



## Appendix B

### Natural Resources Technical Memorandum and Correspondence

**From:** [Kristen Maines](#)  
**To:** [Mohr, Mark](#)  
**Cc:** [Barrett Stone](#)  
**Subject:** FW: Clements Ferry Rd, Berkley Sec 7  
**Date:** Tuesday, February 20, 2018 11:15:22 AM  
**Attachments:** [image003.png](#)  
[image001.png](#)  
[CFR\\_NRTM\\_complete\\_20180202.pdf](#)  
[BA Transmittal CFR Widening P029503 272018.pdf](#)  
[CFR\\_NLEB\\_4d \(2\).pdf](#)

---

Thank you Mark.

Kristen

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**From:** Mohr, Mark [mailto:[MohrAM@scdot.org](mailto:MohrAM@scdot.org)]  
**Sent:** Tuesday, February 20, 2018 10:58 AM  
**To:** Kristen Maines <[kristen.maines@ice-eng.com](mailto:kristen.maines@ice-eng.com)>  
**Subject:** FW: Clements Ferry Rd, Berkley Sec 7

Kristen,

Please see attachments and email response from USFWS below for project files. Let me know if you need anything else, thanks

Mark

### **A. Mark Mohr**

NEPA Coordinator, Lowcountry RPG  
SC Department of Transportation  
955 Park Street Columbia, SC 29201  
(O) 803.737.0925 (C) 803.609.8686  
[mohram@scdot.org](mailto:mohram@scdot.org)



*Celebrating 100 years of service to South Carolina!*

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**From:** Mark Caldwell [mailto:[mark\\_caldwell@fws.gov](mailto:mark_caldwell@fws.gov)]  
**Sent:** Thursday, February 08, 2018 9:55 AM  
**To:** Mohr, Mark  
**Cc:** [michelle.herrell@dot.gov](mailto:michelle.herrell@dot.gov)  
**Subject:** FW: Clements Ferry Rd, Berkley Sec 7

**\*\*\* This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. \*\*\***

Mark,

Thank you for your email. Upon review of the documents I don't see a need to provide an additional letter of concurrence under section 7 of the Endangered Species Act. Our July 2017 letter for Clements Ferry Road remains valid. The Service recently reviewed the SC Department of Transportation's submittal for the northern long-eared bat (NLEB). No comments were needed for the NLEB submittal.

Mark

Mark A. Caldwell  
Deputy Field Supervisor  
U.S. Fish and Wildlife Service  
South Carolina Ecological Services  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407  
843-727-4707 ext 215  
843-300-0426 (direct line)  
843-727-4218 – facsimile

**This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.**

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**From:** Mohr, Mark [mailto:[MohrAM@scdot.org](mailto:MohrAM@scdot.org)]  
**Sent:** Wednesday, February 07, 2018 1:27 PM  
**To:** [charleston\\_regulatory@fws.gov](mailto:charleston_regulatory@fws.gov)  
**Cc:** Herrell, Michelle (FHWA) <[michelle.herrell@dot.gov](mailto:michelle.herrell@dot.gov)>; Mohr, Mark <[MohrAM@scdot.org](mailto:MohrAM@scdot.org)>  
**Subject:** Clements Ferry Rd, Berkley Sec 7

The South Carolina Department of Transportation (SCDOT) previously submitted and coordinated a natural resources assessment associated with the subject project, including a concurrence letter from the South Carolina Ecological Services Field Office for the U.S. Fish and Wildlife Service (Service) dated July 19, 2017. This previous coordination effort was conducted to support the preparation of an environmental assessment (EA) per SCDOT standards to enable Berkeley County to provide adequate documentation to the U.S. Army Corps of Engineers in support of their NEPA decision regarding the County's future Section 404 permit requests. Since this time, federal transportation funding has been applied to the project, requiring the preparation of an EA per the regulations and guidelines of the Federal Highway Administration (FHWA). The enclosed Natural Resource Technical Memorandum has been prepared in support of this document, and is attached for your review and concurrence under section 7 of the Endangered Species Act. This Memorandum includes a description of potential impacts to federally protected species, and includes a recent addendum to document the evaluation of impacts to the Northern long-eared bat (*Myotis septentrionalis*) since the initial review.

Please don't hesitate to contact me if you have any questions or need additional information. Your expeditious handling of this request is greatly appreciated,  
Respectfully,  
Mark

*Electronic Correspondence- In an effort to save resources and expedite delivery, you are receiving this document in an electronic format. Please consider the environment before printing.*

**A. Mark Mohr**

NEPA Coordinator, Lowcountry RPG

SC Department of Transportation

955 Park Street Columbia, SC 29201

(O) 803.737.0925 (C) 803.609.8686

[mohram@scdot.org](mailto:mohram@scdot.org)



*Celebrating 100 years of service to South Carolina!*

February 7, 2018

Mr. Mark Caldwell  
Field Supervisor  
U.S. Fish and Wildlife Service  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407

RE: Clements Ferry Road Widening Project: Jack Primus Road to SC 41, Berkeley County  
SCDOT PIN: P029503; FWS Log No. 2017-CPA-0027

Dear Mr. Caldwell:

The South Carolina Department of Transportation (SCDOT) previously submitted and coordinated a natural resources assessment associated with the subject project, including a concurrence letter from the South Carolina Ecological Services Field Office for the U.S. Fish and Wildlife Service (Service) dated July 19, 2017. This previous coordination effort was conducted to support the preparation of an environmental assessment (EA) per SCDOT standards to enable Berkeley County to provide adequate documentation to the U.S. Army Corps of Engineers in support of their NEPA decision regarding the County's future Section 404 permit requests. Since this time, federal transportation funding has been applied to the project, requiring the preparation of an EA per the regulations and guidelines of the Federal Highway Administration (FHWA). The enclosed Natural Resource Technical Memorandum has been prepared in support of this document, and is attached for your review and concurrence under section 7 of the Endangered Species Act. This Memorandum includes a description of potential impacts to federally protected species, and includes a recent addendum to document the evaluation of impacts to the Northern long-eared bat (*Myotis septentrionalis*) since the initial review.

The proposed project would widen Clements Ferry Road from a two-lane roadway to a four-lane roadway with a center two-way left-turn lane or raised landscaped median, construct intersection improvements within the project limits, and provide a multi-use path for bicyclists and pedestrians. This project is funded by the 2014 Berkeley County Sales Tax Program and Federal guideshare funds and is being developed by the County, FHWA and the SCDOT.

The project area is situated within the lower coastal plain and predominantly coastal zone physiographic regions of South Carolina occupying the lower portion of the Cooper River/Charleston Harbor and the Wando River watersheds. Most of the project area is located within the Wando River watershed with the southwestern portion predominantly draining to Martins Creek and thence the Wando River and the northeastern portion of the project area draining to an unnamed tributary to the Wando River and via wetlands directly to the Wando River. The Cooper River/Charleston Harbor watershed is dominated by

urban and forested land uses while the Wando River watershed is dominated by forested land uses. The project area is dominated by the existing roadway and its associated zone of disturbance. However, there are several types of different land uses/habitat communities adjacent to the approximately 4.5-mile route. The following communities and habitats were identified along the project area:

- Forested Freshwater Wetlands/Drainageways
- Critical Area (Emergent Tidal Salt Marsh)
- Pine Stands Mixed
- Pine-Hardwoods
- Developed Areas

The below list of protected species for Berkeley County was obtained from the U.S. Fish and Wildlife Service, which was last updated in October 2017. A determination of effect was conducted for each species. The effect determination included a review of available databases for known occurrence; mapping review; and various site visits.

Common Name	Scientific Name	Status	Determination
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGEPA	No Effect
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	Endangered	No Effect
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	Endangered	No Effect
Flatwoods Salamander	<i>Ambystoma cingulatum</i>	Threatened	No Effect
American Wood Stork	<i>Mycteria americana</i>	Threatened	<b>Not Likely to Adversely Affect</b>
Red-cockaded Woodpecker	<i>Picoides borealis</i>	Endangered	<b>Not Likely to Adversely Affect</b>
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened	No Effect
West Indian Manatee	<i>Trichechus manatus</i>	Threatened	No Effect
Pondberry	<i>Lindera melissifolia</i>	Endangered	No Effect
Canby's Dropwort	<i>Oxypolis canbyi</i>	Endangered	No Effect
American Chaffseed	<i>Schwalbea americana</i>	Endangered	No Effect

\* Federally protected under the Bald and Golden Eagle Protection Act

The review of the project area did not reveal the preferred habitats required by the shortnose and Atlantic sturgeon, Flatwoods salamander, West Indian manatee, Pondberry, Canby's dropwort and American chaffseed. Based on the lack of suitable habitat and/or no observations of the listed species during field reconnaissance of the project area and coordination with representatives of Cainhoj Plantation, results of the protected species/habitat assessment indicate that the proposed project is expected to have "No Effect" on these threatened or endangered species or critical habitats currently documented for Berkeley County. Per prior coordination with the USFWS and the aforementioned coordination with representatives of Cainhoj Plantation, the project is "Not Likely to Adversely Affect" the red-cockaded woodpecker or wood stork. Please see enclosed Natural Resources Technical Memorandum for documentation of potential effects from the project.



The SCDOT requests concurrence that the proposed project remains consistent with these determinations, in addition to the conclusion that the project "Not Likely to Adversely Affect" the red-cockaded woodpecker or wood stork. Your expeditious handling of this request will be appreciated. Should you have any questions, please contact me at (803) 737-0925.

Sincerely,



A. Mark Mohr  
SCDOT NEPA Coordinator/Biologist  
Lowcountry RPG 1

Enclosure



**From:** [Altman, Ann-Marie](#)  
**To:** [charleston\\_regulatory@fws.gov](mailto:charleston_regulatory@fws.gov)  
**Cc:** [Barrett Stone \(barrett.stone@ice-eng.com\)](mailto:barrett.stone@ice-eng.com); [Belcher, Jeffery - FHWA](#); [Mohr, Mark](#)  
**Subject:** NLEB 4(d) submittal  
**Date:** Thursday, January 11, 2018 10:32:15 AM  
**Attachments:** [NLEB\\_description.pdf](#)  
[Addendum I - Clements Ferry Phase II Nat Res Tech Memo\\_20180110.pdf](#)  
[CFR\\_NLEB\\_4d.pdf](#)  
[clements\\_ferry\\_road\\_map.pdf](#)

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Please see attached information regarding SCDOT's proposed widening of Clements Ferry Road in Berkeley County.

Let me know if you have any comments or questions.

Thanks!

Ann-Marie

*Ann-Marie Altman  
Permits Manager-RPG 4 (Upstate)/Biologist  
SCDOT Environmental Services  
803-737-0946 (office)*



## Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

### Information to Determine 4(d) Rule Compliance:

YES      NO

	YES	NO
1. Does the project occur wholly outside of the WNS Zone <sup>1</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency <sup>2</sup> to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

**Lead Federal Agency:** FHWA

**Applicant<sup>3</sup> (Name, Email, Phone No.):** SCDOT; Attn. Ann-Marie Altman; AltmanAM@scdot.org;  
(803)737-0946

**Project PIN/Project Number:**

**Project County:** Berkeley

**Project Name:** Clements Ferry Road Widening Project: Jake Primus Road to SC 41

**Project Location** (include coordinates if known):

Start: 32.915461/79.886027

End: 32.925923/73.823327

**Basic Project Description** (provide narrative below or attach additional information):

See Attached.

<sup>1</sup> <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

<sup>2</sup> See <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

<sup>3</sup> If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25-mile of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion <sup>4</sup> ? (if yes, report acreage below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Estimated total acres of forest conversion	19.3	
If known, estimated acres <sup>5</sup> of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31 <sup>6</sup>		
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest	N/A	
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire	N/A	
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)	N/A	

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Ann-Marie Altman

Digitally signed by Ann-Marie Altman  
DN: cn=Ann-Marie Altman, o, ou,  
email=altmanam@scdot.org, c=US  
Date: 2018.01.11 10:20:29 -05'00'

Date Submitted: 1/11/2018

<sup>4</sup> Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

<sup>5</sup> If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

<sup>6</sup> If the activity includes tree clearing in June and July, also include those acreage in April to October.



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200  
Charleston, South Carolina 29407



July 19, 2017

Mr. A. Mark Mohr  
NEPA Coordinator  
S.C. Department of Transportation  
P.O. Box 191  
Columbia, SC 29202-0191

RECEIVED  
JUL 31 2017  
Environmental Management  
SCDOT

Re: S.C. Department of Transportation, Clements Ferry Road Widening,  
Berkeley County, FWS Log No. 2017-CPA-0027

Dear Mr. Mohr:

The South Carolina Ecological Services Field Office for the U.S. Fish and Wildlife Service (Service) received your natural resource assessment, which will be incorporated into an Environmental Assessment (EA) for the proposed improvements to a portion of Clements Ferry Road, Berkeley County, South Carolina. The South Carolina Department of Transportation (SCDOT) will widen Clements Ferry Road from S-119 (Jack Primus Road) to SC 41 in Berkeley County. In addition, a portion of SC 41 will be widened from the intersection of Clements Ferry Road to the SC 41 bridge. The SCDOT seeks preliminary comments in preparation of an EA pursuant to the National Environmental Policy Act of 1969.

The Service previously provided preliminary comments on the proposed widening on January 23, 2017. We recommended that SCDOT seek the least damaging alignment as well as conducting surveys for federally protected threatened and endangered species that may be in the corridor. Historical records indicate suitable habitat and presence of the red-cockaded woodpecker (*Picoides borealis*), American wood stork (*Mycteria Americana*), and the frosted flatwoods salamander (*Ambystoma cingulatum*) in the project area. Field reconnaissance by SCDOT personnel did not find any threatened and endangered (T&E) species in the corridor, but did find suitable habitat for these species. Due to the presence of suitable habitat, SCDOT concluded the proposed widening project may affect, but is not likely to adversely affect, these two species. A determination of no effect was made for the remainder of T&E species that may occur in Berkeley County.

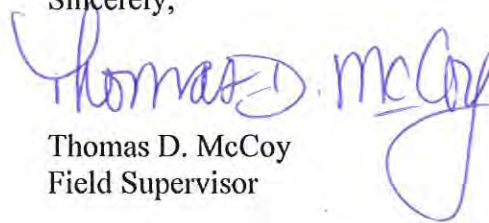
Upon review of your information, the Service concurs with SCDOT's determination. For those T&E species in which a no effect determination was made, no consultation is required. Please note that obligations under the ESA must be reconsidered if: (1) new information reveals impacts

of this identified action may affect any federally listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

For SCDOT's convenience, the Service has included with this letter a list of species that may occur in Berkeley County and are currently protected under the Endangered Species Act of 1973 (ESA). This list also includes species that are considered At Risk Species (ARS) that are either candidates for listing or have been petitioned for listing under the ESA. Appropriate survey time frames or windows for each species are included in the list. Although there are no Federal protections afforded to ARS, please consider including them in your project efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at: <http://www.fws.gov/southeast/candidateconservation>.

The Service appreciates the opportunity to provide input at this early stage of the project's development. If you have any questions regarding our comments, please do not hesitate to contact Mr. Mark Caldwell of the South Carolina Ecological Services Field Office at (843) 727-4707 ext. 215 and reference FWS Log No. 2017-CPA-0027.

