FINDING OF NO SIGNIFICANT IMPACT
(FONSI)

SAVANNAH HARBOR EXPANSION PROJECT
Modification of McCoys Cut Feature (McCoys Cut)

Chatham County, Georgia and Jasper County, South Carolina

1. Description of Proposed Action: The U.S. Army Corps of Engineers (USACE), Savannah District, proposes to modify the McCoys Cut Feature previously discussed in the July 2012 Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP) and Record of Decision dated October 26, 2012.

This proposed action modifies what is described in the FEIS Section 5.01.2.3, and Appendix C. The proposed action consists of (1) dredging an additional 2,600 feet in Middle River (stations 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide required flows, (2) dredging an additional 4 feet at the mouth of Union Creek to account for potential future shoaling. This additional depth is within the same footprint, just four feet deeper for a distance of approximately 1,360 feet. A large portion of the sediment removed as part of the project will be used beneficially to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts, rather than place all of the material in the upland Dredged Material Containment Areas (DMCA) as described in the 2012 FEIS. The remaining quantity of dredged sediment will be placed either in existing DMCAs or in a portion of the Sediment Basin, which is another feature of the flow re-routing effort for SHEP.

2. Factors Considered in Determination: USACE Savannah District assessed the impacts of the proposed action on important resources, including wetlands and aquatic resources/fisheries, terrestrial resources, wildlife, threatened, endangered and protected species, cultural, air quality, and water quality. No significant adverse impacts were identified for any of the important resources. The risk of encountering Hazardous Toxic and Radioactive Waste is low based on the location of the project area. No impacts were identified that would require compensatory mitigation. The proposed action has the potential to change the impact on the Coastal Zone as additional dredging would be performed and fill would be placed in the waters of the U.S. to beneficially create tidal wetlands. Therefore, the District completed an updated Section 404(b)(1) analysis. It is anticipated the proposed action will improve water quality when compared to the No Action Alternative. Created tidal wetlands act as a natural filtering system, removing excess sediments, nutrients, and pollutants from the water. Wetlands also have the ability to absorb water flows. This can reduce the amount of erosion that occurs and prevent sediment from being transported downstream.

USACE Savannah District has concurred with, or resolved, all comments provided by Federal and state natural resource agencies and the public. The impact to Essential Fish Habitat would be the same as that described for the Selected Plan described in the FEIS.

3. Environmental Design Commitments. The following commitments are an integral part of the proposed action:

1. If the proposed action is changed significantly or its construction is not started within one year, Savanah District will coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to ensure that the proposed action would not adversely affect any Federally-listed threatened or endangered species, or their habitat.

2. As a result of recent coordination with NMFS in February 2017, the project includes the following measures to minimize potential impacts to sturgeon:

    a. Monitor water quality downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River.

    b. Conduct dredging in only one site at a time (either in upper Middle River or the Back River, not both at the same time).

    c. Regardless of which dredging method is used, implement precautionary warning techniques before dredging starts each day (e.g., tapping the clamshell bucket on the water surface or some similar method of warning sturgeon of the upcoming work).

    d. Follow guidelines similar to those in NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions to protect sturgeon observed in or near the dredging area. More specifically, operation of any mechanical construction equipment shall cease immediately if a sturgeon is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition or a 30-minute waiting period.

    3. Savannah District will conduct a short term monitoring effort after the wetlands are created at both McCoombs Cut and Rifle Cut to track the wetland's progress. Immediately after the construction of both wetland areas, surveys will be completed to document post-construction marsh elevations as well as vegetation growth present. Savannah District will continue to monitor marsh elevation and vegetation growth for an additional two years after that initial survey. The results of the surveys will allow Savannah District to document lessons learned for future wetland restoration/creation efforts.

4. As stated in the South Carolina Department of Health and Environmental Control's (DHEC) Section 401 Water Quality Certificate as well as in the Savannah River Maritime Commission's (SRMC) Navigable Waters Permit the following terms and conditions will be met:

a. All necessary measures must be taken to prevent oil, tar, trash, debris and other pollutants from entering the adjacent waters or wetlands during construction.

b. All spoil, dredged material, or other fill material must be tested on a regular basis to ensure the quality of the material disposed of consistent with the Inland Testing Manual, as amended or revised. U.S. Envtl. Protection Agency and U.S. Army Corps of Eng'rs. Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. - Testing Manual, EPA-823-B-98-004 (Feb. 1998).

c. Within the Period of Performance under the contract issued by the Savannah Corps for the work that constitutes the Proposed Modification, or four hundred five (405) days from the commencement of such contract, whichever is longer (Project Period), the Savannah Corps will update the SHEP hydrodynamic (EFDC) and water quality (WASP) models to reflect the additional dredging depths authorized hereunder, as well as the conversion of McCoombs and Rifle Cuts to wetlands. The Savannah Corps will produce a report (Report) no later than the conclusion of the Project Period, which shall be shared with the SRMC and DHEC and which isolates and reflects the incremental effect of the Proposed Modification on instream D.O. concentrations in the applicable model zones.

5. In the event that any historic or cultural resources and/or archaeological materials are found during the course of work, the applicant must notify the State Historic Preservation Office and the South Carolina Institute of Archaeology and Anthropology. Historic or cultural resources consist of those sites listed in the National Register of Historic Places and those sites that are eligible for the National Register. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials.

6. All construction Best Management Practices must be installed, inspected and maintained to retain sediment on the access site to protect wetlands and waters through the life of the modified project. Upon completion of construction and removal (including the pier) activities, all disturbed (includes

undeveloped) areas, including those impacted for access, must be immediately stabilized.

7. All final agreements and conditions related to the Coastal Zone Consistency Determination of the original SHEP, with the exception of any condition related to these modified areas, shall remain in full effect.

4. Public Involvement. Coordination with the state and federal natural resource agencies has occurred, including discussions at an interagency meeting on October 25, 2016, a meeting with USFWS Refuge staff on January 26, 2017, and an informational email on February 7, 2017.

The proposed action was coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of a draft SEA for their review and comment starting May 23, 2017. Ten comment letters/emails were received during this time. Responses to these comments are included as an appendix to the Final EA. All of the comments received were supportive of the proposed project. Several of the comments received asked the USACE Savannah District to provide more detail on the creation and success of the proposed wetlands at both Rifle and McCoombs Cut, as well as their importance within the Coastal Georgia Ecosystem. As a result of these comments, USACE Savannah District revised the project to include a short term monitoring effort after the wetlands are created Another comment requested a better description of the Sediment Basin and its purposes with the SHEP. Another comment requested a statement discussing the finding of the updated Section 404(b)(1) analysis and a reference to the Section 404(b)(1) analysis in Appendix C. Other comments asked that additional information be added to the report to better explain how increasing the depth of dredging would impact water quality within the project area, in particular, dissolved oxygen levels. One comment asked that following construction, all wetlands impacted by the temporary platform structure should be restored to pre-construction elevations and be replanted with the appropriate vegetation species. The project has been refined as suggested, and the project documents have been revised to include this information. In order to comply with the terms and conditions of the Savannah River Maritime Commission's Navigable Waters Permit, the USACE Savannah District completed an Inland Testing Manual Tier 1 Evaluation. As a result of the Tier 1 Evaluation, it was determined that no additional sediment testing would be required and that a Tier II evaluation would not be needed.

5. Conclusion. USACE Savannah District has assessed the potential environmental impacts of the proposed action. Based on this assessment, a review of the comments made on the Environmental Assessment, and implementation of the environmental design commitments described in the EA and listed above, USACE Savannah District concludes that the proposed action will not result in a significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

03APR18
Date

FOR LTC, AN DC

Marvin L. Griffin, P.E.
Colonel, U.S. Army
Commanding

US Army Corps
of Engineers®
Savannah District

SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT

SAVANNAH HARBOR EXPANSION PROJECT
Modification of McCoys Cut Feature (McCoys Cut)

Chatham County, Georgia and Jasper County, South Carolina

April 2018

SAVANNAH HARBOR EXPANSION PROJECT
Modification of McCoys Cut Feature (McCoys Cut)

Chatham County, Georgia and Jasper County, South Carolina

Table of Contents:

Figures

Tables

Appendices

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
SAVANNAH HARBOR EXPANSION PROJECT

Modification of McCoys Cut Feature

Chatham County, Georgia and Jasper County, South Carolina

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Savannah District, prepared this draft Supplemental Environmental Assessment (SEA) to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). This SEA supplements the July 2012 Final Environmental Impact Statement (FEIS) for the SHEP and Record of Decision (ROD) dated October 26, 2012. The FEIS and ROD are incorporated herein by reference. These 2012 documents and the General Reevaluation Report (GRR) can be found at: (http://www.sas.usace.army.mil/Missions/Civil-Works/Savannah-Harbor-Expansion)

This SEA covers the increased area needing to be dredged to achieve the required flows down Back River and alternative sediment placement areas. The SEA does not modify the McCoys Cut Diversion structure or plugs in Rifle and McCoombs Cuts, which are covered in the FEIS.

This SEA has been prepared in accordance with the National Environmental Policy Act of 1969, Council on Environmental Quality's Regulations (40 CFR 1500-1508), and USACE Engineering Regulation ER 200-2-2. This SEA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, USACE, Savannah District, to make an informed decision on the appropriateness of preparing an Environmental Impact Statement (EIS) or signing a Finding of No Significant Impact (FONSI).

1.1 Proposed Action.

There is no change in the method or timing of dredging, the design of the diversion structure or the rock plugs. Construction will still take place from barges to minimize impacts to adjacent lands.

This proposed action (Alternative 3) modifies actions described in the FEIS Section 5.01.2.3, and Appendix C. The proposed action consists of dredging an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide required flows. Figure 1 shows the location of additional dredging reach in Middle River. Figure 2 shows the additional dredging reach along with locations of the proposed beneficial use placement sites. The green, orange, and blue colors shown on Figure 1 indicate areas covered by the FEIS (approximately 3.1 miles of dredging and 315,000 cubic yards of dredged material). The area in white shown on Figure 1 indicates new work being proposed (approximately 2,600 feet of additional

dredging, about 24,000 cubic yards). In addition dredging an additional 4 feet at the mouth of Union Creek (also shown on Figure 1 and 2) is proposed to account for potential future shoaling. This additional depth remains within the same footprint, but would be four feet deeper for a distance of approximately 1,360 feet.

A large portion of the sediment removed as part of the project would be used beneficially to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figures 2 and 3), rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. Approximately nine acres of wetlands would be created using the dredged sediments from the project. The material dredged from the Middle and Little Back Rivers it would be placed behind the cut closure structures to an elevation suitable for wetland creation. These new deposition sites are within the boundary of the Savannah National Wildlife Refuge. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion while vegetation establishes naturally along most of the length of the cuts. Potential plant species that will be planted on the edge of the newly created wetlands include; River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*). The rest of the created wetland habitat will mature and fill in by the second full growing season.

The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. More information regarding the Sediment Basin can be found in several sections of the 2012 FEIS including section 3.01.1.9, 4.01.2, 5.01.2.3, 5.12.2.5 as well as in Appendices C, D, and H. The dredged sediment would be transported either mechanically or hydraulically.

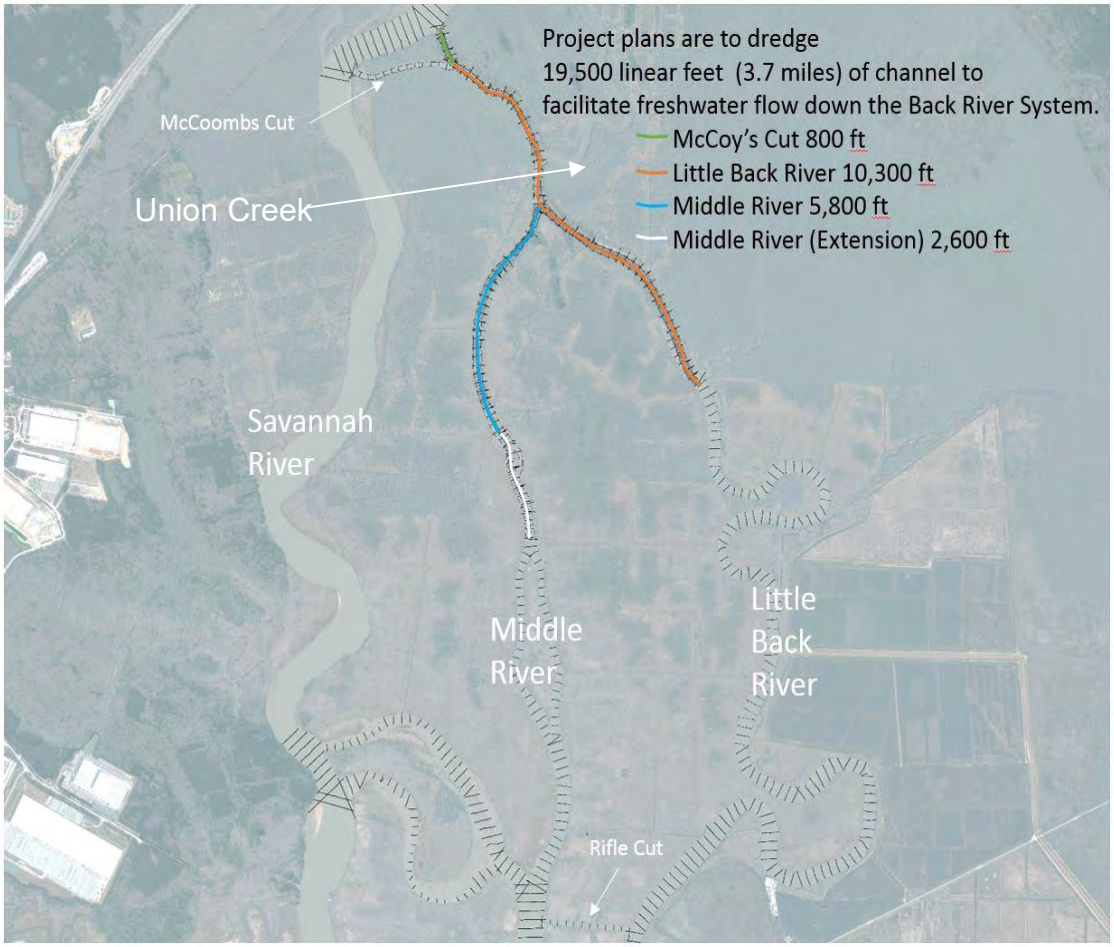


Figure 1: Location of Additional Dredging in Middle River

Figure 2: Proposed Beneficial Use Placement Areas

Figure 3: Project Location – Close Up of Proposed Action Beneficial Use Placement Areas

As a result of logistical concerns of using the Houlihan Bridge during construction, an area will be designated on U.S. Fish and Wildlife (USFWS) lands in the Savannah National Wildlife Refuge as a possible access area for the contractor to move material and supplies to and from the construction site. (Figure 4). A temporary pile supported platform would be installed on the edge of the existing tidal wetland and the Back River, impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Dike improvements would also be performed leading to the new access site platform, impacting approximately 0.23 acres of managed wetlands on the inside USFWS diked

system. This platform is expected to be in place for the duration of the construction timeframe which is estimated to be approximately one year.

If the river under Houlihan Bridge is to be used to transport materials and supplies to and from the construction site, additional Georgia Department of Transportation (GA DOT) staff may be needed to operate the bridge. In addition, if the contractor wants to use the bridge during nighttime hours, they will be required to provide the necessary lighting to safely operate at night.

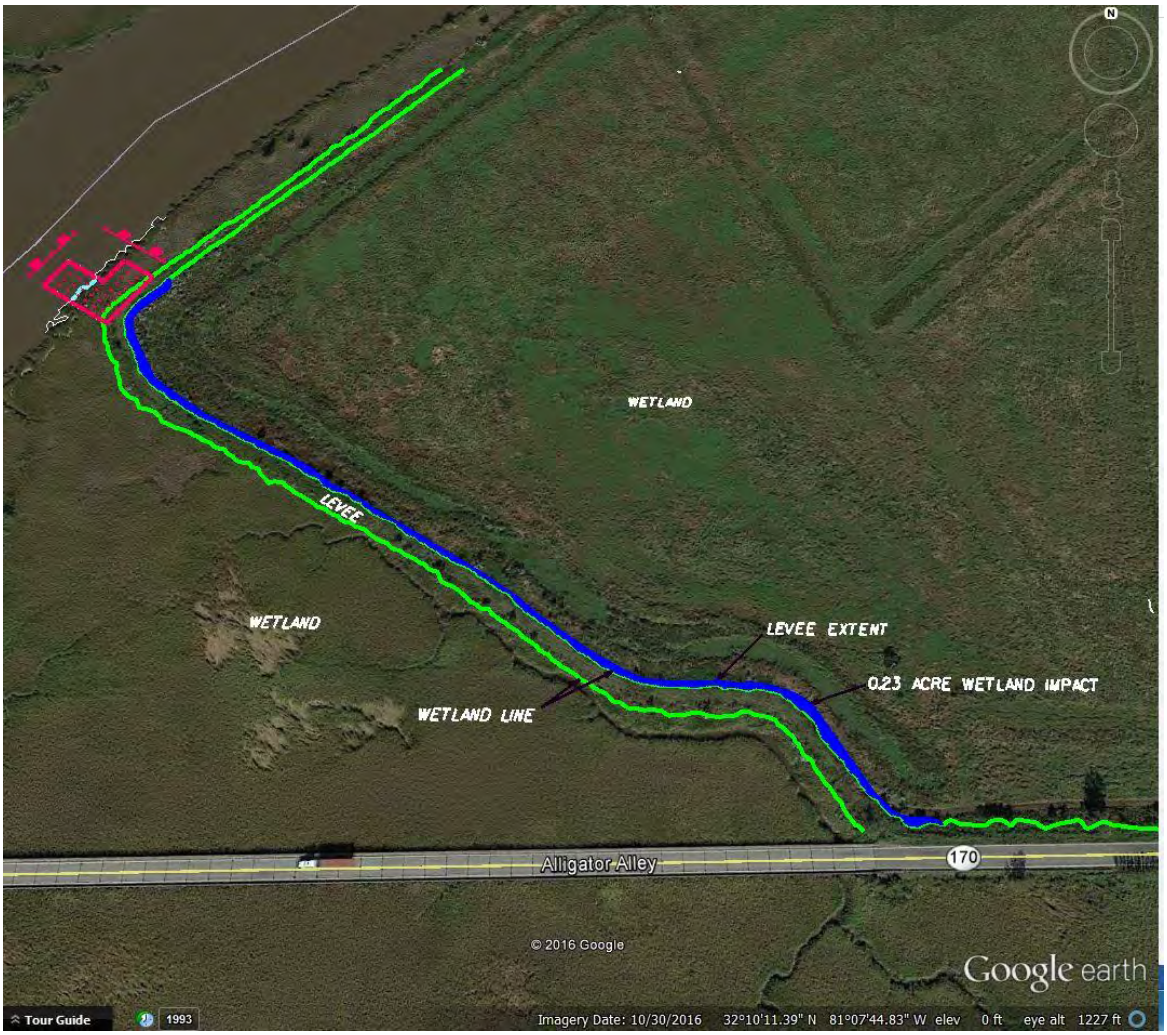


Figure 4: Approximate location of access site within Savannah National Wildlife Refuge

1.2 Purpose and Need for the Proposed Action.

1.2.1 Purpose of the Action

The proposed action would extend the dredging area within Middle River to ensure sufficient freshwater flow to intended areas, as well as save space in the upland DMCA sites by reusing some of the dredged sediments. The reused sediments would create wetland habitat rather than going into approved upland DMCA sites.

