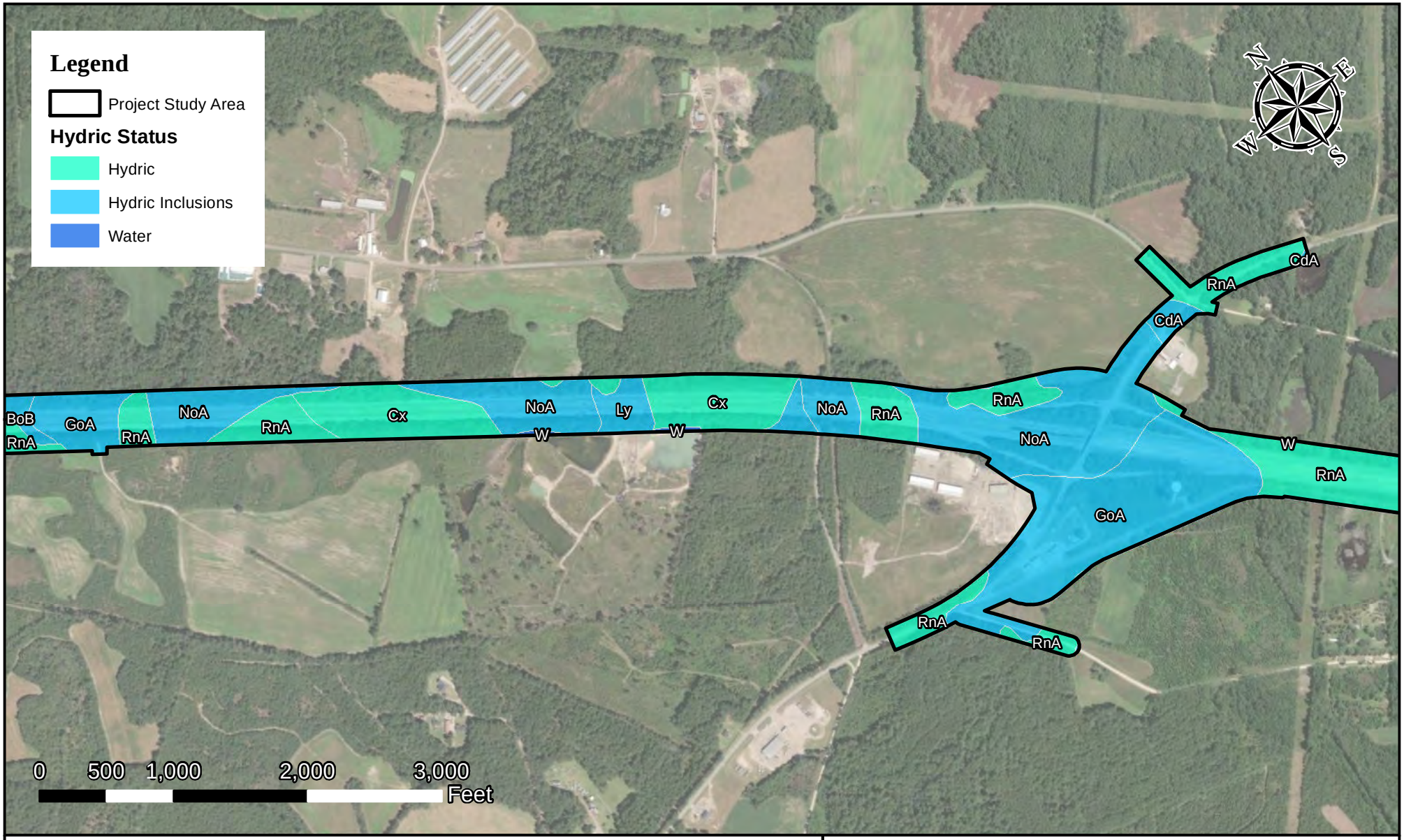

Figure 4L - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

Figure 4M- Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

Figure 4N - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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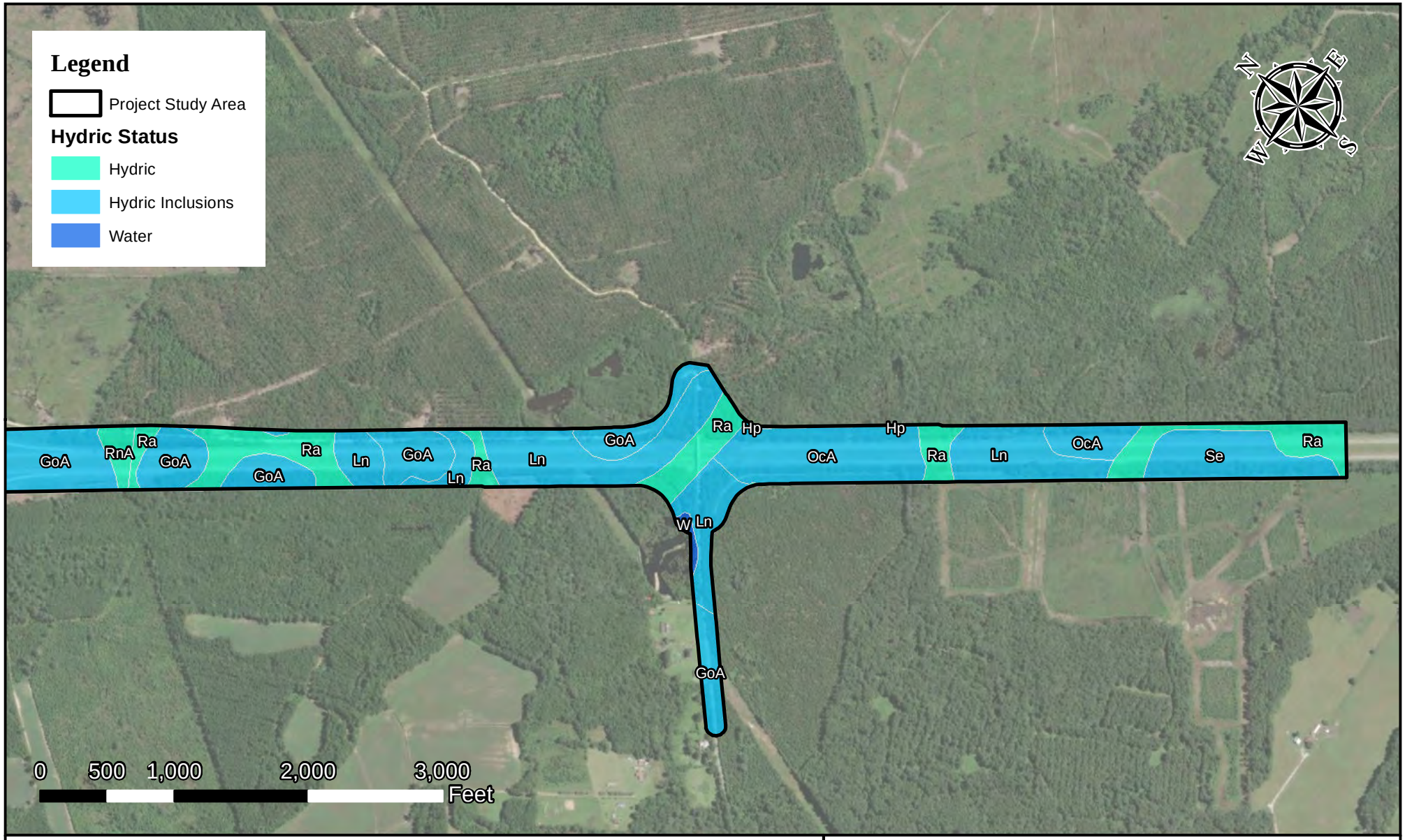

Figure 4O - Soils Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

Figure 5A - Aquatic Resources Map

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

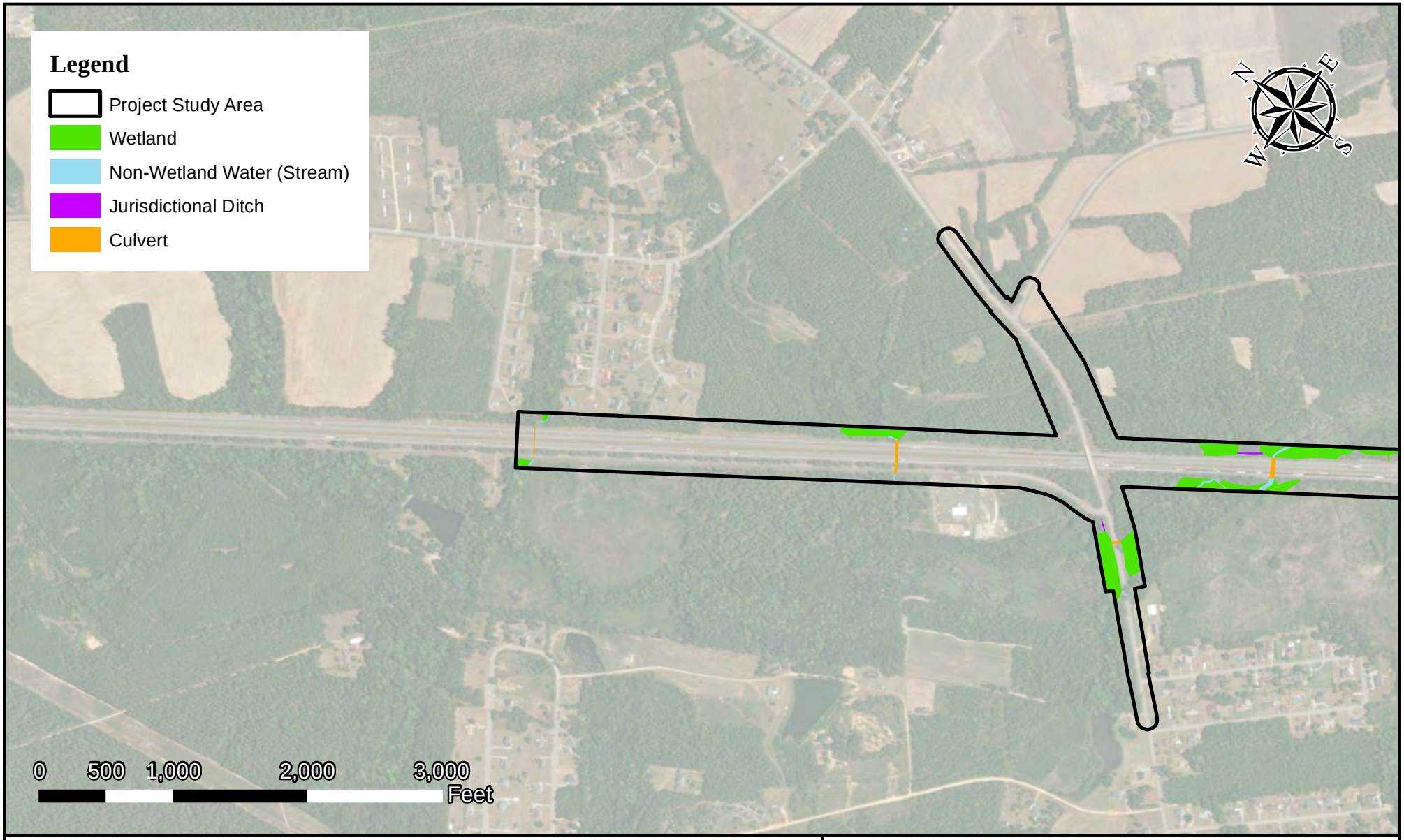

Figure 5B - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
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Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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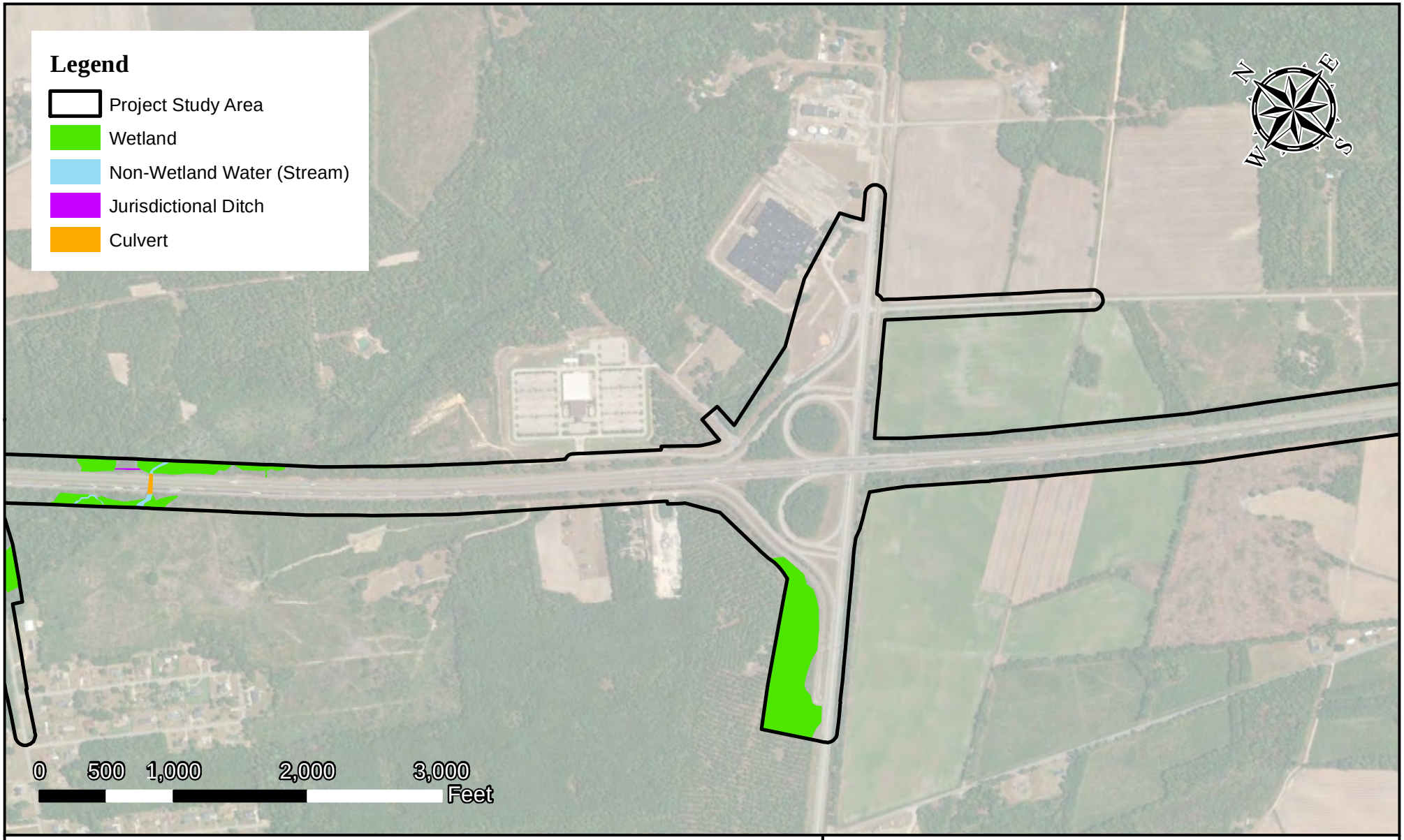