Sincerely,



Thomas D. McCoy  
Field Supervisor

TDM/MAC

## South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Berkeley County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS	
Amphibian	Frosted flatwoods salamander (T, CH)	<i>Ambystoma cingulatum</i>	January 1-April 30	Larvae present in breeding ponds	
	Gopher frog (ARS)	<i>Lithobates capito</i>	Breeding: October-March	Call survey: February-April	
Bird	American wood stork (T)	<i>Mycteria americana</i>	February 15-September 1	Nesting season	
	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season	
	MacGillivray's seaside sparrow (ARS)	<i>Ammodramus maritimus macgillivrayii</i>	May-June		
	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	April 1-July 31	Nesting season	
Crustacean		None Found			
Fish	American eel (ARS)	<i>Anguilla rostrata</i>	March 1-May 30; October 1-December 15	Temperature dependent: normally (17-20°C); can be found between 13-25°C	
	Atlantic sturgeon* (E)	<i>Acipenser oxyrinchus*</i>	February 1-April 30	Spawning migration	
	Blueback herring (ARS)	<i>Alosa aestivalis</i>	Mid-January-mid May	Peak: March-April	
	Shortnose sturgeon* (E)	<i>Acipenser brevirostrum*</i>	February 1-April 30	Spawning migration	
	Frosted elfin (ARS)	<i>Callophrys irus</i>	March - June		
Mammal	Northern long-eared bat (T)	<i>Myotis septentrionalis</i>	Year round	Winter surveys not as successful	
	Rafinesque's big-eared bat (ARS)	<i>Corynorhinus rafinesquii</i>	Year round	Found in mines, caves, large hollow trees, buildings, and bat towers	
	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter	
	West Indian manatee (T)	<i>Trichechus manatus</i>	May 15-October 15	In coastal waters	
			None Found		
Mollusk	American chaffseed (E)	<i>Schwalbea americana</i>	May-August	1-2 months after a fire	
	Boykin's lobelia (ARS)	<i>Lobelia boykinii</i>	May-July/August		
	Bog asphodel (ARS*)	<i>Narthecium americanum</i>	June-July		
	Canby's dropwort (E)	<i>Oxypolis canbyi</i>	Mid-July-September		
	Carolina-birds-in-a-nest (ARS)	<i>Macbridea caroliniana</i>	July-November		
	Carolina bishopweed (ARS)	<i>Ptilimnium ahlesii</i>	May-July		
	Ciliate-leaf tickseed (ARS)	<i>Coreopsis integrifolia</i>	August-November		
	Long Beach seedbox (ARS)	<i>Ludwigia brevipes</i>	July-October		
	Pondberry (E)	<i>Lindera melissifolia</i>	February-March		
	Raven's seedbox (ARS)	<i>Ludwigia ravenii</i>	June-October		
	Sun-facing coneflower (ARS)	<i>Rudbeckia heliopsisidis</i>	July-September		
	Reptile	Eastern diamondback rattlesnake (ARS)	<i>Crotalus adamanteus</i>	Most of the year	Peak: April-November
		Southern hognose snake (ARS)	<i>Heterodon simus</i>	Most of the year	
Spotted turtle (ARS)		<i>Clemmys guttata</i>	February-mid April		

## South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Berkeley County

- \* Contact National Marine Fisheries Service (NMFS) for more information on this species
- \*\* The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species
- ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.
- ARS\* Species that are either former Candidate Species or are emerging conservation priority species
- BGEPA Federally protected under the Bald and Golden Eagle Protection Act
- C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species
- CH Critical Habitat
- E Federally Endangered
- P or P - CH Proposed for listing or critical habitat in the Federal Register
- S/A Federally protected due to similarity of appearance to a listed species
- T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.

**NATURAL RESOURCES TECHNICAL**  
**MEMORANDUM**

***CLEMENTS FERRY ROAD WIDENING:  
JACK PRIMUS ROAD TO SC 41  
BERKELEY COUNTY, SOUTH CAROLINA***

PREPARED FOR:  
Berkeley County & The South Carolina Department of Transportation

*PREPARED BY:*



**Red Bay Environmental**

*June 20, 2017*

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**APPENDIX B – SC LIST OF AT-RISK, CANDIDATE, ENDNAGERED, AND THREATENED SPECIES – BERKELEY COUNTY**

## **1.0 INTRODUCTION**

The Berkeley County Sales Tax Transportation Program, via a cooperative intergovernmental agreement between the SC Department of Transportation (SCDOT) and Berkeley County is proposing the widening of existing Clements Ferry Road (S-80-33) from the Jack Primus Road intersection northeast to its intersection with the current roadway and bridge improvements at SC Highway 41 and the Wando River. The typical cross section will consist of an arterial four-lane divided roadway section with painted or landscaped median that will taper on each end of the project area to transition to the existing roadway sections. The review area consists of a project corridor that is approximately 300 feet wide centered on the existing centerline of Clements Ferry Road. The speed limit will be posted at 45 to 55 MPH.

The proposed project route is approximately 4.5 miles long and will be oriented along the existing alignment of Clements Ferry Road. The proposed route is situated within the upper portion of the Cainhoy Peninsula with the southwestern portion of the route consisting of predominantly commercial and industrial land uses transitioning into predominantly residential and commercial land uses in its northeastern portion. The central portion of the project area is dominated by the adjacent Cainhoy Plantation tract that currently predominantly consists of undeveloped woodlands. There are two existing bridge sections along the route that cross a freshwater drainageway (Martins Creek) and a section of critical area that is an unnamed tributary to the Wando River. An overall site location map for the project area is contained in Appendix A, Figure 1.

The proposed project route has been analyzed and an inventory of the existing natural resources was performed to review the potential impacts to the natural environment that could potentially occur as a result of the proposed roadway widening project. The potential impacts are described in detail in the Environmental Assessment (EA) and were evaluated to determine the preferred route of the project as referenced in this memorandum. The natural resources evaluation was developed using readily available published data regarding the area where the project is located and detailed site reconnaissance within the preferred project area route. The natural resources reviewed are wetlands/waters of the United States, regulated floodplains and federally-listed threatened and endangered species.

## **2.0 PROJECT SETTING**

The proposed project review area is oriented along the existing alignment of Clements Ferry Road extending approximately 150 feet from the existing centerline. The project area is approximately 4.5 miles long and is situated within a rapid growth corridor that is extending along Clements Ferry Road from the southwest and northeast. The southwest portion of the project area has seen extensive commercial/industrial growth while the northeastern portion of the project area has been more commercial/residential focused.

Due to its geographical position, Clements Ferry Road provides a direct connection from US I-526 to the rapidly growing areas of the northern portion of Mount Pleasant along the SC Highway 41 and US Highway 17 corridors. Traffic volumes along the roadway have steadily increased as Clements Ferry Road has continued to function as a route to connect residents of northern Charleston County and southern Berkeley County with access to the expanding commercial hub of the greater metropolitan Charleston area.

The project route is generally situated along a ridge that is typical of the southeastern coastal plain dune and swale topography. As a result, there are comparatively fewer wetland areas within the southwestern portion of the project area which predominantly consist of drainageways that transition into a typical coastal flatwoods environment in the northeastern portion of the project area as it approaches its terminus at the Wando River. Accordingly, the soils within the project area transition from the predominantly sandy to loamy sand textures typical of the Cainhoy soil series and the Chipley-Echaw complex to the sandy loam and loam textures of the Lynchburg and Meggett soil series in the northeastern portion of the project area. The project terminates in predominantly loamy sands of the Goldsboro soil series occupying the bank and immediately adjacent area of the Wando River. Wetland features within the southwest portion of the project area that consist predominantly of drainageways contain the sand to loamy sands of the Pickney and Witherbee soil series as opposed to the predominantly loam to clay loam textures of the Pantego, Meggett and Capers series within the northeastern portion of the project area. The project area overlay on U.S. Geological Survey (USGS) topographic maps and U.S. Department of Agriculture (USDA) soil maps is contained in Appendix A, Figures 3 and 4.

The project area is situated within the lower coastal plain and predominantly coastal zone physiographic regions of South Carolina occupying the lower portion of the Cooper River/Charleston Harbor watershed (03050201-070) and the Wando River watershed (03050201-040). The majority of the project area is located within the Wando River watershed with the southwestern portion predominantly draining to Martins Creek and thence the Wando River and the northeastern portion of the project area draining to an unnamed tributary to the Wando River and via wetlands directly to the Wando River. The Cooper River/Charleston Harbor watershed is dominated by urban and forested land uses while the Wando River watershed is dominated by forested land uses. Both watersheds are characterized as having high growth potential due to the expanding metropolitan Charleston area.

### **3.0 LAND USES/HABITAT COMMUNITIES**

The project area is dominated by the existing roadway and its associated zone of disturbance. However, with project area encompassing a corridor of approximately 300 feet wide around the existing alignment, there are several types of different land uses/habitat communities adjacent to the approximately four-mile long route. Natural habitat communities include forested freshwater wetlands/drainageways, critical area (emergent tidal salt marsh), pine stands and mixed pine hardwoods. Land uses are limited to either forested or developed areas. The developed area land uses are divided into commercial and residential along the project area alignment of Clements Ferry Road from Jack Primus Road to the SC 41 Bridge at the Wando River.

## Forested Freshwater Wetlands/Drainageways



The dominant freshwater wetland features within the project area consist of mixed pine-hardwood and hardwood palustrine forested wetlands that are situated within drainageways or adjacent to one of the three identified tributary features located along the project corridor. These areas are of common distribution within the outer coastal plain and provide various habitat functions. These areas contain the three criteria of near surface hydrology, hydric soils and hydrophytic vegetation for wetland determination. Typical of these types of surface features, they interact with near surface groundwater conditions during periods of higher rainfall and function as drainageways to transport surface water runoff from adjacent uplands and higher elevation wetlands to downstream waters. The predominant drainageway features and tributaries within the project corridor ultimately drain to the Wando River and its associated tributaries.

## Critical Area (Emergent Tidal Salt Marsh)



The critical area situated within the project corridor is located within the northern portions of the project area and is associated with an unnamed tributary to the Wando River and adjacent to the Wando River in the extreme northeastern end of the corridor. The hydrology of these areas is directly influenced by the ebb and flood of the daily tidal cycle as well as runoff from higher elevation wetlands and adjacent uplands. These saltwater systems function as emergent wetlands and are characterized by saltwater tolerant emergent herbaceous species that typically

have a salt water tolerant shrub fringe along the interface with adjacent uplands and forested freshwater wetlands. These areas are also subject to the tenets of the SC Coastal Zone Management Act and Section 10 of the Rivers and Harbors Act due to the tidal influence.

### Pine Stands



The dominant upland community within the project area are pine stands of varying age and density adjacent to both sides of the existing alignment of Clements Ferry Road. This habitat type is dominated by stands of loblolly pine (*Pinus taeda*), longleaf pine (*Pinus palustris*) and mixed stands containing both species. The vegetative structure of the stands is highly variable ranging from relatively young stands of dense loblolly plantation pine to somewhat open longleaf and loblolly mixed stands. Understory density is also variable but is generally of a

higher percent of coverage with the more managed stands being situated within the portion of the project area that contains the southern portion of Cainhoy Plantation. Understory within these pine-dominated communities generally consist of a mixed-pine hardwood understory and shrub community with varying amounts of herbaceous coverage. As referenced above, the portion of Cainhoy Plantation within the project area represents the only regularly managed pine stands within the project area.

### Mixed Pine-Hardwoods



The other dominant upland community within the project area are stands of mixed pine-hardwoods that are the result of post-harvest natural regeneration or maturing stands that were prior-thinned and left relatively unmanaged. Similar to the pine stands referenced above, these stands are of a widely varying age and structure within the project corridor. Dominant canopy species are water oak (*Quercus nigra*), live oak (*Quercus virginiana*), sweetgum (*Liquidambar styraciflua*) and red maple (*Acer rubrum*). The amount of coverage

within the understory is largely dependent on the density of the canopy within the differing age classes of this habitat type. Generally, these types of forested communities have a more diverse understory species composition that the pine-dominated stands described above.

### Developed Areas

Developed areas within the project corridor are predominantly commercial and industrial within the extreme southwestern portion of the area and transition to predominantly residential within the northern portions with ultimately a mix of commercial and residential in the northeastern end of the corridor. The development of both commercial and residential properties is steadily increasing adjacent to the project area with numerous projects currently under construction. Associated with these developed land uses are utility easements (overhead and underground) that are situated within and adjacent to the project area.

#### **4.0 WETLANDS AND WATERS OF THE UNITED STATES**

The field delineation of wetlands has been completed and a jurisdictional determination will be submitted to the USACE for verification of delineated wetlands/waters boundaries. The identification and subsequent delineation of wetland/waters areas within the project area involves placing of colored flagging along the upland/wetland boundary. The delineation of freshwater wetland/waters areas are performed in accordance with the directives of the *U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual* and *October 2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*. The determination of the upland/wetland boundary is identified by the three-parameter approach that characterizes and identifies wetland hydrology, presence of hydrophytic vegetation and hydric soil conditions. The delineation of critical area (emergent tidal salt marsh) is based upon the prevalence and salt water tolerant vegetation (predominantly emergent herbaceous) and the ebb and flood of the daily tidal cycle.

The critical area and freshwater wetlands/waters of the U.S. located within the northeastern portion of the project area have been previously delineated and verified by the SC Department of Health and Environmental Control Office of Ocean and Coastal Resource Management and the USACE as a component of the current SC 41 bridge replacement over the Wando River. This portion of the Clements Ferry Road project corridor overlaps the northern portion of the SC 41 project corridor and is included in the USACE designated project number SAC-2011-364 (SCDOT PIN #32098) which contains both the delineation and general permit for the bridge replacement currently in progress. The permit for the SC 41 bridge replacement was recently re-issued and expires on July 20, 2021.

In addition to the northeastern portion of the project area, the central portion of the project corridor that is located within the southern section of Cainhoy Plantation has also been recently delineated by others and has been field verified by the USACE. Coordination with consultant representing the landowner of Cainhoy Plantation has been ongoing and the wetland boundary data from the USACE field-verified delineation has been incorporated into the project area for the widening of Clements Ferry Road.

The dominant freshwater wetlands within the project area are characterized as forested wetlands/drainageways that occur frequently within the flatwoods of the outer coastal plain. These areas consist of drainageways of varying width and depth that interact with near-surface groundwater as well as transport sheet flow runoff from adjacent and higher elevation areas to tributaries of the nearby Wando River. There are three linear drainage features (tributaries) located within the project area. These include Martins Creek within the southern portion of the project corridor, an unnamed tributary to the Wando River situated within adjacent critical area within the northern portion of the project corridor, along with a channelized section of drainageway within the northeastern portion of the project corridor. The freshwater wetland features are of common distribution within the outer coastal plain and the area of Berkeley County where the project area is situated.

The critical areas (emergent salt marsh) within the project area are directly associated with the Wando River and its tributaries. These areas are subject to the ebb and flood of the daily tidal cycle and are dominated by saltwater tolerant vegetation. These types of emergent wetlands are of common distribution within the vicinity of the project area and typically function as an interface between adjacent uplands/forested wetlands and open tidal surface waters.

The included exhibits in Appendix A, Figure 5 depict the approximate location and extent of delineated wetlands and waters of the United States within the boundaries of the project area corridor. The varying types of wetlands/surface water features are denoted by hatch and color type.

**5.0 FLOODPLAINS**

The project area is situated within FIRM #45019C0320J, 45019C0340J, 45019C0717D, 45019C0736D and 45019C0737D. The regulated floodplain areas are generally associated with portions of the Martins Creek drainage, the Wando River and unnamed critical/freshwater drainageways/tributaries to the Wando River. These floodplains are a classified as “AE” with the highest concentration being located within the northeastern portion of the project area. The project will be constructed with applicable Federal and local floodplain regulations. Appendix A, Figure 2 depicts the location of regulated floodplain areas in relation to the project area boundaries on an aerial photo overlay.

**6.0 FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES**

Pursuant to Section 7 of the Endangered Species Act of 1973, a field survey of the proposed project area was conducted. Six (9) documented federally endangered species are known to occur within Berkeley County and are presented in Table 4.0. The endangered (E) and threatened (T) species documented for Berkeley County were through on-line documentation from the U.S. Fish and Wildlife Service (USFWS) and the South Carolina Department of Natural Resources (SCDNR) Heritage Trust Program (Appendix 2). The USFWS identified the following documented protected species for Berkeley County:

Common Name	Scientific Name	Federal Status
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	Endangered
Flatwoods Salamander	<i>Ambystoma cingulatum</i>	Threatened
American Wood Stork	<i>Mycteria americana</i>	Threatened
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
West Indian Manatee	<i>Trichechus manatus</i>	Threatened
Pondberry	<i>Lindera melissifolia</i>	Endangered
Canby’s dropwort	<i>Oxypolis canbyi</i>	Endangered
American chaffseed	<i>Schwalbea americana</i>	Endangered

\*Note that the Bald Eagle has been de-listed but remains protected subject to the Bald & Golden Eagle Protection Act.

The SCDNR records were searched for documented occurrences of Federally listed species within the area of Berkeley County where the project area is located and specifically the Cainhoy and North Charleston, SC USGS Quadrangles. The SCDNR identified eight (8) occurrences of the flatwoods salamander, one (1) occurrence of the red-cockaded woodpecker, six (6) occurrences of pondberry and three (3) occurrences of American chaffseed within the Cainhoy, SC USGS Quadrangle. Three (3) occurrences of the red-cockaded woodpecker and one (1) occurrence of the shortnose sturgeon were identified within the North Charleston, SC

USGS Quadrangle. Only two of the documented occurrences are located within close proximity to the project area. There are two (2) documented flatwoods salamander occurrences located in relative proximity to the eastern end of the project area. These two occurrences were documented in 1953 where six (6) individuals were noted as captured and fourteen (14) individuals were reported. One of the occurrences near Clements Ferry Road would now be located within the zone of disturbance of past improvements to the roadway and the second area where a documented occurrence is located currently consists of residential development. The other documented protected species occurrences are located north of the project site and west of the project site in the vicinity of the Cooper River.

The review of SCDNR occurrence data indicated five documented occurrences of the bald eagle within the North Charleston, SC USGS Quadrangle. Though de-listed, the bald eagle remains protected by the *Bald & Golden Eagle Protection Act* as referenced above. The SCDNR records revealed that the documented occurrence data for the bald eagle are limited to the adjacent Cooper River drainage situated west of the Wando River drainage and the proposed project area.