1.2.2 Need for Action

USACE believes that an additional 2,600 feet of the Middle River will need to be deepened to achieve the intended flow volume. The original mitigation plan which was designed to increase freshwater flows into the estuary and limit salt water intrusion to reduce salinity impacts from the SHEP navigation project. That plan included dredging Middle River for a distance of approximately 5,800 feet downstream of the confluence with Little Back River. Recent bathymetric data indicated that this dredging template did not include a large shoal in Middle River just downstream of the original template. Approximately 2,600 feet downstream of the original dredging, the river widens and splits around two small islands before narrowing again moving into a more defined channel. By extending the dredging template across this shoal, the deepened channel would connect to the deeper depths downstream of the shoal. This connection would allow the diverted freshwater flow to pass the entire length of Middle River. The additional channel capacity will help ensure wetland mitigation goals are met on Middle River, by mitigating impacts to freshwater and brackish wetlands from upstream salinity movement. Without additional dredging, freshwater flow down Middle River would likely be restricted. While this shoal might have existed for a time, USACE only learned of it through recent bathymetry data when the team entered the design phase for this mitigation feature.

An additional four feet of dredging also appears necessary at the mouth of Union Creek to mitigate future shoaling. This area of additional dredging depth would remain in the same footprint as the previously-approved dredging template, but four feet deeper for a distance of approximately 1,360 feet.

As a result of GA DOT operation limitations at the Houlihan Bridge as a result of the age of the bridge and the unreliability of the bridge to properly open and close when needed, an area will be designated on USFWS lands on the Savannah National Wildlife Refuge as a possible access area for the contractor to haul material and supplies to and from the construction site. If during the construction timeframe the Houlihan Bridge becomes inoperable for any reason, this access point would provide the contractor another way to get material and supplies to and from the construction site.

Beneficial use of the excavated sediments would provide environmental enrichment by creating additional wetland habitat. This, in turn, would enhance the fish and wildlife conditions by converting manmade cuts from open water to approximately nine acres of freshwater tidal wetlands. These nine acres of wetlands will increase the amount of freshwater tidal wetlands present at the protected Savannah National Wildlife Refuge thereby enhancing this habitat for the fish and wildlife that use the Refuge. The location

where the wetlands will be created (McCoombs Cut and Rifle Cut) experiences times where there isn't adequate water flow, causing stagnant water. The creation of the wetland habitat will reduce that concern and help reduce the side effects of stagnant water on the fish and wildlife that use that area within the Refuge for habitat. The proposed marsh creation areas are expected to be inundated during each tidal cycle to allow organic matter to deposit on the surface to support wetland vegetation. This beneficial use would result in a cost savings to the project and reduce the volume of sediment placed in the approved DMCAs. Reducing sediment placed in DMCAs would extend the useful life of those sites for Operations and Maintenance (O&M) purposes.

1.3 Authority.

A part of the Water Resources Development Act of 1999 (Public Law 106-53, Section 102(b)(9)) authorized the harbor deepening. The wording of the authorization can be found in Section 2.04 of the FEIS.

1.4 Prior Reports

Previous environmental documents, circulated for public and environmental agency review, addressed dredging and sediment placement methods for the Savannah Harbor Expansion Project. Section 1.05 of the FEIS contains a list of these methods. The following reports have been completed since the FEIS was prepared documenting changes or modifications to components of the Savannah Harbor Expansion Project from what was discussed in the FEIS:

USACE, Savannah District. September 2013. Savannah Harbor Expansion Project Environmental Assessment for Modifications to the Raw Water Storage Impoundment (http://www.sas.usace.army.mil/Portals/61/docs/Planning/Plansandreports/FinalRWSI/_RWSI%20Final%20EA%20-%208%20Oct%202013.pdf). This EA examined the impacts from needed modifications to the location and design of the Raw Water Storage Impoundment. During the detailed design process, USACE considered several alternate sites to identify the location that best met project needs. A parcel near Interstate Highway 95 and the City of Savannah's raw water pipeline was identified as the best location. USACE then performed engineering and environmental studies on that site. Construction is well underway.

Minor Modification Coordination for Diversion Structures, November 2013.

USACE, Savannah District. December 2016. Draft Supplemental Environmental Assessment for the Savannah Harbor Expansion Project, Evaluation and Placement of Cadmium-Laden Sediments. This EA evaluated the potential impacts of placing Cadmium-laden dredged sediments in Dredged Material Containment Areas 14A and 14B in a moist (inundated), but not flooded condition, as part of the SHEP.

2.0 FORMULATION OF ALTERNATIVES

USACE examined three types of measures as part of plan formulation for this action:

1) Measures that extend the dredging reach down Middle River.
   a) No change
   b) Additional 2,600 feet as well as an additional 4 feet of sediment at the mouth of Union Creek
2) Sediment Placement Measures
   a) Use of approved sites (DMCAs)
   b) Sediment Basin
   c) Wetland Creation
3) Measures to allow contractor access to and from the construction site
   a) Use of Houlihan Bridge: closing the bridge for multiple weeks at a time
   b) Access to the construction site from a more northern location
   c) Construct a bulkhead (dredging required) on the edge of the Back River and the Savannah National Wildlife Refuge
   d) Construct a temporary pile supported platform on the edge of the Back River and the Savannah National Wildlife Refuge

2.1 Initial Array of Alternatives

In January 2017, the project team participated in a shortened Value Engineering study to review the McCoys Cut flow re-routing feature and discuss possible alternatives that could reduce project costs or provide additional environmental benefits. The team identified 12 proposals for further evaluation. Appendix D contains a table with the 12 proposals. Table 1 (below) describes the eight alternatives in the initial array as well as the rationale for eliminating or carrying the alternative forward. The alternatives in Table 1 are a combination of the three types of measures discussed in Section 2.0.

Table 1: Initial Array of Alternatives			
Alternative	**Includes**	**Carry Forward**	**Rationale**
No Action Alternative (NAA)	No Change in dredging or sediment placement	Yes	NEPA requires NAA to be carried forward.
1	Extend dredging 2,600 feet, partial beneficial reuse of excavated sediments at McCoombs Cut and Rifle Cut, rest in approved DMCAS. An area will be designated on USFWS lands on the Savannah National Wildlife Refuge as a possible access area for the contractor to haul material and supplies to and from the construction site.	Yes	Use the dredged material beneficially to reduce the amount of dredged material placed in the approved DMCAs. This would maintain capacity for O&M and new work sediments and provide ecosystem benefits by creating wetlands.
2	Extend dredging 2,600 feet, beneficial reuse of excavated sediments at McCoombs Cut and Rifle Cut, maximum amount in both and remainder going to the Sediment Basin. Same access as Alternative 1.	Yes	Take excess dredged material to the Sediment Basin rather to the approved DMCA 2A site. This would save the project money and help to achieve the required fill depth in the Sediment Basin, thereby acting as a salinity block.
3	Extend dredging 2,600 feet, beneficial reuse of excavated sediments at McCoombs Cut and Rifle Cut, maximum amount in both with the remainder of the sediment placed either in approved DMCAs or in the Sediment Basin. Same access as Alternative 1.	Yes	Potentially reduce costs by allowing the contractor flexibility to place the remaining balance of dredged material at either the approved DMCA site or within the Sediment Basin

4	Extend dredging 2,600 feet, partial beneficial reuse of excavated sediments at McCoombs Cut site only, rest in DMCAs. Same access as Alternative 1.	No	Using only one site for beneficial use would not achieve as many environmental benefits since it produces less wetlands. The additional sediments going to the DMCAs would take up much needed capacity for O&M and new work sediments.
5	Extend dredging 2,600 feet, no change in sediment placement, all excavated sediments to go to approved DMCAs. Same access as Alternative 1.	No	The cost to transport the dredged material from the project area to the approved disposal areas would have the highest cost and would take up needed O&M capacity at the DMCAs.
6	Extend dredging 2,600 feet, beneficial reuse of excavated sediments at McCoombs Cut and Rifle Cut, maximum amount in both. Same access as Alternative 1.	No	Filling the cuts to a maximum elevation of 9 feet MLLW for wetland habitat would still leave a balance of material that will need to be placed in DMCA 2A as originally planned.
7	Extend dredging 2,600 feet, beneficial reuse of excavated sediments at McCoombs Cut and Rifle Cut, maximum amount in both, and remainder going to the New Cut Same access as Alternative 1.	No	It would be cost prohibitive to bring the excess dredged material to New Cut for beneficial reuse due to the large amount of rock needed to close New Cut for the limited amount of sediment that would be saved from going to the approved DMCA 2A site.
Placement of dredged material to create wetlands or to be placed in approved DMCAs could be accomplished either mechanically or hydraulically.			

2.2 Final Array of Alternatives

Three alternatives to the proposed action (Alternative 3 -Section 1.1) will be considered in detail. Placement of dredged sediments could be accomplished either mechanically or hydraulically.

These alternatives are:

- ***No-action Alternative (NAA)*** (FEIS PLAN)
- ***Alternative 1:*** Extend the length of dredging an additional 2,600 feet (24,000 cubic yards) and beneficially use approximately 192,000 cubic yards of excavated sediments at McCoombs Cut and Rifle Cut for intertidal wetland creation, and place the remaining balance of approximately 100,000 cubic yards of excavated sediment in the approved DMCAs. Designate an area on USFWS lands on the Savannah National Wildlife Refuge as a possible access area for the contractor to haul material and supplies to and from the construction site.
- ***Alternative 2:*** Extend the length of dredging an additional 2,600 feet (24,000 cubic yards) and beneficially use approximately 192,000 cubic yards of excavated sediments at McCoombs Cut and Rifle Cut for intertidal wetland creation, and place the remaining balance of approximately 100,000 cubic yards in the Sediment Basin. Same access as Alternative 1.

2.3 No Action Alternative (NAA) (FEIS Approved Plan).

The NAA is the dredging area and placement plan described in the SHEP GRR and FEIS (FEIS approved plan) in Section 5.01.2.3 of the FEIS, and Appendix C, Section 5.

The plan approved in the FEIS consists of constructing a diversion structure at the upper end of Back River to divert a small portion of freshwater flow on the Savannah River to the upper estuary and down the Middle and Little Back Rivers. The structure itself will be a straight, 280 foot long, steel sheet pile cantilevered wall that extends perpendicular from the south river bank at McCoys Cut into the Savannah River. Stone scour protection would prevent scour along the length of the structure. The south shoreline adjacent to the diversion structure and the north shoreline opposite of the diversion structure would be protected from erosion by cantilever sheet pile shoreline protection walls with toe stone armor for scour protection. The top of the structure would be located at 0 feet MLLW. The tallest portion of the structure would extend approximately 23 feet from the existing river bottom. The structure will be completely submerged at most times. Solar powered lights and signage, constructed upstream and downstream of the structure, would alert river traffic of the potential navigation hazard.

Some environmental dredging would need to occur as discussed in the FEIS. The intent of this mitigation feature is to increase freshwater flow down the Little Back, Back and Middle Rivers and adjacent tidal wetlands. This feature will work in combination with the diversion structure by increasing the flow capacity of the river for the freshwater diverted into the upper estuary. Dredging of these rivers is required to increase their available flow capacity (their ability to transport the freshwater). The dredging in Back River would

extend from the confluence of McCoys Cut and the Savannah River approximately 2.1 river miles down the Little Back River. The dredging in Middle River would begin at the confluence of Middle and Little Back River and extend approximately 1.6 river miles downstream. The dredging template does not include widening and is not expected to impact vegetation adjacent to the channel (wetlands or uplands). Once constructed, a need for future maintenance dredging is not anticipated because increased currents are expected maintain depth.

To prevent the loss of flow diverted into the upper estuary, a plug closure will be constructed on the western end of McCoys Cut (McCoombs Cut) to elevation +11 feet MLLW. A closure will be constructed on the western end of Rifle Cut to elevation +11 feet MLLW in order to prevent movement of saltwater from the Savannah River through Steamboat River and Houston Cut to the Back River. USACE plans to use recycled concrete material (former Highway 17 Bridge) and rock to construct both of these closure structures.

2.4 Alternative 1: Extend Dredging, Beneficial Reuse at Two Sites, with Remainder in Approved DMCAs.

Alternative 1 requires an additional 2,600 feet of dredging within Middle River (stations 58+00 to 84+00) to -7 feet MLLW to provide adequate flows. In addition, the dredging depth would be increased by four feet at the mouth of Union Creek to account for potential future shoaling. The area of additional dredging depth remains within the same footprint as the previously-approved dredging template, but four feet deeper for a distance of approximately 1,360 feet. This alternative includes using the majority of excavated sediments beneficially to create wetlands in both McCoombs Cut (western arm of McCoys Cut) and Rifle Cut to enhance fish and wildlife habitat. The remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River would be placed in approved DMCA sites.

The sediment would be placed behind the cut closure structures to an elevation suitable for wetland creation. This proposed action, which is conceptually supported by U.S. Fish and Wildlife, would occur within the Savannah National Wildlife Refuge. The volume of sediment to be dredged is sufficient to fill the two cuts to elevation +8 to +8.5 feet MLLW. Topographic surveys conducted for the project indicate that adjacent high ground in both areas are at or above elevation +8 feet MLLW. Before placement of the excavated sediments, a rock, concrete rubble, or similar plug would be constructed across the western ends of both cuts to approximately elevation of +11 feet MLLW. The plug at McCoombs would be 80 feet wide at the base and have 1 foot of dredged material as a cap. The plug at Rifle Cut would be 100 feet wide at the base and have 1 foot of dredged material as a cap. The eastern end will be armored with rock to +5 feet MLLW. Above that elevation, protection against erosion will be provided by hay bales secured with live stakes and several rows of container plantings. The plantings would reduce the risk of erosion immediately after completion of the project until vegetation establishes naturally along the length of the cuts. This action creates approximately nine acres of wetlands.

As a result of logistical concerns of using the Houlihan Bridge during construction, an area will be designated on Savannah National Wildlife Refuge lands as a possible access area for the contractor to haul material and supplies to and from the construction site. (Figure 4). A temporary pile-supported platform would be installed on the edge of the existing tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Improvement to the dike leading to the new platform would be completed, impacting approximately 0.23 acres of managed wetlands. This platform is expected to be in place for the duration of the construction timeframe, which is estimated to be approximately one year and would be removed after construction has been completed.

2.5 Alternative 2: Extend Dredging, Beneficial Reuse at Two Sites, with Remainder in the Sediment Basin.

Alternative 2 would require an additional 2,600 feet of dredging within Middle River (stations 58+00 to 84+00) to -7 feet MLLW to provide the required flows. In addition, the dredging depth would be increased by four feet at the mouth of Union Creek to account for potential future shoaling. The area of additional dredging depth is within the same footprint as the previously-approved dredging template, but four feet deeper for a distance of approximately 1,360 feet. This alternative includes using the majority of excavated sediments beneficially to create wetlands in both McCoombs Cut (western arm of McCoys Cut) and Rifle Cut to enhance fish and wildlife habitat. The remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River would be placed in the Sediment Basin.

As a beneficial use of the sediment dredged from the Middle and Little Back Rivers, the material will be placed behind the cut closure structures to an elevation suitable for wetland creation within the boundary of the Savannah National Wildlife Refuge as described in Alternative 1. As described in Section 2.4, an area within the Savannah National Wildlife Refuge will be designated as a potential access area to haul material and supplies to and from the construction area, impacting approximately 0.36 acres of wetlands (tidal and managed) and approximately 0.10 acres of river habitat.

The remaining excavated material could be transported to an area within the Sediment Basin where Savannah District plans to construct a broad berm as described in the FEIS. Approximately 45 round trips may be needed to transport the excavated sediments to the Sediment Basin and would be coordinated to avoid traffic conflicts with other ships in the project area. Figure 5 shows the area within the Georgia side of the Sediment Basin where the sediments would be placed. The state line between Georgia and South Carolina is not mid channel, but runs along the northern side of the Federal Sediment Basin project. The placement of the excavated sediments would help fill the inactive sediment basin. The area is approximately 30 acres in size, with a bottom elevation of -15 feet MLLW based on an October 2016 hydrosurvey. The placement priority will be at the downstream or eastern end of the box and will be limited to a placement elevation of -10 feet MLLW (target height for broad berm as described in the FEIS).

Figure 5: Approximate placement location within the Sediment Basin

2.6 Alternative 3: Extend Dredging, Beneficial Reuse at Two Sites, with Remainder in approved DMCAs and/or Sediment Basin.

See Section 1.1, Proposed Alternative for a description of Alternative 3.

3.0 AFFECTED ENVIRONMENT

3.1 General

Section 4.0 of the FEIS describes the affected environment in detail. The method of dredging would not change, but the volume and area would increase.

3.2 Relevant Resources

This section contains a description of relevant resources that could be impacted by the project. The important resources described in this section are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations, technical or scientific agencies, groups, or individuals, and the general public. USACE Savannah District considered the following resources and believes they would be unaffected by the alternatives under consideration: bottomland hardwood forest, water bodies, socioeconomic, environmental justice, and recreational resources.

3.2.1 Sediments

Section 4.01.2 and Section 3 of Appendix H of the FEIS describes the sediment characteristics found in the SHEP project area. Sediments excavated from the Savannah Harbor are a mixture of sands, silts, and clays. Sand is defined as grain size between 0.07 and 5.0 mm while silt and clay measures less than 0.07 mm in diameter. Fill material that would be used to construct the various mitigation features of the project include clean sand, rock and riprap.

3.2.2 Wetlands

A wetland delineation report completed in the late summer/early fall of 2016 describes the wetlands found in Little Back River near McCoys Cut/McCoombs Cut and Rifle Cut, where wetland creation activities would occur (Appendix A). The Rifle Cut area is dominated by tidal, emergent wetlands, while the McCoys Cut area contains mostly forested wetlands with small fringe areas of emergent wetlands. No upland areas were observed at Rifle Cut, but a small sandy bluff upland area was observed at McCoys Cut. No upland development presently exists along either project area. Manmade ditches were also observed intersecting with Rifle Cut.

The USFWS National Wetlands Inventory (NWI) maps identified one wetland type surrounding Rifle Cut and two wetland types around Little Back River. In total, the NWI maps identified that wetlands occur in 100 percent of the project area. On both the north and south sides of Rifle Cut, the NWI map depicted a Palustrine emergent wetland. The NWI map for the Little Back River near McCoys Cut shows a Palustrine forested wetland on the north and south sides and a very small portion of a Palustrine emergent wetland in the southwest corner of the project area.

Within the Rifle Cut area, the emergent wetland was almost monotypic in vegetation with *Typha latifolia* covering 96 percent of the area. The Little Back River near McCoys Cut/McCoombs Cut area was dominated by forested and emergent wetlands. There was one small upland area observed in the northeast corner of this area with the rest of the site being wetland or open water.

3.2.3 Aquatic Resources /Fisheries

Section 4.04 of the FEIS describes the aquatic resources found in the SHEP area. Some of the more common fish species found in the Savannah River estuary area include: striped mullet, largemouth bass, bowfin, spotted sucker, common carp, croaker/spot, white catfish, silver perch, spotted seatrout, red drum, striped bass, bluefish, channel catfish, American shad, hickory shad, blueback herring, and American eel. Aquatic resources in the project area also include, oysters, white and brown shrimp and blue crabs.

3.2.4 Essential Fish Habitat

The Magnuson-Stevenson Fishery Conservation and Management Act requires that Essential Fish Habitat (EFH) areas be identified for each fishery management plan and that all federal agencies consult with the National Marine Fisheries Service (NMFS) on federal actions that may adversely affect EFH. Section 4.05 of the FEIS describes the

EFH found in the SHEP area. Within the project area, EFH adjacent to McCoys Cut/McCoombs Cut and Rifle Cut are tidal freshwater (palustrine) and tidal palustrine forested areas. In coordination with NMFS, Savannah District determined that the only EFH species that could be impacted by the McCoys Cut project is shrimp, since the construction area is tidal fresh (Table 2).