Figure 5C - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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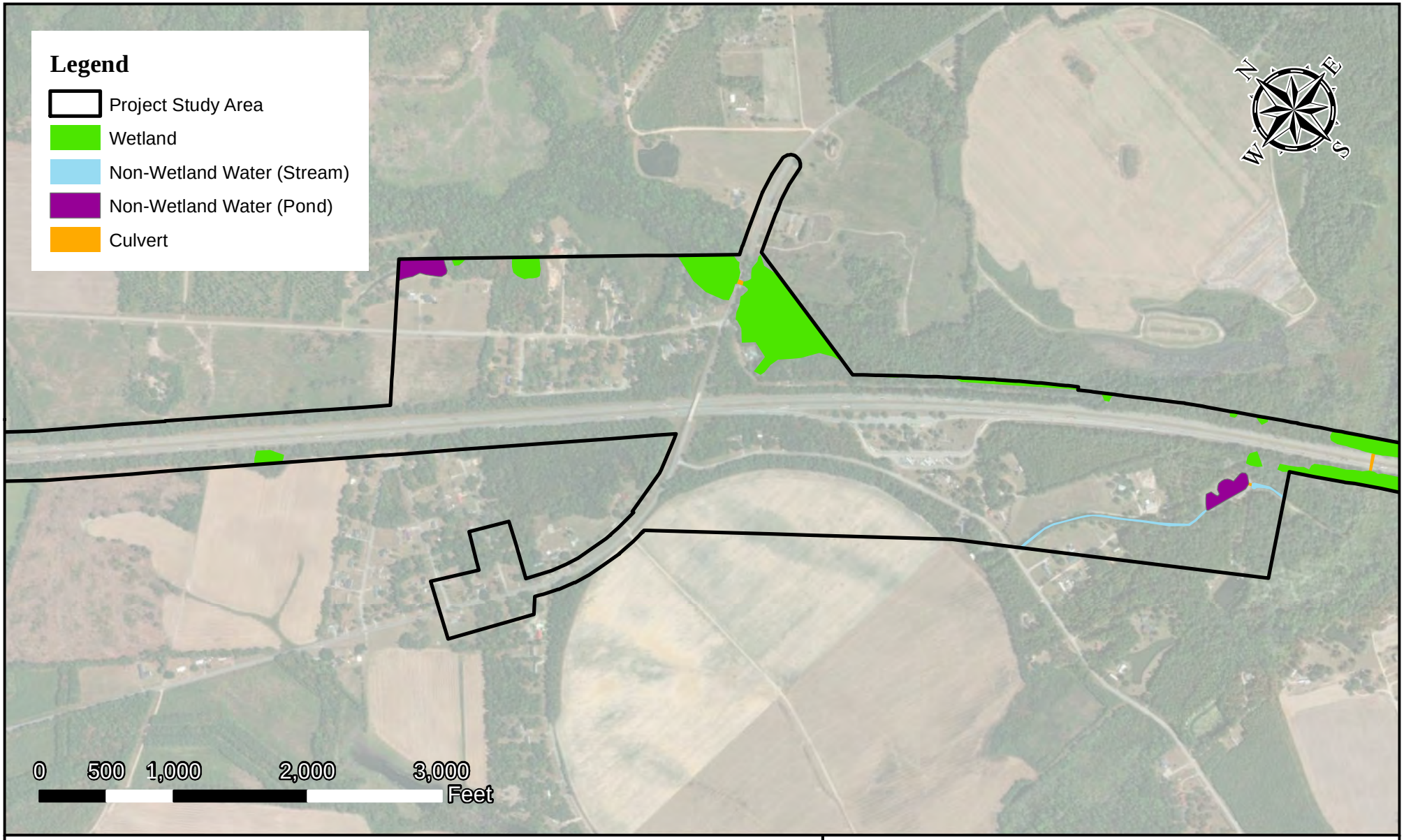

Figure 5D - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

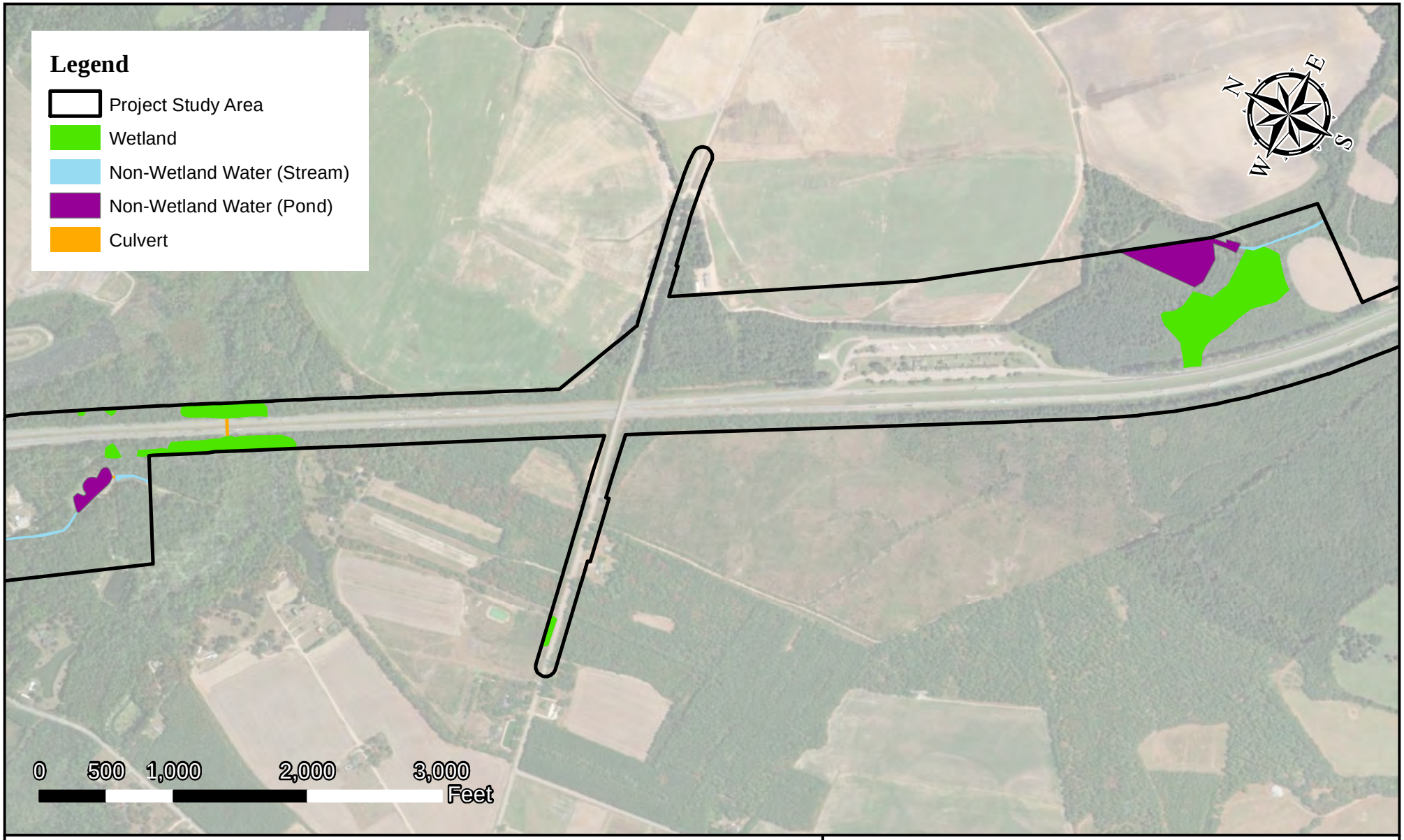

Figure 5E - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

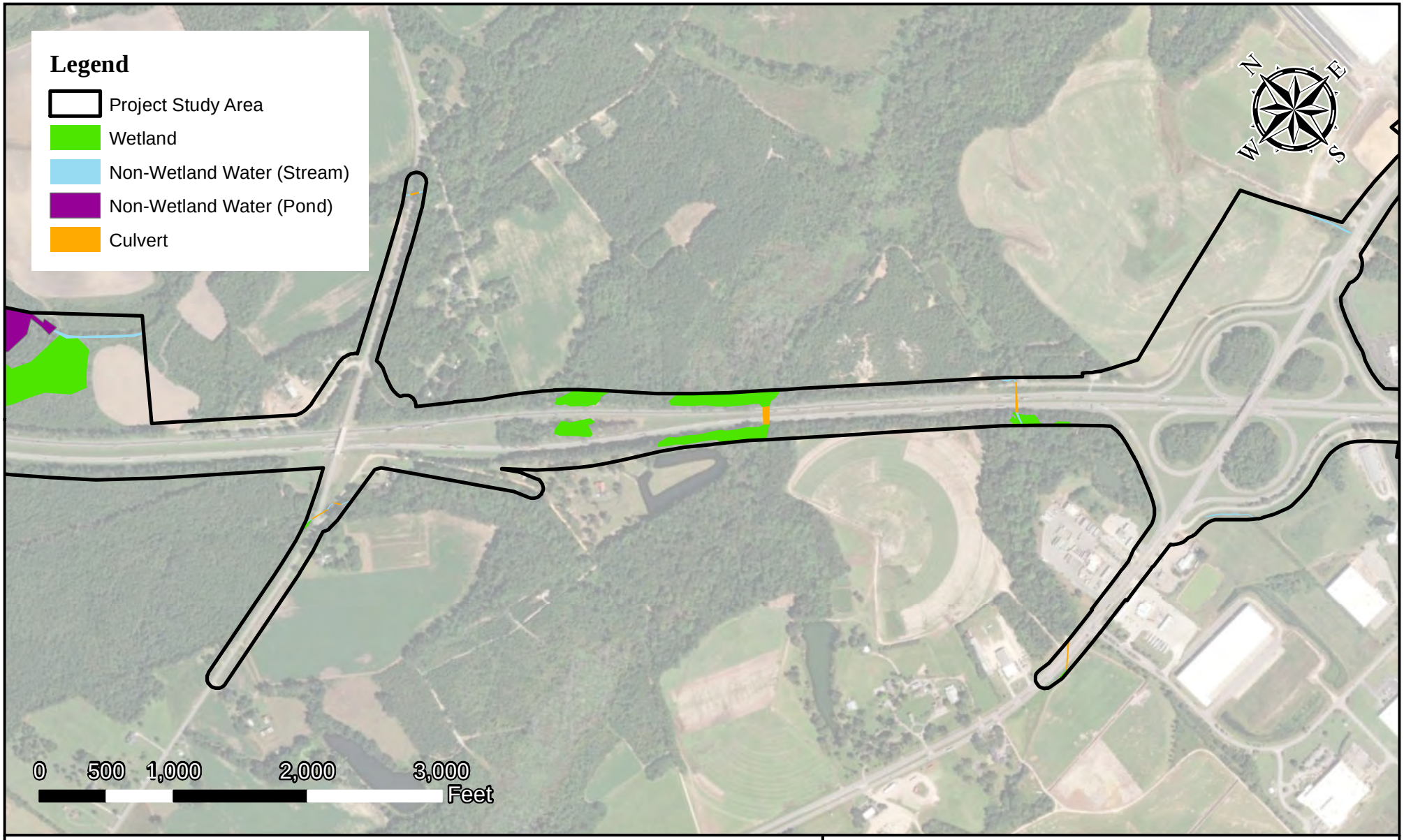

Figure 5F - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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South Carolina Department of Transportation