The habitat assessment of the project area did not reveal any critical habitat for the documented protected species for Berkeley County. The habitat types present within the project area corridor and its immediate vicinity are generally of common distribution within the portion of Berkeley County where the project area is situated. The habitat assessment was conducted for listed species and their specific habitat requirements as described below. The only exception to this general finding within the project area is the portion of the project area that is situated within and adjacent to the Cainhoy Plantation tract. Portions of this tract adjacent to the project area (predominantly north side of existing Clements Ferry Road) are regularly maintained and managed. On-going species surveying in coordination with the US Fish & Wildlife Service (USFWS Log #2013-TA-0267) has been on-going on the tract. Results of surveying have indicated that no individuals of the red-cockaded woodpecker and flatwoods salamander are located within the tract in the vicinity of Clements Ferry Road and the proposed project area. The Cainhoy Plantation portion of the project area is described in greater detail in the following sections.

#### West Indian Manatee (*Trichechus manatus*)

Though not a documented species for Berkeley County by the SCDNR, the downstream critical areas in the vicinity of the project area near the confluence with the Wando River may contain potentially suitable habitat for the Federally protected West Indian Manatee (*Trichechus manatus*). However, the limits of the project area do not contain the specific habitat requirements preferred by this species. The critical area within the project area does not contain the access to adjacent deeper channels preferred by the manatee. The critical area within the project area is subjected to daily dry-down due to the tidal cycle and is not situated in close proximity to the confluence with the Wando River. Accordingly, the proposed project is not expected to have an effect on this species.

#### Shortnose Sturgeon (*Acipenser brevirostrum*) & Atlantic Sturgeon (*Acipenser oxyrinchus*)

The shortnose sturgeon is a bony, anadromous fish growing to a length of up to four feet. Shortnose sturgeon exhibit five rows of plates along the body, with olive to black coloring along the back, and yellow to white coloring on the belly. Four barbels are located in front of the mouth are used to locate food along the river bottom. The shortnose sturgeon migrates

from salt water to freshwater to spawn from April to May. Spawning occurs every other year for males and every third year for females. The shortnose sturgeon's habitat consists of tidal river systems along the Atlantic coast of North America. This species typically occupies the channels and deeper holes within the river, while feeding in shallow areas at night.

The Atlantic sturgeon's habitat requirements and feeding habits are similar to that of the shortnose sturgeon. The most notable physical differences between the species is the darker coloration of the Atlantic sturgeon and its smaller mouth and more pointed snout when compared to the larger mouth and blunt snout of the shortnose sturgeon. The Atlantic sturgeon also prefers the major river drainages and their mainstems. Both species require fresh or slightly brackish water for spawning and migrate into saltwater (marine) habitat for maturing. Recent proposals (2016) by the NMFS for critical habitat designations include the nearby Cooper River and Santee River system for the portion of the Carolina distinct population segment within the region where the project area is located.

Though the northeastern terminus of the project area is in close proximity to the SC Highway 41 Wando River crossing, the proposed project corridor does not include the Wando River itself, or any of its associated, larger tributaries capable of supporting the shortnose and Atlantic sturgeon. The unnamed tidal tributary (critical area) located within the project area boundaries is not of the order that would be considered as potentially suitable habitat for the shortnose and Atlantic sturgeon. The current bridge replacement and associated roadway improvements at the SC Highway 41 crossing are located beyond the limits of the proposed corridor for the widening of Clements Ferry Road. **Accordingly, the proposed project is not expected to have an effect on these species.**

#### Flatwoods Salamander (*Ambystoma cingulatum*)

The flatwoods salamander is a small amphibian growing to a length of up to five inches. This species is black in color with a cross-pattern of irregular, gray lines on the back. The belly of the flatwoods salamander is gray to black with whitish to gray spots.

This species prefers fire-maintained, seasonally wet, relatively open pine savannas and pine flatwoods located within the southeastern portion of the United States. These areas consist predominantly of long leaf pine or slash pine with a low percentage of canopy closure and understory coverage. Additionally, this species may be found in the vicinity of cypress ponds. Shallow water wetland habitat is required for laying eggs.

The majority of the proposed project area corridor does not contain potentially suitable habitat for the flatwoods salamander. The majority of undeveloped areas adjacent to the project area do not contain forested wetlands and adjacent forested uplands with the vegetative structure preferred by this species. These areas do not contain the seasonally wet, open longleaf pine and/or slash pine savannas with adjacent open cypress ponds preferred by this species. Cainhoy Plantation, in coordination with the USFWS, has completed five years of monitoring and sampling for the flatwoods salamander and no individuals of this species have been identified. The results of the monitoring and sampling have revealed that the southern portion of Cainhoy Plantation that is adjacent to the proposed project corridor for the widening of Clements Ferry Road is not considered suitable habitat for the flatwoods salamander. Accordingly, the proposed project is not expected to have an effect on this species.

American Wood Stork (*Mycteria Americana*)

The wood stork is a large wading bird that is approximately 50 inches tall and has a wingspan of approximately five feet. The plumage of the wood stork is primarily white, with black primary and secondary wing feathers and a short black tail. The head and neck are dark gray and primarily unfeathered. The wood stork displays a prominent black bill that is slightly decurved and thick at the base. The wood stork feeds primarily on small fish, including minnows and shellfish.

The wood stork requires shallow wetland areas with a depth of six to 10 inches. The bird's primary habitat is brackish and freshwater wetland areas with associated shallow water zones. The wood stork favors depressional areas within larger wetland systems that are subject to falling water levels due to the resultant concentration of fish species. Wood storks are highly colonial and prefer forested wetland areas (swamps) or islands surrounded by open water for nesting.

Though not a documented species known to occur in Berkeley County by the SCDNR, the critical areas within and adjacent to the project area contain potentially suitable habitat for the Federally protected wood stork (*Mycteria americana*). The nesting habitat preferred by this species is not located within the project area corridor. Any disturbance to the wood stork would be limited to the timeframe for construction over on-site critical areas and would be short term and minor in nature only. **The proposed project may affect a limited amount of this potentially suitable foraging habitat (critical area), but is not likely to adversely affect the wood stork.**

Red-cockaded woodpecker (*Picoides borealis*)

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

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

The project area corridor does not contain suitable nesting habitat for the red-cockaded woodpecker. Mixed longleaf and loblolly pine stands are present within the review area. However, the existing understory conditions are not preferred by this species due to lack of management and the resultant developed vegetation layer. Habitat conditions are also lacking due to increased development along the project corridor. Portions of Cainho Plantation which

is adjacent to the central portion of the project corridor may contain limited areas of potentially suitable habitat for the red-cockaded woodpecker. Cainhoy Plantation has recently undergone a detailed red-cockaded woodpecker survey and no individuals of this species have been identified within the southern portion of the tract that is adjacent to the proposed project corridor for the widening of Clements Ferry Road (USFWS Log No. 2013-TA-0267). Habitat conditions within this portion of Cainhoy Plantation are not of the structure preferred by this species. Accordingly, the proposed project is not expected to have an effect on nesting habitat for this species. Similar to the conditions for the Clements Ferry Road Phase I project corridor, the portions of Cainhoy Plantation adjacent to the project area corridor may be considered potentially suitable foraging habitat for the red-cockaded woodpecker. **The proposed project may affect a limited amount of this potentially suitable habitat, but is not likely to adversely affect the red-cockaded woodpecker.**

Pondberry (*Lindera melissifolia*)

Pondberry is a deciduous shrub found within wetland areas of the southeastern coastal plain and wetland areas associated with the southern portion of the Mississippi River. The shrub grows to a maximum height of approximately six feet and forms dense thickets. The leaves of pondberry are thin and drooping and taper to a point at the tip. Leaves are ovate to elliptic in shape and have an odor resembling sassafras when crushed. Pondberry produces multiple yellow flowers from February to March and red fruit from August to October. Pondberry prefers seasonally wet areas within bottomland hardwoods, and shallow depressions (ponds) located within the sandhills and coastal plain regions.

The wetland drainageways located within the project area corridor are not the seasonally wet, pond or depression habitats preferred by this species. The drainageways within the project area are associated with adjacent flatwoods or contain a tributary component without adjacent bottomland hardwoods and their associated seasonally wet areas. The pineland ponds and depressions preferred by this species along with depressions located within bottomland hardwood communities are not present within the project area. **Accordingly, the proposed project is not expected to have an effect on this species.**

Canby's dropwort (*Oxypolis canbyi*)

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

The primary habitats of Canby's dropwort are pineland ponds and savannas, wet meadows, and around the edges of open cypress ponds. This species prefers open habitat with little to no canopy closure of tree species. The habitat types preferred by Canby's dropwort generally consist of hydric soils with a seasonal high water table. The wetland habitat types preferred by Canby's dropwort are not present within the project area corridor. The wetland areas within the project area consist of wetland drainageways and depressions within flatwoods that have a well-developed canopy and understory. The open habitat characteristics preferred by this species are not present due to lack of understory management, vegetative structure and

encroaching development within the southwestern and northeastern portions of the project area. **Accordingly, the proposed project is not expected to have an effect on this species.**

American chaffseed (*Schwalbea americana*)

The American Chaffseed is a perennial herb with large purplish-yellow, tubular flowers. The leaves are alternate, lance-shaped to elliptic, and attach directly to the stalk without a leaf stem. Leaves are 2 to 5 centimeters (1 to 2 inches) long, and herb can be 30-60 centimeters (one to two feet) tall. The entire plant is densely hairy throughout, including the flowers. Flowering occurs from April to June in the South.

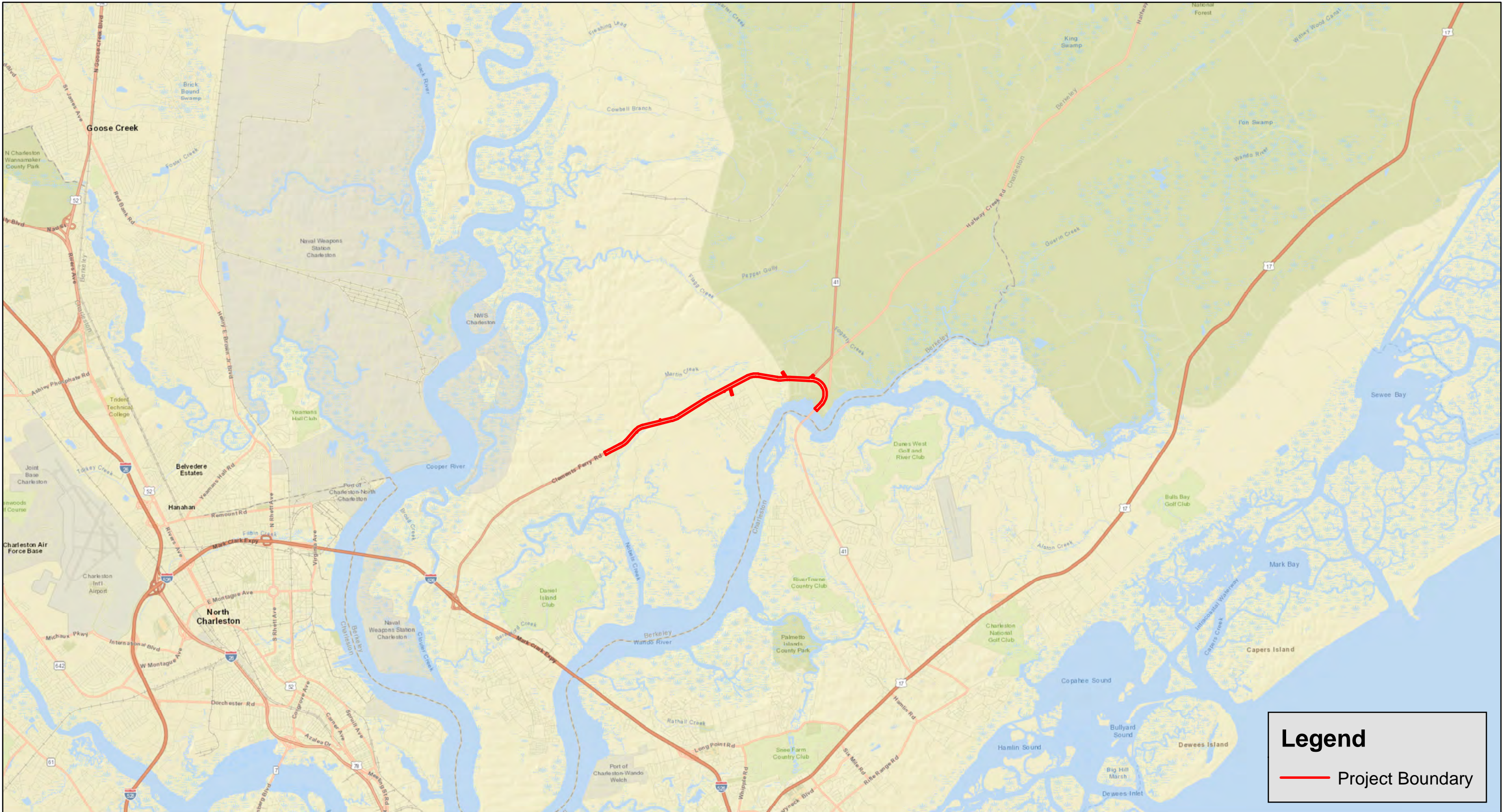
American chaffseed prefers fire-maintained areas such as wet savannas and open, moist pine flatwoods. American chaffseed is found in moist to dry, sandy soils of the coastal plain. This species is also documented to occur within open, grass and sedge systems. American chaffseed depends on a fluctuating water table and frequent fire to maintain the open habitat that it requires.

Similar to Canby's dropwort described above, the open habitat characteristics preferred by American chaffseed are not present within the project area. The lack of understory management and encroaching development within the southwestern and northeastern portions of the project area have eliminated the potential for the presence of suitable habitat for this species. The only open, wet grass and sedge system within the project area is situated within critical area adjacent to an unnamed tributary to the Wando River within the eastern portion of the project area. **Accordingly, the proposed project is not expected to have an effect on this species.**

The review of the project area did not reveal the preferred habitats required by the shortnose and Atlantic sturgeon, flatwoods salamander, West Indian manatee, pondberry, Canby's dropwort and American chaffseed. Based on the lack of suitable habitat and/or no observations of the listed species during field reconnaissance of the project area and coordination with representatives of Cainhoy Plantation, results of the protected species/habitat assessment indicate that the proposed project is not expected to have an effect on these threatened or endangered species or critical habitats currently documented for Berkeley County. Per prior coordination with the USFWS and the aforementioned coordination with representatives of Cainhoy Plantation, the project is not expected to negatively affect the red-cockaded woodpecker or wood stork. The Cainhoy Plantation project is ongoing and is referenced by USFWS Log #2013-TA-0267.