Table 2: Essential Fish Habitat (EFH) Species for the Project Area			
Common Name of Species	Scientific Name of Species	EFH for Life Stages (Estuarine)	Habitat Areas of Particular Concern
Brown shrimp	*Farfantepenaeus aztecus*	Post larvae, juveniles, and adults	Penaeid shrimp HAPC – tidal inlets, state nursery and overwintering habitats
White shrimp	*Lytopenaeus setiferus*	Post larvae, juveniles, and sub adults	Penaeid shrimp HAPC – tidal inlets, state nursery and overwintering habitats
Pink shrimp	*Farfantepenaeus duorarum*	Post larvae, juveniles, and sub adults	Penaeid shrimp HAPC – tidal inlets, state nursery and overwintering habitats

3.2.5 Terrestrial Resources

Section 4.07.1 of the FEIS describes the flora of the Savannah National Wildlife Refuge. The Refuge, located in the upper portion of the harbor, consists of 29,450 acres of freshwater marshes, tidal rivers and creeks, and bottomland hardwoods. It also contains extensive unimpounded wetlands along the Savannah, Middle and Back Rivers. Wetlands located downstream of U.S. Highway 17 are vegetated predominantly by salt marsh and brackish marsh species, while those above that point are predominantly freshwater or brackish species. USFWS also manages 5,700 acres of diked impoundments for waterfowl in the Refuge. Those impoundments include 3,000 acres of freshwater pools.

3.2.6 Wildlife

The Savannah National Wildlife Refuge provides habitat for a wide variety of wildlife species. The Refuge forms an important link in the chain of wildlife refuges along the Atlantic Flyway and attracts thousands of migratory birds yearly. The Refuge also provides nesting habitat for wood ducks, purple gallinules, bald eagles, anhingas, and swallow-tailed kites. For a complete listing of species found at the Savannah National Wildlife Refuge, see the September 2011 Savannah Coastal National Wildlife Refuges Complex Comprehensive Conservation Plan in Appendix B.

3.2.7 Threatened and Endangered Species

Section 4.09 of the FEIS describes the threatened and endangered (T&E) species that could be found in the SHEP area. An updated species list (Table 3) for the project area was generated using the Information for Planning and Conservation (IPAC) website (https://ecos.fws.gov/ipac/) (Appendix B).

In August 2017, NOAA finalized a rule that designated the Savannah River as critical habitat for Atlantic sturgeon.

NOAA's designation of critical habitat for Atlantic sturgeon included four physical and/or biological features (PBF) essential to the conservation of the species. PBFs are defined as the features that support the life history needs of the species, including but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms of relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. The four PBFs identified for critical habitat for Atlantic sturgeon are:

- Hard substrate in freshwater = Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range).
- Salinity gradient and soft substrate below spawning areas = Aquatic habitat between the river mouth and spawning sites with a gradual downstream gradient of 0.5, up to as high as 30 parts per thousand salinity, and soft substrate (e.g., sand, mud).
- Unobstructed water of appropriate depth = Water between the river mouth and spawning sites of appropriate depth and absent physical barriers to passage (e.g., locks, dams, gear, thermal plumes, turbidity, sound, reservoirs, etc.).
- Water quality = Water quality conditions, especially in the bottom meter of the water column, with appropriate temperature and oxygen values.

The purpose of critical habitat is to increase the number of adults spawning, then protect the eggs/larvae/juveniles they produce so those individuals survive to subsequent life stages and ultimately spawn themselves.

3.2.8 Cultural Resources

President Coolidge issued Executive Order No. 4626 on April 6, 1927, establishing the Savannah River Bird Refuge, now known as the Savannah National Wildlife Refuge. The order set aside 2,352 acres and included portions of the Vernezobre, Redeem, Lucknow, Beech Hill, Recess, and Red Knoll Plantations. Through time, the Refuge expanded to 29,175 acres, and it now encompasses Argyle, Hog, Hog Marsh, Isla, and Onslow Islands. Rice plantations and fields flourished in these areas from the late 1700s to the late 1800s.

Numerous archaeological sites associated with the area's rice culture were identified in and along Middle, Little Back and Back Rivers in 2012 (Panamerican Consultants, Inc. 2014). Archaeologists recorded 115 cultural resources sites that represent rice trunks, wharfs, and possible mill sites affiliated with the 18th and 19th century rice plantations during a low water bankline survey. One prehistoric site was recorded. Of the identified sites 111 have potential significance or require further investigation to determine National Register of Historic Places (NRHP) eligibility.

An underwater remote sensing survey of Middle, Little Back and Back Rivers identified 567 magnetic anomalies and 193 side-scan sonar contacts (Panamerican Consultants, Inc. 2014). A total of 11 anomalies and 26 side-scan sonar contacts are considered potentially significant or require further investigation to determine NRHP eligibility.

The 2012 survey included portions of the sediment basin that had been investigated by Tidewater Atlantic Research in 1992 (Watts 1992). No new anomalies or targets were recorded. Archaeological divers investigated seven previously identified targets as part of the 2012 survey. None were determined significant.

3.2.9 Air Quality

Section 4.03 of the FEIS describes the air quality found in the SHEP area. Jasper County and Chatham County remain in compliance with the National Ambient Air Quality Standard. The Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch (GA DNR-EPD, APB) and the South Carolina Department of Health and Environmental Control, Bureau of Air Quality, designated both counties as attainment areas.

3.2.10 Water Quality

Section 4.02 of the FEIS describes the water resources found in the SHEP area. USACE Savannah District received 401 Water Quality Certificates from both South Carolina and Georgia for the SHEP which included the McCoys Cut flow re-routing feature and can be found in Appendix Z of the 2012 FEIS.

3.2.11 Transportation/Traffic

Within the project area, the Houlihan Bridge in Chatham County, Georgia, is an important node in the transportation network around the port. Based on 2012 data, the Georgia Department of Transportation estimates this busy swing bridge over the Savannah River services approximately 3,570 vehicles daily. Not only do commercial and residential vehicles cross the bridge, but the bridge also opens and closes frequently to allow for vessels to transverse the Savannah River.

Table 3: Threatened and Endangered Species				
Group	**Common Name**	**Scientific Name**	**Status**	**Critical Habitat Designated**
Amphibians	Frosted Flatwoods Salamander	*Ambystoma cingulatum*	T	Y
Birds	Kirtland's Warbler	*Setophaga kirtlandii*	E	N
Birds	Piping Plover	*Charadrius melodus*	T	Y
Birds	Red Knot	*Calidris Canutus Rufa*	T	N
Birds	Red-cockaded Woodpecker	*Picoides borealis*	E	N
Birds	Wood Stork	*Mycteria American*	T	N
Fish	Shortnose Sturgeon	*Acipenser brevirostrum*	E	N
Fish	Atlantic Sturgeon	*Acipenser Oxyrinchus*	E	Proposed
Flowering Plants	American Chaffseed	*Schwalbea americana*	E	N
Flowering Plants	Canby's Dropwort	*Oxypolis canbyi*	E	N
Flowering Plants	Pondberry	*Lindera melissifolia*	E	N
Mammals	North Atlantic Whale	*Eubalaena Glacialis*	E	Y
Mammals	West Indian Manatee	*Trichechus manatus*	E	Y
Reptiles	Eastern Indigo Snake	*Drymarchon Corais Couperi*	T	N
Reptiles	Gopher Tortoise	*Gopherus Polyphemus*	Candidate	N
Reptiles	Kemp’s Ridley sea turtle	*Lepidochelys kempii*	E	N
Reptiles	Leatherback sea turtle	*Dermochelys coriacea*	E	Y
Reptiles	Loggerhead sea turtle	*Caretta*	T	Y

4.0 ENVIRONMENTAL CONSEQUENCES

Section 5.00 of the FEIS describes the environmental consequences of the SHEP.

4.1 Sediment

Future Conditions with No Action (FEIS Plan), Alternative 1, Alternative 2, and Alternative 3 (Proposed Action)

In late November 2016, subsurface investigations were initiated which included portions of McCoys Cut, Little Back River, Middle River and McCoombs Cut. The visual classification of the soil samples collected indicate predominantly medium to coarse sands with little to trace fines and organics. Four out of the nearly 100 samples were comprised of mostly silts/clays, with trace to little sand.

The FEIS included hazardous, toxic and radioactive waste investigations for this project feature. Based on the samples collected analyzed during the most recent subsurface investigation, Savannah District determined that no further investigation of this issue is warranted. Based on the location of the project area, there is a very low risk of contaminants being present. In addition, during the geotechnical analysis process, no unusual colors or odors were noted.

Savannah District also completed an Inland Testing Manual Tier I sediment evaluation, to comply with the terms of the Navigable Waters permit and the SC Water Quality Certification. The evaluation document considered available information, including the location and the lack of spills and discharges into the waters near McCoy's Cut, and concluded that the sediments to be excavated would not significantly degrade or endanger the waters of the United States and therefore believes that no additional sediment testing is required, a Tier II evaluation is not needed. A copy of the Inland Testing Manual Tier I sediment evaluation for the project can be found in Appendix J.

4.2 Wetlands

Future Conditions with No Action (FEIS Plan)

With implementation of the FEIS Plan (NAA), the flow re-routing features would increase freshwater flows into the Back and Middle Rivers. This would limit salinity intrusion and reduce salinity impacts from harbor deepening to tidal freshwater and brackish wetlands. The flow re-routing features benefit tidally-influenced wetlands adjacent to the Middle, Back and Little Back River system which are part of the Savannah River distributary system. To avoid wetland impacts, the project would be constructed from barge-mounted equipment. No land-based access roads or staging areas would be available at the construction sites. Impacts and the required mitigation due to rock closures of the cuts are covered in the FEIS in Section 5.01. As a result of new information USACE recently obtained (discussed in Section 1.2.2), without the proposed additional dredging, the flow re-routing will not perform as originally designed and described in the FEIS.

Future Conditions with Alternative 1, Alternative 2 and Alternative 3 (Proposed Action)

With implementation of Alternative 1, 2 or 3, impacts to wetland habitat as a result of the project would be similar as those discussed for the NAA. However, with implementation of all three alternatives, there would be temporary adverse impacts to existing wetlands where the access area within the Savannah National Wildlife Refuge is proposed. There would be temporary impacts to approximately 0.13 acres of tidal wetlands where the pile supported platform is expected to be placed, as well as approximately 0.10 acre of river that would be impacted due to the shading of the platform. There are also approximately 0.23 acres of managed wetlands that will be impacted by dike improvement. It is expected that the impacts to the existing wetlands and river as a result of the temporary platform would only last for approximately one year. As part of Alternatives 1, 2, and 3, the sediments excavated for the project would be used to create approximately nine acres of wetland habitat where currently open water exists. Within the project area, there are tidal and non-tidal wetlands surrounding the areas where wetlands would be created. The creation of additional wetlands in the project area will help offset the temporary wetland impacts within the temporary access area within the Savannah National Wildlife Refuge. They would also help improve water quality, provide food and habitat for various fish and wildlife species, and enhance aesthetics and recreation opportunities. Savannah District has updated the Section 404(b)(1) analysis as a result of the proposed modifications to the McCoys Cut flow re-routing feature of the SHEP. Based on the determination made in the updated Section 404(b)(1) evaluation found in Appendix C. the finding is that the proposed action complies with the Section 404(b)(1) guidelines.

4.3 Aquatic Resources/Fisheries

Future Conditions with No Action (FEIS Plan)

With implementation of the FEIS Plan (NAA), there is a potential risk of direct impact and indirect impacts to aquatic resources using the adjacent wetlands, due to the construction and sediment placement activities. Some aquatic species would be buried while others would be displaced. During construction, short-term increases in turbidity are expected to occur in the project area. The temporary and localized turbidity effects would have only a minor adverse impact on fish species and the aquatic ecosystem. Use of best management practices during construction would minimize turbidity during construction. There are no long-term impacts to fish resources. Impacts associated with the NAA are covered in Section 5.03 of the FEIS.

Future Conditions with Alternative 1

With implementation of Alternative 1, impacts to aquatic resources/fisheries habitat would be similar to those described for the NAA. However, with implementation of this alternative, the sediment dredged for the project would be used to create approximately nine acres of wetland habitat in the project area. This acreage would provide habitat beneficial to species that provide sustenance to resident fish species. In addition, as part of the construction of the access area, approximately 0.10 acres of the Back River

will be shaded by the temporary pile supported platform. This newly constructed area may attract fish by providing a shaded area for them during the summer months.

Future Conditions with Alternative 2 and Alterative 3 (Proposed Action)

With implementation of Alternative 2 and Alternative 3, impacts to aquatic resources/fisheries habitat would be similar as those discussed for the NAA and Alternative 1. A silt curtain would be used during construction at the wetland creation sites to minimize those effects. There may also be some temporary turbidity impacts associated with the sediment placement activities at the Sediment Basin. The turbidity effects at the Sediment Basin, expected to be temporary and localized, would have only a minor adverse impact on fish species and the aquatic ecosystem. No long term impacts to fish resources are expected.

4.4 Essential Fish Habitat

Future Conditions with No Action (FEIS Plan)

With implementation of the FEIS Plan (NAA), impacts on Essential Fish Habitat (EFH) would be those covered in Section 5.14 of the FEIS. USACE concluded that with the mitigation and monitoring plans in place, the proposed action would not cause adverse impacts to EFH species, including fish accessibility to habitat. Impacts are expected to be minor on an individual project and cumulative effects basis.

USACE evaluated the overall project impacts on EFH and determined that with the mitigation and monitoring plan, the project would not cause adverse impacts to the EFH species.

Future Conditions with Alternative 1

In coordination with NMFS, Savannah District determined that the only EFH species that could be impacted by the McCoys Cut project would be shrimp, since the project area is dominated by tidal freshwater habitat. The U.S. Fish and Wildlife's Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Atlantic) indicate that brown, white, and pink shrimp prefer muddy or peaty bottom substrates. Brown shrimp have been known to frequent other substrates such as sand, silt, or clay, mixed with rock fragments. USACE completed subsurface investigations of the proposed dredging area in late 2016. Visual classification of the soil samples collected indicate the sediments to be excavated consist predominantly of medium to coarse sands, with little to trace fines and organics.

With regards to salinity preference, both white and pink shrimp prefer higher salinity environments. Adult white and pink shrimp spawn where salinities are at least 27 parts per thousand (ppt). While juvenile white and pink shrimp prefer slightly lower salinities these shrimp species can tolerate a wide range of salinities ranging from 18 and 34 ppt. Brown shrimp prefer slightly lower salinities ranging between 8.5 and 17 ppt, but post larvae have been found to survive anywhere between 2 and 40 ppt. Knowing these salinity preferences, USACE evaluated water quality information for the project area by

examining USGS gages near the project site. One of the USGS gages is located slightly north of McCoombs Cut/McCoys Cut (https://waterdata.usgs.gov/ga/nwis/uv/?site_no=02198840&PARAmeter_cd=00400,00095,00010) and one is located slightly south west of Rifle Cut (https://waterdata.usgs.gov/ga/nwis/uv/?site_no=02198920&PARAmeter_cd=00400,00095,00010) where the project construction and sediment placement activities would occur (Figure 6).

Figure 6: Location of USGS gages near McCoombs/McCoys and Rifle Cut

Data collected from the USGS gage near McCoombs/McCoys Cut indicate that the average annual salinity is approximately 0.05 ppt, while the average annual salinity near Rifle Cut is approximately 2.67 ppt.

Based on the salinity and sediment preferences for the brown, white, and pink shrimp and the existing conditions of the project area, USACE believes the project will not likely affect these EFH species by the additional dredging and sediment placement activities to create wetlands.

Future Conditions with Alternatives 2 and 3 (Proposed Action)

Impacts associated with Alternative 2 and 3 would be very similar to those described under Alternative 1. However, impacts associated with placement of excavated sediments in the Sediment Basin could have its own impacts to EFH. The sediment composition of the existing bottom at the Sediment Basin is primarily silts. Based on the

USGS gage near the Sediment Basin (Figure 7), the average annual salinity in the area is approximately 7 ppt.

Figure 7: Location of USGS gage near the Sediment Basin

Based on the salinity and sediment preferences for the brown, white, and pink shrimp and the existing conditions of the project area, USACE believes the project will not likely affect these EFH species by the additional dredging and sediment placement activities to create wetlands. However, the Sediment Basin has higher salinity levels and is comprised of mostly silty materials. As a result, during sediment placement at the Sediment Basin, there is a possibility that the three species of shrimp could be present.

4.5 Terrestrial Resources

Future Conditions with No Action (FEIS Plan), Alternative 1, Alternative 2, and Alternative 3 (Proposed Action)

There are no expected impacts to terrestrial resources other than what is described in Section 5.08 of the FEIS. The area adjacent the dredging and construction areas are wetlands and the sediments being dredged would be used to create additional wetland habitat.

4.6 Wildlife

Future Conditions with No Action (FEIS Plan), Alternative 1, Alternative 2, and Alternative 3 (Proposed Action)

With implementation of the FEIS Plan (NAA), there are no expected impacts to wildlife resources other than as discussed in Section 5.08 of the FEIS. There are no long-term impacts expected to the wildlife resources in the area. Short-term, minor impacts are expected from increased turbidity and noise during construction. These may disturb nearby wildlife. Additionally, the project will provide permanent positive impacts to wildlife by increasing freshwater flows in Back and Middle Rivers. This would limit salinity intrusion, reducing salinity impacts from the harbor deepening project to tidal freshwater and brackish wetlands.

4.7 Threatened and Endangered Species

Future Conditions with No Action (FEIS Plan), Alternative 1, Alternative 2 and Alternative 3 (Proposed Action)

The McCoys Cut diversion structure described in the FEIS will not likely adversely affect the protected species identified in Table 3. Potential effects on these listed species are expected to be negligible. The proposed activities would result in minimal disturbance to vegetated areas, because construction equipment will arrive by barge and work from a barge.

Temporary impacts during construction would include construction noise and suspension of sediment in the vicinity of the diversion structure. Appropriate standard precautionary measures would be implemented to minimize impacts during construction.

Sediment control measures would be implemented in the river while the flow diversion structure is being constructed. The flow diversion structure is not expected to have a negative impact on listed species once it is constructed.

To reduce adverse effects to sturgeon during construction of the flow re-routing modifications and during the harbor deepening, special provisions would be implemented to protect sturgeon. The area of the proposed flow re-routing modifications is located in foraging and resting habitat for sturgeon and is used by juvenile shortnose sturgeon during the winter. To minimize project impacts to sturgeon, construction of the diversion and closure structure at McCoys/McCoombs Cut and Rifle Cut would only occur between May 15 and November 1. Most sturgeon are not expected to be in that portion of the estuary during that period, as discussed in the November 4, 2011 final Biological Opinion for SHEP. In addition, dredging would not occur during the spawning season for striped bass, which occurs between April 1 and May 15. As a result of coordination with NMFS in February 2017, additional measures were suggested to minimize potential impacts to sturgeon from the proposed work:

1) Monitor water quality (DO, pH, turbidity) downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River

2) Conduct dredging in only one area at a time (either in upper Middle River or the Back River, not both at the same time)

3) Regardless of dredging method used, implement precautionary warning techniques before dredging starts each day (e.g., tapping the clamshell bucket on the water surface or some similar method of providing warning)

4) Follow similar guidelines as those in NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions to protect sturgeon observed in or near the dredging area. More specifically, operation of any mechanical construction equipment shall cease immediately if a sturgeon is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition or a 30-minute waiting period.

The District would implement these measures as part of the proposed action. This document serves as an update to the existing Biological Assessment (Appendix B of the FEIS). This updated assessment concludes that all of the alternatives being evaluated "may affect, but is not likely to adverse effect" Atlantic and shortnose sturgeon

In December 2017, the USACE Savannah District provided NMFS with a Section 7(a)(2)/7(d) Evaluation to re-initiate consultation on the Savannah Harbor Expansion Project (which includes the McCoys Cut flow re-routing feature) as a result of NOAA's August 17, 2017 final rule designating the Savannah River as critical habitat for Atlantic sturgeon and consultation is currently ongoing. A copy of the updated Section 7(a)(2)/7(d) Evaluation can be found in Appendix I.