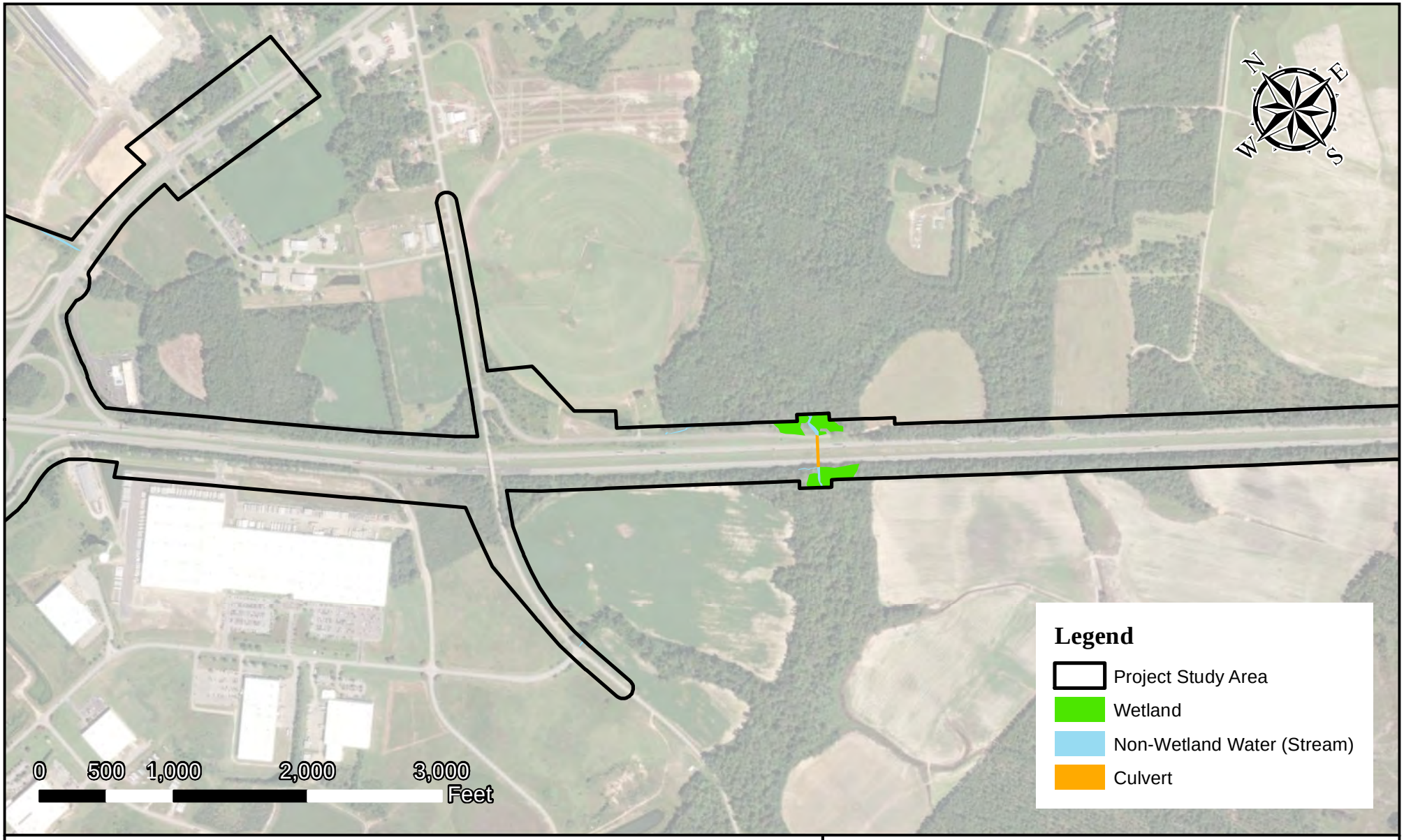

Figure 5G - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

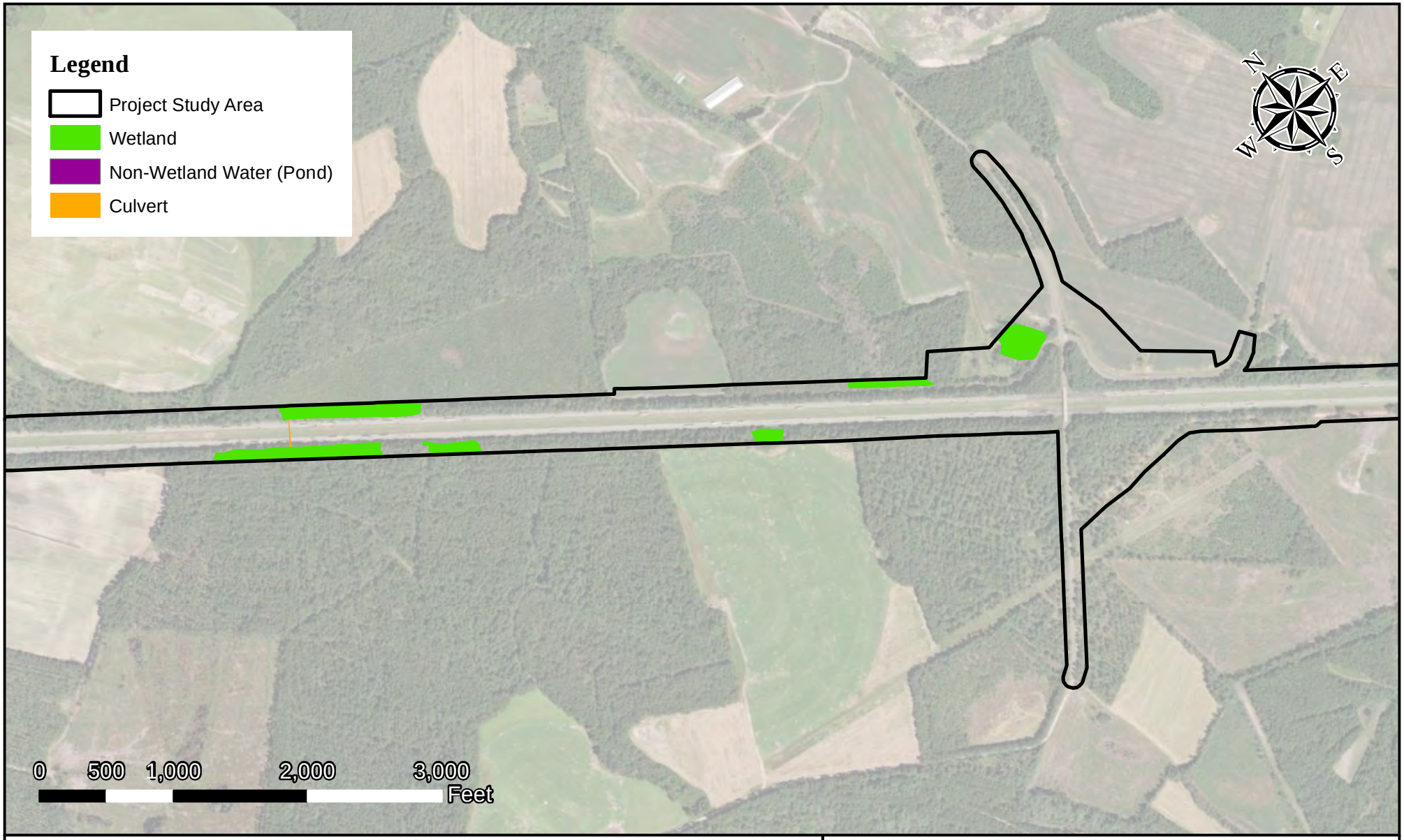

Figure 5H - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina
Date: September, 2025

South Carolina Department of Transportation

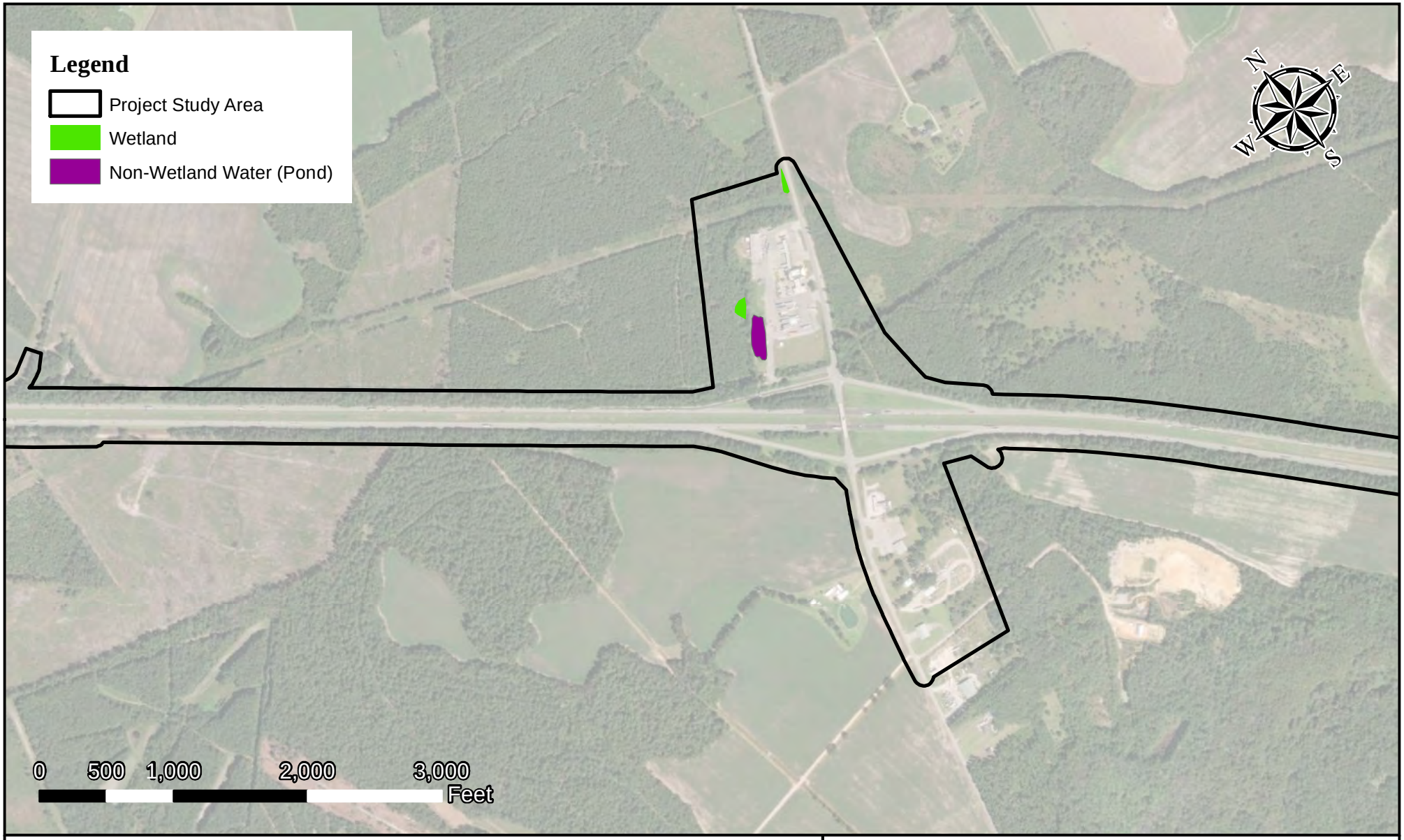

Figure 5I - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

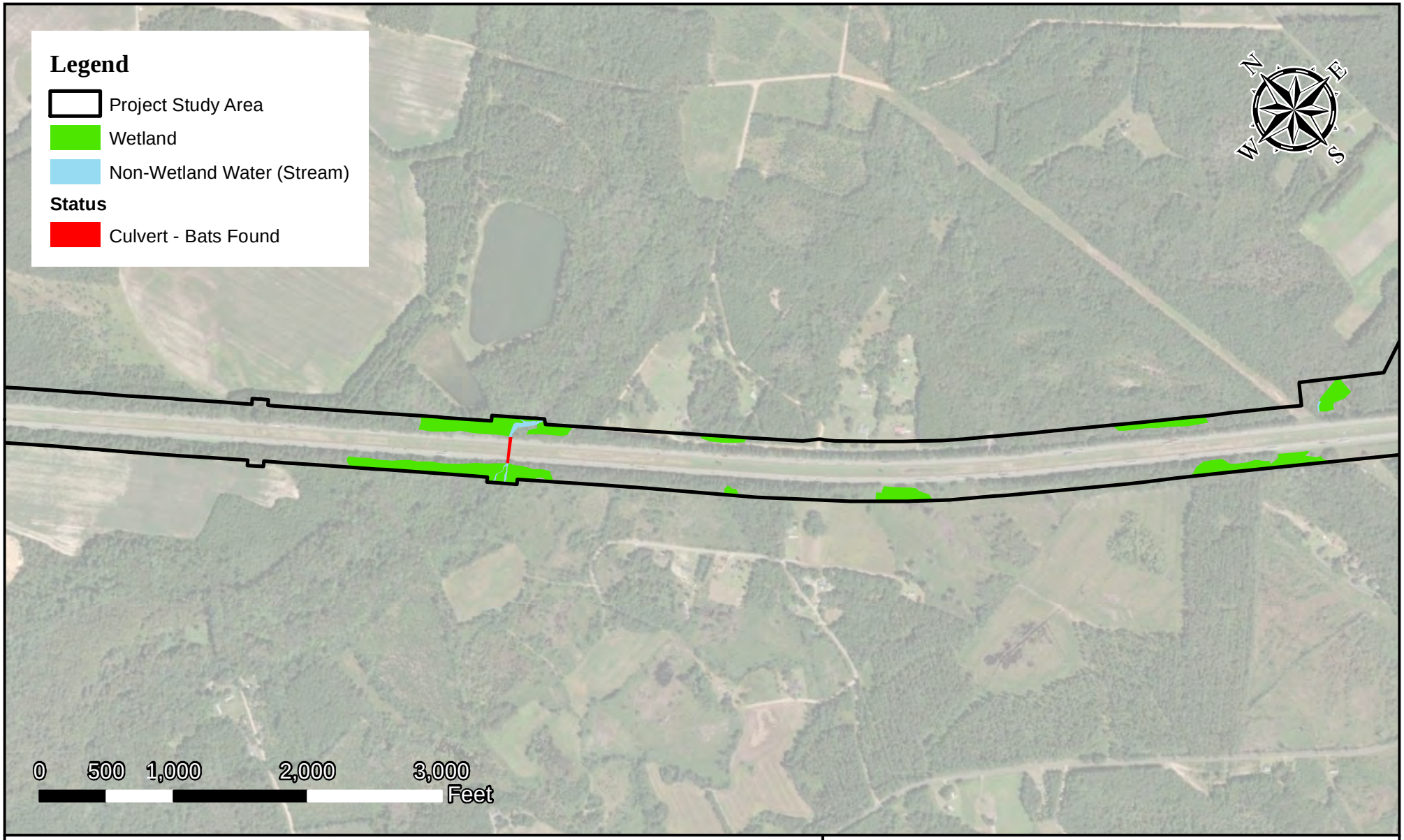

Figure 5J - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

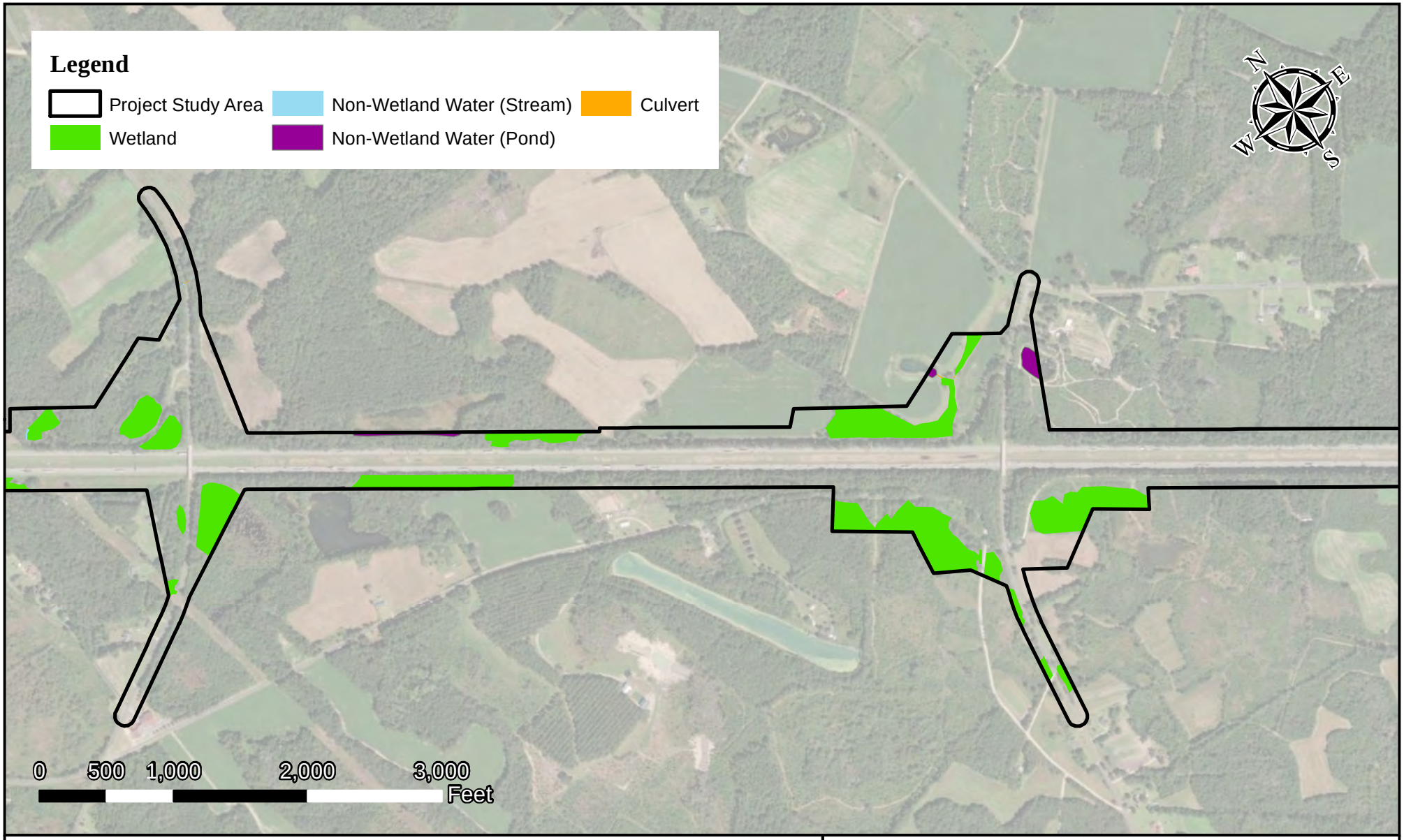

Figure 5K - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

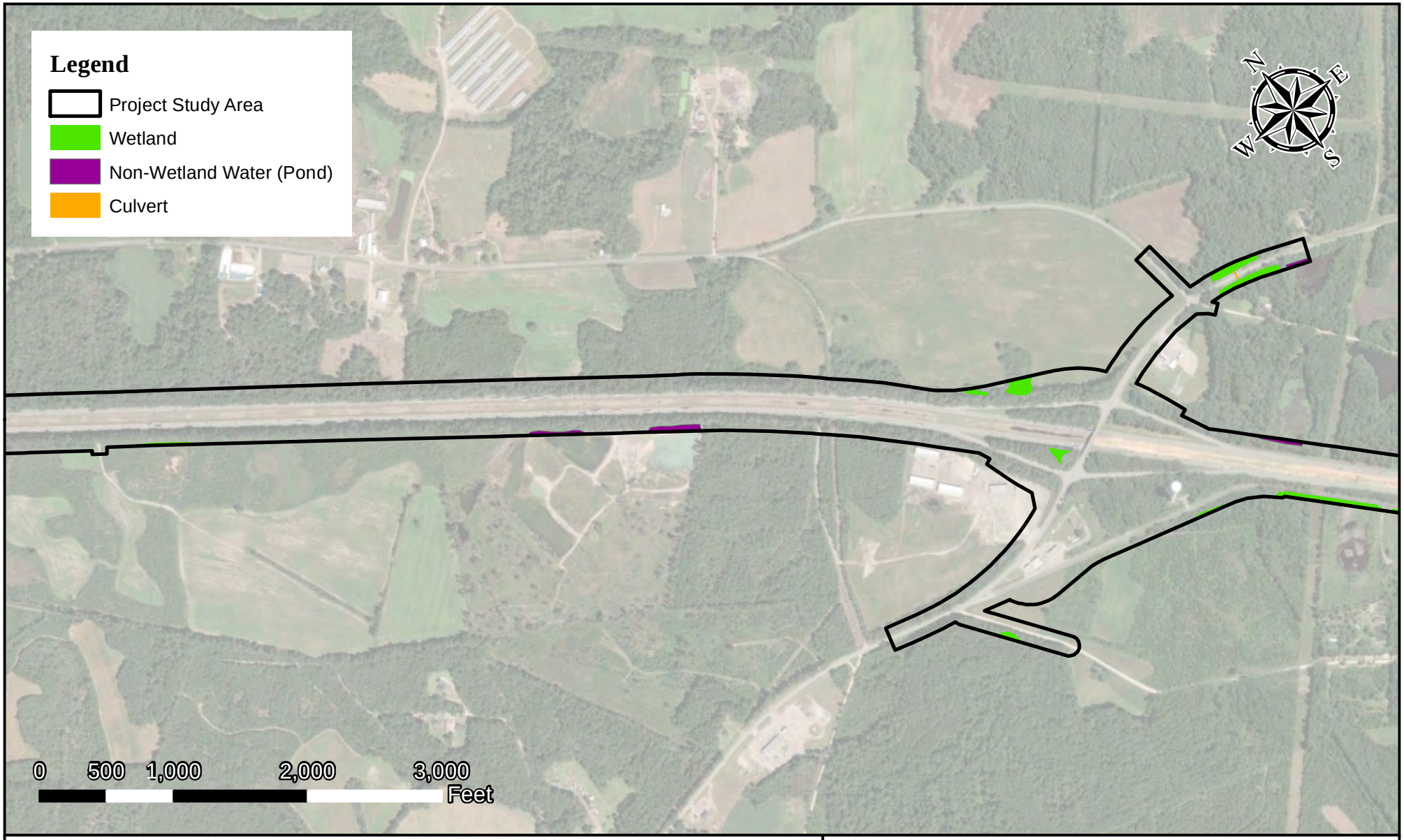

Figure 5L - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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South Carolina Department of Transportation