## **APPENDIX A**

- FIGURE 1 - SITE LOCATION MAP**
- FIGURE 2 – NWI & REGULATED FLOODPLAIN**
- FIGURE 3 – TOPOGRAPHIC MAPS**
- FIGURE 4 – SOIL MAPS**
- FIGURE 5 – POTENTIAL WOVS**



**Legend**

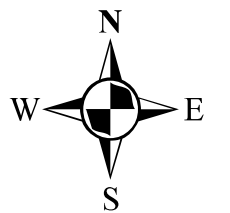
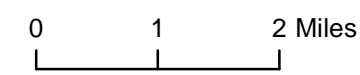
— Project Boundary

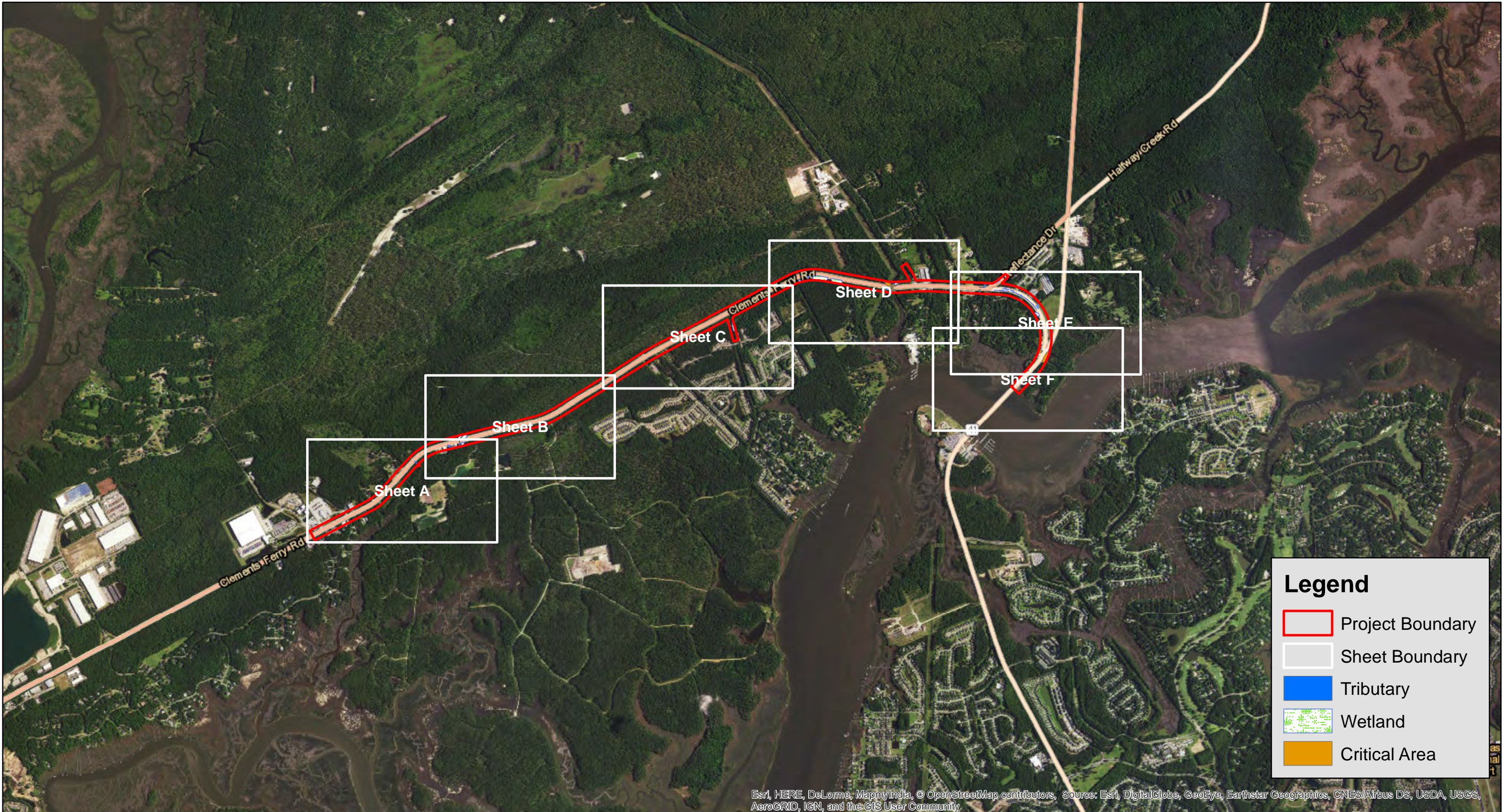
Prepared:  
March 17, 2017  
By:

**IE** INFRASTRUCTURE  
CONSULTING & ENGINEERING

**Figure 1: Project Location**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





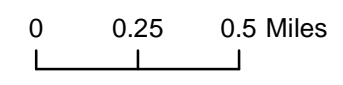
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

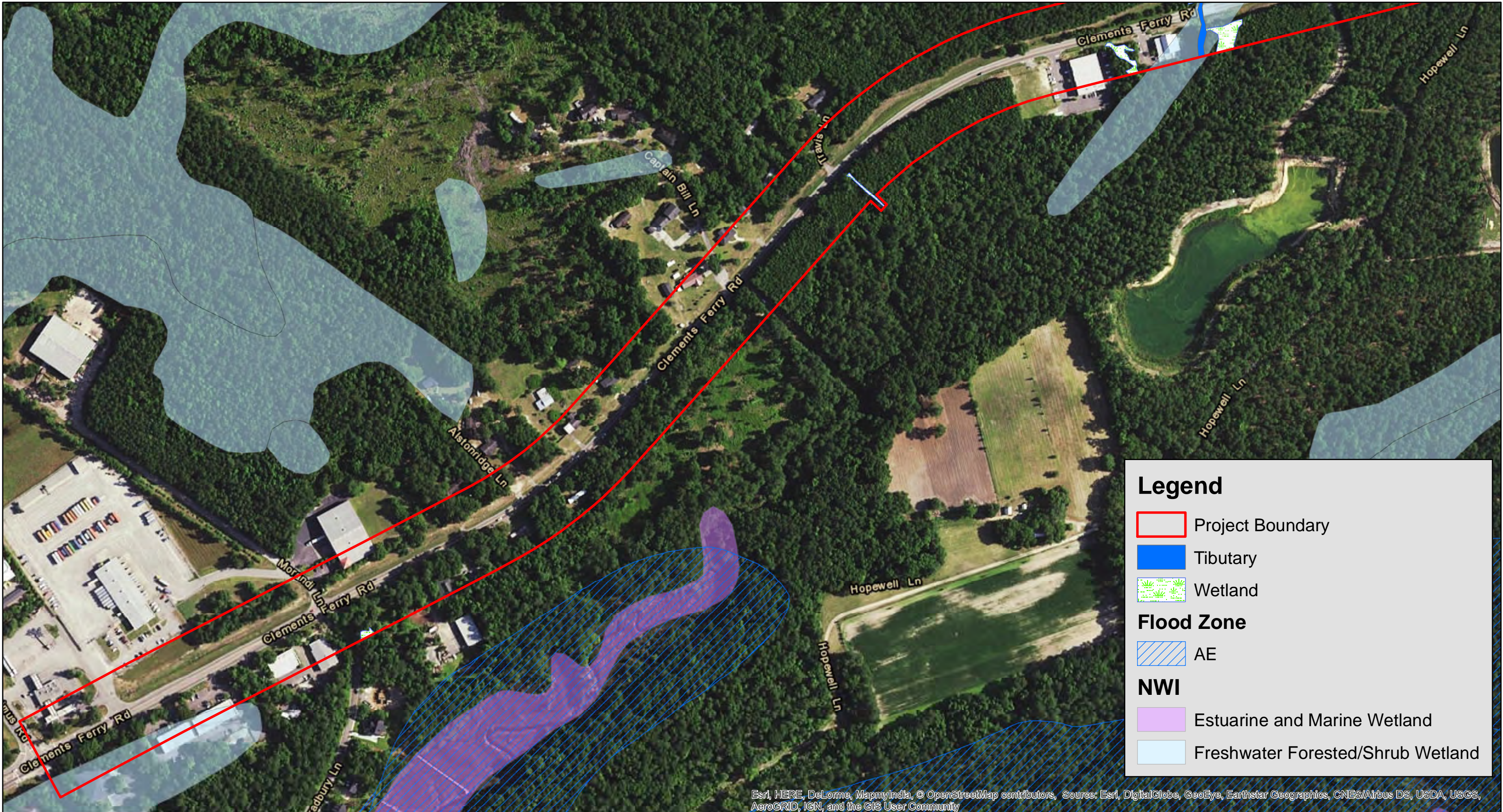
Prepared:  
March 17, 2017  
By:

**IE** INFRASTRUCTURE  
CONSULTING & ENGINEERING

**Figure 2 Master: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tibutary
- Wetland

**Flood Zone**

- AE

**NWI**

- Estuarine and Marine Wetland
- Freshwater Forested/Shrub Wetland

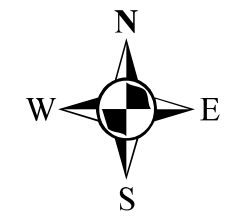
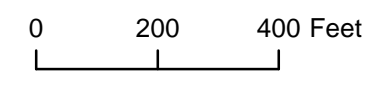
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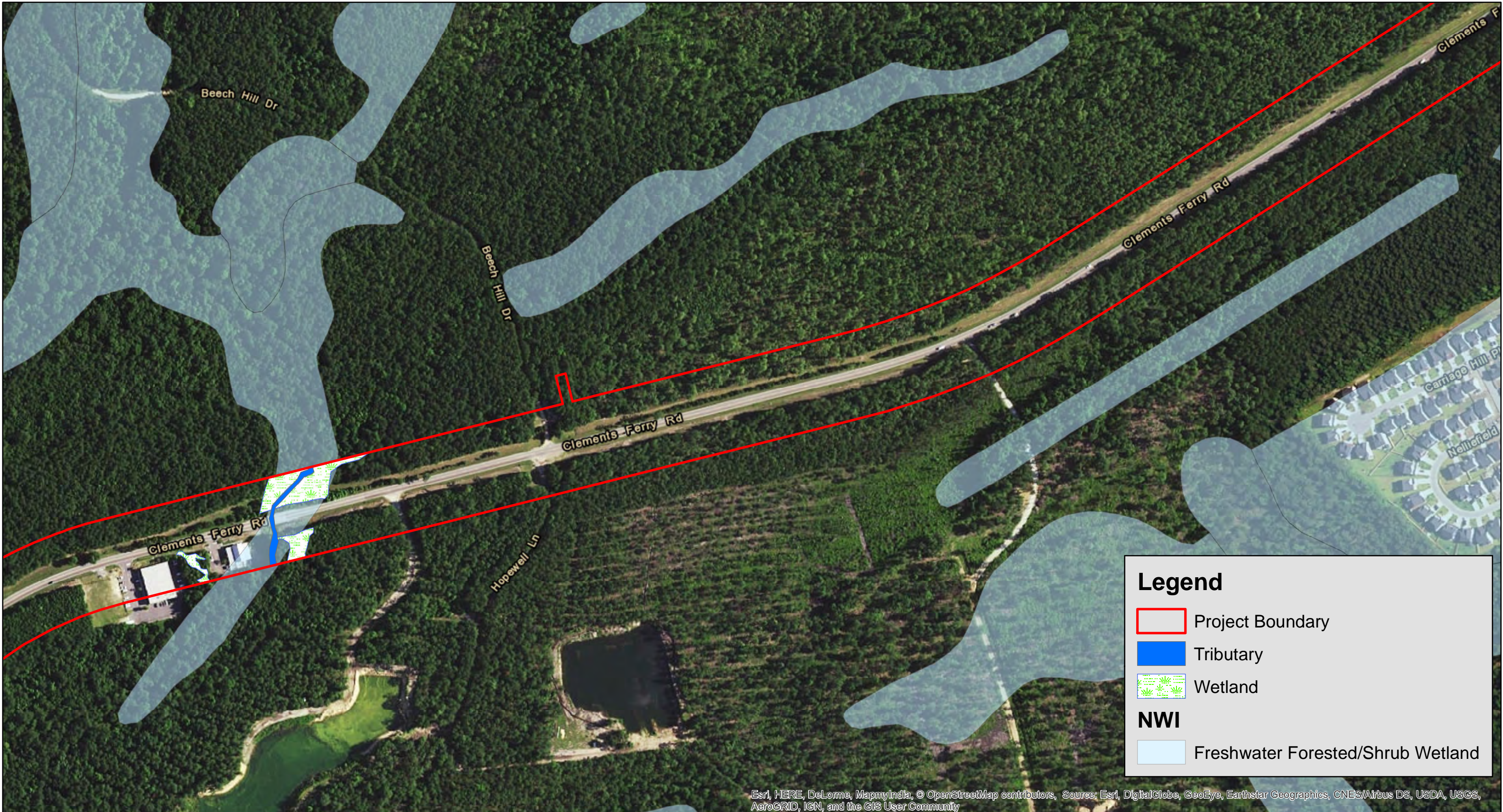
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**Figure 2a: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland

**NWI**

- Freshwater Forested/Shrub Wetland

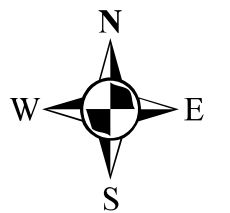
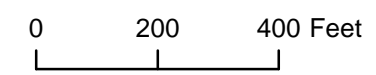
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**Figure 2b: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



# Legend


 Project Boundary


 Wetland

## Flood Zone

 AE

## NWI

 Freshwater Emergent Wetland

 Freshwater Forested/Shrub Wetland



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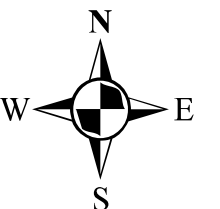
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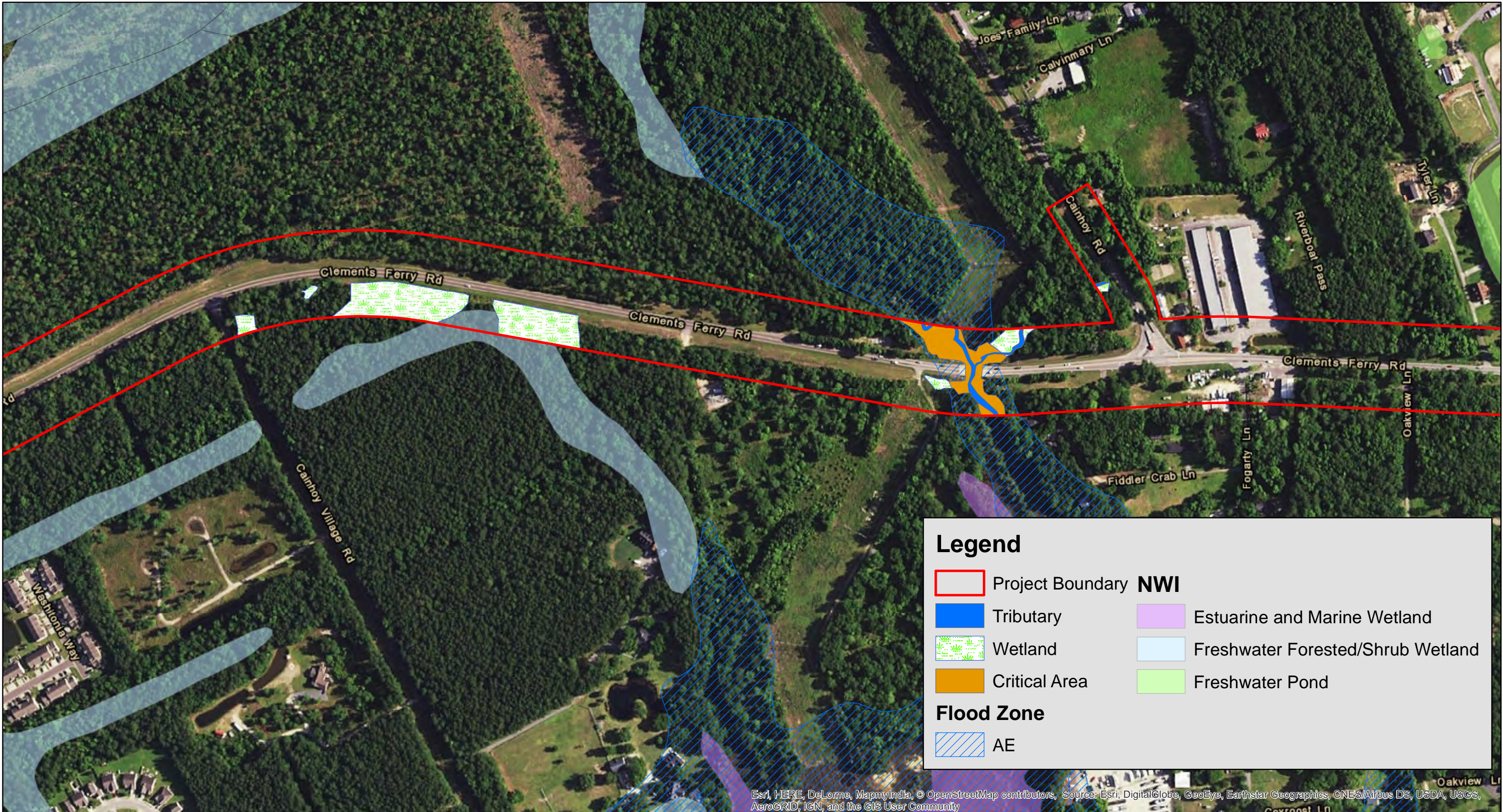
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### Figure 2c: NWI and Regulated Floodplain


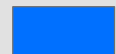
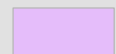
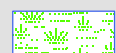
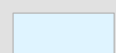
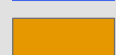
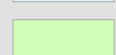

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC

0 200 400 Feet





**Legend**

 Project Boundary	<b>NWI</b>
 Tributary	 Estuarine and Marine Wetland
 Wetland	 Freshwater Forested/Shrub Wetland
 Critical Area	 Freshwater Pond
<b>Flood Zone</b>	
 AE	