The analysis concludes that the proposed McCoys Cut Flow Re-routing feature "**May Affect but Not Adversely Modify**" critical habitat for Atlantic sturgeon for the hard substrate PBF for all three life stages (eggs, larvae, and adults) but in a positive way. One aspect of the McCoys Cut flow re-routing is the placement of crushed stone/rock next to the sheet pile as part of the construction of the diversion structure. This placement of crushed stone/rock has the potential to help provide critical habitat for Atlantic sturgeon with regards to the availability of approximately 200,000 square feet of hard substrate in fresh water.

The proposed McCoys Cut diversion structure, **"May Affect but Not Adversely Modify"** critical habitat for juvenile Atlantic sturgeon for the salinity gradient and soft substrate PBF. The construction of the McCoys Cut diversion structure will cause a conversion of an area of approximately 44 million square feet within the Back River portion of the Savannah River that was between 0.5 ppt to 30 ppt to less than 0.5 ppt. This area will see a decrease in river salinities that would have otherwise been available for juvenile foraging but with the conversion of the habitat to salinities less than 0.5 ppt,

it would not be considered ideal foraging habitat. There will also be two areas within the Front River portion Savannah River totaling approximately 100 million square feet whose salinities will changes from 0.5 ppt and less to 0.5 to 30 ppt which will provided additional suitable foraging habitat for juvenile Atlantic sturgeon. The benefit of the construction of the McCoys Cut flow re-routing feature is even with the loss of the area within the Back River for suitable foraging habitat for juvenile Atlantic sturgeon, as a result of the width size of the river areas within the Front River where there will be an increase in salinities, there will be an overall gain in suitable foraging habitat by about half.

The construction of the McCoys Cut diversion structure and the construction of the closure structure at McCoombs Cut to create wetland habitat **"May Affect but Not Adversely Modify"** critical habitat for Atlantic sturgeon for the unobstructed water depth PBF for the following life stages (subadults, adults (spawning movement), and adults (staging or resting)). These construction features will likely cause an obstruction within Savannah River for Atlantic sturgeon subadults and adults between the river mouth and spawning site for their holding, spawning movements, and staging/resting life stages, thereby causing the Atlantic sturgeon to travel approximately 2,400 feet to McCoys Cut to continue their way up river and to find additional spawning and resting areas.

Dredging activities associated with McCoys Cut flow re-routing feature, **"May Affect but Not Adversely Modify"** critical habitat for Atlantic sturgeon for the water quality PBF for the juvenile, subadults, and adult's life stages. Savannah District however, will follow best management practices during the dredging activities associated with the McCoys Cut flow re-routing feature including the monitoring of water quality (dissolved oxygen, pH, turbidity) downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River, as well as only conduct dredging in only one area at a time (either in upper Middle River or the Back River, but not both at the same time). In addition, the size of the dredge will be limited.

The conversion of McCoombs Cut from open water to wetlands as part of the McCoys Cut Flow re-routing **would not impact** critical habitat for juvenile Atlantic sturgeon for the "salinity gradient and soft substrate" PBF as well as for the "the unobstructed water depth PBF " as McCoombs cut is located within a section of the Savannah river where salinities are less than 0.5 ppt which is not preferable juvenile foraging and physiological development as they prefer water where the salinities range from 0.5 to 30 ppt.

A copy of the Section 7(a)(2)/7(d) Evaluation can be found in Appendix I. The analysis concludes that the protective measures that will be used during the SHEP construction and maintenance for the McCoys Cut flow re-routing feature, should reasonably protect Atlantic sturgeon and not jeopardize their critical habitat.

4.8 Cultural Resources

Future Conditions with No Action (FEIS Plan)

Savannah District's 2013 consultation with the Georgia and South Carolina State Historic Preservation Offices (SHPOs) and the USFWS concluded that implementation of the NAA would not adversely impact cultural resources. USACE refined dredging designs for Middle River in 2016, and as a result, one historic rice trunk on the Georgia bank associated with Red Knoll Plantation would be impacted, as an adequate buffer could not be placed around the site. USACE reinitiated consultation with the Georgia SHPO and the USFWS to develop a work plan to conduct detailed archival research, fully delineate the site boundary, and document the site. The work was performed and is sufficient to mitigate the adverse impacts to the site.

Future Conditions with Alternative 1

Extending the length of dredging by an additional 2,600 feet would not affect any cultural resources located along Middle River. Four historic sites, two of which are rice trunk features, and two that are bank reinforcement structures, are located along the expanded area. The sites are located well outside the area of dredging and would not be impacted directly or indirectly by dredging activities.

The construction of plugs in McCoombs Cut and Rifle Cut and the placement of excavated sediment adjacent to those plugs to create wetlands would not impact any cultural resources. No terrestrial or submerged resources are located within the cuts or in areas where sediment material would be placed. The created wetlands will not have a visual impact on the landscape. No cultural resources sites are located at the site of the proposed access platform. Six historic sites are recorded along the shoreline of Back River upstream of the proposed temporary access platform. The project specifications provided to the contractor will depict the locations of the cultural sites as areas off-limits for mooring to avoid impacts. No sites are located on the dike.

Section 4.10.2 of the FEIS identifies areas within the Area of Potential Effects with extremely low potential for cultural resources. No initial or follow on investigations for historic properties are warranted for those areas. The existing dredged sediment placement sites for Savannah Harbor are included in the list. The original land surfaces in the DMCAs that may contain historic properties are buried under 30 or more feet of deposited dredged sediment and would not be impacted by the placement of additional dredged material.

Future Conditions with Alternative 2

No impacts to cultural resources would result with implementation of Alternative 2. Impacts to sites within the extended area of dredging, the areas where dredged sediment would be placed in McCoombs Cut and Rifle Cut, and the associated access area for filling Rifle Cut are the same as described for Alternative 1. Several cultural resources sites associated with maritime history are located along the shoreline within

the Sediment Basin. Those sites are outside the limits where dredged material would be placed.

Future Conditions with Alternative 3 or the Proposed Action

Impacts to cultural resources would be same as described in Alternatives 1 and 2.

4.9 Air Quality

Future Conditions with No Action (FEIS Plan)

Although there would be a minimal amount of dust generated during the construction of the diversion and closure structures at McCoys/McCoombs Cut and Rifle Cut, that impact would only occur during the period of construction. Aside from emissions generated by construction equipment and barges hauling the dredged sediment to the various placement sites, no long-term impacts on air quality are expected. Following construction, the structures will be passive and would not generate any additional air pollutants. There would be no permanent impacts to air quality as a result of these alternatives.

Future Conditions with Alternative 1

With implementation of Alternative 1, impacts to air quality would be similar to those described under the NAA. In addition, there would be a minor decrease in greenhouse gasses with implementation of Alternative 1, as a result of the shorter barge movement between the dredging area and the sediment placement sites.

Future Conditions with Alternative 2 and Alternative 3 (Proposed Action)

With implementation of Alternative 2 and Alternative 3, impacts to air quality would be similar to those described under the NAA. With implementation of Alternative 2 and Alternative 3, the barges would have longer distances to haul the dredged material from the excavation area to Sediment Basin than it would to take to move the material to the approved DMCA site. However, that impact would still be within the *de minimis level* (minimal threshold for which a conformity determination must be performed for various pollutants in a project area).

4.10 Water Quality

Future Conditions with No Action (FEIS Plan)

With implementation of the FEIS Plan (NAA), short-term water quality impacts will occur from deepening Little Back and Middle River to allow more fresh water to flow into those river systems. There will also be short term water quality impacts during the construction of the diversion structures, resulting from temporary increases in turbidity. More details on impacts to water quality can be found in Section 5.02 in the FEIS.

All the salinity reductions expected in the FEIS would not occur due to the flow restriction that was recently identified in Middle River.

Future Conditions with Alternative 1

With implementation of Alternative 1, the impact to water quality would be the same as those described in the FEIS for the NAA. With implementation of Alternative 1, additional dredging at the mouth of Union Creek is needed to ensure that the required flows as discussed in the FEIS is maintained. Using a risk-based approach, Savannah District concluded that this additional dredging will not decrease dissolved oxygen levels in this portion of the Middle River. The conclusion is based on the following information:

> The analysis described in Section 5.02.01 of the FEIS evaluated dissolved oxygen at critical cells within several portions of Front River, Middle River, and Lower Back River. As a result of the flow rerouting mitigation features, the analysis indicated that dissolved oxygen levels would increase in Middle River Zones 2 through 6 with the 47-depth alternative (the FEIS selected and approved plan), even before operation of the dissolved oxygen system. The area of additional dredging at the mouth of Union Creek is located within Middle River Zone 5.
>
> In addition, a 2010 report on the SHEP Dissolved Oxygen Injection System indicates that dissolved oxygen levels would increase by 0.2 to 0.5 milligram/liter (mg/l) at the mouth of Union Creek. Dissolved oxygen levels at this location would increase to 1 mg/l once operation of the dissolved oxygen mitigation feature begins. Using this information and data analysis, the long term water quality is expected to improve within this portion of the Savannah River system as a result of the overall Savannah Harbor Expansion Project. The improvement would be the result of a higher velocity and volume of freshwater flows moving through that portion of the estuary.

As a result of the terms and conditions of the Navigable Water Permit received by the Savannah River Maritime Commission and the Section 401 Water Quality Certificate received by South Carolina Department of Health and Environmental Control (SCDHEC) Control, Savannah District will update the SHEP hydrodynamic and water quality models to reflect the additional dredging depths authorized hereunder, as well as the conversion of McCoombs and Rifle Cuts to wetlands. Savannah District will produce a report no later than the conclusion of the construction of the project and will share the findings with the Savannah River Maritime Commission and SCDHEC. The report will describe the incremental effect of the McCoys Cut flow re-routing feature on in-stream D.O. concentrations in the applicable model zones. All copies of the environmental compliance documentation including a copy of the Navigable Water Permit and the Section 401 Water Quality Certificate can be found in Appendix H.

In addition, Alternative 1 would result in intertidal wetlands being created using the sediments dredged from Little Back and Middle Rivers. Once these wetlands mature,

they would help improve the water quality within the project area by acting as a natural filtering system, removing excess sediments, nutrients, and pollutants from the water. Wetlands also have the ability to absorb water flows. This can reduce the amount of erosion that occurs and prevent sediment from being transported downstream. The salinity reductions described in the FEIS would occur.

Future Conditions with Alternative 2 and 3 (Proposed Action)

With implementation of Alternatives 2 and 3, the impact to water quality would match those described in the FEIS for the NAA. In addition to the impacts described for Alternative 1, there would be some temporary impacts to water quality as a result of the sediment placement in the Sediment Basin. The composition of the sediment that would be dredged and placed in the Sediment Basin is medium to coarse sand, with little trace of fines and organics. The sandy sediment is expected to drop quickly within the water column, minimizing the amount of turbidity. The excavated sediments would be barged from the dredging area to the Sediment Basin, which means that the fines would have time to settle out before the next round of sediment would be delivered. Based on the location of the excavation area, there is a very low risk of contaminants being present. As a result, it is anticipated that the proposed action will have only minor and temporary impacts to water quality. The salinity reductions described in the FEIS would occur.

4.11 Transportation/Traffic

Future Conditions with No Action (FEIS Plan)

With implementation of the NAA, all of the dredged sediments from the project are required to go to an approved DMCA placement site. As a result, the number of trips would be greater to take the dredged sediments from the dredging location to the desired placement location. The dredged sediments will either be transported by barge or will be pumped hydraulically using a pipeline, which should not have any adverse impacts to the traffic/transportation in the project area. If the material will be transported by barge, traffic through the Houlihan Bridge will be impacted depending on which DMCA placement site is used. If the material is barged to the DMCA 1N placement site, located above the Houlihan Bridge, traffic should not be impacted other than from trips required to bring materials and equipment for the plugs and diversion structure previously covered in the FEIS. If the material is barged to the DMCA 2A placement site, located below the bridge, traffic would be impacted, causing more frequent bridge openings. In order to ensure safe passage through the bridge during construction hours, and to help with vessel traffic in this portion of the Savannah River, temporary lighting will be installed.

Future Conditions with Alternative 1

With implementation of Alternative 1, approximately 192,000 cubic yards of dredged sediments will be used to create wetlands at both McCoombs Cut and Rifle Cut. The remaining balance of approximately 100,000 cubic yards of dredged sediments will go into an approved DMCA placement site. Impacts associated with Alternative 1 with

regards to traffic associated with taking the material to the approved DMCA placement sites will be the same as those described for the NAA, but there would be fewer openings required because of the reduction in the volume of material. If the contractor constructs and uses the pile supported platform on the edge of the Savannah National Wildlife Refuge (Refuge) on the Back River, there will be a temporary increase of marine transportation in this portion of the river during the construction period, which is anticipated to be approximately a year. In addition, there could be an increase of truck traffic along Highway 17 leading away from the DMCA and South Carolina State Road 170.

Future Conditions with Alternative 2

With implementation of Alternative 2, approximately 192,000 cubic yards of dredged sediments will be used to create wetlands at both McCoombs Cut and Rifle Cut. The remaining balance of approximately 100,000 cubic yards of dredged sediments will go into the Sediment Basin. During the construction period, the portion of the sediments going to the Sediment Basin will require the barges to go through the Houlihan Bridge. These trips to and from the Sediment Basin will cause more frequent openings of the bridge compared to normal circumstances. It will also be in addition to the opening required for the material and equipment needed to construct the plugs and diversion structure previously covered in the FEIS. In order to ensure safe passage through the bridge during construction hours, and to help with vessel traffic in this portion of the Savannah River, temporary lighting will be installed. If the contractor constructs and uses the access at the Refuge the impacts would be the same as those described in Alternative 1.

Future Conditions with Alternative 3 or the Proposed Action

With implementation of Alternative 3, the portion of the excavated sediments dredged as part of the project going to the Sediment Basin will be barged as described in impact description for Alternative 2. The portion of the dredged material going to the approved DMCAs, will be transported by barge, like the material going to the Sediment Basin and therefore will have similar impacts on traffic on the Houlihan Bridge as described under the Alternative 1. If the material is pumped hydraulically using a pipeline there should not be any adverse impacts to the traffic/transportation in the project area. If the contractor constructs and uses the access at the Refuge, the impacts would be the same as those described in Alternative 1.

4.12 Cumulative Impacts

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of

what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)". Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

Future Conditions with No Action (FEIS Plan)

With implementation of the NAA, there would be no change in cumulative impacts from those described in the FEIS (Appendix L of FEIS).

Future Conditions with Alternative 1

With implementation of Alternative 1, some temporary impacts will occur as a result of the additional dredging and sediment placement activities associated with the creation of approximately nine acres of wetlands. Adhering to appropriate environmental dredging windows and watching dissolved oxygen levels throughout the process to ensure they do not fall below the 5.0 mg/L threshold will minimize these impacts. The creation of wetlands would have positive benefits over time as the wetlands mature, providing food and habitat for various fish and wildlife species, improving overall water quality, and minimizing shoreline erosion.

Future Conditions with Alternatives 2 and 3 (Proposed Action)

With implementation of Alternatives 2 and 3, impacts would be similar to those described for Alternative 1. In addition to those impacts, there would be minor and temporary water quality impacts associated with sediment placement activities in the Sediment Basin. These short term impacts would not cause any long term impacts to the water quality.

5.0 **COORDINATION**

Coordination with the state and federal natural resource agencies included discussions at an interagency meeting on October 25, 2016, a meeting with USFWS Refuge staff on January 26, 2016, and an informational email to the various state and federal agencies on February 7, 2017.

The draft EA and Finding of No Significant Impact (FONSI) were coordinated with appropriate Federal, state, and local interests, as well as environmental groups and other interested parties. Federal and state agencies and NGO's that were contacted during the evaluation or that received a copy of the EA for review were as follows:

U.S. Department of Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency
U.S. Department of Commerce, National Marine Fisheries Service
Natural Resources Conservation Service, State Conservationist
S.C. Department of Health and Environmental Control
S.C. Department of Natural Resources

S.C. Department of Archives and History
GA Department of Natural Resources

Comments from the public and agencies and detailed responses can be found in Appendix G. The following is a list of major responses or clarification in this document:

- A statement was added in Section 1.1 to direct the reader on where they could find more information on the Sediment Basin in the 2012 FEIS and Appendices.
- Additional information was added in Section 1.2.2 on the operational limitations of the bridge.
- Additional information was added near the bottom of Section 1.2.2 to discuss the wetlands in more detail as well as their significant in the Coastal Georgia ecosystem.
- A statement was added in Section 4.2 to discuss the findings of the Section 404(b)(1) Evaluation and refer the reader to Appendix C for the updated Section 404(b)(1) analysis.
- USACE Savannah District will complete a short term monitoring effort for the wetlands created at both McCoombs Cut and Rifle Cut. Savannah District will monitor the wetland elevations immediately after construction has been completed as well as for two years afterwards. Savannah District will also monitor for vegetation growth and expansion during those two years to keep track of our progress.

6.0 **MITIGATION**

The appropriate application of mitigation is to formulate an alternative that first avoids adverse impacts, then minimizes adverse impacts, and lastly, compensates for significant unavoidable impacts. To ensure that dredging and construction activities does not affect manatees, Savannah District has adopted and would implement on this project the “Standard State and Federal Manatee Protection Conditions.”

The McCoys Cut project is a mitigation feature of SHEP. This feature is part of a group of features that would re-route flows in the estuary. These features were designed to work in combination to increase freshwater flows in the Back and Middle Rivers. They would limit salinity intrusion to reduce salinity impacts from the harbor deepening project to tidal freshwater and brackish wetlands. These features benefit tidally-influenced wetlands adjacent to the Middle, Back and Little Back River system which are part of the Savannah River distributary system. This system of smaller cuts and rivers joins the navigation channel on the Savannah (or Front) River in several locations.

The additional dredging being proposed is needed for the flow re-routing features to fulfill their purposes described in the FEIS.

Actions associated with the creation of approximately nine acres of wetlands using the excavated sediments should not have any long term negative impacts that would

require compensatory mitigation. Savannah District will conduct a short term monitoring effort after the wetlands are created at both McCoombs Cut and Rifle Cut to track the project's progress. Immediately after the construction of both wetland areas, surveys will be completed to document post-construction marsh elevations, as well as vegetation growth present. Savannah District will continue to monitor marsh elevation and vegetation growth for an additional two years post construction. The results of the surveys will allow Savannah District to document lessons learned for future wetland restoration/creation efforts.

If the contractor constructs the access point in the Refuge there would be temporary impacts to approximately 0.13 acres of tidal wetlands and 0.23 acres of managed wetlands. The impacts to the tidal wetlands will be minimized by the subsequent removal of the pile supported platform and replanting of the area. The Refuge provided a list of plants that are acceptable for use in the area. The sum of the impacts to the managed wetlands will be minimized when at the end of construction the 16-foot crest width of the dike is degraded to maintain an approximately 20-foot berm. Disturbed areas of this berm will be replanted. A small portion (approximately half an acre) of the construction of the nine acres of tidal wetlands by the project will compensate for the impacts to the diked managed wetlands.

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

7.1 Existing Approvals Not Requiring Update

The following environmental compliances would not change from what is in the FEIS due to the proposed action and do not require an update:

Air Quality (Appendix K of the FEIS) – no significant change in equipment used or hours of operation.

7.2 Existing Approvals Requiring Update

The following environmental compliances would require updating as a result of the proposed alternative since additional dredging would be performed and beneficial reuse of the excavated sediment is included to create wetlands:

1. Section 404(b)(1) Evaluation (Appendix H of the FEIS) - fill being placed in the waters of the U.S. to beneficially create wetlands. As a result of the proposed action, an updated Section 404(b)(1) Evaluation can be found in Appendix C.
2. Section 401 Certification (Appendix Z of the FEIS) - additional dredging would be performed, and fill would be placed in the waters of the U.S. to beneficially create wetlands
3. Coastal Zone Management (CZM) Act (Existing CZM determinations for the SHEP can be found in Appendix J of 2012 FEIS) - additional dredging would be performed, and fill would be placed in the waters of the U.S. to beneficially create wetlands. As a result of the proposed action, updated CZM determinations for

both the States of Georgia and South Carolina can be found in Appendix E and F respectively.