Figure 5M - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

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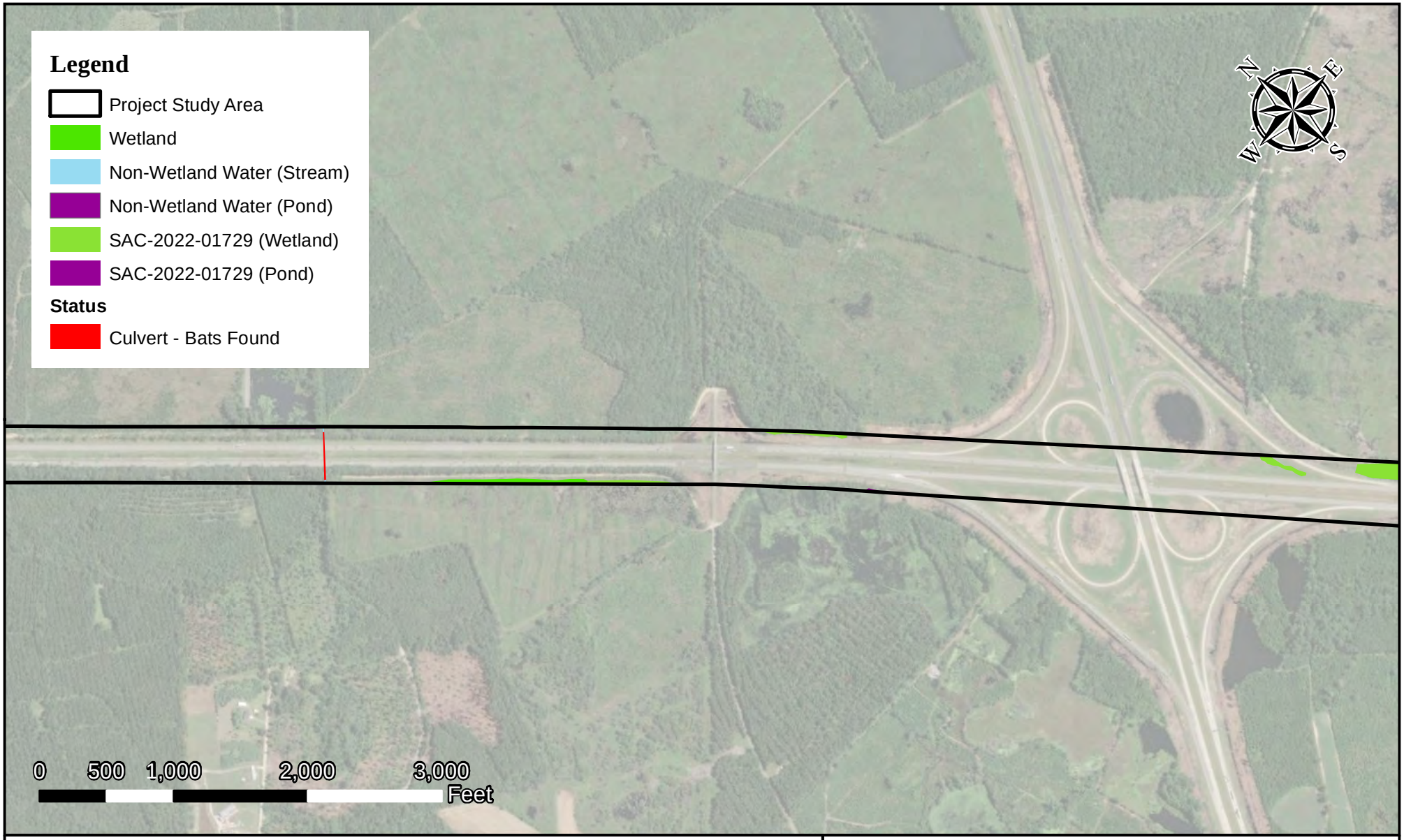


Figure 5N - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

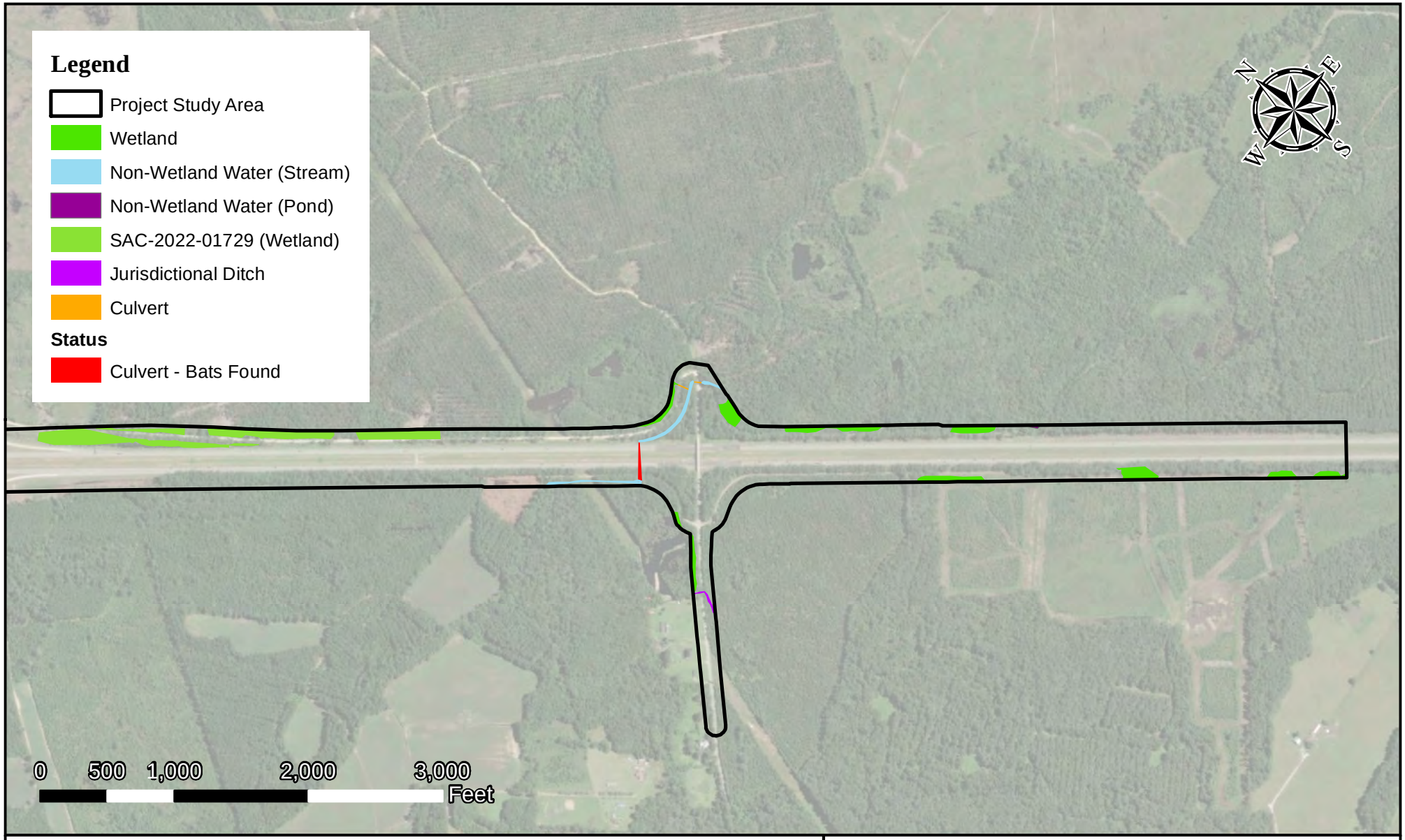


Figure 5O - Aquatic Resources

Author: Three Oaks Engineering
Project Name: I-26 Corridor Improvements MM 145 - 172
PIN: P041967 & P042454
Acreage: 1,958 acres
County: Orangeburg & Dorchester
State: South Carolina

Date: September, 2025

South Carolina Department of Transportation

APPENDIX B

PROTECTED SPECIES

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: 08/18/2025 16:50:18 UTC
Project Code: 2025-0137140
Project Name: I-26 Corridor Improvements MM 145-172

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

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:

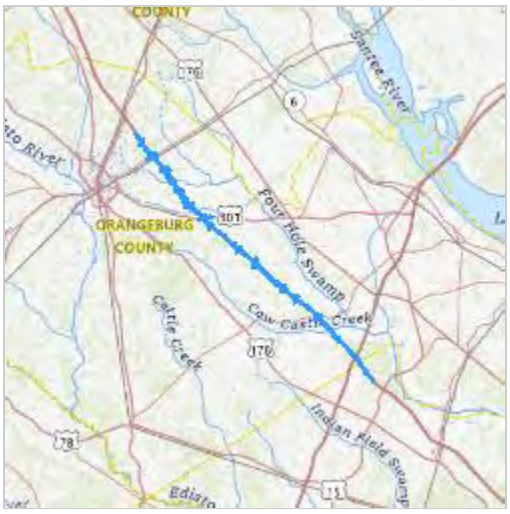
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407-7558
(843) 727-4707

PROJECT SUMMARY

Project Code: 2025-0137140
Project Name: I-26 Corridor Improvements MM 145-172
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Widening I-26 in Orangeburg and Dorchester Counties from MM 145 - 172 and improvements to interchanges.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.41893905,-80.6749348674596,14z



Counties: Dorchester and Orangeburg counties, South Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 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/UGVTWFW7INARRIH74B7N7BM3XA/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/UGVTWFW7INARRIH74B7N7BM3XA/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

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/UGVTWFW7INARRIH74B7N7BM3XA/documents/generated/9753.pdf	Endangered
Pondberry *Lindera melissifolia* 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/UGVTWFW7INARRIH74B7N7BM3XA/documents/generated/9753.pdf	Endangered

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.

---

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 (■)

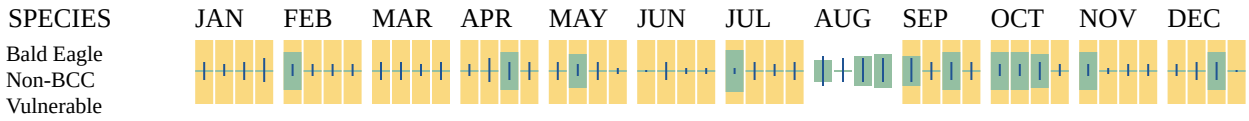
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

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.

■ probability of presence ■ breeding season | survey effort – no data



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).

---

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
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

NAME	BREEDING SEASON
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
Coastal (waynes) Black-throated Green Warbler *Setophaga virens waynei* 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/11879	Breeds May 1 to Aug 15
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
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
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

NAME	BREEDING SEASON
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
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
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
Ruddy Turnstone *Arenaria interpres morinella* 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/10633	Breeds elsewhere
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
Semipalmated Sandpiper *Calidris 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/9603	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

NAME	BREEDING SEASON
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.

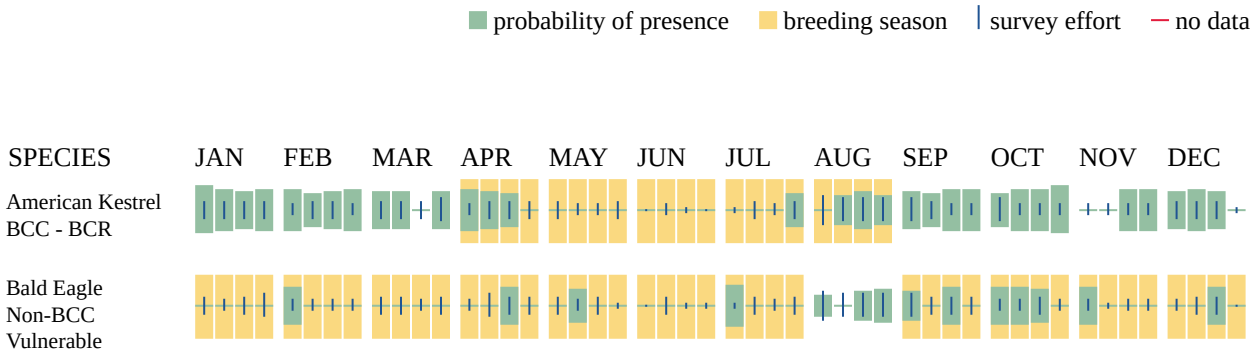
Probability of Presence (■)

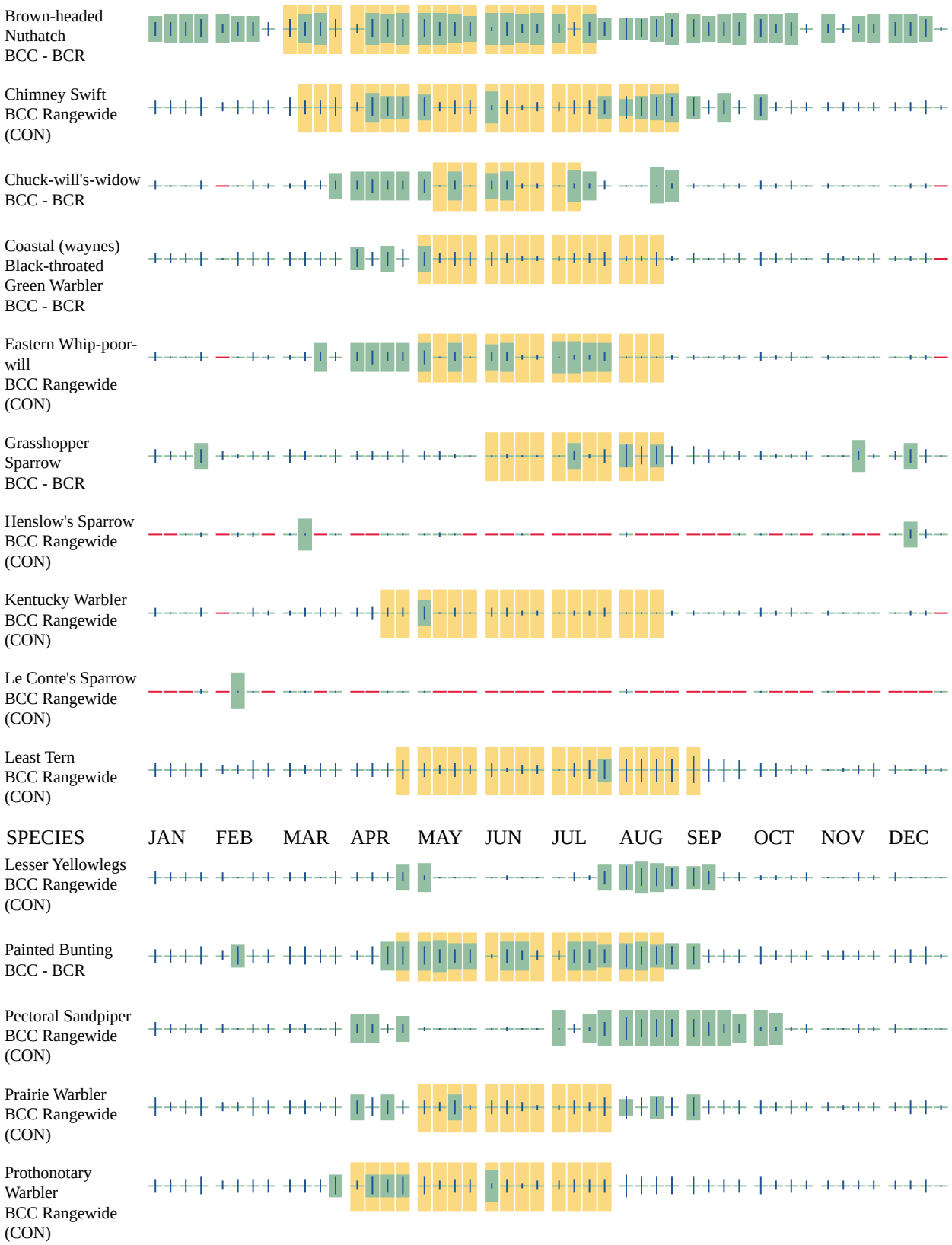
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

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.