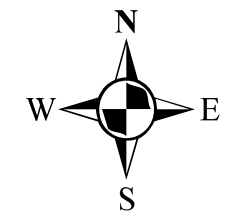
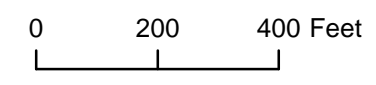
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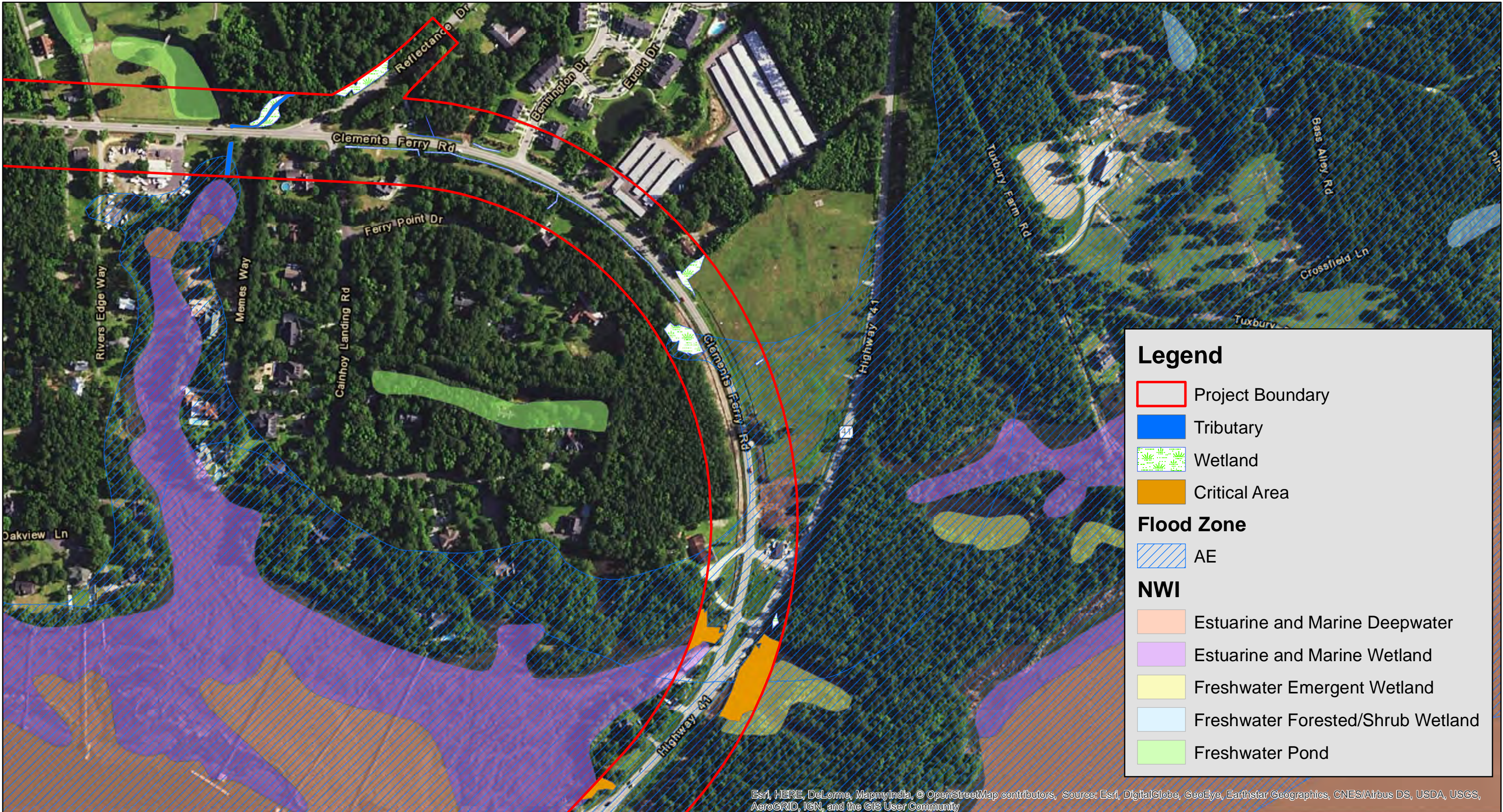
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**Figure 2d: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland
- Critical Area

**Flood Zone**

- AE

**NWI**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

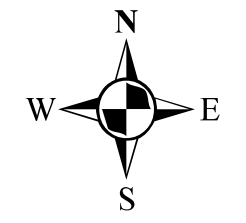
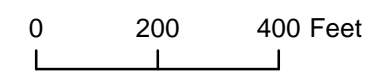
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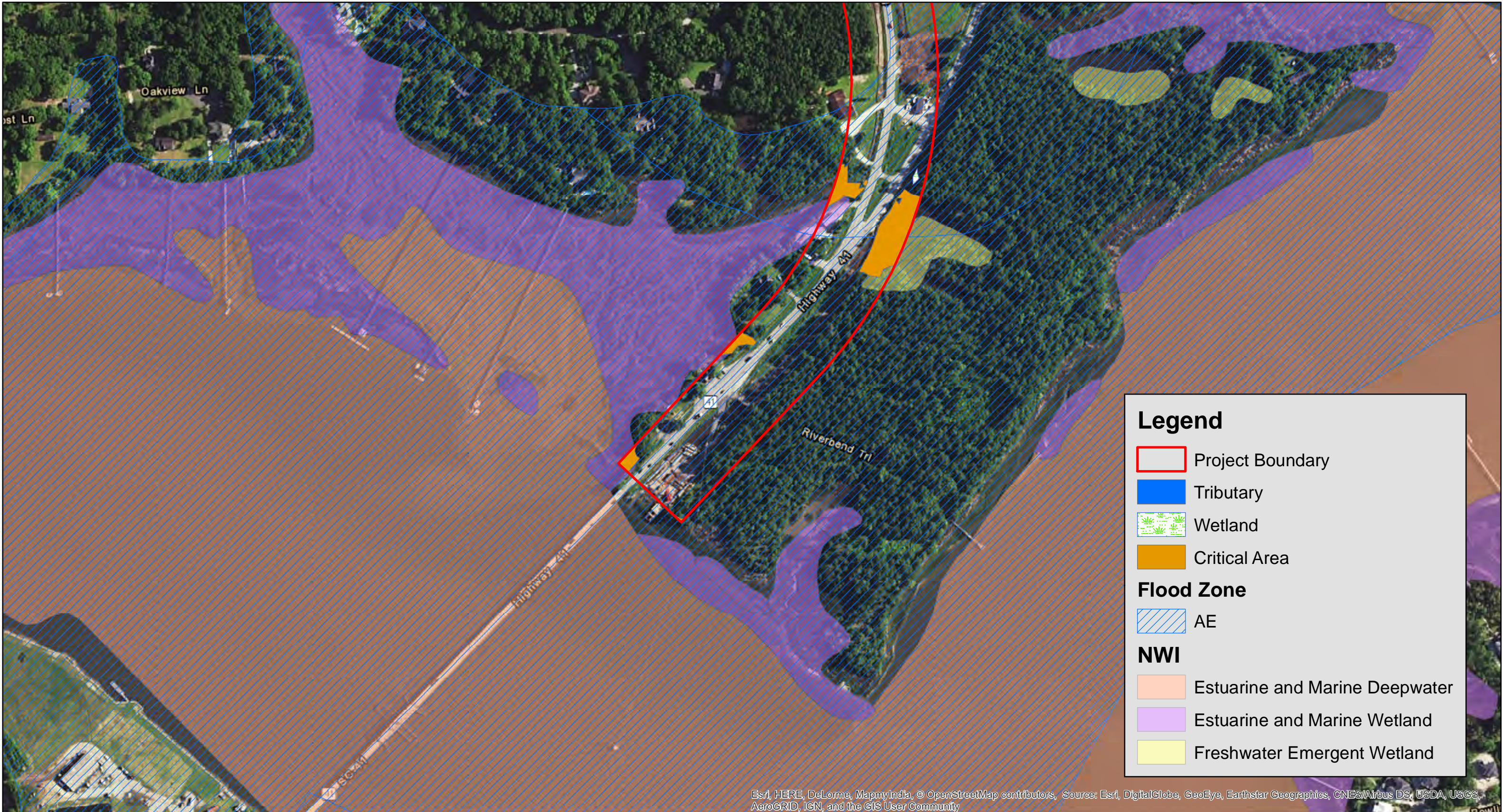
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**Figure 2e: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland
- Critical Area

**Flood Zone**

- AE

**NWI**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland

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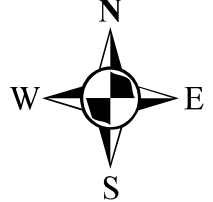
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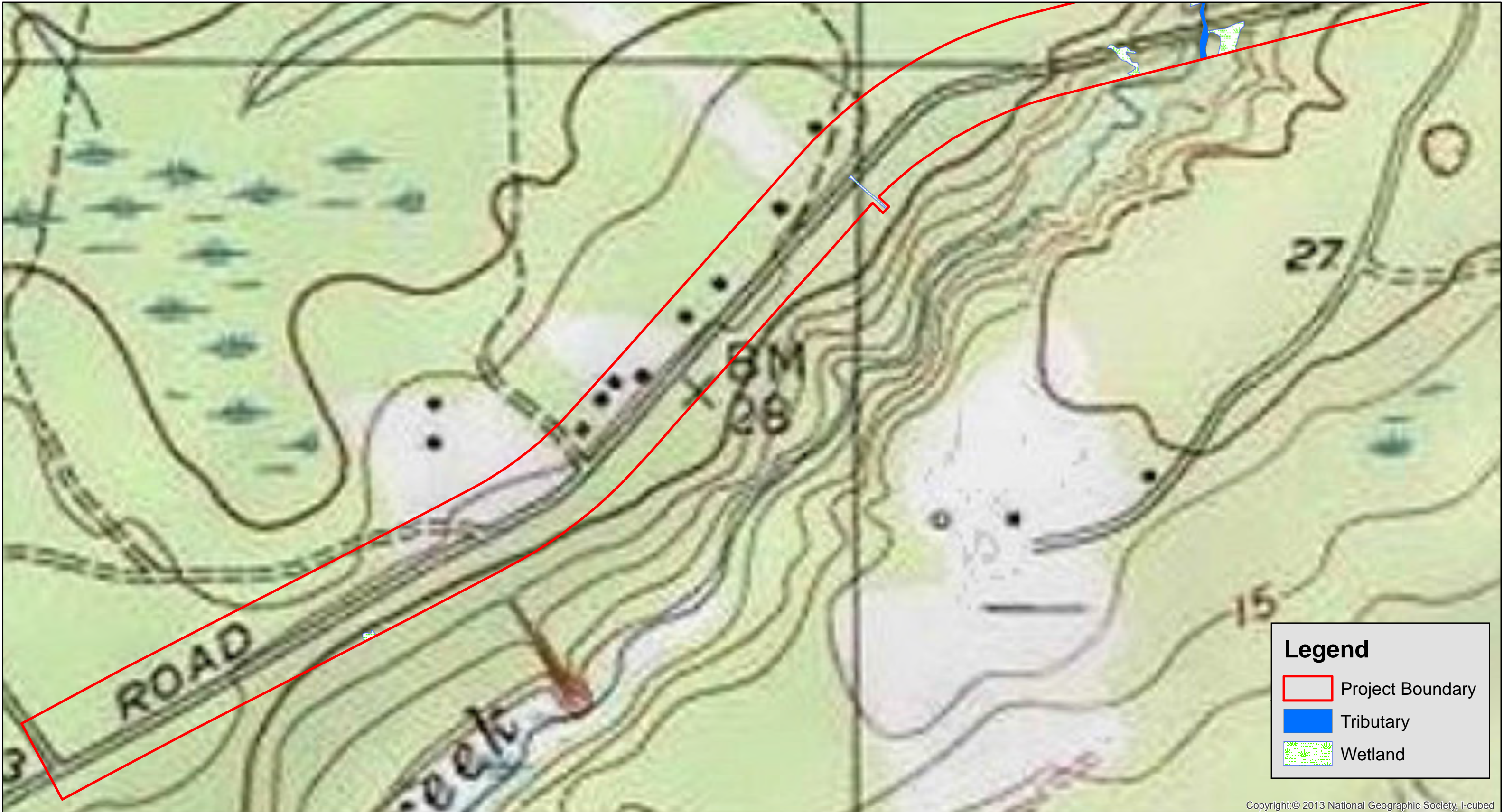
**Figure 2f: NWI and Regulated Floodplain**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC

0 200 400 Feet







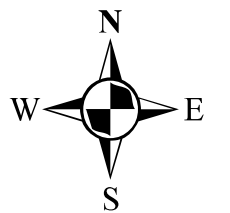
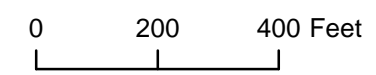
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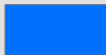
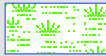
**Figure 3a: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

-  Project Boundary
-  Tributary
-  Wetland

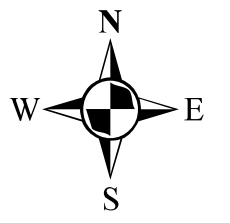
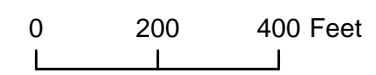
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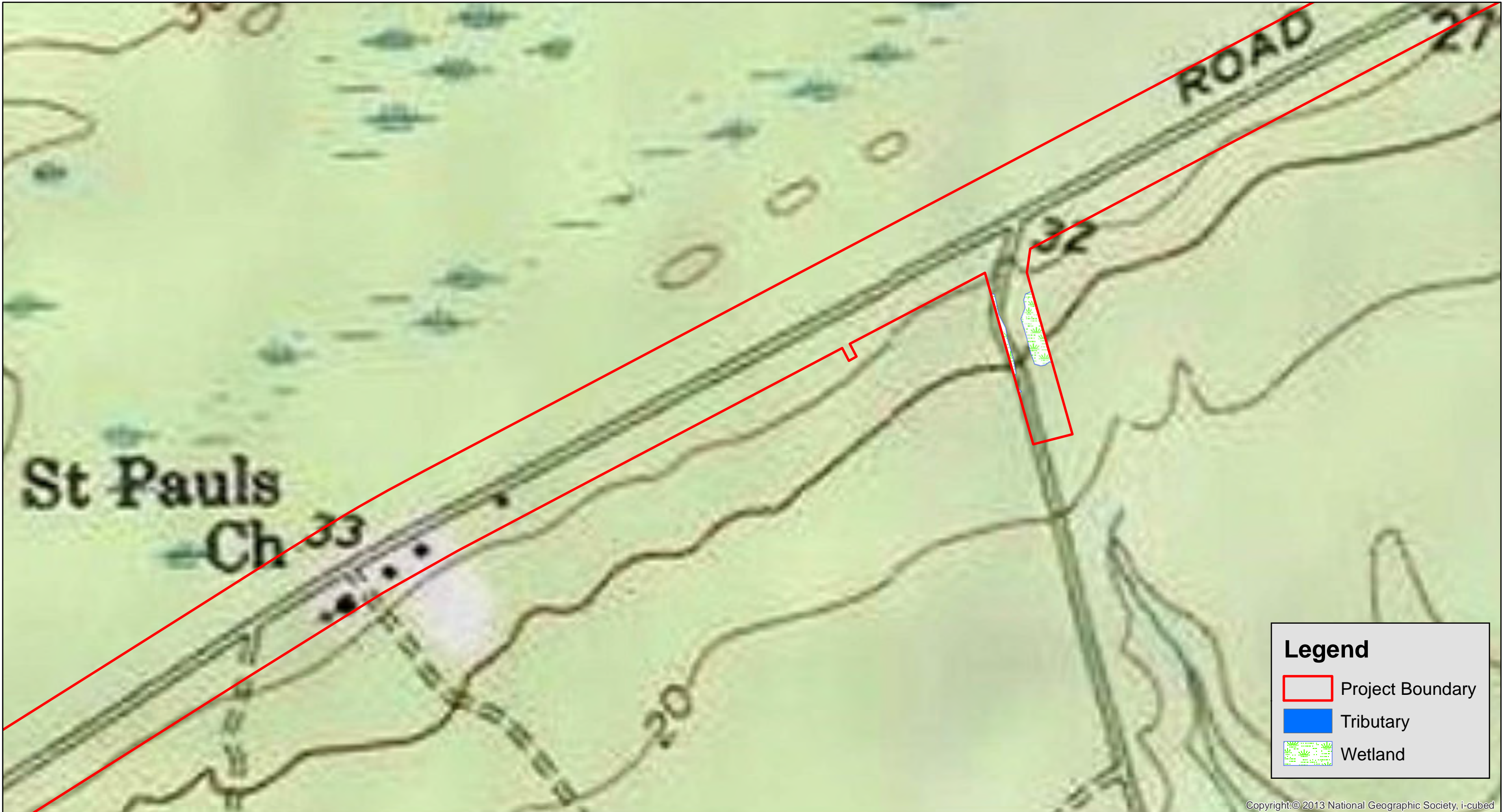
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**Figure 3b: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

-  Project Boundary
-  Tributary
-  Wetland

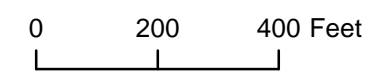
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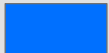


**Figure 3c: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

-  Project Boundary
-  Tributary
-  Wetland
-  Critical Area

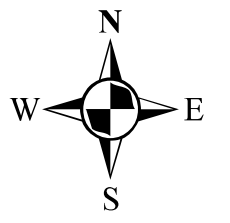
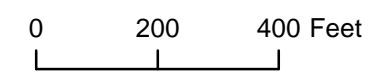
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**Figure 3d: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