7.3 Environmental Approvals

Environmental compliance for the proposed action would be achieved upon the following actions:

- The Draft EA and Finding of No Significant Impact (FONSI) were released for public review on May 23, 2017, and was coordinated with the appropriate agencies, organizations, and individuals for their review and comment;
- U.S. Fish and Wildlife Service (USFWS) confirmed in an email dated June 22, 2017 that the proposed modifications did not change the Endangered Species Act Section 7 Concurrence provided as part of the 2012 FEIS.
- States of South Carolina and Georgia Historic Preservation Officer letters dated May 31, 2017concurred with the District's Determination of No Effect on cultural resources as a result of the proposed action.
- NOAA NMFS stated in an email on June 12, 2017 that the "NMFS agrees with the District's conclusion that the proposed action would have no additional impacts to EFH beyond those described in the July 2012 Final Environmental Impact Statement for SHEP."
- NOAA NMFS confirmed in an email dated May 31, 2017, that the work at McCoys Cut is covered by the overall biological opinion for the SHEP, stating "the modifications to the planned work at McCoys Cut did not rise to level of triggering the need to reinitiate consultation."
- Georgia Department of Natural Resources, Environmental Protection Division, confirmed in an email dated June 22, 2017, "that the proposed project adjustments comprise essentially modifications of the extent, magnitude and certain accessory aspects of the concept as originally put forth in the FEIS," and is consistent with the Section 401 Water Quality Certificate that was issued for the SHEP project in 2011.
- In December 2017, the USACE Savannah District provided NMFS with a Section 7(a)(2)/7(d) Evaluation to re-initiate consultation on the Savannah Harbor Expansion Project (which includes the McCoys Cut flow re-routing feature) as a result of NOAA's August 17, 2017 final rule designating the Savannah River as critical habitat for Atlantic sturgeon and consultation is currently ongoing. On April 3, 2018, a revised 7(a)(2)/7(d) Evaluation was provided to NMFS to provide information on expected impacts based on the four physical and/or biological features of critical habitat.
- Georgia Department of Natural Resources, Coastal Resources Division, provided Coastal Zone Management concurrence on July 26, 2017.
- South Carolina, Department of Health and Environmental Control, provided Coastal Zone Management concurrence on July 25, 2017.
- South Carolina, Department of Health and Environmental Control, provided the USACE Savannah District with an updated Water Quality Certificate for the McCoys Cut feature on February 5, 2018.

- Savannah River Maritime Commission provide the USACE Savannah District with the Navigable Waters Permit on January 11, 2018.
- On July 20, 2017, South Carolina, Department of Transportation, provided the USACE Savannah District with an Encroachment Permit. On February 7, 2018, an extension was provided.
- South Carolina, Department of Health and Environmental Control, provided the USACE Savannah District with the Erosion and Sedimentation Control Permit on March 20, 2018.

The proposed action would not be implemented until the action achieves full environmental compliance with applicable laws and regulations, as described above. Table 4 shows compliance with following Executive Orders.

Table 4: Compliance of the Proposed Action with Executive Orders

Executive Orders	Number	Compliance Status
Equal Opportunity	11246	In Compliance
Protection and Enhancement of Environmental Quality	11514/11991	In Compliance
Protection and Enhancement of the Cultural Environment	11593	In Compliance
Convict Labor	11755	In Compliance
Floodplain Management	11988	In Compliance
Protection of Wetlands	11990	In Compliance
Federal Compliance with Pollution Control Standards	12088	In Compliance
Environmental Effects Abroad of Major Federal Actions	12114	In Compliance
Federal Compliance with Right-To-Know Laws and Pollution Prevention	12856	In Compliance
Federal Actions to Address Environmental Justice and Minority and Low-Income Populations	12898	In Compliance
Implementation of the North American Free Trade Agreement	12889	In Compliance

Table 4: Compliance of the Proposed Action with Executive Orders		
Executive Orders	**Number**	**Compliance Status**
Energy Efficiency and Water Conservation at Federal Facilities	12902	In Compliance
Federal Acquisition and Community Right-To-Know	12969	In Compliance
Protection Of Children from Environmental Health Risks and Safety Risks	13045	In Compliance
Environmental Justice	12898	In Compliance
National Invasive Species Council	13112	In Compliance
Responsibilities of Federal Agencies to Protect Migratory Birds	13186	In Compliance

8.0 **CONCLUSION**

The proposed action consists of (1) dredging an additional 2,600 feet in Middle River to achieve the intended flow needed to fulfill the SHEP's mitigation requirements, and (2) increasing the dredging depth at the mouth of Union Creek by four feet to account for potential future shoaling. The area of additional dredging depth would be within the same footprint as the approved dredging template, but four feet deeper for a distance of approximately 1,360 feet.

The proposed action also consists of using the majority of the excavated sediments to create approximately nine acres of wetlands and placing the remaining 100,000 cubic yards of sediment in either a portion of the Sediment Basin (another flow re-routing feature of the SHEP) or in an existing upland DMCA.

Savannah District has assessed the environmental impacts expected from the various alternatives and determined that the proposed action (Alternative 3) would have no unacceptable impacts upon cultural resources, wildlife, rare, threatened and endangered species, EFH, terrestrial resources, or air quality. The protective measures that will be used during the construction of the McCoys Cut flow re-routing feature, should reasonably protect Atlantic sturgeon and not jeopardize their critical habitat. Over time, the proposed action would result in more beneficial effects on wetlands, aquatic resources and water quality than those described for the plan approved in the FEIS.

9.0 **PREPARED BY**

This SEA and the associated FONSI were prepared by Robin Armetta, Biologist, with relevant sections prepared by: Julie Morgan - Archeologist; Taylor Wimberly - Project Manager; Laura Williams – Civil Engineer; and Lee Schuman – Geotechnical Engineer.

The address of the preparers is: Environmental Resources Branch, Savannah District, U.S. Army Corps of Engineers, 100 West Oglethorpe Avenue, Savannah, Georgia 31401-0889

10.0 **REFERENCES**

AECOM. Wetland Delineation Report for Rifle Cut and McCoys Cut, Savannah GA for U.S. Army Corps of Engineers, Savannah District. October 2016.

Larson, S.C., M.J. Van Den Avyle, and E.L. Bozeman Jr. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (South Atlantic)—brown shrimp. U.S. Fish Wildl. Serv. Biol. Rep.82 (11.90). U.S. Army Corps of Engineers TR EL-82-4. 14 pp.

Muncy, R.J. 1984. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (South Atlantic)—white/pink shrimp. U.S. Fish Wildl. Serv. FWS/OBS-82/11.27. U.S. Army Corps of Engineers, TR EL-82-4. 19 pp.

USFWS. Savannah Coastal Refuge Complex, Comprehensive Conservation Plan, September 2011.

USFWS. Endangered and Threatened Species in Chatham County, Georgia and Jasper County S.C. for McCoys Cut Project Area. Updated list obtained from USFWS on February 9, 2017. https://ecos.fws.gov/ipac/

Appendix A

- **2016 Wetland Delineation Report for Rifle Cut and McCoys Cut**

Wetland Delineation Report

Prepared For:
Lowe Engineers
United States Army Corps of Engineers, Savannah District

SHEP Wetland Delineation
Rifle Cut and McCoy's Cut, Savannah GA
Task Order on Contract Number W912HN-12-D-0031

AECOM
Paul Masten
201 North Front Street, Suite 509
Wilmington, NC 28401
TEL (910) 667-2391
AECOM Project Number: 60519402

Table of Contents

Tables

Figures

Appendices

1.0 Introduction

Rifle Cut and the Little Back River near McCoy's Cut are two project areas part of an environmental mitigation project in the Savannah River Basin. The project locations are on lands that are part of the Savannah National Wildlife Refuge, which is owned and operated by the US Fish and Wildlife Service. AECOM was not made aware of proposed project activities thus such considerations have not been included in this report (See Appendix A).

1.1 Purpose of Document

AECOM has prepared this Wetlands Delineation Report on behalf of Lowe Engineers to identify wetlands and Waters of the U.S. present within the study areas. The purpose of this document is to describe the methods used to identify wetlands and other features and present the results of the field delineation.

1.2 Wetland Definition

Wetlands are defined by the U.S. Army Corps of Engineers ([USACE] 33 CFR 328.3, 1986) and the U.S. Environmental Protection Agency ([EPA] 40 CFR 230.3, 1980) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". Many wetlands and other water features, including ephemeral, seasonal (formerly intermittent), and perennial streams, are considered waters of the United States by the USACE and these "preliminary jurisdictional" areas are protected under Section 404 of the Clean Water Act (CWA).

1.3 Site Location and Description

The site locations include Rifle Cut and the Little Back River near McCoy's Cut. Rifle Cut is an approximately 2,000-foot long surface water located between the Middle River and the Back River, connecting with the Middle River on its western boundary approximately 800 feet upstream of the GA Hwy 25 (N. Coastal Hwy) bridge crossing Middle River. Little Back River is an approximately 2,300-foot long stream off the Savannah River that flows into McCoy's Cut, located approximately 5 miles upstream of the Houlihan Boat Ramp Park. The wetland delineation covered the length of the two locations, extending no more than 100 feet beyond the top edge of the wetland/surface water interface on both sides of the Cut/River. Both project areas are within the tidal range of the overall Savannah River system. The project locations are on lands that are part of the Savannah National Wildlife Refuge, which is owned and operated by

the U.S. Fish and Wildlife Service (USFWS). While performing the delineation, care was taken to minimize disturbance on the sites as much as possible.

1.4 Habitat Description

The project areas are within the Savannah National Wildlife Refuge, in the Savannah River Basin. Both sites are tidally influenced. The Rifle Cut area is dominated by tidal, emergent wetlands while the McCoy's Cut area contains mostly forested wetlands with small fringe areas of emergent wetlands. No upland areas were observed at Rifle Cut, but a small sandy bluff upland area was observed at McCoy's Cut. No development has occurred along either project area. Man-made ditches were also observed intersecting with Rifle Cut.

1.5 National Wetlands Inventory

The USFWS National Wetlands Inventory (NWI) Maps (USFWS 2015) indicate one wetland type surrounding the Rifle Cut project area and two wetland types around Little Back River project area (Table 1.5). In total, the NWI maps indicate that wetlands occur in 100% of the project areas. On both the north and south sides of Rifle Cut, the NWI map depicted a PEM1Td wetland. The NWI map for the Little Back River near McCoy's Cut shows a PFO1/2T wetland on the north and south sides and a very small portion of a PEMT1 wetland in the southwest corner of the project area.

Table 1
Wetlands Intersecting the Project as Indicated by NWI Maps

Project Area	NWI Code	Wetland Class	Wetland Subclass	Water Regime (Special Modifier)	% of Total Project Area
Rifle Cut	PEM1Td	Palustrine Emergent	Persistent	semi-permanently flooded-fresh, tidal	100
Little Back River	PFO1/2T	Palustrine Forested	Persistent	semi-permanently flooded-fresh, tidal	98
Little Back River	PEMT1	Palustrine Emergent	Persistent	semi-permanently flooded-fresh, tidal	<2

1.6 Topography

According to the U. S. Geological Survey (USGS) topographic maps for the Project (USGS 2016), elevations are below 1.5 mean sea level (msl) in both project areas. Topographic maps for the project areas are found in Figures 2, 4a, and 4b.

1.7 Soils

Based on a review of the USDA-NRCS online Web Soil Survey (2016), the study area crosses 3 soil types within the Little Back River project area and one soil type within Rifle Cut, which are described in the table below and shown in Figure 2.

Table 2 Soils Intersecting the Project as Indicated by NRCS			
Project Area	Soil Code	Soil Name	NRCS Hydric Rating*
Rifle Cut	Tmh	Tidal Marsh Fresh	YES
Little Back River	AB	Angelina & Bibb soils, frequently flooded	YES
	Tmh	Tidal marsh fresh	YES
	LE	Levy Soils	YES

*This rating indicates the percentage of map units that meets the criteria for hydric soils and are separated based on their percentage of hydric components. The National Technical Committee for Hydric Soils definition identifies general soil properties associated with wetness. In order to determine whether a specific soil is hydric or nonhydric, more specific information including depth and duration of the water table is needed. (NRCS 2015)

2.0 Methods

2.1 Data Collection

AECOM wetland scientists evaluated the project areas at Rifle Cut and Little Back River near McCoy's Cut on September 21, 2016. This included the identification and delineation of wetlands and other water features in accordance with the protocol outlined in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0).

Each wetland and upland feature in the proposed project area was assigned a unique identification (ID) number. One soil pit was examined for Rifle Cut that represented the entire project area. Two soil pits were examined at Little Back River: a wetland pit and an upland pit. Each pit was examined for the presence of hydric soil indicators and wetland hydrology indicators. Wetland vegetation, soils, and hydrology data were recorded on Wetland Determination Data Forms – Atlantic and Gulf Coastal Plain Region for each wetland pit and the associated upland site (Appendix B). Photographs for each observation point were also taken and can be viewed in Appendix C. It should be noted that there were no upland areas present at Rifle Cut and therefore no upland pit or data form was taken.

The project sites were accessed via boat. The upland/wetland boundaries and surface water boundaries were demarcated using field flagging and a differential Global Positioning System (GPS) device was used to locate the field flags. Due to the presence of deep water and strong tidal action, much of the surface water boundaries were marked and GPS-located from a boat. Observation points for the wetland and upland points were taken by foot.

2.1 Data Analysis

2.1.1 Wetland Classification

During field surveys, wetlands were classified using the Cowardin classification system (Cowardin, et al. 1979). According to this classification system, two types of wetlands were identified: estuarine emergent (EEM) at Rifle Cut and estuarine forested (EFO) at Little Back River near McCoy's Cut. Emergent wetlands are characterized by emergent plants—i.e., erect, rooted, herbaceous hydrophytes, excluding mosses and lichens—are the tallest life form with at least 30% areal coverage. Forested wetlands are characterized by woody vegetation that is 6 meters or taller.

2.1.2 Mapping

After determining the extent of each wetland based on the presence of hydric soils, hydrophytic vegetation, and wetland hydrology, the wetland boundary was mapped on aerial photography using GIS. Acreages for delineated wetlands can be found in the Delineation Results Table 3. The GPS was programmed to only record points with a minimum of five satellites and a Position Dilution of Precision (PDOP) value no greater than 4.0.

3.0 Jurisdictional Findings

Jurisdictional wetlands and surface waters were identified and delineated within both of the project areas. The wetland characteristics for each area are described below and a summary of delineation findings is located in Table 3.

Table 3
Delineation Results Summary

Project Area	Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Rifle Cut	WA	32.16801	-81.13090	E2EM1	10 acres	Wetland, tidal
	SA	32.16796	-81.13358	R1SB6	2200 lf	Non-wetland, Section 10, tidal
Little Back River	WB	32.22210	-81.13358	E2PFO1/4	10 acres	Wetland, tidal
	SB	32.22158	-81.14748	R1SB6	2400 lf	Non-wetland, Section 10, tidal

3.1 Rifle Cut

This project area contained Rifle Cut, a tidal surface water, and emergent tidal wetlands that surround it. The emergent wetland was almost monotypic in vegetation with *Typha latifolia*

covering 96% of the area. Hydrology was present in the form of saturation and water table to the surface. At the time of the observation point WA1-EEM, there was no surface water present; however a tidal change occurred during the time of delineation, which inundated the entire project area. No upland areas were identified at this project site. Jurisdictional status is assumed for Rifle Cut. Figures showing the location and delineation of Rifle Cut are shown in Figures 3a, 4a, 5a, and 6a.

3.2 Little Back River

This project area contained Little Back River, a tidal surface water, and forested and emergent wetlands that surround it. One small upland area was observed in the northeast corner of this study area with the rest of the site being wetland or open water. At the observation point WB2-EFO, dominant trees included *Nyssa biflora* and *Acer rubrum*. Dominant saplings/shrubs were *Alnus serrulata*, *Persea borbonia*, and *Persea palustris*. *Saururus cernuus*, *Chasmanthium latifolium*, and *Zizania aquatica* dominated the herbaceous stratum. Tidal fluxes influence this area greatly. Inundation occurred throughout the project area save for the small upland area. Jurisdictional status is assumed for Little Back River. Figures showing the location and delineation of Little Back River are shown in Figures 3b, 4b, 5b, and 6b.

4.0 Environmental Permitting

If development activities are proposed at either site that impact jurisdictional features, coordination with the U.S. Army Corps of Engineers Savannah and/or Charleston Districts will be required. Depending on the total amount of impacts proposed, the project could be eligible for coverage under a Nationwide Permit (NWP) – generally less than 0.5 acres of wetland impact and/or 300 linear feet of stream impact (USACE 2012). If proposed impacts exceed the impact thresholds for the relevant NWP, then an Individual Permit will be required.

Additional coordination with State-level environmental regulatory agencies will also be necessary, specifically with Georgia Department of Natural Resources – Coastal Resources Division, and South Carolina Department of Environmental Health and Control.

5.0 Other Regulatory Considerations

Compliance with Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA) will be required for federal permits (NHPA 2016, ESA 2016). The upland area identified in the project area at Little Back River near McCoy's Cut was observed to be a sandy bluff with a relatively open understory. Such areas located along major river systems can contain cultural resources from prehistoric civilizations. Both project areas are located within the Savannah National Wildlife Refuge which has multiple documented occurrences of threatened and endangered species. Site assessments to document the presence/absence of cultural resources and/or protected species may be required.

6.0 Literature Cited

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C.

National Historical Preservation Act, Pub. L. No. 89-665, as amended by Pub. L. No. 96-515. Section 106. 2016. http://www.achp.gov/nhpa.pdf

U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS). 2016. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Environmental Laboratory, Vicksburg, Mississippi.

U.S. Army Corps of Engineers (USACE). 2012. Nationwide Permits. 2016. http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2012/NWP2012_sumtable_15feb2012.pdf

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0).

U.S. Fish & Wildlife Service . 2016. National Wetlands Inventory: Wetlands Mapper. http://www.fws.gov/wetlands/Data/Mapper.html.

U.S. Fish & Wildlife Service . Endangered Species Act. Section 7. 2016. https://www.fws.gov/endangered/laws-policies/section-7.html

United States Geologic Survey (USGS). 2016. http://topomaps.usgs.gov/.