Brown-headed Nuthatch BCC - BCR
Chimney Swift BCC Rangewide (CON)
Chuck-will's-widow BCC - BCR
Coastal (waynes) Black-throated Green Warbler BCC - BCR
Eastern Whip-poor-will BCC Rangewide (CON)
Grasshopper Sparrow BCC - BCR
Henslow's Sparrow BCC Rangewide (CON)
Kentucky Warbler BCC Rangewide (CON)
Le Conte's Sparrow BCC Rangewide (CON)
Least Tern BCC Rangewide (CON)
SPECIES
JAN
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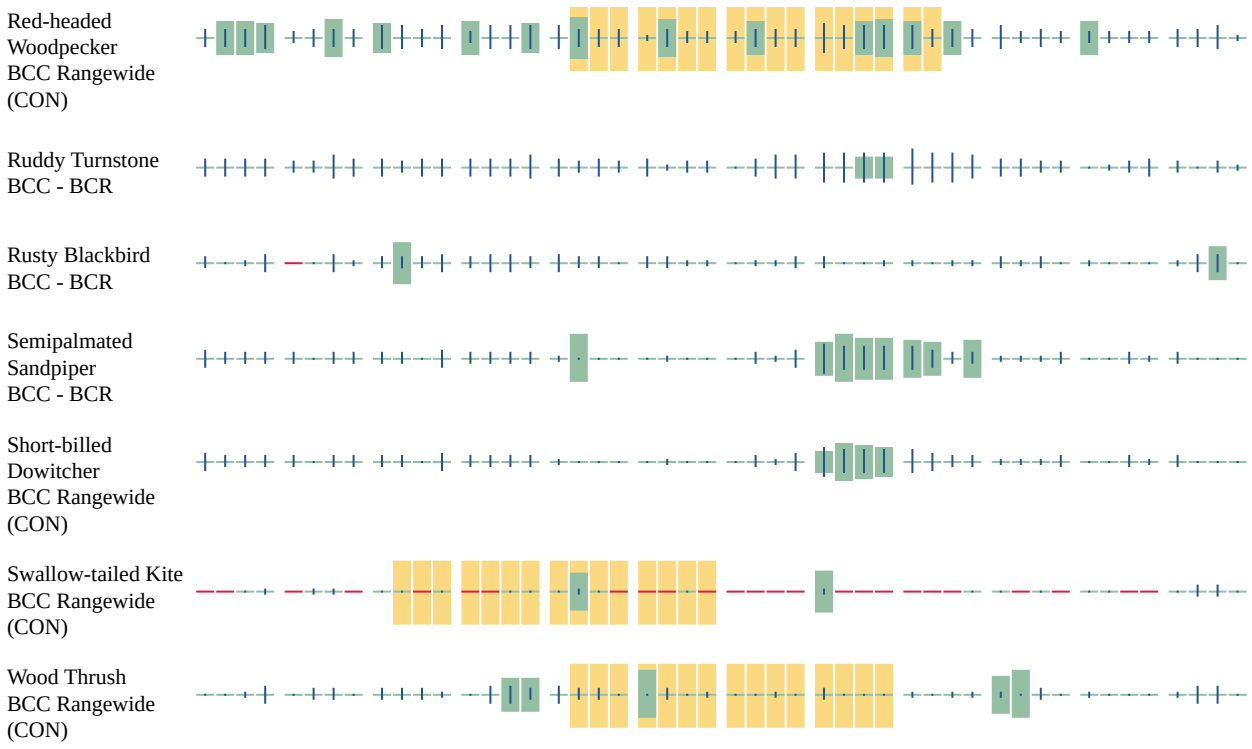
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Lesser Yellowlegs BCC Rangewide (CON)
Painted Bunting BCC - BCR
Pectoral Sandpiper BCC Rangewide (CON)
Prairie Warbler BCC Rangewide (CON)
Prothonotary Warbler BCC Rangewide (CON)



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

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Zachary Biltoft
Address: 1022 State Street
City: Cayce
State: SC
Zip: 29033
Email zach.biltoft@threeoaksengineering.com
Phone: 8648149327

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

State of South Carolina
Department of Natural Resources

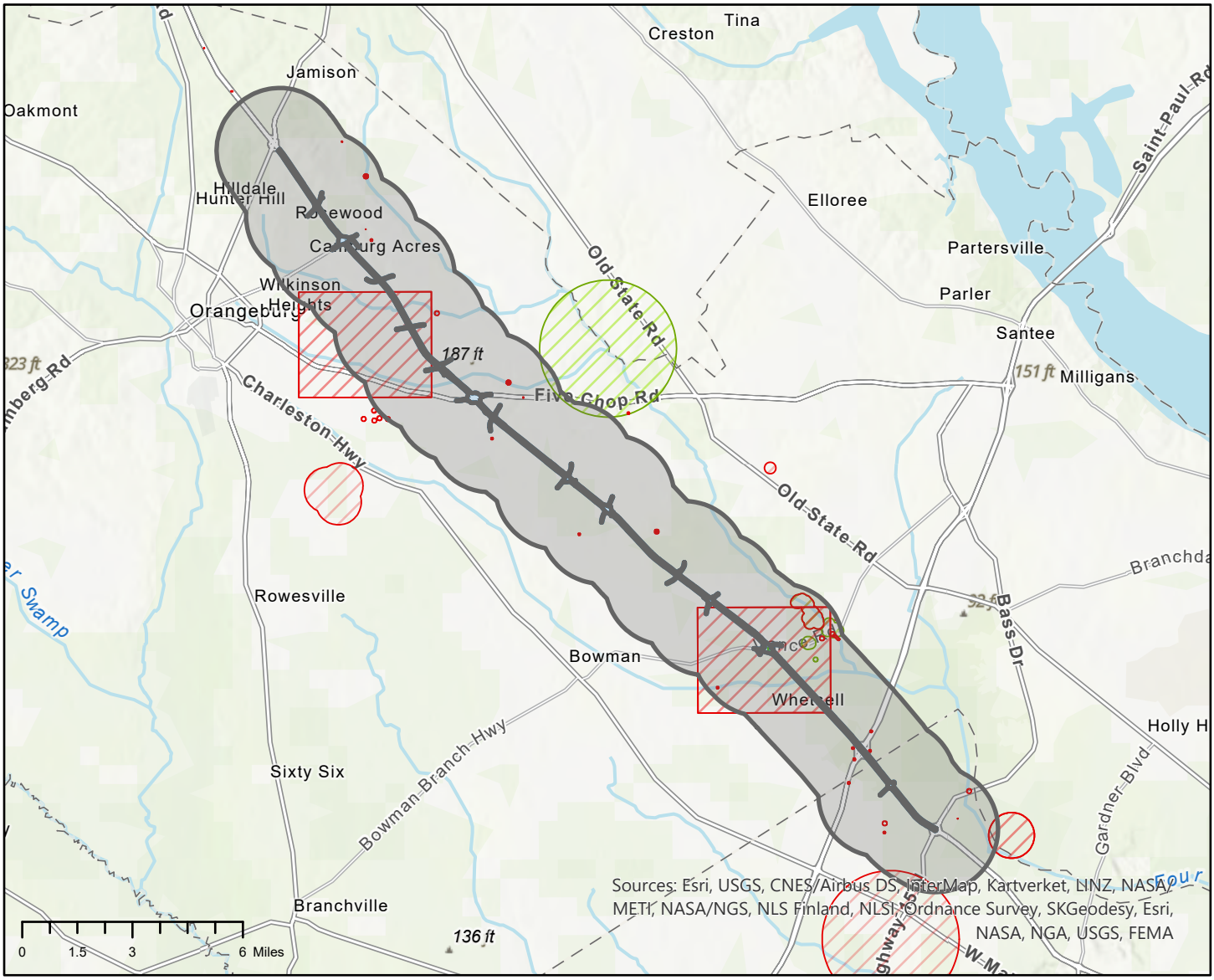
Thomas S. Mullikin, PhD, JD, *Director*
James W. Dillman, *Deputy Director, Wildlife and Freshwater Fisheries*

PO Box 167
Columbia, SC 29202
(803) 734-1396
speciesreview@dnr.sc.gov

Requested on Monday, August 25, 2025 by *Three Oaks Engineering*.

Re: Request for Threatened and Endangered Species Consultation
Three Oaks Engineering - I-26 Corridor Improvements MM 145-172 - Road - Dorchester County - Orangeburg County, South Carolina

The South Carolina Department of Natural Resources (SCDNR) has received your request for threatened and endangered species consultation of the above named project in Dorchester County - Orangeburg County, South Carolina. The following map depicts the project area and a 2 mile buffer surrounding:



State of South Carolina
Department of Natural Resources

Thomas S. Mullikin, PhD, JD, *Director*
James W. Dillman, *Deputy Director, Wildlife and Freshwater Fisheries*

This report includes the following items:
A - A report for species which intersect the project area
B - A report for species which intersect the buffer around the project area
C - A list of best management practices relevant to species near to or within the project area
D - A list of best management practices relevant to the project type
E - A list of state & federally listed species within the county of the project area
F - Other important information on conservation status, listed species, and how to submit observations to the program.

Please be advised:

The contents of this report, including all tables, maps, recommendations, and various other text, are produced as a direct result of the information a user provides at the time of submission. The SCDNR assumes that all information submitted by the user represents the project scope as proposed, and recommends that additional reports be requested should the scope deviate from how the project was initially represented to the SCDNR.

The technical comments outlined in this report are submitted to speak to the general impacts of the activities as described through inquiry by parties outside the South Carolina Department of Natural Resources. These technical comments are submitted as guidance to be considered and are not submitted as final agency comments that might be related to any unspecified local, state or federal permit, certification or license applications that may be needed by any applicant or their contractors, consultants or agents presently under review or not yet made available for public review. In accordance with its policy 600.01, Comments on Projects Under Department Review, the South Carolina Department of Natural Resources, reserves the right to comment on any permit, certification or license application that may be published by any regulatory agency which may incorporate, directly or by reference, these technical comments.

Interested parties are to understand that SCDNR may provide a final agency position to regulatory agencies if any local, state or federal permit, certification or license applications may be needed by any applicant or their contractors, consultants or agents. For further information regarding comments and input from SCDNR on your project, please contact our Office of Environmental Programs by emailing environmental@dnr.sc.gov or by visiting www.dnr.sc.gov/environmental. Pursuant to Section 7 of the Endangered Species Act, requests for formal letters of concurrence with regards to federally listed species should be directed to the USFWS.

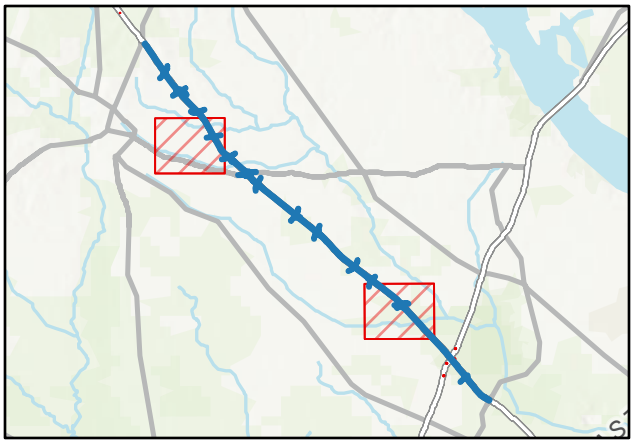
Should you have any questions or need more information, please do not hesitate to contact our office by email at speciesreview@dnr.sc.gov or by phone at 803-734-4080.

Sincerely,

Megan Levinson
Heritage Trust Program
SC Department of Natural Resources

A. Project Area - Species Report

There are 19 tracked species records found within the project foot print. The following table outlines occurrences found within the project footprint (if any), sorted by listing status and species name. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. You can find more information about global and state rank status definitions by visiting Natureserve's web page. Please note that certain sensitive species found on site may be listed in this table but are not represented on the map. Please contact speciesreview@dnr.sc.gov should you have further questions related to sensitive species found within the project area.

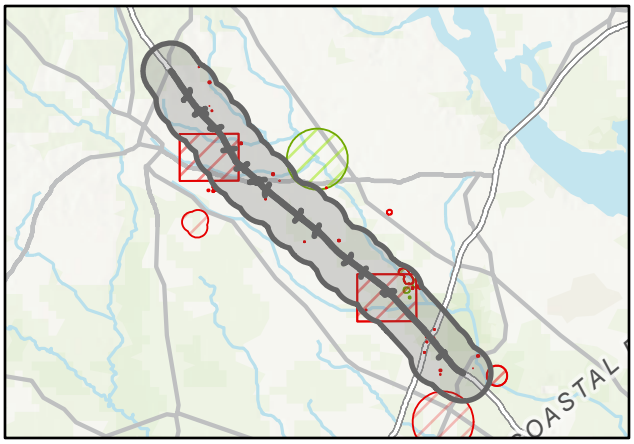


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	SWAP Priority	Last Obs. Date
Lasiurus cinereus	Hoary Bat	ARS	NA	G3G4	S2	1	2023-06-29
Myotis lucifugus	Little Brown Bat	ARS	NA	G3G4	S2	1	2023-07-11
Perimyotis subflavus	Tricolored Bat	LEP	NA	G3G4	S3	1	2021-12-09
Perimyotis subflavus	Tricolored Bat	LEP	NA	G3G4	S3	1	2022-02-09
Perimyotis subflavus	Tricolored Bat	LEP	NA	G3G4	S3	1	2023-01-31
Perimyotis subflavus	Tricolored Bat	LEP	NA	G3G4	S3	1	2023-07-11
Lanius ludovicianus	Loggerhead Shrike	MBTA	NA	G4	S3	1	1995
Lanius ludovicianus	Loggerhead Shrike	MBTA	NA	G4	S3	1	1991
Passerina ciris	Painted Bunting	MBTA	NA	G5	S3B	1	1991
Passerina ciris	Painted Bunting	MBTA	NA	G5	S3B	1	1995
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	2011-04-21
Anguilla rostrata	American Eel	NA	NA	G4	S2S3	1	2011-04-21
Etheostoma serrifer	Sawcheek Darter	NA	NA	G5	S4	3	2011-04-21
Myotis austroriparius	Southeastern Bat	NA	NA	G4	S3	1	2022-02-09
Procambarus hirsutus	Shaggy Crayfish	NA	NA	G4	S4	3	No Date
Procambarus troglodytes	Eastern Red Swamp Crayfish	NA	NA	G5	S3	0	No Date
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	NA	SE	G3G4	S2	1	2021-12-15
Quercus similis	Swamp Post Oak, Delta Oak	NA	NA	G4	S1	3	2004-08-20
Quercus similis	Swamp Post Oak, Delta Oak	NA	NA	G4	S1	3	2004-08-20

B. Buffer Area - Species Report (1 of 2)

The following table outlines rare, threatened or endangered species found within 2 miles of the project footprint, arranged in order of protection status and species name. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. You can find more information about global and state rank status definitions by visiting Natureserve's web page. Please note that certain sensitive species found within the buffer area may be listed in this table but are not represented on the map.