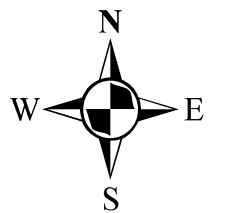
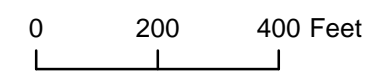
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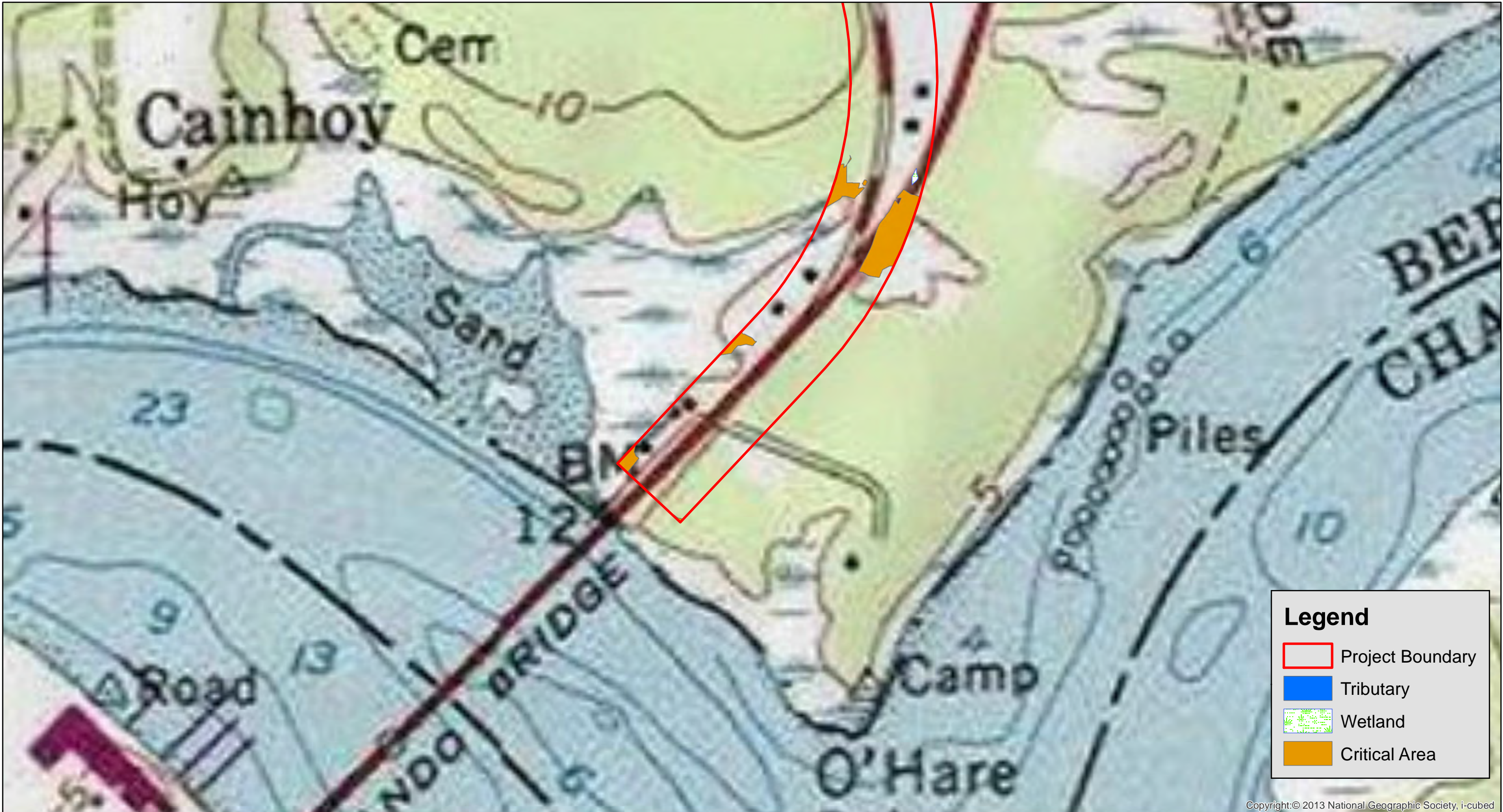
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**Figure 3e: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland
- Critical Area

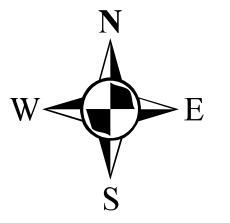
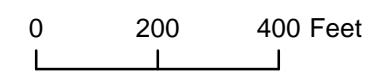
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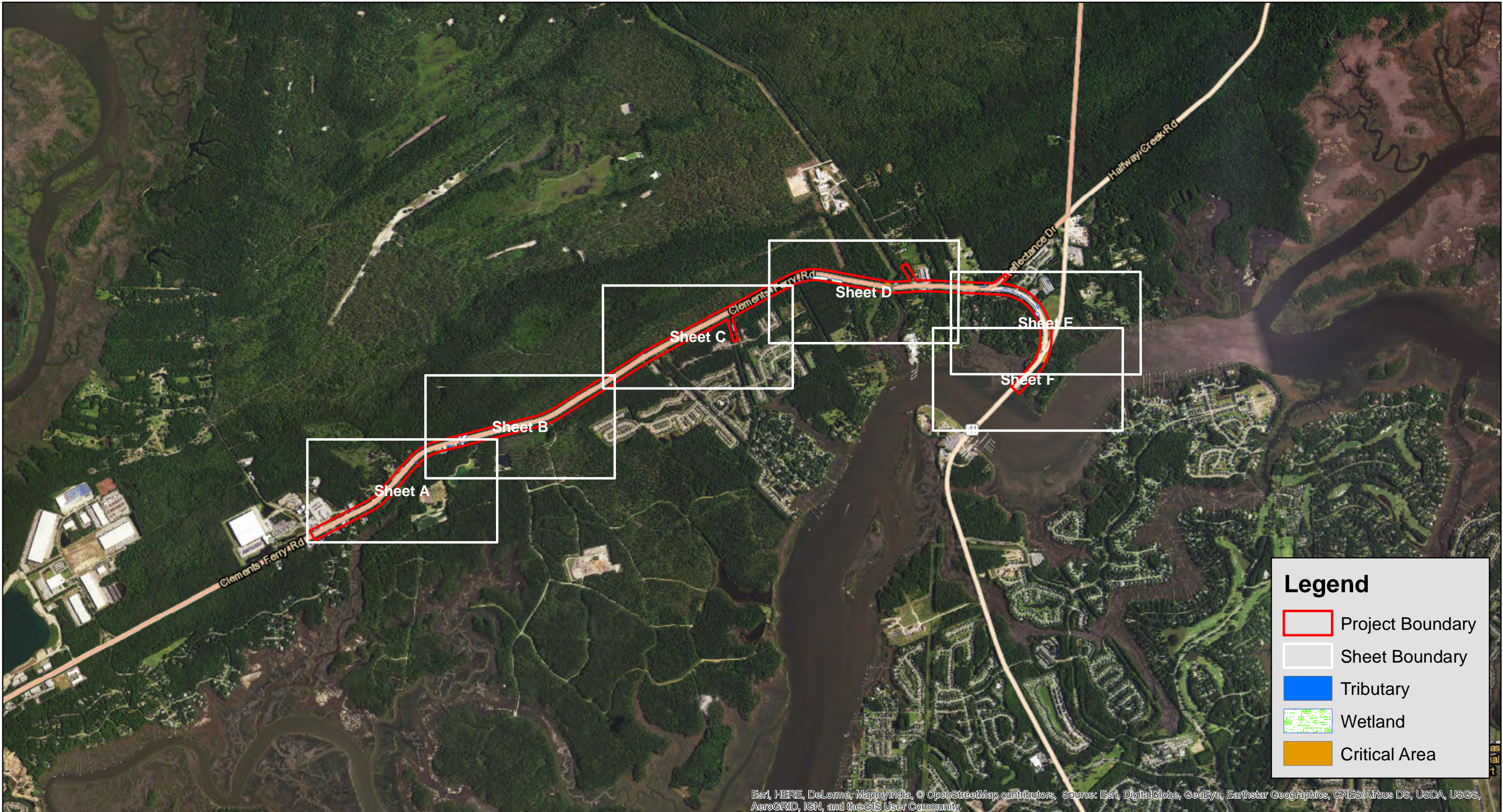
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**Figure 3f: Topographic**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





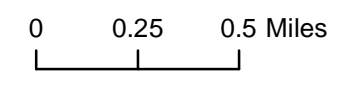
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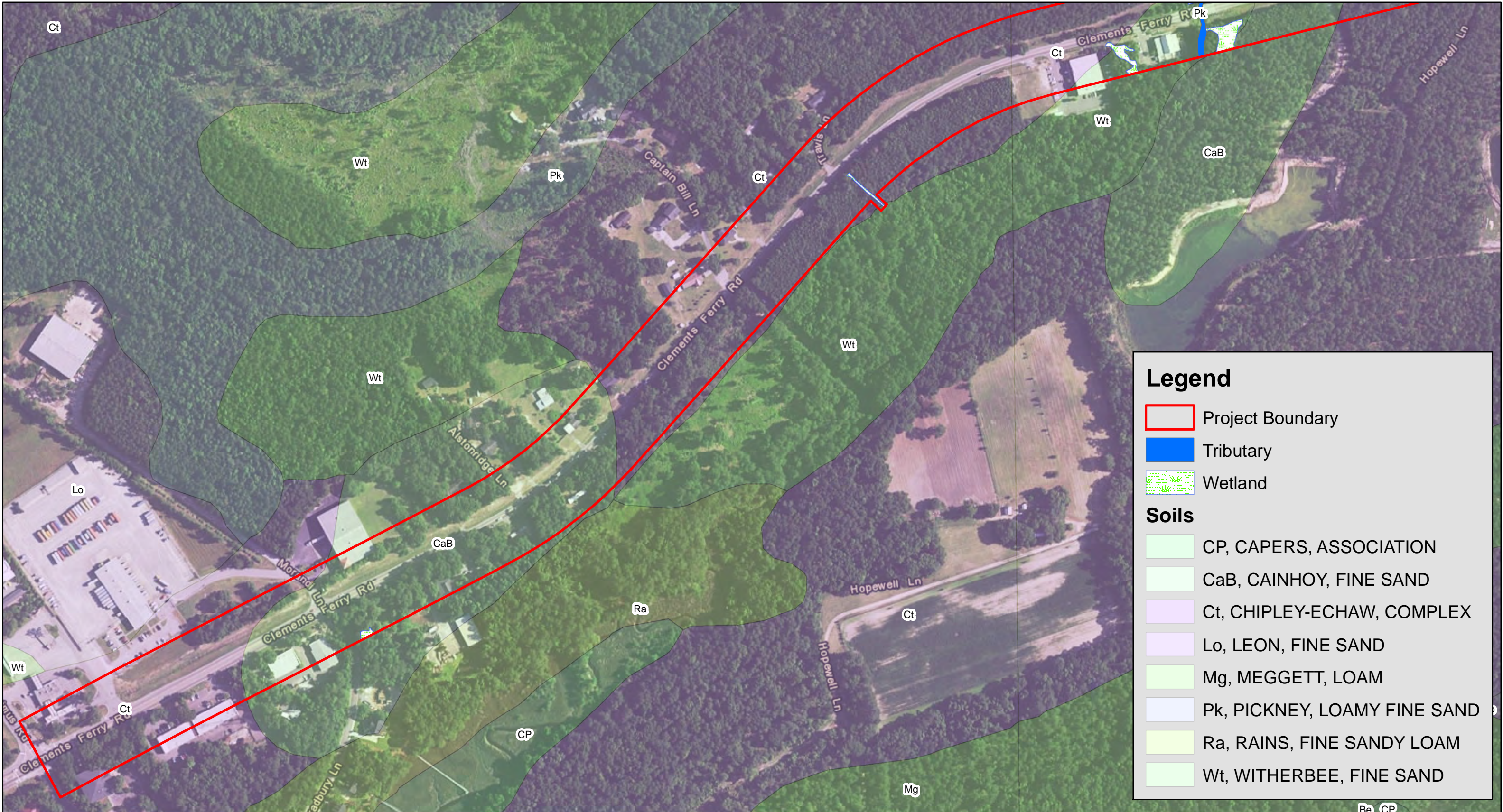
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**Figure 4 Master: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



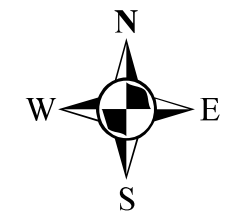
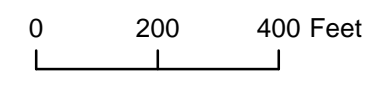


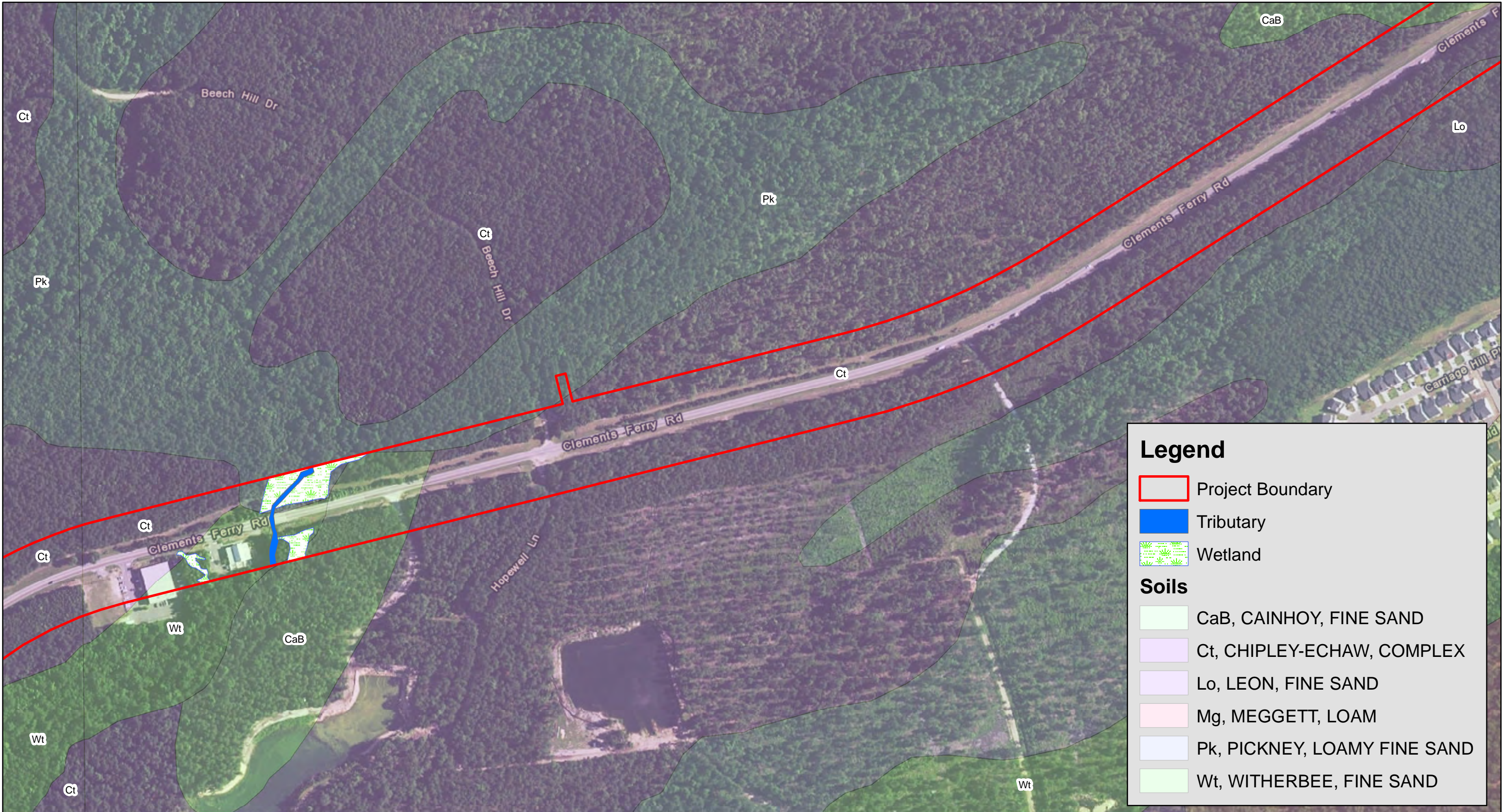
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March 17, 2017  
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**Figure 4a: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland

**Soils**

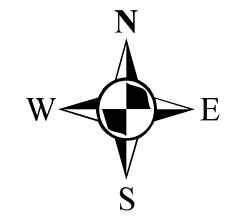
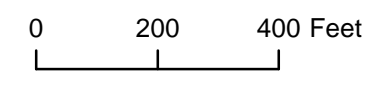
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- Ct, CHIPLEY-ECHAW, COMPLEX
- Lo, LEON, FINE SAND
- Mg, MEGGETT, LOAM
- Pk, PICKNEY, LOAMY FINE SAND
- Wt, WITHERBEE, FINE SAND