Figures

N

0 750 1,500 3,000 Feet

Road
Project Limits

Figure 1
Site Vicinity Aerial Map

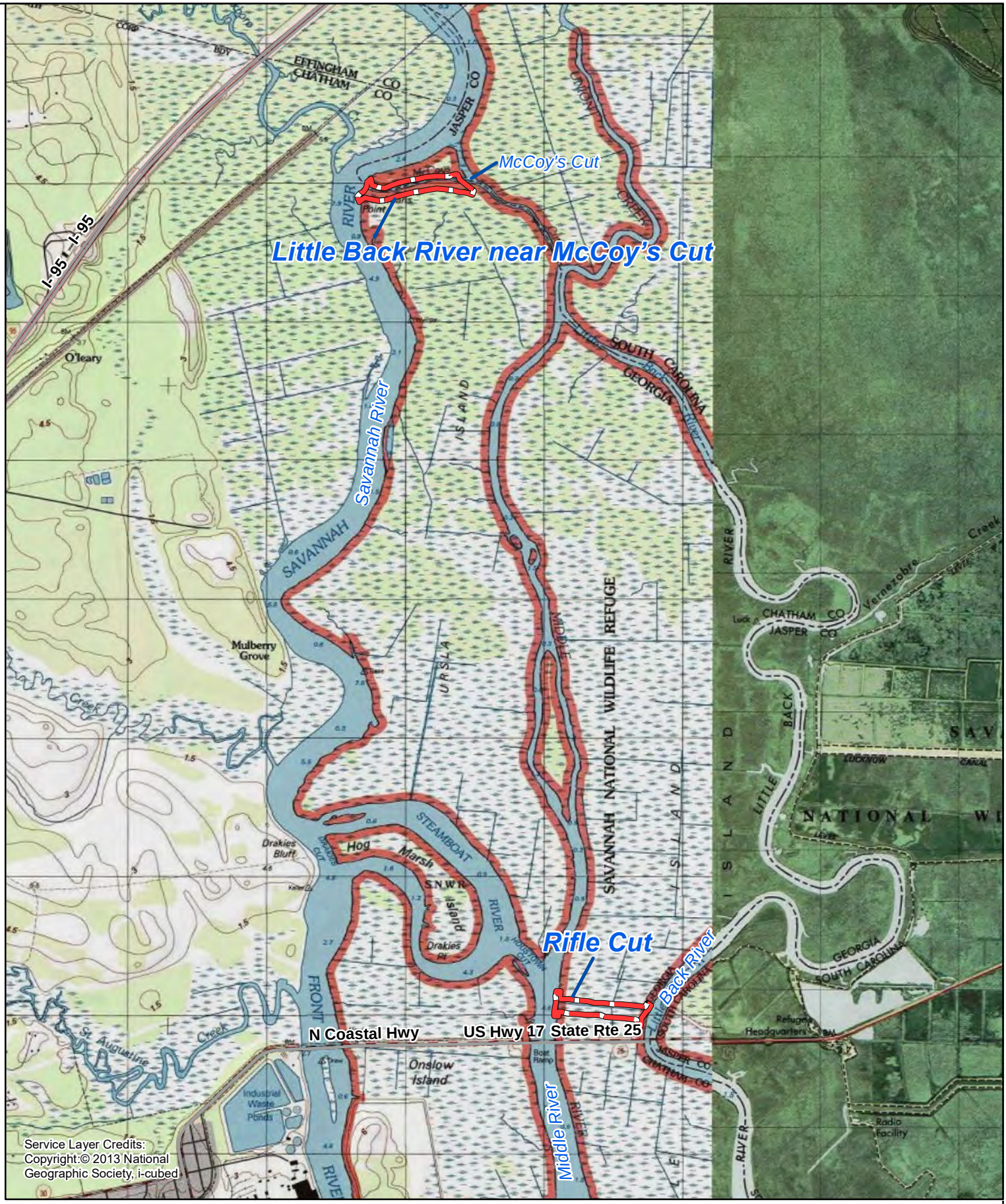
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\1-Vicinity Map.mxd



N

0 750 1,500 3,000 Feet

Road

Project Limits

Figure 2
Site Vicinity Topo Map

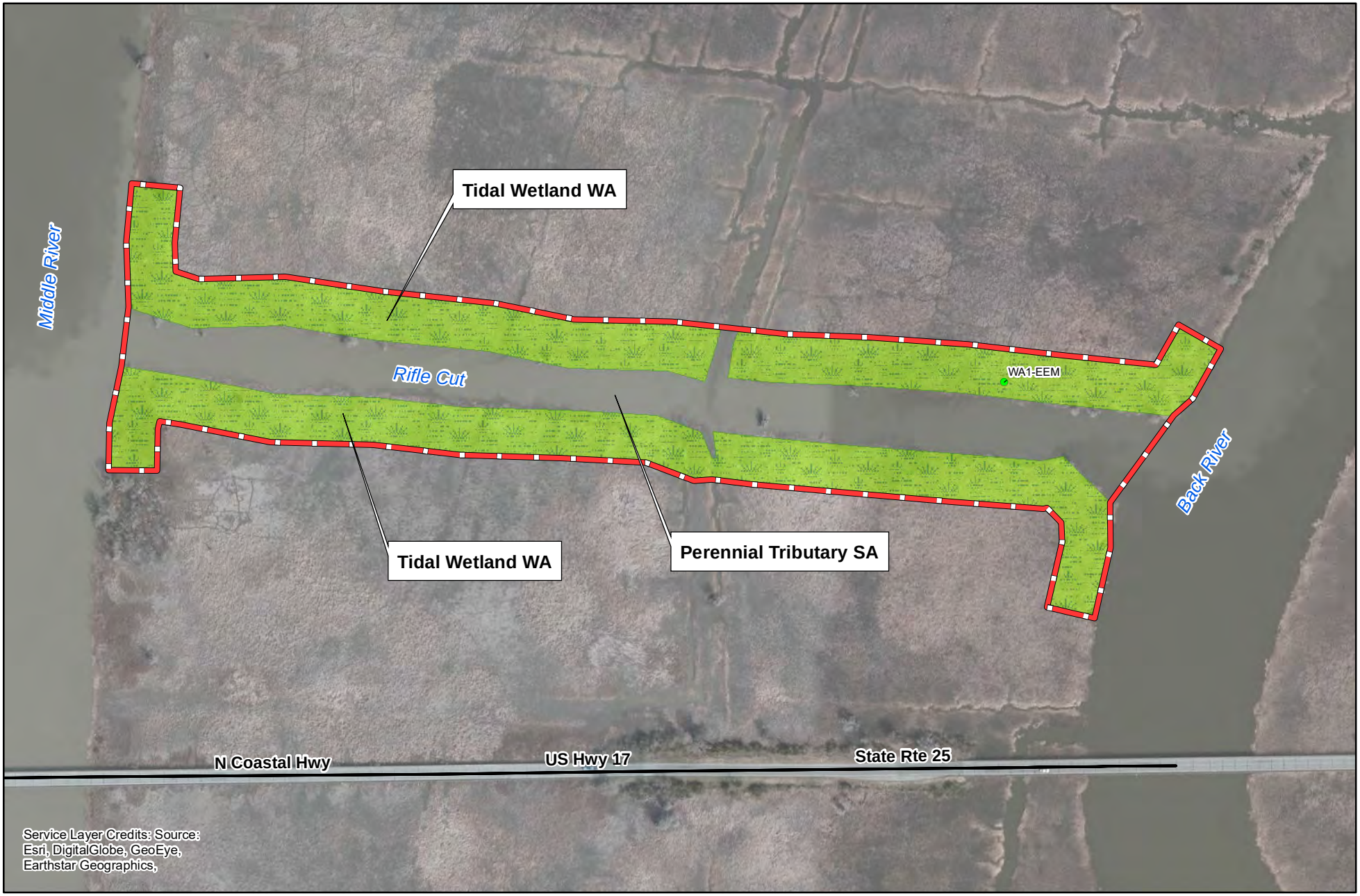
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map2-Vicinity Map-topo.mxd



N

Observation Point
Georgia Wetland
Road
Project Limits

0 70 140 280 Feet

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 3a
Delineation Aerial Map
Rifle Cut

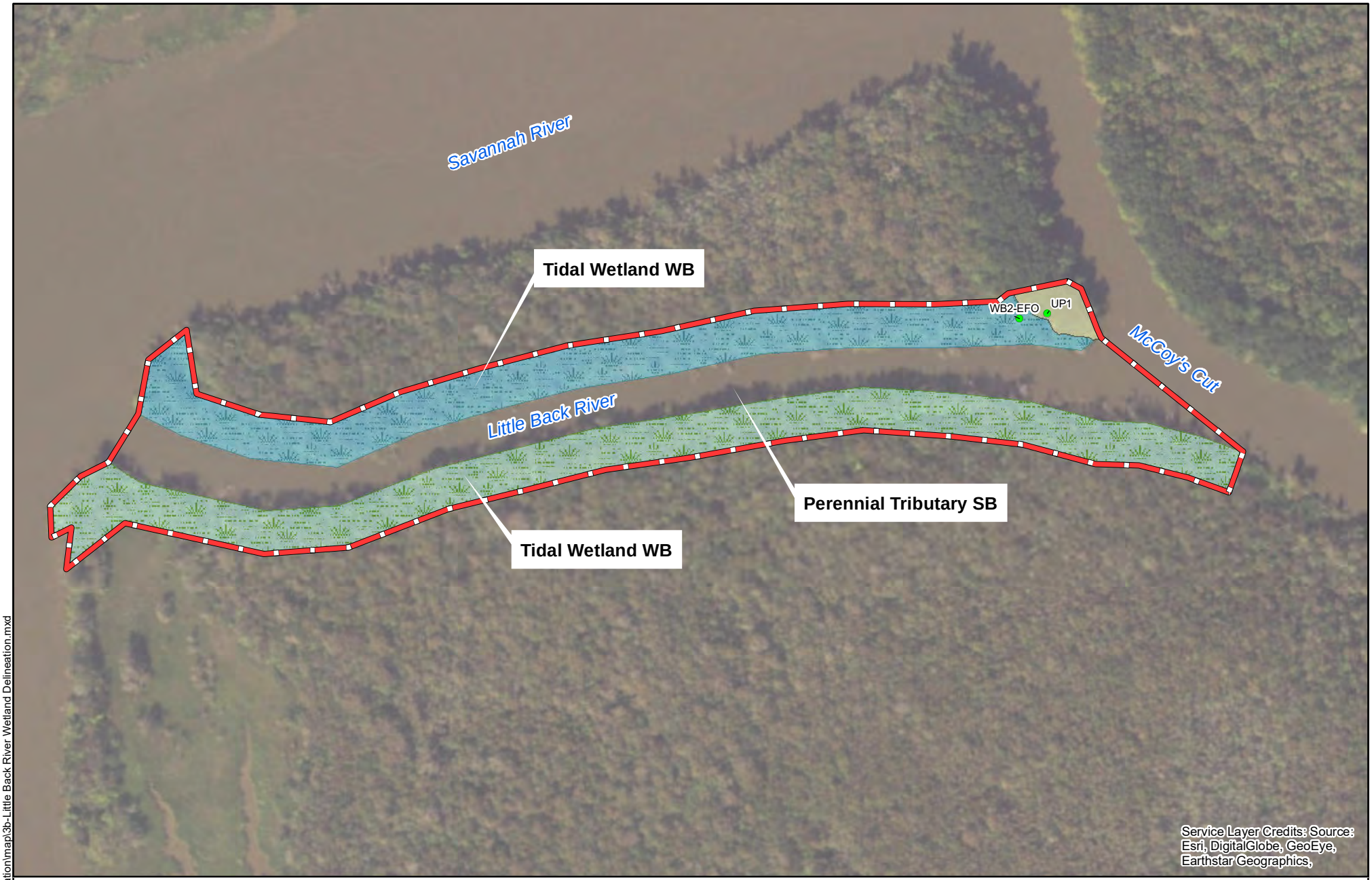
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\3a-Rifle Cut Wetland Delineation.mxd



N

Observation Point
Road
Project Limits
Georgia Wetland
South Carolina Wetland
Upland

0 75 150 300 Feet

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 3b
Delineation Aerial Map
Little Back River

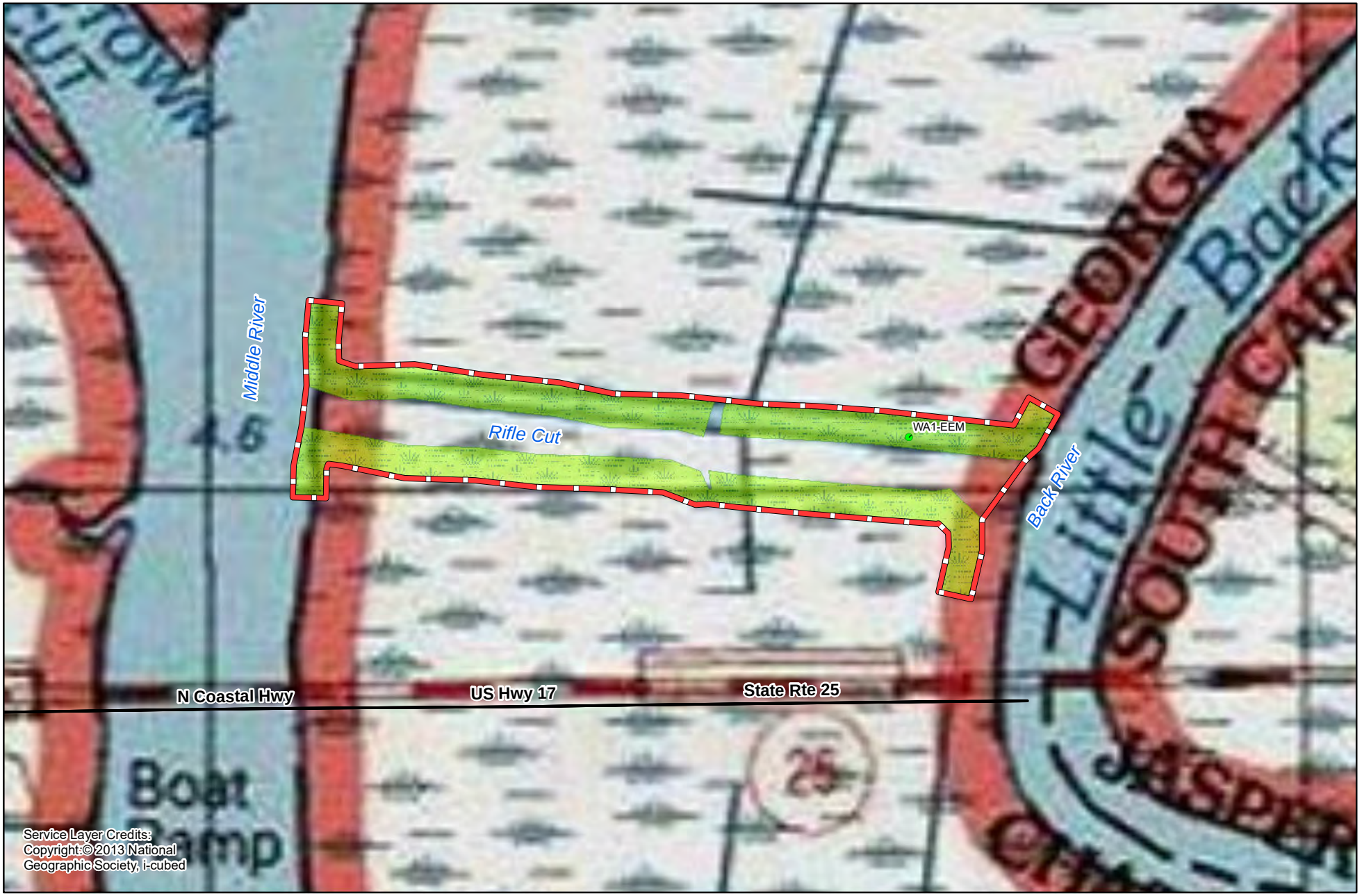
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\3b-Little Back River Wetland Delineation.mxd



N

Observation Point
Road
Project Limits
Georgia Wetland

0 100 200 400 Feet

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 4a
USGS Topographic Map
Rifle Cut

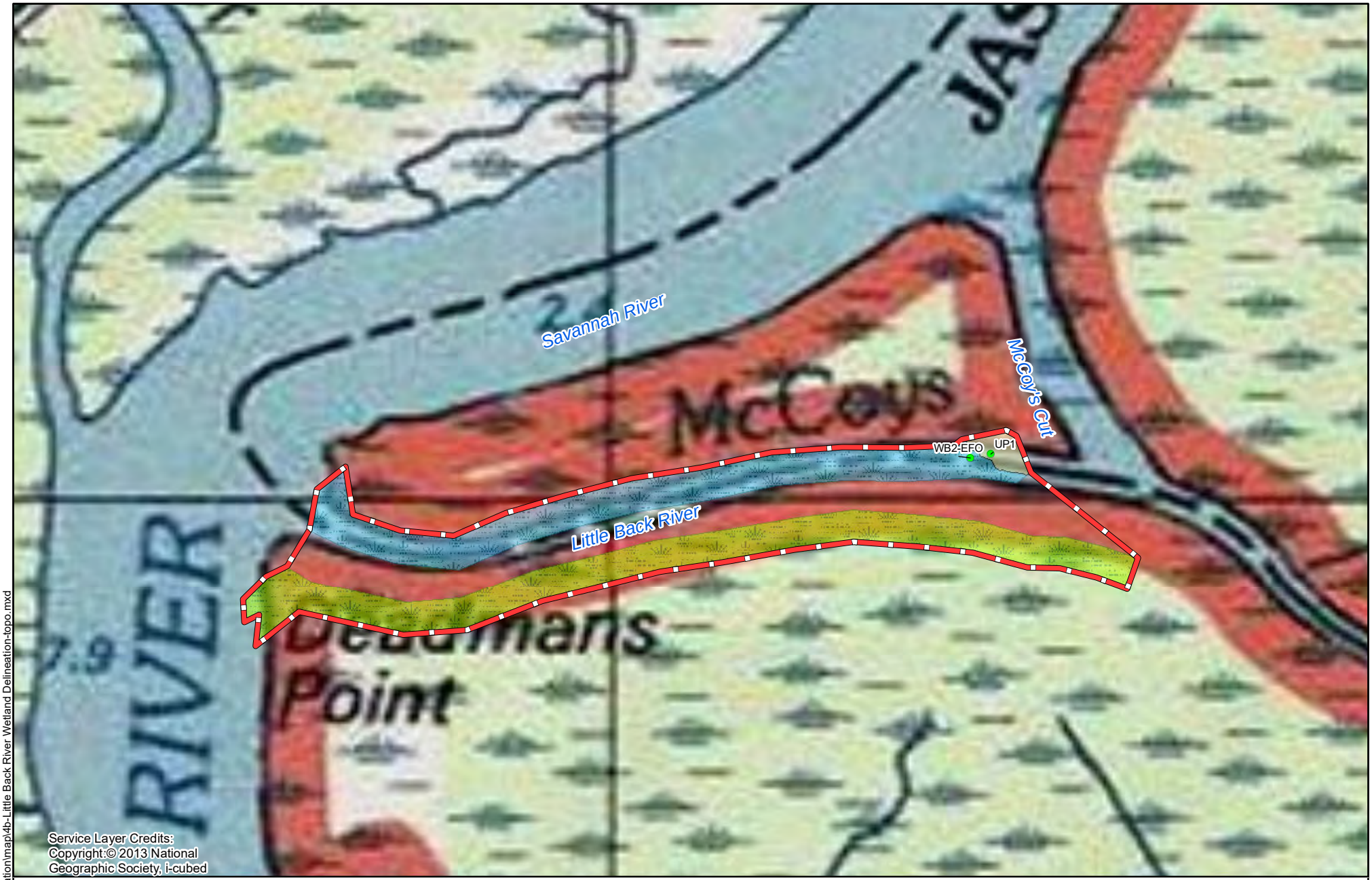
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\4a-Rifle Cut Wetland Delineation-topo.mxd



N

0 100 200 400
Feet

- Observation Point
- Project Limits
- Georgia Wetland
- South Carolina Wetland
- Upland

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 4b
USGS Topographic Map
Little Back River