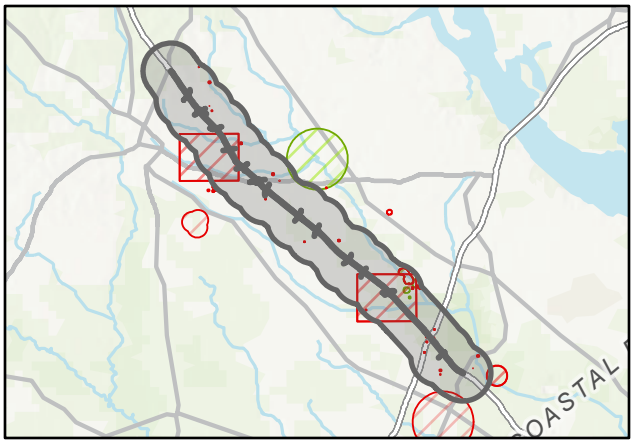


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	SWAP Priority	Last Obs. Date
Lasiurus cinereus	Hoary Bat	ARS	NA	G3G4	S2	1	2023-06-29
Myotis lucifugus	Little Brown Bat	ARS	NA	G3G4	S2	1	2023-07-11
Lithobates capito	Carolina Gopher Frog	ARS	SE	G2G3	S1	1	1956-02-12
Clemmys guttata	Spotted Turtle	ARS	ST	G5	S2	2	2021-11-10
Perimyotis subflavus	Tricolored Bat	LEP	NA	G3G4	S3	1	2023-07-11
Dryobates borealis	Red-cockaded Woodpecker	LT	SE	G3	S2	1	2023-08
Danaus plexippus	Monarch Butterfly	LTP	NA	G4	S4	1	2021-09
Lanius ludovicianus	Loggerhead Shrike	MBTA	NA	G4	S3	1	1995
Lanius ludovicianus	Loggerhead Shrike	MBTA	NA	G4	S3	1	1991
Passerina ciris	Painted Bunting	MBTA	NA	G5	S3B	1	1991
Passerina ciris	Painted Bunting	MBTA	NA	G5	S3B	1	1995
Alburnops chalybaeus	Ironcolor Shiner	NA	NA	G4	S3	3	2020-07-30
Ameiurus platycephalus	Flat Bullhead	NA	NA	G4	S3S4	3	1978-07-10
Ameiurus platycephalus	Flat Bullhead	NA	NA	G4	S3S4	3	1978-07-10
Ameiurus platycephalus	Flat Bullhead	NA	NA	G4	S3S4	3	1978-07-10
Anguilla rostrata	American Eel	NA	NA	G4	S2S3	1	2020-07-30
Anguilla rostrata	American Eel	NA	NA	G4	S2S3	1	2011-04-21
Callinina intertexta	Rotund Mysterysnail	NA	NA	G4	S2S3	0	1988-07-01
Crotalus horridus pop. 2	Timber Rattlesnake - Coastal	NA	NA	G4T4Q	S4	3	1976-03-13
Enneacanthus chaetodon	Blackbanded Sunfish	NA	NA	G3G4	S2S3	2	No Date
Enneacanthus obesus	Banded Sunfish	NA	NA	G5	S3	3	1977-06-27
Etheostoma serrifer	Sawcheek Darter	NA	NA	G5	S4	3	2020-07-30
Etheostoma serrifer	Sawcheek Darter	NA	NA	G5	S4	3	1978-07-10
Etheostoma serrifer	Sawcheek Darter	NA	NA	G5	S4	3	2011-04-21
Etheostoma serrifer	Sawcheek Darter	NA	NA	G5	S4	3	1978-07-10
Galba cubensis	Carib Fossaria	NA	NA	G5	S2S3	0	2007-08-02
Laevapex fuscus	Dusky Ancylid	NA	NA	G5	S5	0	1997-02-12
Lithobates heckscheri	River Frog	NA	NA	G5	S4	0	1976-03-13
Menetus dilatatus	Bugle Sprite	NA	NA	G5	S5	0	2007-08-02
Myotis austroriparius	Southeastern Bat	NA	NA	G4	S3	1	2021-12-09
Procambarus hirsutus	Shaggy Crayfish	NA	NA	G4	S4	3	1983-04-18
Procambarus hirsutus	Shaggy Crayfish	NA	NA	G4	S4	3	No Date
Pseudosuccinea columella	Mimic Lymnaea Snail	NA	NA	G5	S5	0	2007-08-02
Pteronotropis stonei	Lowland Shiner	NA	NA	G5	S3S4	3	1978-07-12
Asclepias perennis	Aquatic Milkweed	NA	NA	G5	S4	0	2021-09
Lilium pyrophilum	Sandhills Bog Lily	NA	NA	G2	S1	2	1957-07-19
Macbridea caroliniana	Carolina Birds-in-a-nest, Carolina	NA	NA	G3	S3	2	1957-07-19
Quercus similis	Swamp Post Oak, Delta Oak	NA	NA	G4	S1	3	2004-08-20
Quercus similis	Swamp Post Oak, Delta Oak	NA	NA	G4	S1	3	2004-08-20
Quercus similis	Swamp Post Oak, Delta Oak	NA	NA	G4	S1	3	2004-08-20

B. Buffer Area - Species Report (2 of 2)

The following table outlines rare, threatened or endangered species found within 2 miles of the project footprint, arranged in order of protection status and species name. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. You can find more information about global and state rank status definitions by visiting Natureserve's web page. Please note that certain sensitive species found within the buffer area may be listed in this table but are not represented on the map.

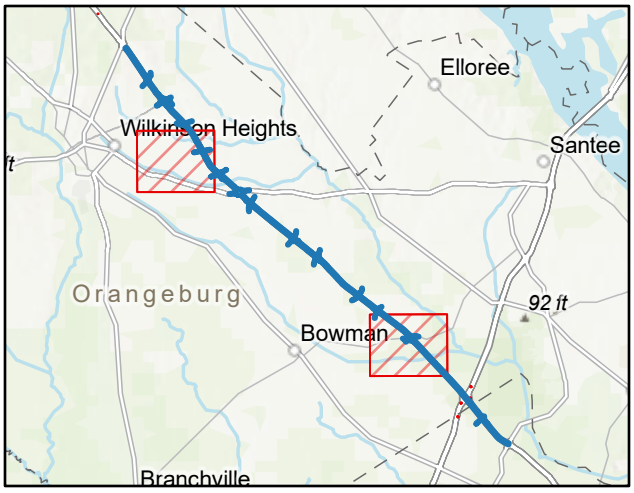


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	SWAP Priority	Last Obs. Date
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	2011-04-21
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	1978-07-17
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	1978-07-12
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	1978-07-10
Acantharchus pomotis	Mud Sunfish	NA	NA	G4G5	S4	0	1977-06-27
Heterandria formosa	Least Killifish	NA	NA	G5	S3S4	0	No Date
Noturus gyrinus	Tadpole Madtom	NA	NA	G5	S4	0	2007-06-21
Noturus gyrinus	Tadpole Madtom	NA	NA	G5	S4	0	1978-07-12
Noturus gyrinus	Tadpole Madtom	NA	NA	G5	S4	0	1978-07-10
Procambarus troglodytes	Eastern Red Swamp Crayfish	NA	NA	G5	S3	0	No Date
Procambarus troglodytes	Eastern Red Swamp Crayfish	NA	NA	G5	S3	0	No Date
Procambarus troglodytes	Eastern Red Swamp Crayfish	NA	NA	G5	S3	0	No Date
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	NA	SE	G3G4	S2	1	2021-12-09
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	NA	SE	G3G4	S2	1	2003-07-25
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	NA	SE	G3G4	S2	1	2003-06-22

C. Species Best Management Practices (1 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to species of concern which may be found on or near to the project area. Please contact speciesreview@dnr.sc.gov should you have further questions with regard to survey methods, consultation, or other species-related concerns.



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One or more occurrences of state listed species are found within or near to your project area. Please note that take of these species are prohibited under S.C. Code of Laws §50-15-30.

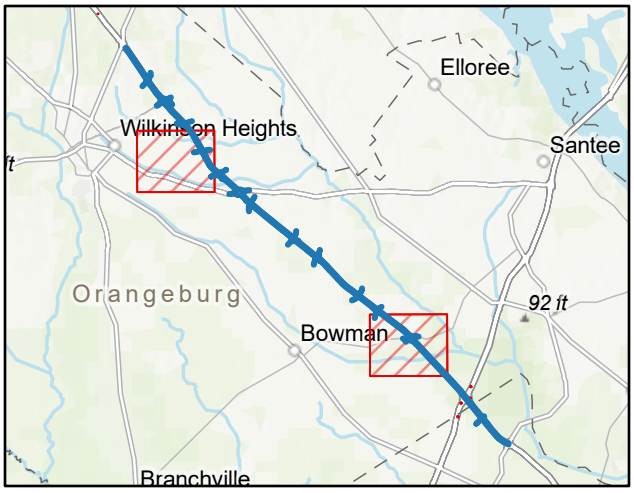
Regarding spotted turtle (1 of 3): The spotted turtle (Clemmys guttata) is a state-threatened species and a federal At-Risk species (ARS). Spotted turtles may be allowed to be relocated into areas of suitable habitat, management, and conservation status; however, any plans for relocation should be submitted for review to SCDNR with a detailed description and images of the current and future habitat and proposed work plan and methodologies as it pertains to a relocation project. It should be noted that not all habitats are suitable for relocation. • Avoid any construction in areas within or adjacent to aquatic resources (wetlands, streams, etc.) from January 15th through May 31st. • Prior to any construction activity, install silt fencing from November 15th through January 15th. Silt fencing should include 45-degree arms to direct spotted turtles to the uplands adjacent to the waterbody and away from the construction site. The 45-degree arms should be placed at a minimum of 100 ft from the waterbody and no more than 300 ft from the waterbody. Additionally, silt fence arms should extend at least 50-ft and extend in each direction so that the ends of each 45-degree angle to the fence meet to form a triangle. Silt fencing should remain in place throughout the duration of the proposed construction activities. • Prior to construction, monitor the silt fencing to ensure it is effectively working properly on a monthly basis. This should effectively exclude the species from the project area prior to construction activities. Once construction activities begin, the silt fence should be monitored weekly for the integrity of the fencing and the presence of spotted turtles or other herpetofauna or small wildlife species. If spotted turtles are encountered, the SCDNR state herpetologist should be notified immediately by calling 854-202-0472.

Regarding spotted turtle (2 of 3): Should the applicant not be able to install the silt fencing in accordance with the proposed window, it will require the applicant to install the exclusion fencing when the species is more active and has the potential to trap individuals with the area of proposed construction. Therefore, the SCDNR recommends checking the perimeter of the fencing twice daily for 14 days prior to ground disturbance and/or clearing in areas adjacent to and near these wetlands to ensure that spotted turtles are not trapped within the proposed project footprint. Any turtles found within the construction area during this initial monitoring period and the construction monitoring period described below must be relocated. The relocation plan must be submitted to SCDNR for review prior to the installation of the silt fencing and the proper permits acquired from the SCDNR Herpetologist for the movement of a state protected species. Please contact the State Herpetologist by calling 854-202-0472.

Regarding spotted turtle (3 of 3): For areas where construction will occur in wetlands, the SCDNR recommends the following to prevent the take of this state protected species: • Surveys for the presence of spotted turtle in wetlands to be impacted should occur from February 15th – April 15th. The best window for visually identifying spotted turtles as well as successfully trapping is February to early May. Visual surveys are usually most effective February to April and trapping, usually March to May. All of this depends on water levels in the surveyed wetland habitat. If dry or extremely low water levels, neither method will be effective or appropriate. Spotted turtles utilize wetland habitat during certain times of the year, but during periods of drought or low water levels, spotted turtles will aestivate in the surrounding forests adjacent to wetlands. The SCDNR recommends one of the methods detailed in the Spotted Turtle Assessment Protocol developed by the Spotted Turtle Working Group be utilized. Following completion of surveys, the results should be submitted to SCDNR, and further coordination occur if spotted turtle are found to be present onsite.

C. Species Best Management Practices (2 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to species of concern which may be found on or near to the project area. Please contact speciesreview@dnr.sc.gov should you have further questions with regard to survey methods, consultation, or other species-related concerns.