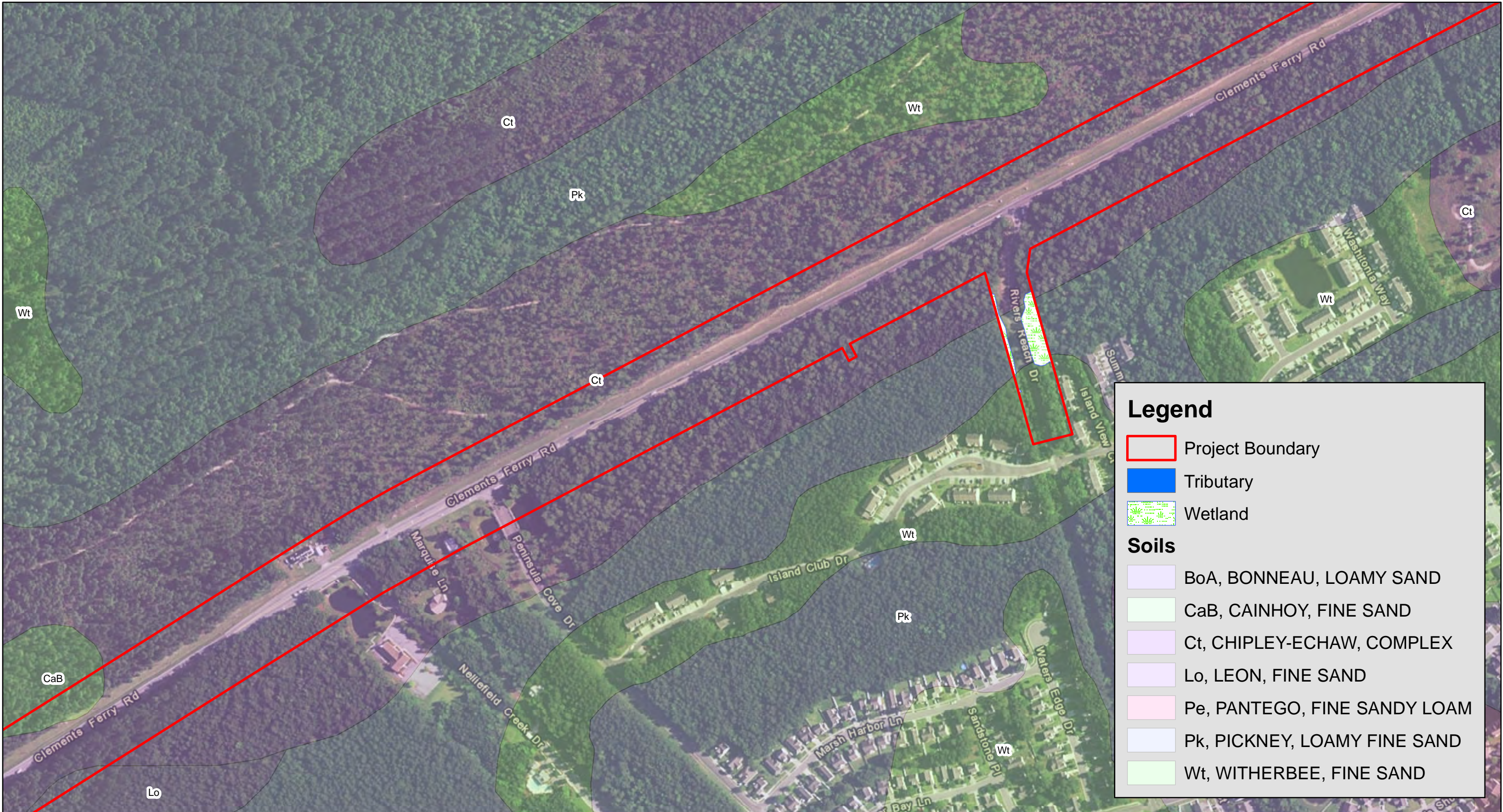
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**Figure 4b: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





**Legend**

- Project Boundary
- Tributary
- Wetland

**Soils**

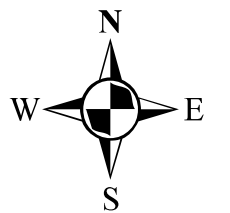
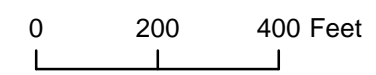
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- CaB, CAINHOY, FINE SAND
- Ct, CHIPLEY-ECHAW, COMPLEX
- Lo, LEON, FINE SAND
- Pe, PANTEGO, FINE SANDY LOAM
- Pk, PICKNEY, LOAMY FINE SAND
- Wt, WITHERBEE, FINE SAND

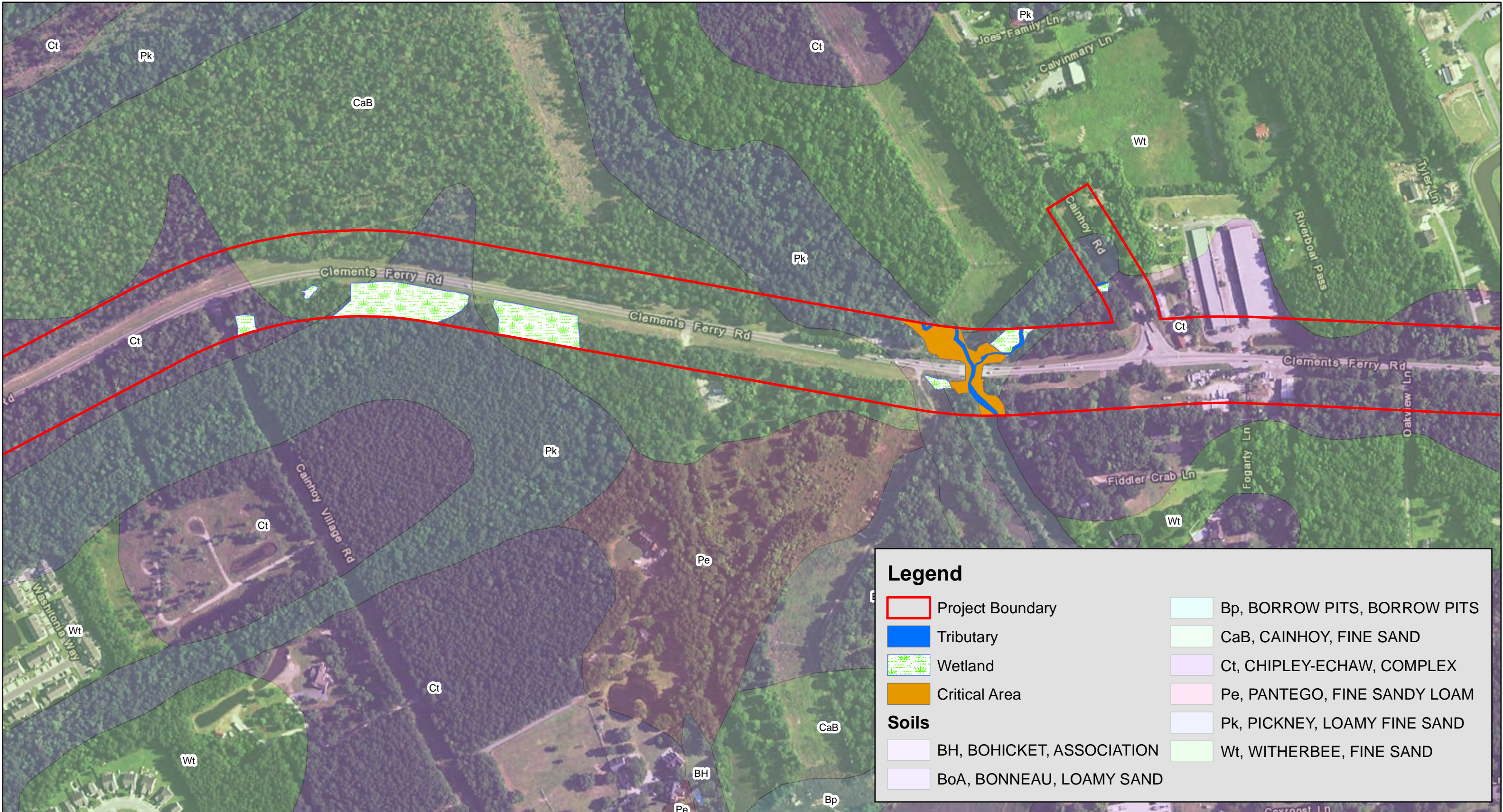
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**Figure 4c: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



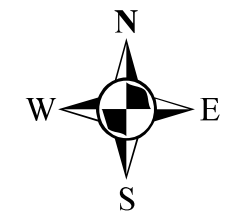
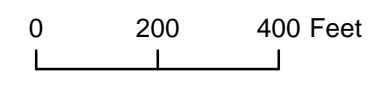


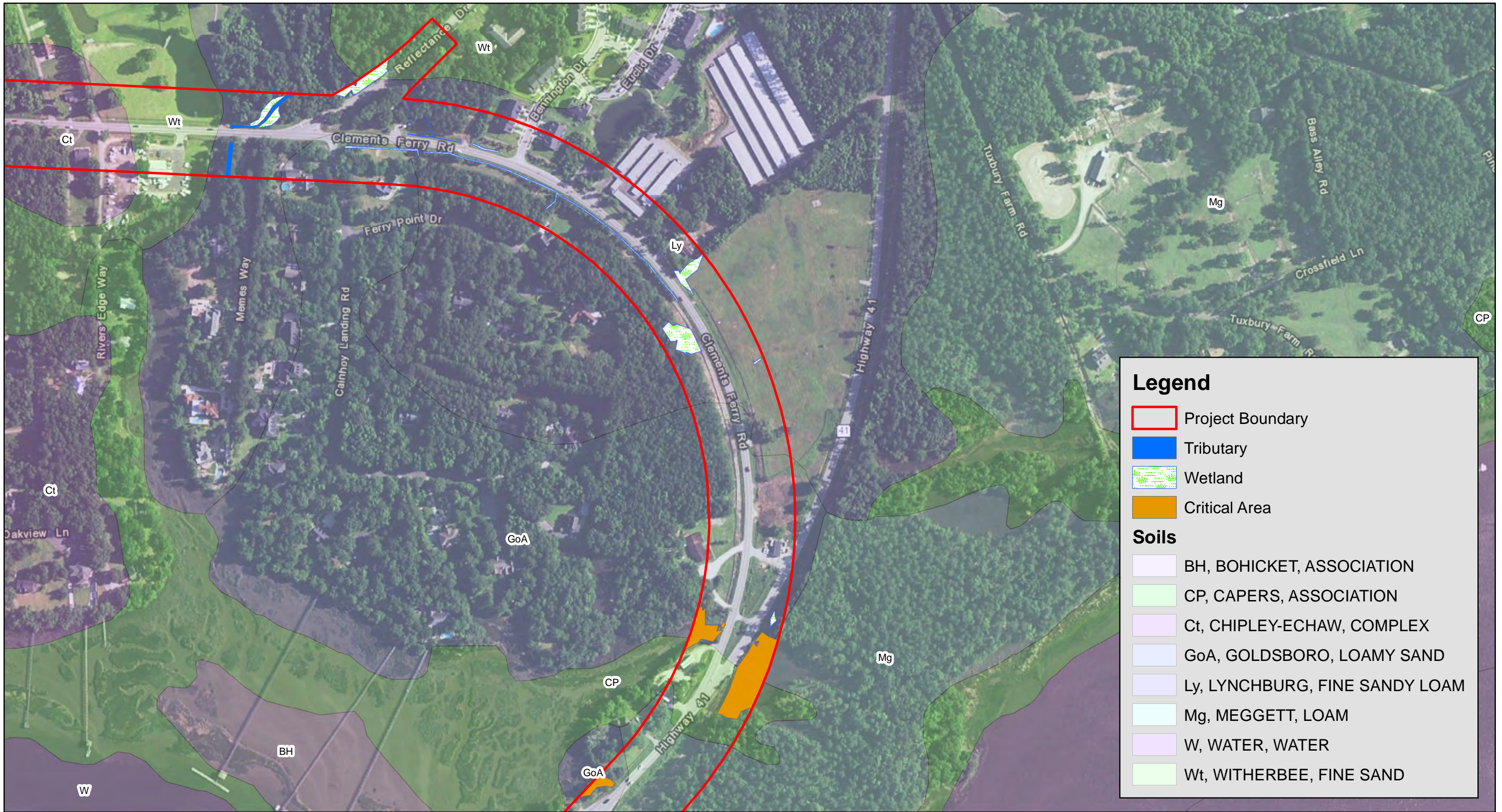
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**Figure 4d: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





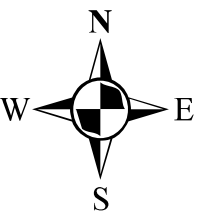
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**Figure 4e: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC

0 200 400 Feet



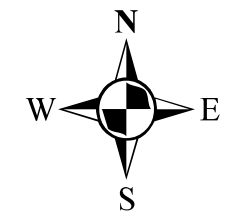
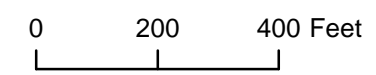


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**Figure 4f: Soils**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





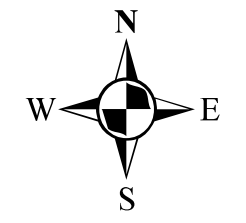
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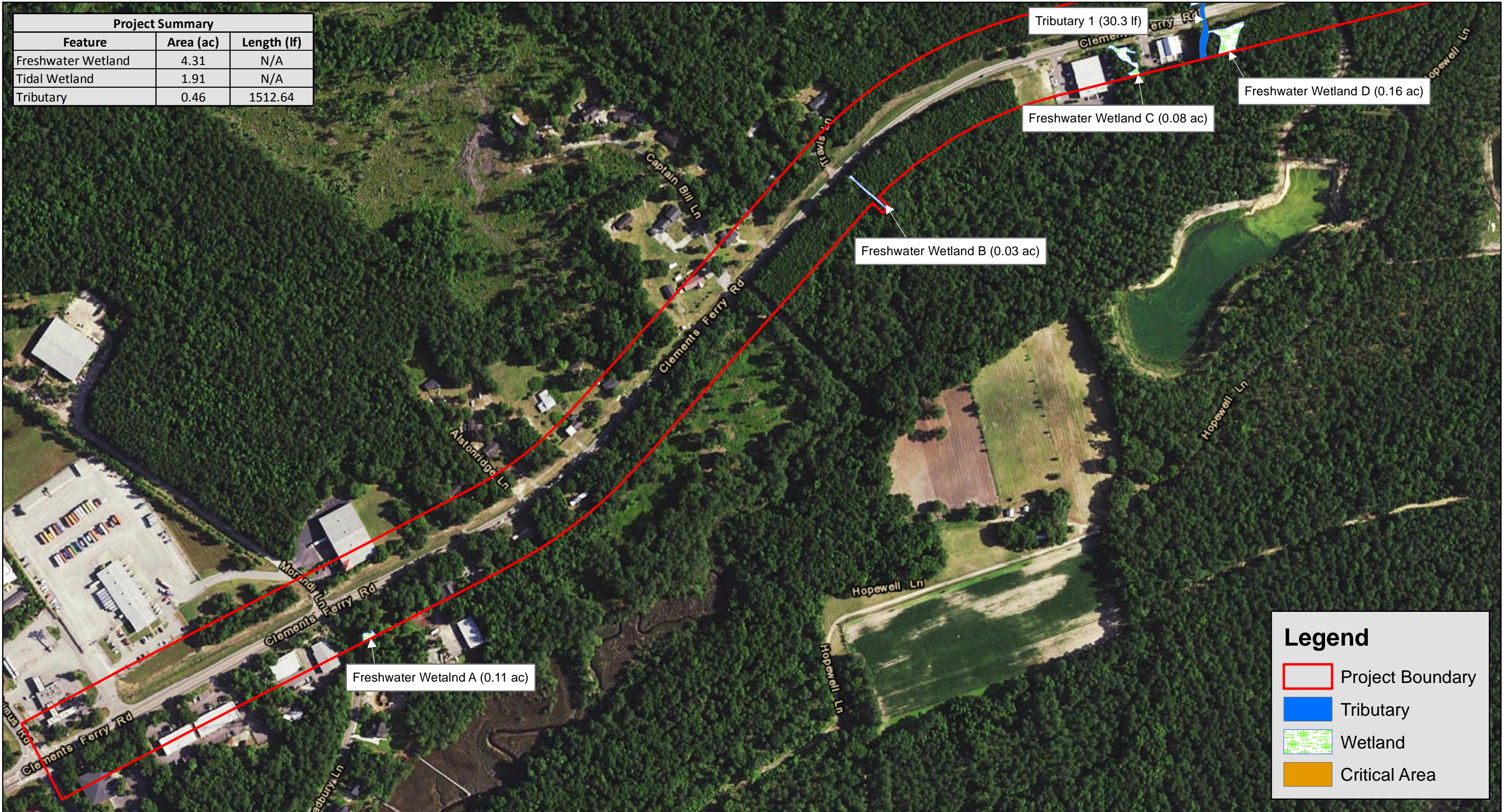
**Figure 5 Master: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC