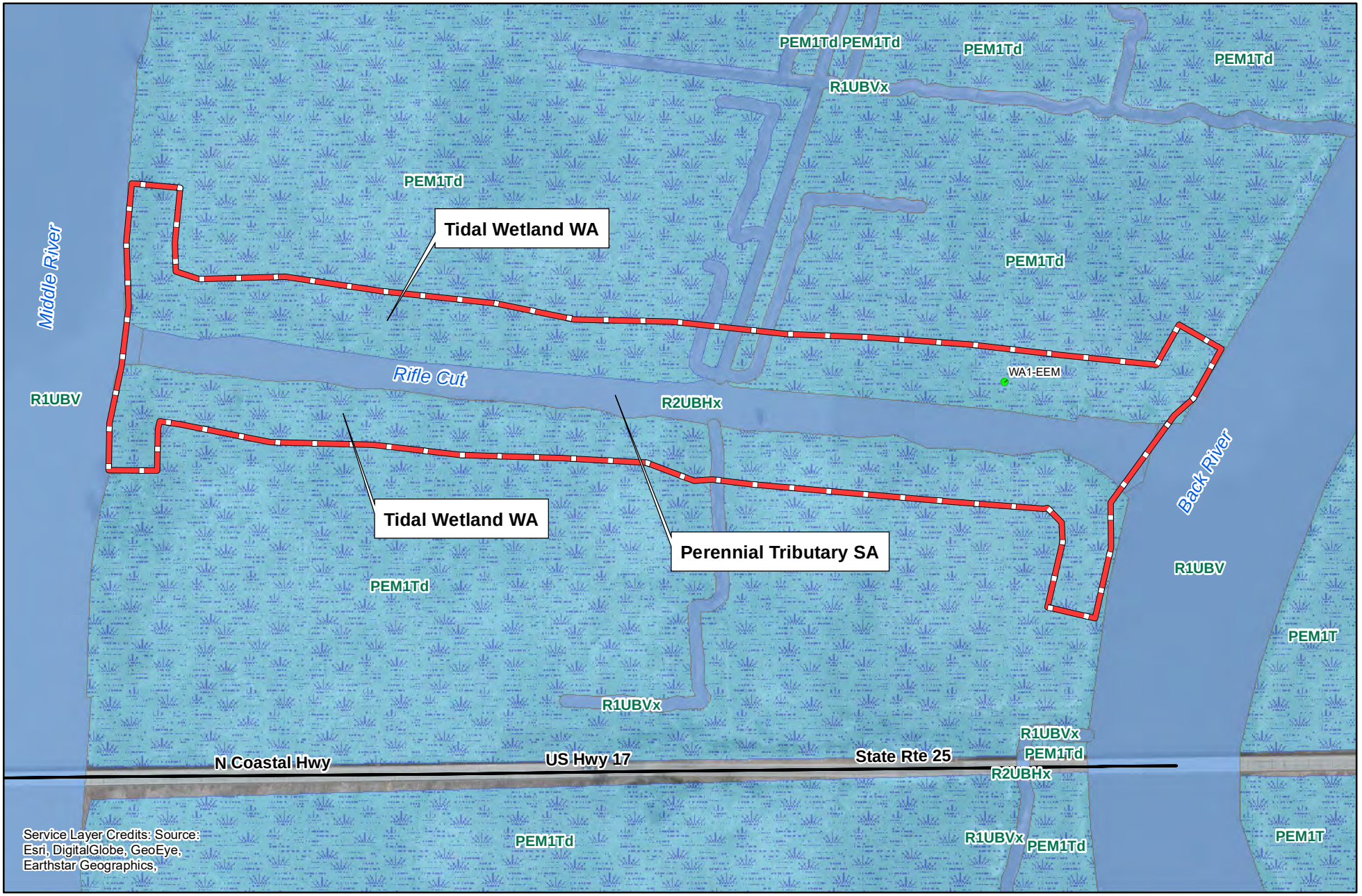
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\4b-Little Back River Wetland Delineation-topo.mxd



Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Drawn By: LLM

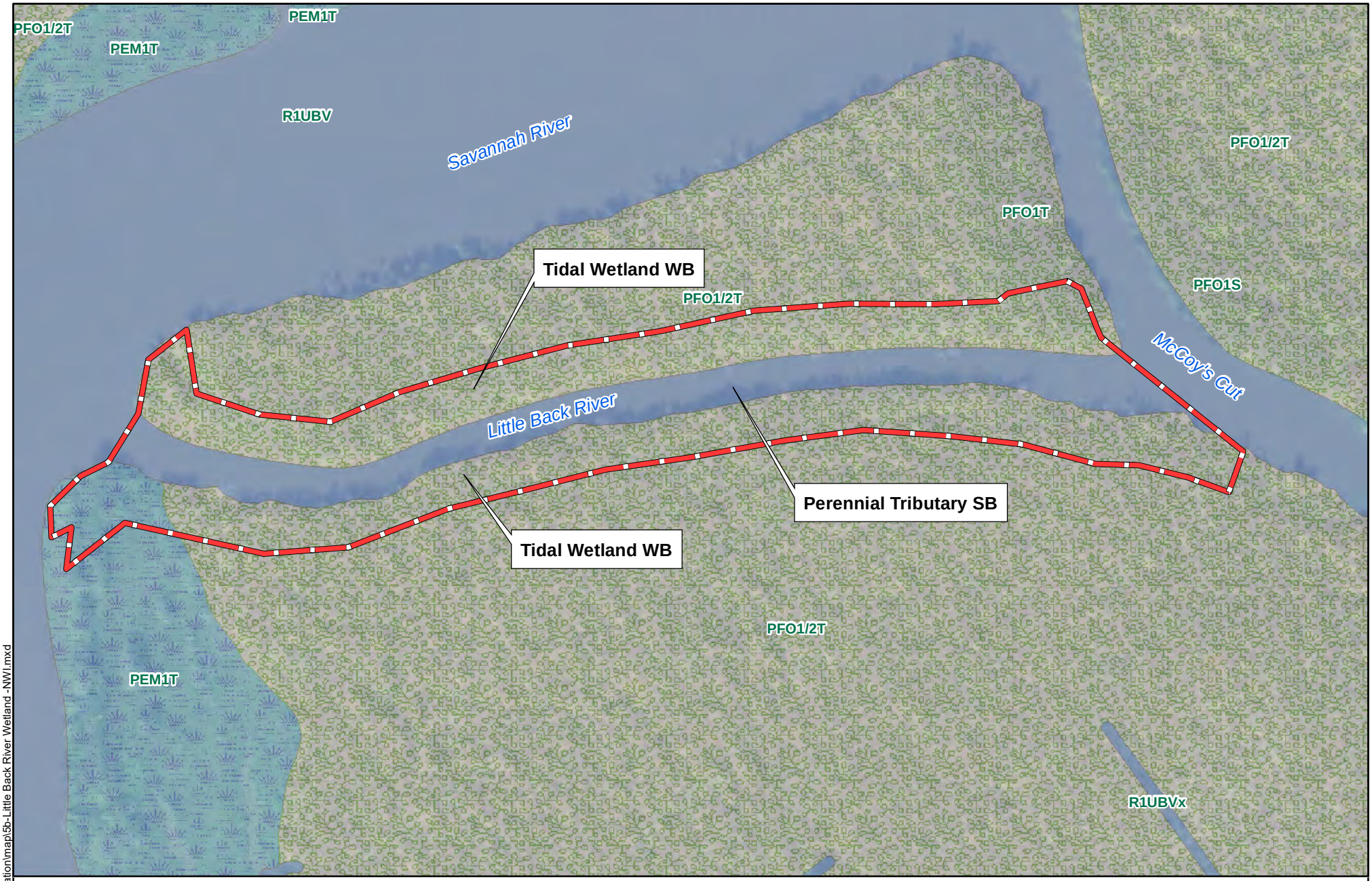
Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

Figure 5a
National Wetlands Inventory Map
Rifle Cut

AECOM

L:\work\GIS\Shep Wetland Delineation\map\5a-Rifle Cut NWI.mxd



N

Project Limits
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Riverine

0 75 150 300
Feet

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 5b
National Wetlands Inventory Map
Little Back River

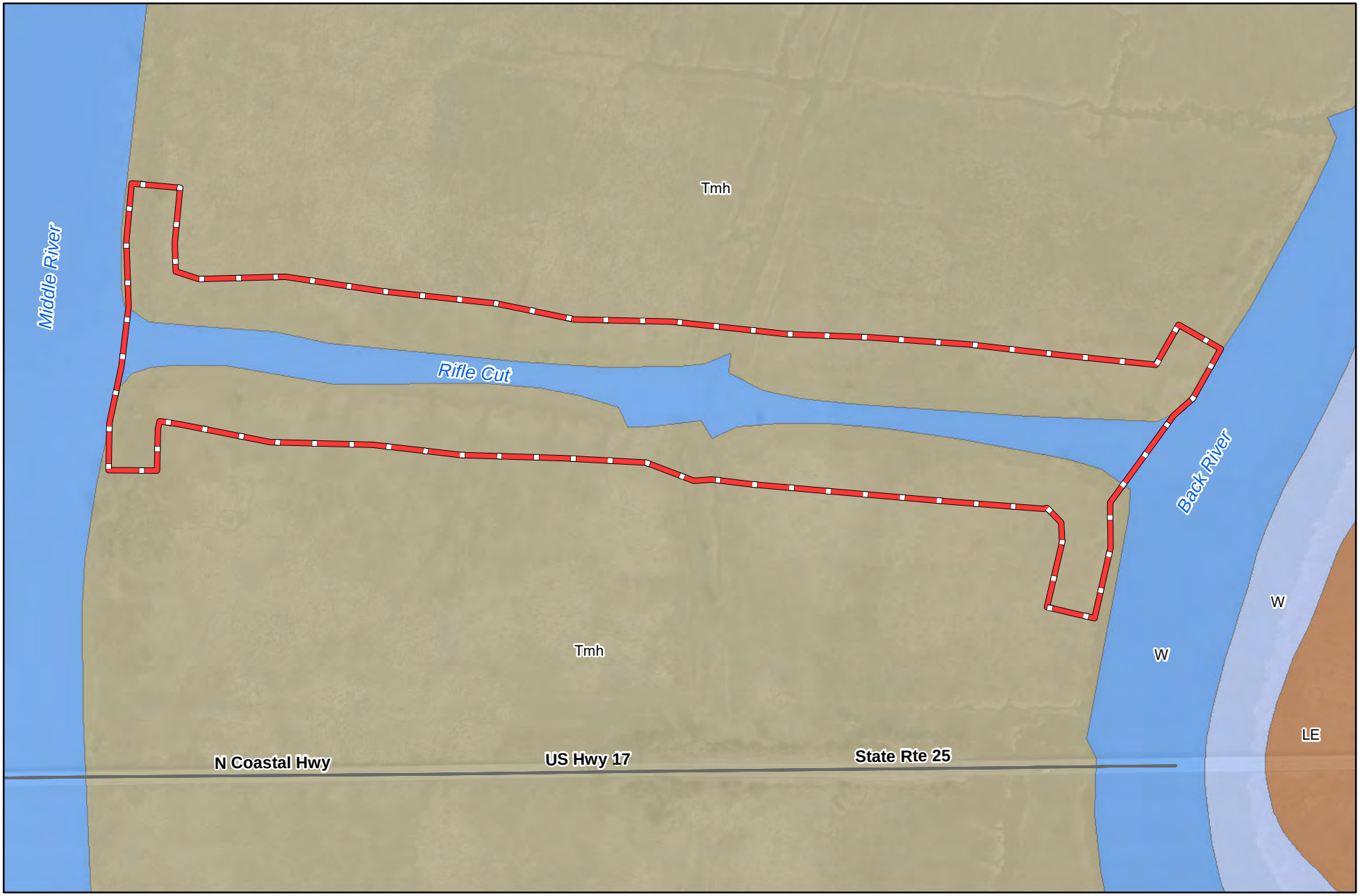
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\5b-Little Back River Wetland -NWI.mxd



N

0 70 140 280 Feet

- Road
- Project Limits
- LE
- South Carolina - W
- Tmh
- Georgia - W

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 6a
USDA-NRCS Soil Map
Rifle Cut

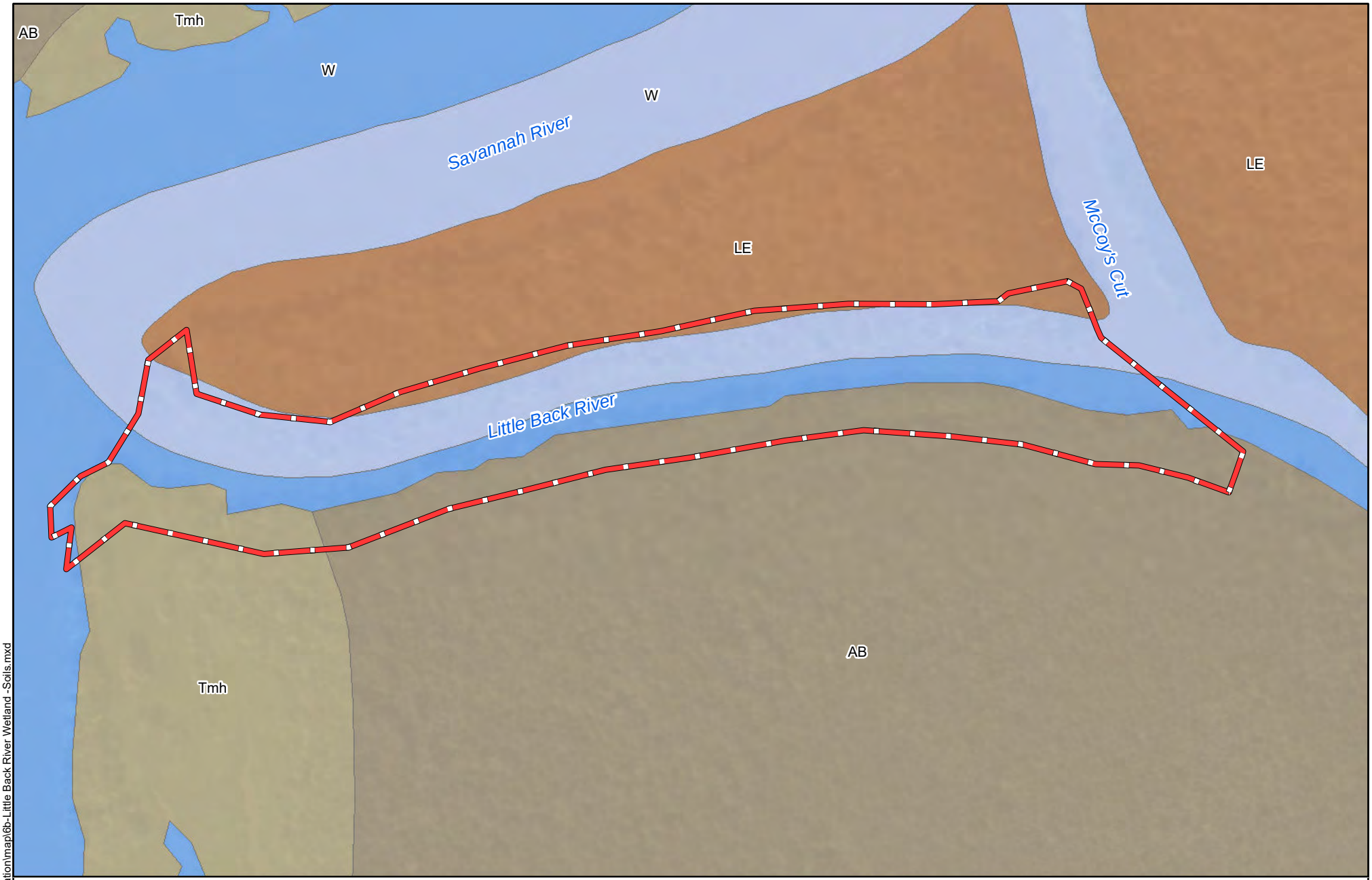
AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\6a-Rifle Cut Soils.mxd



N

0 75 150 300 Feet

- Project Limits
- LE
- South Carolina - W
- AB
- Tmh
- Georgia - W

Note:
(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet."

Figure 6b
USDA-NRCS Soil Map
Little Back River

AECOM

Drawn By: LLM

Date Drawn/Revised: (10/14/2016)

Project No. 60519402.1

L:\work\GIS\Shep Wetland Delineation\map\6b-Little Back River Wetland -Soils.mxd

Appendix A

Scope of Work

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

August 15, 2016

Execution Branch
Contracting Division

SUBJECT: Task Order on Contract Number W912HN-12-D-0031, SHEP Topographic Survey and Wetland Delineation

Lowe Engineers
Attn: William Daniel
daniel@loweengineers.com
2000 River Edge Parkway, Suite 400
Atlanta, GA 30328

Dear Mr. Daniel:

A copy of the Specific Instructions for a proposed task order for surveying services is provided.

Please furnish your fee proposal August 26, 2016. The proposal shall be emailed to Jennifer Casey at jennifer.s.casey@usace.army.mil with a copy furnished to the contracting officer at sabrina.bastine@usace.army.mil. These are the only two individuals authorized to receive your proposal. It is inappropriate and further prohibited to furnish your proposal or discuss its contents with other than contracting personnel. The proposal shall include a detailed breakdown of the costs, which includes level of effort by labor category including identifying all subcontractors, any required travel, and special equipment or supplies. It is also requested that you provide the assumptions used in creating the proposal. Preferred software for proposal submission is Word and Excel.

In accordance with FAR Clause 52.222-41 Service Contract Act Wage Determinations may be applicable to this task order. It is a requirement that all service employees providing services on this task order are paid in accordance with the Department of Labor's wage determinations.

Wage Determination WD 15-4471 (Rev.-2) (Fulton County, GA) posted 06/28/2016

Please contact the Contract Specialist, Jennifer Casey at 912-652-5539 if you have any questions regarding submission of your proposal. If you have technical questions please contact Mrs. Casey to schedule a conference with the Technical/Project Manager

SUBJECT: Task Order on Contract Number W912HN-12-D-0031, SHEP Topographic Survey and Wetland Delineation

Please do not proceed with any work or incur any obligation chargeable to the Government. In the event of unsuccessful negotiations, the Government can assume no obligation for payment of any expenses incurred in the preparation of your proposal. Award of the requirement is subject to the availability of funds.

Sincerely,

Sabrina Bastine
Contracting Officer

Enclosure

SUBJECT: Task Order on Contract Number W912HN-12-D-0031, SHEP Topographic Survey and Wetland Delineation

SPECIFIC INSTRUCTIONS

ARCHITECT ENGINEER SERVICES FOR

TOPOGRAPHIC SURVEY & WETLAND DELINEATION LITTLE BACK RIVER NEAR McCOY'S CUT & RIFLE CUT CHATHAM COUNTY, GEORGIA & JASPER COUNTY, SOUTH CAROLINA

1. GENERAL

1.1. The following schedule of A-E Services is required for this delivery order as provided for in paragraph 2, Design Services and Submittal Requirements of Performance Requirements for Architect-Engineer Services Indefinite-Delivery, Indefinite Quantity Contract: W912HN-12-D-0031 to Lowe Engineers, LLC.

Required	ARCHITECT-ENGINEER SERVICES
	Design Charrette
	Code 3 Design with Parametric Estimating with Complete Project Definition Package
	Concept/Early Preliminary (35 Percent) Design and Submittal
	Preliminary Design (60 Percent) and Submittal
	Final Design and Submittal
	Construction Contract Documents
	Preparation of Design-Build Request for Proposal (Nominal Criteria)
	Preparation of Design-Build Request for Proposal (Partial Criteria)
	Preparation of Design-Build Request for Proposal (Full Criteria)
	Design-Build Evaluation Consultation
	Review of Design-Build Submittals
	Studies/Reports
	Design Conference
X	Topographic Survey
X	Wetland Delineation
	Subsurface Investigation
	Asbestos/Lead Based Paint Identification and Removal
	Permits
	Architectural Renderings
	Interior Design
	Color Boards
X	Photographs
	Construction Phase Services
X	Other AE Services (see Scope of Work)

1.2. Project Description: The Contractor shall provide all surveying services, including furnishing of all personnel, transportation, equipment and materials required in connection with the services described in the Scope that follows. In general, work to be performed consists of providing a topographic survey and

wetland delineation for two areas that are part of an environmental mitigation project in the Savannah River basin. These services shall be performed in accordance with the technical and special provisions contained herein. Services not specifically described herein are nevertheless required if they can be identified as an item commonly a part of professional grade work of a comparable nature.

1.3. The project site locations are Little Back River, near McCoy's Cut, and Rifle Cut. Site locations are shown on the attached vicinity map. Access to the site locations is by boat only. The Little Back River site is located on the Savannah River approximately 5 miles upstream of the Houlihan Boat Ramp Park. The Rifle Cut site is located on the Middle River approximately 800 feet upstream of the GA Hwy 25 (N. Coastal Hwy) bridge crossing Middle River. Both sites are located on lands that are a part of the Savannah National Wildlife Refuge. Savannah National Wildlife Refuge is owned and operated by the US Fish and Wildlife Service.

(1) Horizontal Datum required for this project is NAD 1983 (2011) State Plane Georgia East.
(2) Vertical Datum required for this project is Mean Lower Low Water (MLLW), Epoch 1983-2001 and the North American Vertical Datum of 1988 (NAVD88).
(3) Units of measure required for this project is US Survey Feet.