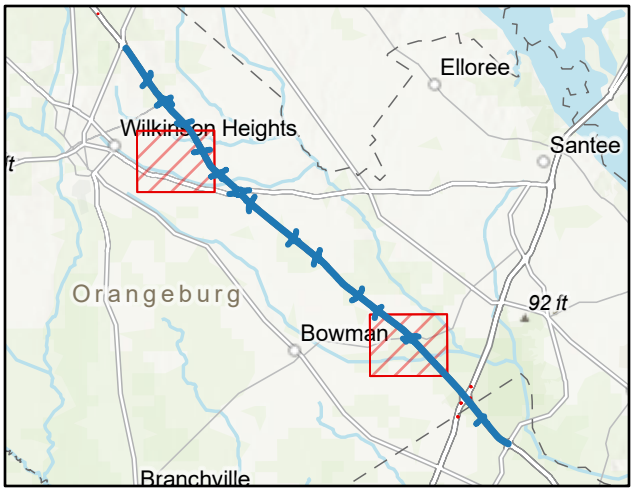


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

The gopher frog (Lithobates capito) is a state listed endangered and federal At-Risk species (ARS). The SCDNR recommends prior to habitat disturbance in the proposed work area, the areas of impact be completely surveyed by individuals qualified to identify this species and its habitat. Surveys can include either a call survey with the use of recording devices deployed from February 1st to March 31st or dip net surveys performed from March 1st through April 30th to identify gopher frog tadpoles. However, please note that identification of gopher frog tadpoles is extremely difficult and there are only a few individuals in the state that are likely qualified. Therefore, the SCDNR recommends that a call survey be performed. Surveys must be completed when water is present in the wetlands and should be performed by a biologist with gopher frog survey experience. Pursuant to S.C. Code of Laws §50-15-70 and State Regulation 123-151.1(A), It is unlawful for any person to take, possess, transport, import, export, process, sell, offer for sale, ship, or receive for shipment any gopher frog without a permit from the SCDNR.Gopher frogs may be allowed to be relocated into areas of suitable habitat, management, and conservation status; however, any plans for relocation should be submitted for review to SCDNR with a detailed description and images of the current and future habitat and proposed work plan and methodologies as it pertains to a relocation project.
Red-cockaded woodpecker, a federally threatened and state endangered species, is known to occur within or near your project area. Surveys of mature pine trees (50-years or older) to rule out RCW within the project footprint is advised, regardless of habitat condition, and use of heavy machinery is prohibited within 200-feet of a cavity tree during the breeding season (April through July). If RCW are found within the project area, please consult with the U.S. Fish and Wildlife Service before proceeding with any construction activities. Please note the take of this state listed species is prohibited under S.C. Code of Laws §50-15-30.
Three listed species of bats have been known to occur in the coastal plain ecoregions of South Carolina, including the state-endangered Rafinesque's big-eared bat (Corynorhinus rafinesquii); the federally endangered northern long-eared bat (NLEB) (Myotis septentrionalis); and the federally at-risk & proposed endangered tricolored bat (Perimyotis subflavus). Please note that take of a state endangered species is prohibited under S.C. Code of Laws §50-15-30. Prior to any land-clearing activities in the proposed project area, the SCDNR recommends a threatened and endangered species assessment be conducted to identify suitable habitat and provided to SCDNR for review.
Regarding Rafinesque's big-eared bat (1 of 2): Suitable habitat for Rafinesque's big-eared bat is defined as swamp forests, hardwood or mixed mature bottomlands, maritime forests and black gum (Nyssa sylvatica) and water tupelo (Nyssa aquatic) stands (Cochran 1999, Hofmann et al. 1999, Lance et al. 2001, Gooding and Langford 2004, Trousdale and Beckett 2005).If suitable habitat exists within the project, the SCDNR recommends assumption of presence of Rafinesque's big-eared bat within areas of forested wetlands and to further protect these areas, surround them with a 1000-foot buffers and avoid tree clearing from May 1st to July 31st to minimize disturbance and destruction of habitat that may be used by females during gestation or maternal care for pups. All other tree clearing outside of the forested wetlands and its associated buffer may occur in areas that are not wetlands or other aquatic resources in non-Rafinesque's big-eared bat maternity roosting habitat anytime. Where wetlands occur that are not Rafinesque's big-eared bat habitat, but they are spotted turtle habitat, tree clearing should only occur August to December to prevent impacts to spotted turtles during reproduction. However, if wetlands are dry January to June, they may be cleared, but they must be completely dry (no surface water present).For future right-of-way management (if applicable), use heavy equipment and herbicide treatment for right-of-way vegetation management in wetlands only during the months of July to November. If wetlands are completely dry (no surface water present), heavy equipment may be used January to June, but the wetlands must be completely dry.

C. Species Best Management Practices (3 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to species of concern which may be found on or near to the project area. Please contact speciesreview@dnr.sc.gov should you have further questions with regard to survey methods, consultation, or other species-related concerns.

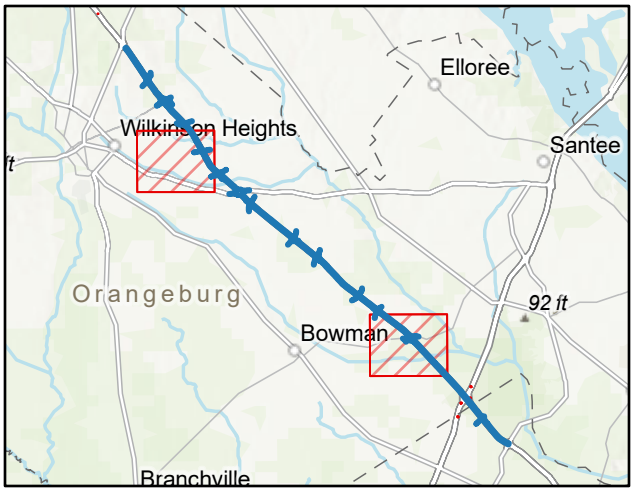


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Please note that the northern long-eared bat is now listed as federally endangered as of March 31, 2023, making the take of the NLEB prohibited under Section 9 of the Endangered Species Act. Therefore, please consult with the USFWS regarding impacts to this species.
Please note that tricolored bat was proposed for listing by the U.S. Fish and Wildlife Service on September 13, 2022. Therefore, due to the conservation concerns surrounding this species, the SCDNR strongly suggests acoustic surveys be conducted by a qualified individual during the summer months to assess the use of the area to be cleared by tricolored bats. Should the species occur in the proposed area slated for clearing, coordination should occur with SCDNR and USFWS regarding avoidance and minimization measures. Tricolored bat utilize caves, rock crevices, tree foliage and basal cavities, Spanish moss and man-made structures, such as houses, barns and culverts, as maternity roosts during the summer months and they will use more than one roost location. If this species are found on-site, please contact the U.S. Fish & Wildlife Service and SCDNR. The SCDNR recommends the assumption of presence of the the species and abide by a clearing moratorium from May 1st to July 31st if suitable habitat for the species is likely or are explicitly identified within the project footprint.
In the interest of preserving plant diversity, the South Carolina Plant Conservation Alliance performs native plant rescues in order to protect and preserve our diversity of native plants. If you are interested in assisting with this important endeavor please contact the SCDNR Botanist at botany@dnr.sc.gov before any development occurs onsite. There may be plants of interest on the project site that the Alliance would like to preserve.
Species in the above table with SWAP priorities of High, Highest or Moderate are designated as having conservation priority under the South Carolina State Wildlife Action Plan (SWAP). SWAP species are those species of greatest conservation need not traditionally covered under any federal funded programs. Species are listed in the SWAP because they are rare or designated as at-risk due to knowledge deficiencies; species common in South Carolina but listed rare or declining elsewhere; or species that serve as indicators of detrimental environmental conditions. SCDNR recommends that appropriate measures should be taken to minimize or avoid impacts to the aforementioned species of concern.

D. Project Best Management Practices (1 of 2)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact our Office of Environmental Programs at environmental@dnr.sc.gov should you have further questions with regard to best management practices related to this project area.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Our records indicate one or more parcels within your project area may be associated with a conservation easement. We recommend you inquire with the appropriate County to receive a copy of the recorded deed and plat before moving forward with any alterations to the project site.

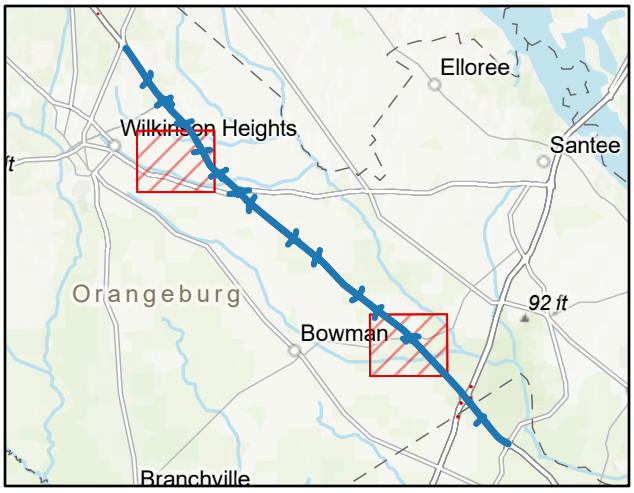
• All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas/wetlands/water.• Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
• Upon project completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap or other erosion control methods as appropriate.
• The project must be in compliance with any applicable floodplain, stormwater, land disturbance, shoreline management guidance or riparian buffer ordinances.
• Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (e.g. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
• Materials used for erosion control (e.g., hay bales or straw mulch) will be certified as weed free by the supplier.
• Inspecting and ensuring the maintenance of temporary erosion control measures at least:
  a. on a daily basis in areas of active construction or equipment operation;
  b. on a weekly basis in areas with no construction or equipment operation; and
  c. within 24 hours of each 0.5 inch of rainfall.
• Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts.
• Land disturbing activities must avoid encroachment into any wetland areas (outside the permitted impact area).Wetlands that are unavoidably impacted must be appropriately mitigated.
• Your project may require a Stormwater Permit from the SC Department of Health & Environmental Control, please visit <LINK>https://www.scdhec.gov/environment/water-quality/stormwater</LINK>

Your project area includes a FEMA special flood hazard area and may require a permit from the County National Floodplain Insurance Program Manager before impacts occur to aquatic resources and the associated floodplains on site. Please refer to https://www.dnr.sc.gov/water/flood/documents/nfipadmindirectory.pdf to find your appropriate contact information.

All tributary crossings for road projects must be made with appropriately sized bridges and/or culverts. Culverts must be sized and designed to prevent alteration of the natural stream morphology. SCDNR prefers that arched or bottomless culverts are utilized; however, if using boxed culverts or pipes, the bottom elevation of the culvert or pipe must be at or below the stream bed elevation to allow for natural migration of aquatic organisms up- and downstream. Where feasible, disturbed stream banks should be restored by using bioengineering techniques for stream bank stabilization. Stream banks at crossings must be restored after construction has been completed. Disturbed stream banks can be restored by planting woody vegetation and by using bioengineering techniques for stream bank stabilization.

D. Project Best Management Practices (2 of 2)

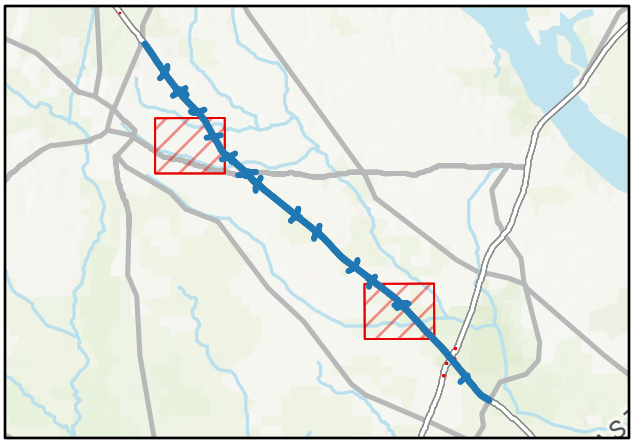
SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact our Office of Environmental Programs at environmental@dnr.sc.gov should you have further questions with regard to best management practices related to this project area.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

• Your project boundary lies within a coastal county in South Carolina which means you may also need a Coastal Zone Consistency Certification for your project from the SC Department of Health and Environmental Control. For more information, visit: https://www.scdhec.gov/environment/your-water-coast/ocean-coastal-management/beach-management/coastal-permits/coastal-zone • If your project could affect coastal waters, tidelands, beaches and beach/dune systems, you may also need a critical area permit from the SC Department of Health and Environmental Control. For more information, visit: https://www.scdhec.gov/environment/your-water-coast/ocean-coastal-management/beach-management/coastal-permits/critical-1

E. State & Federally Listed Species in Dorchester County - Orangeburg County



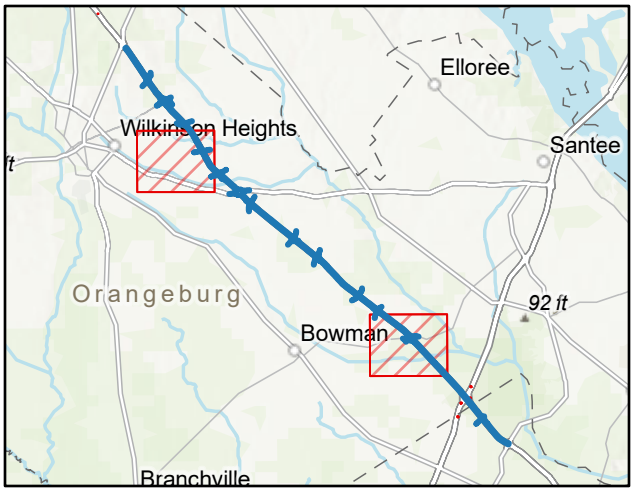
The South Carolina Department of Natural Resources' Heritage Trust Program organizes a database that captures and tracks element of occurrence data for rare, threatened and endangered species, both federal and state. Please keep in mind that this information included within this report is derived from existing databases, and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. If your project requires the assessment of potential threatened or endangered species that could be within the project area, the SCDNR asks that you include a review of the state listed species within the county or watershed in addition to those that may be within the report as being within the project footprint or within 1-mile of the proposed project area. Consideration should be given to the occurrence of suitable habitat onsite, species movement and connectivity of habitat when assessing the likelihood of a state listed species on the project area.

Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

County	Scientific Name	Common Name	G Rank	S Rank	Federal Status	State Status	Group Type
Dorchester	*Acipenser oxyrinchus oxyrinchus*	Atlantic Sturgeon	G3T3	S3	LE: Federally Endangered	Not Applicable	Zoological
Dorchester	*Bombus pensylvanicus*	American Bumble Bee	G3G4	SNR	ARS: At-Risk Species	Not Applicable	Zoological
Dorchester	*Clemmys guttata*	Spotted Turtle	G5	S2	ARS: At-Risk Species	ST: State Threatened	Zoological
Dorchester	*Coreopsis integrifolia*	Chipola Dye-flower; Cileate-leaf	G1G2	S1	ARS: At-Risk Species	Not Applicable	Botanical
Dorchester	*Corynorhinus rafinesquii*	Rafinesque's Big-eared Bat	G3G4	S2	Not Applicable	SE: State Endangered	Zoological
Dorchester	*Crotalus adamanteus*	Eastern Diamond-backed Rattlesnake	G3	S2	ARS: At-Risk Species	Not Applicable	Zoological
Dorchester	*Danaus plexippus*	Monarch Butterfly	G4	S4	C: Candidate	Not Applicable	Zoological
Dorchester	*Dryobates borealis*	Red-cockaded Woodpecker	G3	S2	LT: Federally Threatend	SE: State Endangered	Zoological
Dorchester	*Elanoides forficatus*	Swallow-tailed Kite	G5	S2	MBTA: Migratory Bird Treaty Act	SE: State Endangered	Zoological
Dorchester	*Eurycea chamberlaini*	Chamberlain's Dwarf Salamander	G4	S3	ARS: At-Risk Species	Not Applicable	Zoological
Dorchester	*Gopherus polyphemus*	Gopher Tortoise	G3	S1	Not Applicable	SE: State Endangered	Zoological
Dorchester	*Haliaeetus leucocephalus*	Bald Eagle	G5	S3B,S3N	Bald & Golden Eagle Protection Act	ST: State Threatened	Zoological
Dorchester	*Heterodon simus*	Southern Hog-nosed Snake	G2	S1	Not Applicable	ST: State Threatened	Zoological
Dorchester	*Lasiurus cinereus*	Hoary Bat	G3G4	S2	ARS: At-Risk Species	Not Applicable	Zoological
Dorchester	*Lindera melissifolia*	Southern Spicebush, Pondberry	G3	S2	LE: Federally Endangered	Not Applicable	Botanical
Dorchester	*Lithobates capito*	Carolina Gopher Frog	G2G3	S1	ARS: At-Risk Species	SE: State Endangered	Zoological
Dorchester	*Myotis lucifugus*	Little Brown Bat	G3G4	S2	ARS: At-Risk Species	Not Applicable	Zoological
Dorchester	*Perimyotis subflavus*	Tricolored Bat	G3G4	S3	LEP: Federally Endangered (Proposed)	Not Applicable	Zoological
Dorchester	*Sternula antillarum*	Least Tern	G4	S2B	MBTA: Migratory Bird Treaty Act	ST: State Threatened	Zoological
Dorchester	*Trichechus manatus*	Florida Manatee	G2G3	S2S3	LT: Federally Threatened	SE: State Endangered	Zoological
Orangeburg	*Acipenser brevirostrum*	Shortnose Sturgeon	G3	S3	LE: Federally Endangered	SE: State Endangered	Zoological
Orangeburg	*Acipenser oxyrinchus oxyrinchus*	Atlantic Sturgeon	G3T3	S3	LE: Federally Endangered	Not Applicable	Zoological
Orangeburg	*Bombus fraternus*	Southern Plains Bumble Bee	G3G4	SNR	ARS: At-Risk Species	Not Applicable	Zoological
Orangeburg	*Clemmys guttata*	Spotted Turtle	G5	S2	ARS: At-Risk Species	ST: State Threatened	Zoological
Orangeburg	*Corynorhinus rafinesquii*	Rafinesque's Big-eared Bat	G3G4	S2	Not Applicable	SE: State Endangered	Zoological
Orangeburg	*Danaus plexippus*	Monarch Butterfly	G4	S4	C: Candidate	Not Applicable	Zoological
Orangeburg	*Dryobates borealis*	Red-cockaded Woodpecker	G3	S2	LT: Federally Threatend	SE: State Endangered	Zoological
Orangeburg	*Eurycea chamberlaini*	Chamberlain's Dwarf Salamander	G4	S3	ARS: At-Risk Species	Not Applicable	Zoological
Orangeburg	*Haliaeetus leucocephalus*	Bald Eagle	G5	S3B,S3N	Bald & Golden Eagle Protection Act	ST: State Threatened	Zoological
Orangeburg	*Lasiurus cinereus*	Hoary Bat	G3G4	S2	ARS: At-Risk Species	Not Applicable	Zoological
Orangeburg	*Lithobates capito*	Carolina Gopher Frog	G2G3	S1	ARS: At-Risk Species	SE: State Endangered	Zoological
Orangeburg	*Lobelia boykinii*	Boykin's Lobelia	G1G2	S2?	ARS: At-Risk Species	Not Applicable	Botanical
Orangeburg	*Myotis lucifugus*	Little Brown Bat	G3G4	S2	ARS: At-Risk Species	Not Applicable	Zoological
Orangeburg	*Noturus sp. 2*	Broadtail Madtom	G2	S1	Not Applicable	ST: State Threatened	Zoological
Orangeburg	*Perimyotis subflavus*	Tricolored Bat	G3G4	S3	LEP: Federally Endangered (Proposed)	Not Applicable	Zoological
Orangeburg	*Pseudobranchus striatus striatus*	Broad-striped Dwarf Siren	G5T1T3	S1	Not Applicable	ST: State Threatened	Zoological