0 0.25 0.5 Miles



Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64



**Legend**

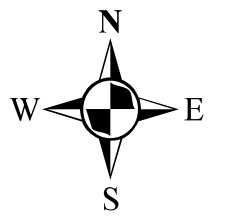
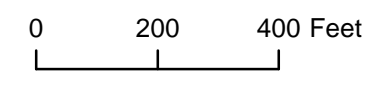
- Project Boundary
- Tributary
- Wetland
- Critical Area

Prepared:  
March 20, 2017  
By:

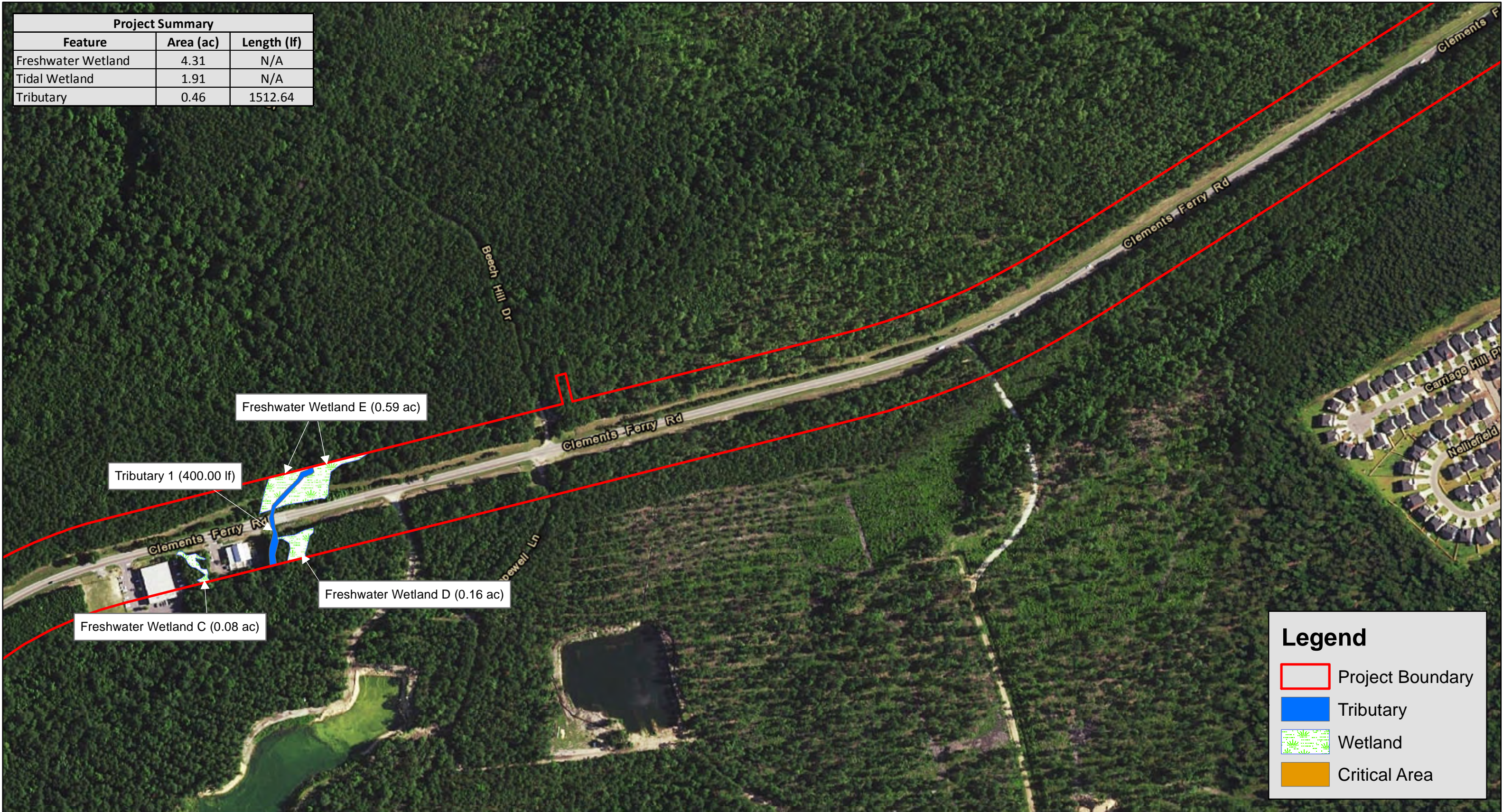


**Figure 5a: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64



**Legend**

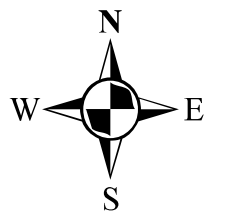
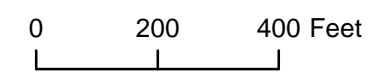
- Project Boundary
- Tributary
- Wetland
- Critical Area

Prepared:  
March 20, 2017  
By:



**Figure 5b: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64



**Legend**

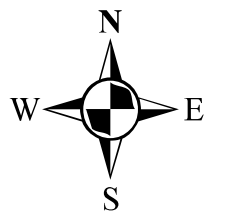
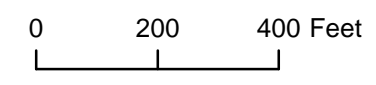
- Project Boundary
- Tributary
- Wetland
- Critical Area

Prepared:  
March 20, 2017  
By:

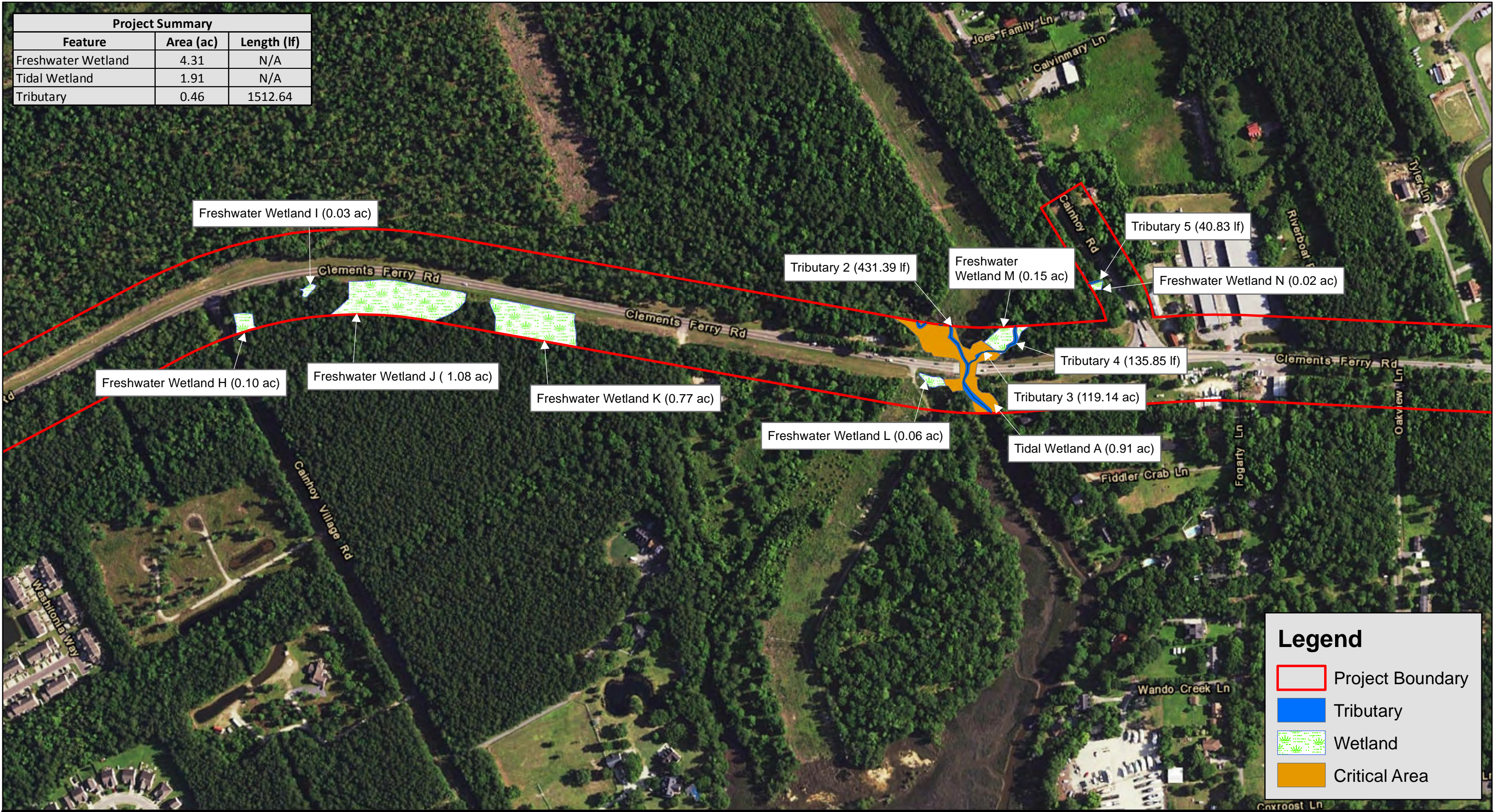


**Figure 5c: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64



**Legend**

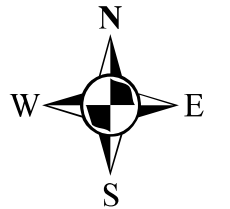
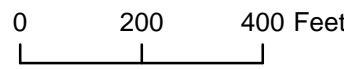
- Project Boundary
- Tributary
- Wetland
- Critical Area

Prepared:  
March 20, 2017  
By:



**Figure 5d: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC





Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64

**Legend**

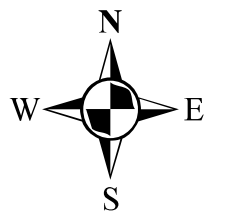
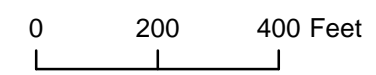
- Project Boundary
- Tributary
- Wetland
- Critical Area

Prepared:  
March 20, 2017  
By:

**IE** INFRASTRUCTURE  
CONSULTING & ENGINEERING

**Figure 5e: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC



Project Summary		
Feature	Area (ac)	Length (lf)
Freshwater Wetland	4.31	N/A
Tidal Wetland	1.91	N/A
Tributary	0.46	1512.64



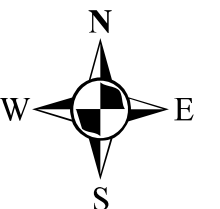
Prepared:  
March 20, 2017  
By:

**IE** INFRASTRUCTURE  
CONSULTING & ENGINEERING

**Figure 5f: Potential WOUS**

Clements Ferry Road Widening;  
Jack Primus Rd to SC 41  
Berkeley County, SC

0 200 400 Feet



**APPENDIX B**

**SC LIST OF AT-RISK, CANDIDATE,  
ENDANGERED, AND THREATENED SPECIES –  
BERKELEY COUNTY**

## South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Berkeley County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibian	Frosted flatwoods salamander (T, CH)	<i>Ambystoma cingulatum</i>	January 1-April 30	Larvae present in breeding ponds
	Gopher frog (ARS)	<i>Lithobates capito</i>	Breeding: October-March	Call survey: February-April
Bird	American wood stork (T)	<i>Mycteria americana</i>	February 15-September 1	Nesting season
	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
	MacGillivray's seaside sparrow (ARS)	<i>Ammodramus maritimus macgillivraii</i>	May-June	
	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	April 1-July 31	Nesting season
Crustacean	None Found			
Fish	American eel (ARS)	<i>Anguilla rostrata</i>	March 1-May 30; October 1-December 15	Temperature dependent: normally (17-20°C); can be found between 13-25°C
	Atlantic sturgeon* (E)	<i>Acipenser oxyrinchus*</i>	February 1-April 30	Spawning migration
	Blueback herring (ARS)	<i>Alosa aestivalis</i>	Mid-January-mid May	Peak: March-April
	Shortnose sturgeon* (E)	<i>Acipenser brevirostrum*</i>	February 1-April 30	Spawning migration
Insect	None Found			
Mammal	Rafinesque's big-eared bat (ARS)	<i>Corynorhinus rafinesquii</i>	Year round	Found in mines, caves, large hollow trees, buildings, and bat towers
	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
	West Indian manatee (T)	<i>Trichechus manatus</i>	May 15-October 15	In coastal waters
Mollusk	None Found			
Plant	American chaffseed (E)	<i>Schwalbea americana</i>	May-August	1-2 months after a fire
	Boykin's lobelia (ARS)	<i>Lobelia boykinii</i>	May-July/August	
	Bog asphodel (ARS*)	<i>Narthecium americanum</i>	June-July	
	Canby's dropwort (E)	<i>Oxypolis canbyi</i>	Mid-July-September	
	Carolina-birds-in-a-nest (ARS)	<i>Macbridea caroliniana</i>	July-November	
	Carolina bishopweed (ARS)	<i>Ptilimnium ahlesii</i>	May-July	
	Ciliate-leaf tickseed (ARS)	<i>Coreopsis integrifolia</i>	August-November	
	Long Beach seedbox (ARS)	<i>Ludwigia brevipes</i>	July-October	
	Pondberry (E)	<i>Lindera melissifolia</i>	February-March	
	Raven's seedbox (ARS)	<i>Ludwigia ravenii</i>	June-October	
	Sun-facing coneflower (ARS)	<i>Rudbeckia heliopsisidis</i>	July-September	
Reptile	Eastern diamondback rattlesnake (ARS)	<i>Crotalus adamanteus</i>	Most of the year	Peak: April-November
	Southern hognose snake (ARS)	<i>Heterodon simus</i>	Most of the year	
	Spotted turtle (ARS)	<i>Clemmys guttata</i>	February-mid April	

## South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Berkeley County

- \* Contact National Marine Fisheries Service (NMFS) for more information on this species
- \*\* The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species
- ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.
- ARS\* Species that are either former Candidate Species or are emerging conservation priority species
- BGEPA Federally protected under the Bald and Golden Eagle Protection Act
- C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species
- CH Critical Habitat
- E Federally Endangered
- P or P - CH Proposed for listing or critical habitat in the Federal Register
- S/A Federally protected due to similarity of appearance to a listed species
- T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.

**ADDENDUM I: NATURAL RESOURCES**  
**TECHNICAL MEMORANDUM (June 20, 2017)**

***CLEMENTS FERRY ROAD WIDENING:  
JACK PRIMUS ROAD TO SC 41  
BERKELEY COUNTY, SOUTH CAROLINA***

PREPARED FOR:  
Berkeley County & The South Carolina Department of Transportation

*PREPARED BY:*



**Red Bay Environmental**

*January 8, 2018*

## **FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES**

Pursuant to Section 7 of the Endangered Species Act of 1973 and the recent listing of the Northern Long-eared Bat (*Myotis septentrionalis*), this addendum has been prepared to include this federally threatened species in the Biological Assessment for the project in addition to the six (6) documented federally endangered species included in the prior completed Natural Resources Technical Memorandum dated June 20, 2017. The project area is situated entirely within the U.S. Fish & Wildlife Service (USFWS) designated white nose syndrome (WNS) zone. In addition, this species is documented as known to occur in Berkeley County.

The northern long-eared bat prefers cave and mine cavities for hibernation and is known to predominantly roost in hardwood-dominated forest stands in the summer months. This species will shift roosting sites to various trees during the summer season.

The project area is situated along the existing alignment of Clements Ferry Road and its existing zone of disturbance. As documented in the Natural Resources Technical Memorandum for the project, the forested areas within and adjacent to the project area are dominated by varying age pine stands and mixed pine-hardwood communities. There is a limited amount of mixed hardwood dominated communities immediately adjacent to several identified wetland/waters of the United States features identified within the project area. These areas are limited in area due to the nature of the relatively narrow drainageway features. No mine cavities or caves were identified within the project area boundaries during the on-site reconnaissance of the project area during the wetland/waters of the United States field delineation and habitat assessment. The SCDNR records were searched for documented occurrences of this species within the area of Berkeley County where the project area is located and specifically the Cainhoy and North Charleston, SC USGS Quadrangles. The SCDNR identified no occurrences of the northern long-eared bat within the project area boundaries. Due to lack of hibernation habitat and the limited amount of hardwood-dominated forested communities, **the proposed project is not expected to have an effect on this species.**