F. Important Information & Instructions for Submitting Species Observations

The SC Natural Heritage Dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the statewide dataset for rare, threatened and endangered species. Below are instructions for how to download the SC Natural Heritage Occurrence Reporting Form through the Survey123 App.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, CGIAR, USGS

Conservation Ranks & SWAP Priority Status

The SC Natural Heritage Program assigns S Ranks for species tracked within the state of South Carolina based on ranking methodology developed by NatureServe and its state program network. For information conservation rank definitions, please visit https://explorer.natureserve.org/AboutTheData/Statuses

The SCDNR maintains and updates it's State Wildlife Action Plan (SWAP) every 10 years. This plan categorizes species of concern by Moderate, High, and Highest Priority. Please visit https://www.dnr.sc.gov/swap/index.html for more information about the SC SWAP.

Important Information Regarding Element Occurrence Data:

The South Carolina Department of Natural Resources' Heritage Trust Program organizes a database that captures and tracks element of occurrence data for rare, threatened and endangered species, both federal and state. Please keep in mind that this information included within this report is derived from existing databases, and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. If your project requires the assessment of potential threatened or endangered species that could be within the project area, the SCDNR asks that you include a review of the state listed species within the county or watershed in addition to those that may be within the report as being within the project footprint or within 1-mile of the proposed project area. Consideration should be given to the occurrence of suitable habitat onsite, species movement and connectivity of habitat when assessing the likelihood of a state listed species on the project area. To view these lists please visit our county and watershed dashboards at our website: https://natural-heritage-program-scdnr.hub.arcgis.com/#track

State-listed Species Guidance

The South Carolina Department of Natural Resources has released a document to provide clarity for the avoidance of a take of a state listed species and what may be needed from permit applicants, for each species listed as threatened or endangered under SC Code of Regulations 123-150 and 123-150.2. Please review this document for information on species-habitat requirements, survey protocol, and other information regarding environmental review: https://dnr.sc.gov/environmental/docs/SCDNRStateListedSpeciesProtectionGuidance.pdf

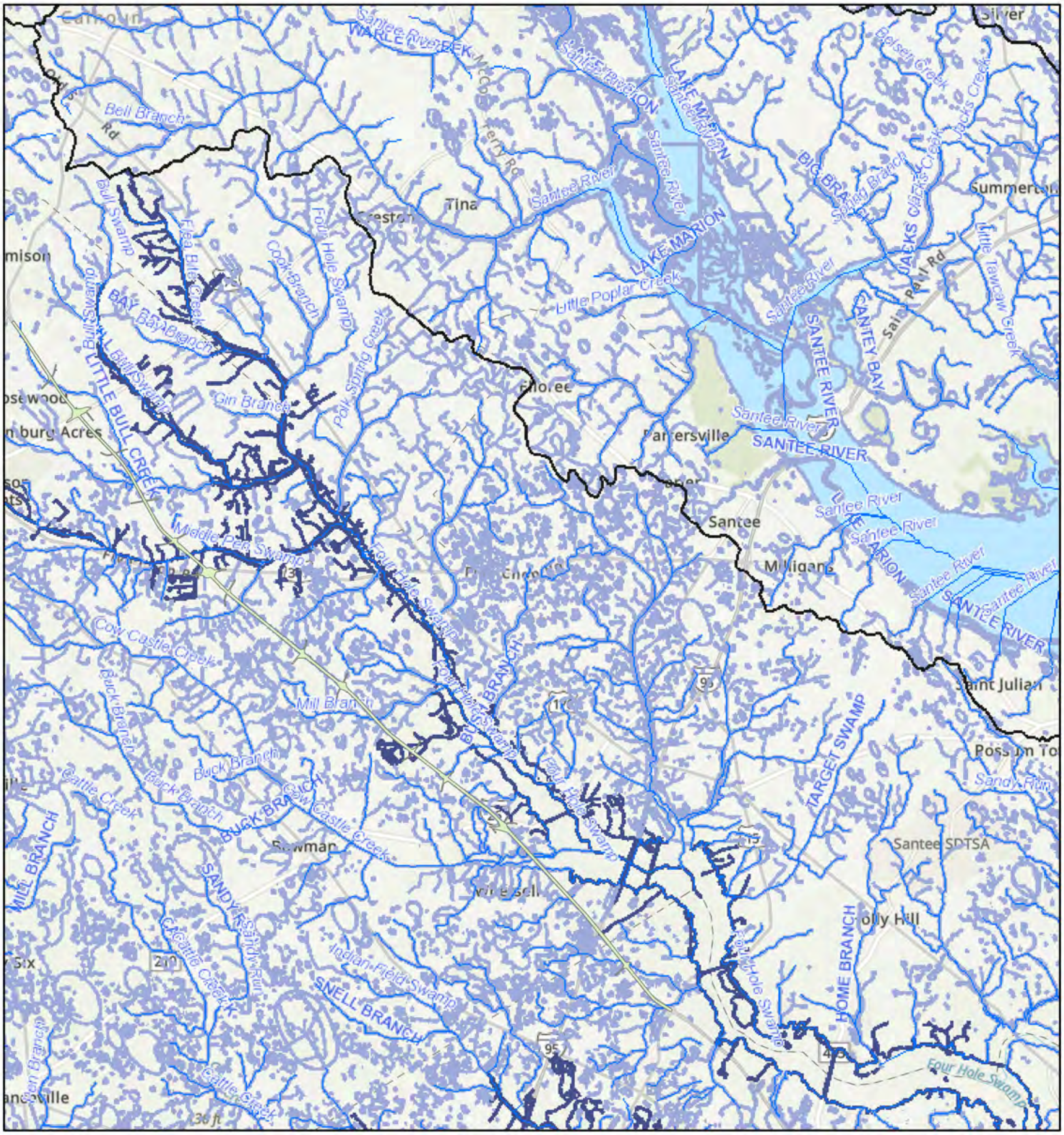
Instructions for accessing the SC Natural Heritage Occurrence Reporting Form

1) Follow https://arcg.is/1a0jzC0 or use the QR code here.
2) Select 'Open in browser' or 'Open in the Survey123 field app' depending on your preference. The browser option will only work when connected to the internet.
3) If using in the Survey123 field app, be sure to download the app from your app store beforehand.

APPENDIX C

SCDES WATER QUALITY

SCDES Watershed Atlas



1/31/2025, 11:43:40 AM

1:288,895

0 2 4 8 mi

0 3.25 6.5 13 km

240919_I26_PSA

Major River Basins

NHD Labeled Streams

Water Classification - Provisional

PROVISIONAL DATA - Refer to Reg. 61-68

Outstanding National Resource Waters (ONRW)

Esri, NASA, NGA, USGS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

SCDES

Esri, NASA, NGA, USGS | SCDHEC | Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS |

SC Department of Environmental Services

Watershed and Water Quality Information

General Information

Applicant Name: Three Oaks Engineering
Address: 15600 I26 W DR, ORANGEBURG, SC, 29115
MS4 Designation: Not in designated area
Within Coastal Critical Area: No
Waterbody Name: COW CASTLE CREEK
Permit Type: MS4
Latitude/Longitude: 33.443333 / -80.710153
Monitoring Station: E-050
Water Classification (Provisional): FW
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
E-050	X	F	F	F	F	F	F	F	F	F	F	InTN	X	X	X	X	X	X	X	X

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

Parameters to be addressed (those not supporting standards)

ECOLI - Escherichia coli (Freshwaters)

Fish Consumption Advisory

Waters of Concern (WOC)

TMDL Information - TMDL Parameters to be addressed

In TMDL Watershed: Yes
TMDL Site: E-050
TMDL Report No: 020-2020
TMDL Parameter: Ecoli
TMDL Document Link: https://des.sc.gov/sites/des/files/media/document/Lower%20Four%20Hole%20Swamp%20and%20Tributaries.pdf

Report Date: January 28, 2025

APPENDIX D

SITE PHOTOGRAPHS

Photo 1
Stream in western PSA

Photo 2
Forested wetlands in western PSA

Photo 3
Open water wetlands in western PSA

Photo 4
Uplands in western PSA

Photo 5
Wetlands in western PSA

Photo 6
Forested uplands in western PSA

Photo 7
Stream in western PSA

Photo 8
Wetlands under culvert in western PSA

Photo 9
Open water wetlands in central PSA

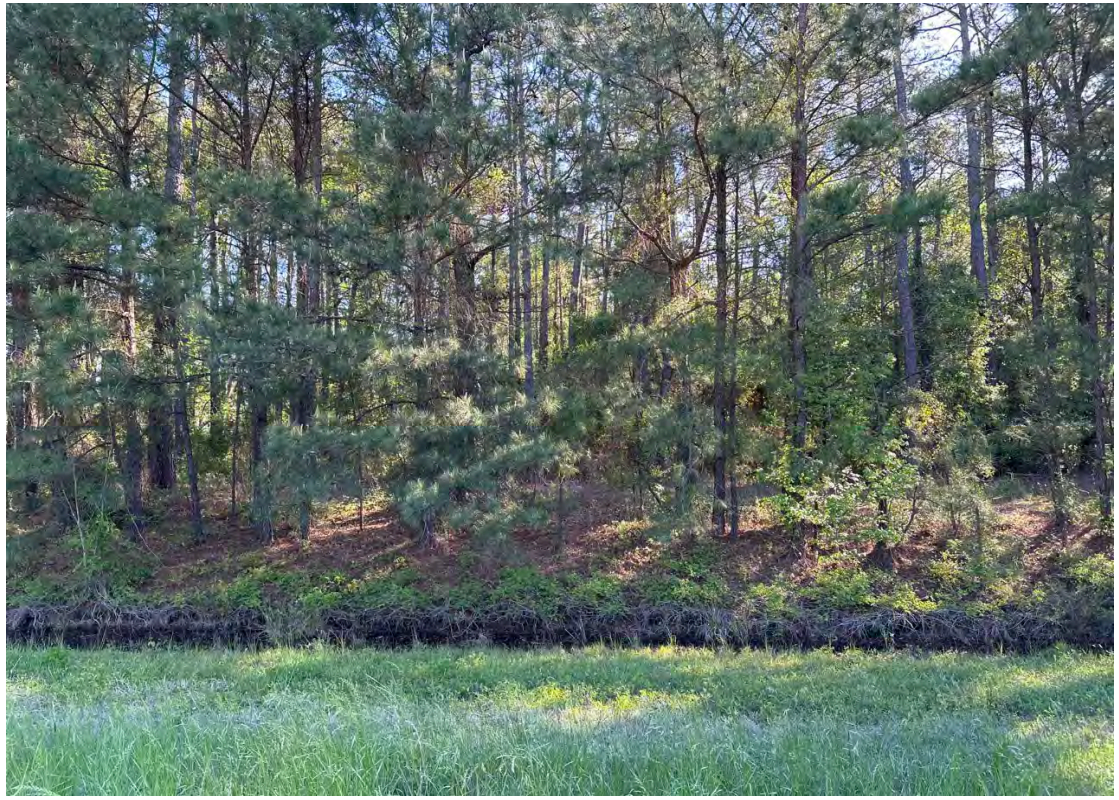


Photo 10
Forested uplands in central PSA

Photo 11
Stream in central PSA

Photo 12
Uplands and overpass in central PSA

Photo 13
Wetlands in eastern PSA

Photo 14
Stream in eastern PSA

Photo 15
Wetlands in eastern PSA

Photo 16
Forested uplands in eastern PSA

APPENDIX E

Permit Determination Form

Date: 04/04/2025

PERMIT DETERMINATION

FROM Wade Biltoft, PWS COMPANY Three Oaks Engineering

CONTACT INFO (phone and/or email) wade.biltoft@threeoaksengineering.com

SCDOT PROJECT ENGINEER Alex Bennett

TO Keith Walker, RGP 3 Permitting Coordinator

Project Description Widening of I-26 between MM 145 (US 601 Interchange) and MM 172 (US 15 Interchange)

Route or Road No. I-26 County Orangeburg and Dorchester

CONST. PIN _____ OTHER PINS or STRUCTURE # P041967 & P042454

RESPONSE:

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

_____

◯ The following permit(s) is/are necessary:
(Please check which type(s) of permit the project will need)

USACE Permit ☐ GP ☑ IP ☐ 401 ☐ JD

OCRM Permit ☐ CAP ☑ CZC

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

Other _____

Water Classification: <select one> *Print and attach the SCDHEC water quality report*

303(d) listed ◯ no ◯ yes, for * PH

TMDL developed ◯ no ◯ yes, for * E. Coli, FC

*List all that apply using the SCDHEC abbreviations

Comments: The project spans two 10-digit HUC watersheds, Upper Four Hole Swamp (0305020501) and Lower Four Hole Swamp (0305020503)

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

Wade B Biltoft — Biologist, SCDOT/Consultant

04/04/2025 — Date

Revised 11/2018

SC Department of Environmental Services

Watershed and Water Quality Information

General Information

Applicant Name: SCDOT
Address: 16600 I26 W DR, BOWMAN, SC, 29018
MS4 Designation: Not in designated area
Within Coastal Critical Area: No
Waterbody Name: COW CASTLE CREEK
Permit Type: Construction
Latitude/Longitude: 33.346566 / -80.577974
Monitoring Station: E-050
Water Classification (Provisional): FW
Entered Waterbody Name:

Parameter Description

NH3N	Ammonia	CD	Cadmium	CR	Chromium
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Station	NH3N	CD	CR	CU	HG	NI	PB	ZN	DO	PH	TURBIDITY	ECOLI	FC	BIO	TP	TN	CHLA	ENTERO	HGF	PCB
E-050	X	F	F	F	F	F	F	F	F	F	F	InTN	X	X	X	X	X	X	X	X
E-112	X	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	N	X

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Fish Consumption Advisory

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Waters of Concern (WOC)

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TMDL Site: E-050
TMDL Parameter: Ecoli

Report Date: November 5, 2024