2. PERIOD OF PERFORMANCE: The Contractor shall complete the topographic surveys and wetland delineation and furnish the required deliverables to the Contracting Officer within 30 days of the date of the Notice to Proceed.

3. SCOPE

3.1 Topographic Survey: The limits of survey for the sites are shown on the attached maps. The required survey work consists of cross sectioning land adjacent to Little Back River and Rifle Cut. The Contractor shall use Government provided hydrographic surveys and cross section line files, which are spaced at 200' intervals, to establish the location of the required cross sections. The Contractor shall collect cross section points at each end of the required cross section lines beginning at 0.0'MLLW and continuing upland 100' beyond the top edge of bank. The Contractor shall ensure the survey data obtained and submitted accurately describes the ground surface for every cross section. Key points on the cross sections are the toes, top edge of bank, and the 100' beyond top edge of bank point. Intermediate points on cross sections shall be obtained as necessary to describe all variations from a straight line between key points. The vertical accuracy for the cross section points shall be plus or minus 0.2'. The Contractor shall also survey any and all ditches, creeks, or significantly eroded areas along the banks between the required cross section lines to a minimum distance of 100' inland from the top edge of bank.

3.2 Local Project Control: The Contractor will establish a minimum of 3 survey control points at each project site location. The control points for the Little Back River site shall be set near the confluence of the Little Back River with the

Savannah River. The control points for the Rifle Cut site shall be set near the confluence of Rifle Cut with Middle River. The Contractor will provide the horizontal coordinates for each control point in NAD 1983 (2011) State Plane Georgia East US Survey Feet and the vertical elevation for each control point in MLLW and NAVD88. The setting of the survey control points shall follow the guidance in EM 1110-1-1002 (Survey Markers and Monumentation). Type C (USACE disk set in existing concrete structure) marks are preferred. Geodetic quality mark stability is not required; thus, Type F and Type G marks (disk attached to rod or rebar) are acceptable as control points. A U-SMART form (source: http://usmart.usace.army.mil/) shall be filled out and provided for each control point established. The control points shall be shown in the topographic survey CADD file. The survey control points will be labeled with name designation, northing, easting, and elevation in MLLW.

3.3 Wetland Delineation: Pursuant to Section 404 of the Clean Water Act, the contractor shall conduct a survey to identify and delineate all on-site waters of the United States adjacent to Rifle Cut and Little Back River near McCoy's Cut. The delineation shall be performed in accordance with the 1987 US Army Corps of Engineers Wetlands Delineation Manual, the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region and the ordinary high water mark as described in US Army Corps of Engineers Regulatory Guidance Letter RGL 05-05. Information to be collected will include plant community composition and cover, presence or absence of wetland hydrology and indicators, and hydric soil characteristics. The contractor shall obtain a USACE-approved verification from the applicable US Army Corps of Engineers district Regulatory Division (Savannah District for sites in Georgia, Charleston District for sites in South Carolina). The contractor shall prepare a report to include a narrative of methods employed, findings including site photographs, and map(s) with wetlands and streams and their applicable acreages, along with GPS data plots, delineation flag locations on maps with aerial photo or US Geological Survey topographical basemap using GPS and ArcGIS 10.0 or later to document and report findings. Reports (.pdfs) and maps (ArcGIS 10.0 or later) shall be provided in digital format.

3.4 Special Instructions: The project site locations are on lands that are a part of the Savannah National Wildlife Refuge. Savannah National Wildlife Refuge is owned and operated by the US Fish and Wildlife Service. In order to ensure that the biological integrity, diversity, and environmental health of the refuge lands is maintained the Contractor shall restrict the removal of vegetation necessary to accomplish the required work to the absolute minimum. Underbrush and small limbs (2" diameter or smaller) may be trimmed, using hand tools only, to the extent necessary to allow line of sight between survey points. The felling of trees, excessive clearing, or use of chainsaws is prohibited. The Contractor shall not harass or feed any wildlife that they may encounter on refuge property. The

Contractor will not remove anything, including plants, found on refuge property. The Contractor shall ensure that any trash or litter generated by the survey crew is removed from the site at the end of each work day.

US Fish and Wildlife Point of Contact:
Chuck Hayes
U.S. Fish and Wildlife Service
765 Alligator Alley
Hardeeville, SC 29927
843.784.6262 - Office
912.210.7366 - cell
chuck_hayes@fws.gov

4. DELIVERABLES

The Contractor shall provide the topographic survey at a scale of 1" = 50' with 1 foot contours in a Bentley Microstation V8i 3D CADD file. The topographic survey file shall use the Georgia East seed file found by selecting the Topo Seed Files link available from the Savannah District Engineering Criteria web site http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx

The file shall be displayed with North at the top of the sheet. No rotation is acceptable. All drawing elements shall reside on the appropriately named level and conform to the symbology specified for the element in accordance with the 6.0 A/E/C CADD standard. Elevations of all cross section points shall be shown in MLLW and the point in the elevation value shall be located at the x-y coordinate value for that point.

All polygons shall be cleaned and free of duplicate vertexes and self-intersections. Pertinent survey information must be present on the existing topography; datum, correction factor from MLLW to NAVD88, date of survey, survey method, and surveyor name. The Contractor shall also provide a Digital Terrain Model (DTM) for use in Microstation Inroads. The Contractor shall combine the hydrographic survey points provided by the Government with the cross section survey data collected under this task order to create the DTM. The CADD file submitted by the Contractor shall utilize the combined survey data from this DTM.

The Contractor shall provide recovery information for each Local Project Control point. An individual U-SMART description sheet for each monument or bench mark will be created. The contractor shall use the latest USACE Survey Monument Archival and Retrieval Tool (U-SMART) Datasheet form available at http://usmart.usace.army.mil to describe all recovered and/or established survey control points including gage reference points. The location map shall show sufficient detail such as street names and significant land marks to adequately

display the general location of the mark. The image of the mark if possible should show the stamping and where possible, the horizon/setup image should show the actual setup. The image sizes shall be kept small enough to limit the size of the final document to 3 megabytes. The elevation data will be shown in both MLLW and NAVD88. The Contractor will also provide an overall sketch/map of the Local Project Control Network. The project control information will be delivered in an Adobe PDF format.

The Contractor shall provide a comma delimited ASCII text file of the points surveyed to include the wetland delineation line. The format for the text file shall be in the format: point number, x-coordinate, y-coordinate, z-MLLW, point description.

The Microstation V8i 3D CADD topographic survey file, DTM, U-SMART Datasheets, the comma delimited ASCII text file shall be delivered on a CD or DVD labeled with the project name and date.

The Contractor shall prepare a wetland delineation report to include a narrative of methods employed, findings including site photographs, and map(s) with wetlands and streams and their applicable acreages, along with GPS data plots, delineation flag locations on maps with aerial photo or US Geological Survey topographical basemap using GPS and ArcGIS 10.0 or later to document and report findings. Reports (.pdfs) and maps (ArcGIS 10.0 or later) shall be provided in digital format.

All work shall be delivered to:
U.S. Army Corps of Engineers
Savannah District
Attn: EN-H / Terry Page
100 W. Oglethorpe Ave
Savannah, GA 31402

5. PERMITS

The Government will coordinate a Special Use Permit for this work with US Fish and Wildlife Service. The Contractor is responsible for obtaining all additional permits required in the performance of this task order.

6. USE AND DISTRIBUTION RIGHTS

All deliverable data and documentation shall be free from restrictions regarding use and distribution. Data and documentation provided under this Task Order shall be freely distributable by government agencies.

7. SAFETY

SUBJECT: Task Order on Contract Number W912HN-12-D-0031, SHEP Topographic Survey and Wetland Delineation

The Contractor will comply with all applicable safety requirements specified in the Corps of Engineers Manual, EM 385-1-1, dated 3 November 2003, entitled “Safety and Health Requirements Manual.”

Personal Flotation Devices: Personal Flotation Devices, of the type described in paragraph 05.H in the Corps of Engineers Manual, EM 385-1-1, dated 3 November 2003, entitled “Safety and Health Requirements Manual”, shall be worn by all persons working on, over, or adjacent to the water.

8. SUBMITTALS

Submit the finished product in the format, quantities and media as specified in paragraph 4. USACE POC for this Task Order is:

Lead Engineer/Technical Manager:	Beth Williams 912-652-5268 Laura.E.Williams@usace.army.mil
Technical Point of Contact:	Terry Page 912-652-5959 Terry.D.Page@usace.army.mil

AECOM
10 Patewood Drive, Bldg. VI, Suite 500
Greenville, SC 29615

864.234.3000 tel
864.234.3069 fax

August 18, 2016

Lowe Engineers
Attn: William Daniel
daniel@loweengineers.com
2000 River Edge Parkway, Suite 400
Atlanta, GA 30328

Re: Task Order on Contract Number W912HN-12-D-0031, SHEP Topographic Survey and Wetland Delineation

Dear Mr. Daniel:

Per your request, AECOM is submitting this letter proposal to provide Lowe Engineers with a Lump Sub bid to complete Wetland Delineations in support of the SHEP project. The site locations include Rifle Cut (an approximate 2,000 ft cut between the Middle River and the Back River, located on the Middle River approximately 800 feet upstream of the GA Hwy 25 (N. Coastal Hwy) bridge crossing Middle River) and the Little Back River (an approximate 2,300 ft stream off the Savannah River to McCoy's Cut, located approximately 5 miles upstream of the Houlihan Boat Ramp Park). The wetland survey and delineation will cover the length of the two locations, extending no more than 100 feet beyond the top edge of the bank on both sides of the Cut/River.

The wetland delineation will be conducted pursuant to Section 404 of the Clean Water Act. The delineation will be performed in accordance with the 1987 US Army Corps of Engineers Wetlands Delineation Manual, the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region and the ordinary high water mark as described in US Army Corps of Engineers Regulatory Guidance Letter RGL 05-05. Information to be collected will include plant community composition and cover, presence or absence of wetland hydrology and indicators, and hydric soil characteristics. AECOM will obtain a USACE-approved verification from the applicable US Army Corps of Engineers district Regulatory Division (Savannah District for sites in Georgia, Charleston District for sites in South Carolina). AECOM will prepare a report to include a narrative of methods employed, findings including site photographs, and map(s) with wetlands and streams and their applicable acreages, along with GPS data plots, delineation flag locations on maps with aerial photo or US Geological Survey topographical basemap using GPS and ArcGIS 10.0 or later to document and report findings. Reports (.pdfs) and maps (ArcGIS 10.0 or later) shall be provided in digital format.

The two sites are assessable by boat only. Lowe Engineers will provide AECOM staff transportation to and from the site for a minimum of two days with the potential for a third day, depending on site conditions.

ESTIMATED COST

AECOM will provide the scope of work described above on a lump sum basis ($12,400) per the attached Consulting Services Agreement.

AECOM appreciates the opportunity to provide environmental consulting services to NextEra. If you have any questions regarding this proposal, please do not hesitate to contact Bobbie Hurley at (864) 234-8913

Sincerely,

Roberta Hurley
AECOM
Associate Vice President
Design and Consulting Services Group
10 Patewood Drive
Building 6, Suite 500
Greenville, SC 29615
D +1-864-234-8913
M +1-864-918-5836
bobbie.hurley@aecom.com

Appendix B

Wetland Datasheets

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SHEP - Rifle Cut City/County: Chatham Sampling Date: 09/21/2016

Applicant/Owner: U.S. Army Corps of Engineers State: GA Sampling Point: WA1-EEM

Investigator(s): Paul Masten & Miranda Steffler Section, Township, Range: Chatham

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32.168011 Long: -81.130903 Datum: _____

Soil Map Unit Name: TmH - Tidal Marsh,fresh NWI classification: PEM1Td

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Sampling points 1-43

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 0 - to surface
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0 - to surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water was not present at the observation point during the time of evaluation, but was present some hours later after the tide had risen.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WA1-EEM

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size:)			
1. Typha latifolia	96	Y	OBL
2. Juncus roemerianus	3	N	OBL
3. Scirpus cyperinus	2	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1	
FACW species		x 2	
FAC species		x 3	
FACU species		x 4	
UPL species		x 5	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WA1-EEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10Y 3/1	100					Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☑ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☑ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Soils were saturated to the surface and uniform throughout the 24in sample pit with a matrix of 10Y 3/1 and texture of muck. This soil conforms with hydric soil indicator A9.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SHEP - Little Back River near McCoy's Cut City/County: Chatham and Jasper Sampling Date: 09/21/2016

Applicant/Owner: US Army Corps of Engineers State: GA & SC Sampling Point: WB2-EFO

Investigator(s): Paul Masten & Miranda Steffler Section, Township, Range: Chatham, GA & Effingham SC

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32.222097 Long: -81.144731 Datum: _____

Soil Map Unit Name: Levy NWI classification: PFO1/2T

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

The project area north of the Little Back River is located in Effingham, SC while the project area south of the river is located in Effingham, GA.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 0 - to surface
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0 - to surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WB2-EFO

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Nyssa biflora	45	Y	OBL
2. Acer rubrum	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Sapling/Shrub Stratum (Plot size:)			
1. Alnus serrulata	40	Y	FACW
2. Persea borbonia	25	Y	FACW
3. Persea palustris	10	N	FACW
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size:)			
1. Saururus cernuus	30	Y	OBL
2. Chasmanthium latifolium	25	Y	OBL
3. Zizania aquatica	25	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WB2-EFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100	-	-	-	-	Sandy	>70% coated grains
6-24	2.5Y 5/1	90	10YR 5/8	10	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SHEP - Little Back River near McCoy's Cut City/County: Chatham and Jasper Sampling Date: 09/21/2016

Applicant/Owner: U.S. Army Corps of Engineers State: GA Sampling Point: WA1-EEM

Investigator(s): Paul Masten & Miranda Steffler Section, Township, Range: Chatham

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32.168011 Long: -81.130903 Datum: _____

Soil Map Unit Name: TmH - Tidal Marsh,fresh NWI classification: PEM1Td

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Sampling points 1-43

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 0 - to surface
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0 - to surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water was not present at the observation point during the time of evaluation, but was present some hours later after the tide had risen.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WA1-EEM

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size:)			
1. Typha latifolia	96	Y	OBL
2. Juncus roemerianus	3	N	OBL
3. Scirpus cyperinus	2	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1	
FACW species		x 2	
FAC species		x 3	
FACU species		x 4	
UPL species		x 5	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WA1-EEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10Y 3/1	100					Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☑ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☑ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Soils were saturated to the surface and uniform throughout the 24in sample pit with a matrix of 10Y 3/1 and texture of muck. This soil conforms with hydric soil indicator A9.

Appendix C

Photographic Log

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Rifle Cut – Savannah, GA Lat 32.16801 Long -81.13090	60519402

Photo No.	Date:
1	9/21/2016

Direction Photo Taken:

Down

Description:

Wetland observation point WA1-EEM. View of wetland soil pit.

Photo No.	Date:
2	9/21/2016

Direction Photo Taken:

North

Description:

Representative view North of the observation point WA1-EEM

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Rifle Cut – Savannah, GA Lat 32.16801 Long -81.13090	60519402

Photo No.	Date:
3	9/21/2016

Direction Photo Taken:

East

Description:

Representative view East of the observation point WA1-EEM

Photo No.	Date:
4	9/21/2016

Direction Photo Taken:

South

Description:

Representative view South of the observation point. View of Rifle Cut visible.

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Rifle Cut – Savannah, GA Lat 32.16801 Long -81.13090	60519402

Photo No.	Date:
5	9/21/2016

Direction Photo Taken:

West

Description:

Representative view West of the observation point WA1-EEM.

Photo No.	Date:
6	9/21/2016

Direction Photo Taken:

West

Description:

General view of cut near observation point WA1-EEM.

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Rifle Cut – Savannah, GA Lat 32.16801 Long -81.13090	60519402

Photo No.	Date:
7	9/21/2016

Direction Photo Taken:

East

Description:

General view of cut near observation point WA1-EEM.

Photo No.	Date:
8	9/21/2016

Direction Photo Taken:

South

Description:

General view of cut near observation point WA1-EEM.

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Little Back River South Side: Chatham, GA North Side: Effingham, SC Lat 32.22210 Long -81.13358	60519402

Photo No.	Date:
1	9/21/2016

Direction Photo Taken:

North

Description:

General view of north side of WB2-EFO looking towards the upland slope

Photo No.	Date:
2	9/21/2016

Direction Photo Taken:

West

Description:

General view of west side of WB2-EFO.

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Little Back River South Side: Chatham, GA North Side: Effingham, SC Lat 32.22210 Long -81.13358	60519402

Photo No.	Date:
3	9/21/2016

Direction Photo Taken:

East

Description:

General view of east side of WB2-EFO. Left side is toward upland boundary.

Photo No.	Date:
4	9/21/2016

Direction Photo Taken:

South

Description:

General view of south side of WB2-EFO.

AECOM

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
SHEP – Wetland Delineation	Little Back River South Side: Chatham, GA North Side: Effingham, SC Lat 32.22210 Long -81.13358	60519402

Photo No.	Date:
5	9/21/2016

Direction Photo Taken:

Down

Description:

View of observation point WB2-EFO pit.

Photo No.	Date:
6	9/21/2016

Direction Photo Taken:

East

Description:

General view of Little Back River looking east

Appendix B

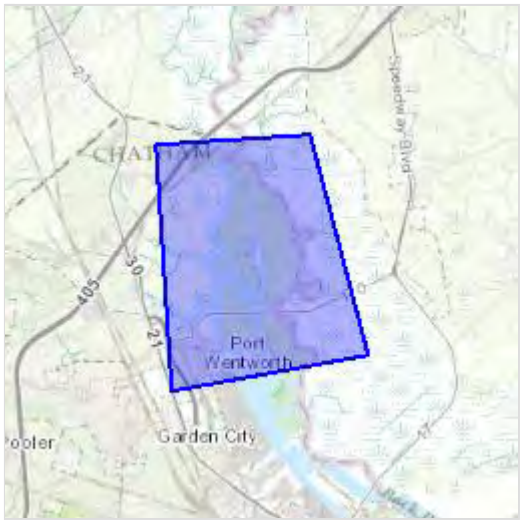
- **McCoys Cut USFWS IPAC: Federally Listed Species for the Project Area**

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

IPaC resource list

Location

Georgia and South Carolina



Local offices

Georgia Ecological Services Field Office

(706) 613-9493
(706) 613-6059

105 Westpark Drive
Westpark Center Suite D
Athens, GA 30606-3175

South Carolina Ecological Services

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

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

http://www.fws.gov/charleston/

Endangered species

This resource list is for informational purposes only and should not be used for planning or analyzing project level impacts.

Section 7 of the Endangered Species Act **requires** Federal agencies to *"request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action"* for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Review section in IPaC or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by creating a project and making a request from the Regulatory Review section.

Listed species

[1] are managed by the Endangered Species Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

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

Amphibians

NAME	STATUS
Frosted Flatwoods Salamander Ambystoma cingulatum There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. http://ecos.fws.gov/ecp/species/4981	Threatened

Birds

NAME	STATUS
Kirtland's Warbler Setophaga kirtlandii (= Dendroica kirtlandii) **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/8078	Endangered
Piping Plover Charadrius melodus **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/6039	Endangered
Piping Plover Charadrius melodus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. http://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot Calidris canutus rufa **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker Picoides borealis **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/7614	Endangered
Wood Stork Mycteria americana **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/8477	Threatened

Fishes

NAME	STATUS
Atlantic Sturgeon Acipenser oxyrinchus oxyrinchus **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/3252	Endangered
Shortnose Sturgeon Acipenser brevirostrum **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/6635	Endangered

Flowering Plants

NAME	STATUS
American Chaffseed Schwalbea americana **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/1286	Endangered
Canby's Dropwort Oxypolis canbyi **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/7738	Endangered
Pondberry Lindera melissifolia **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/1279	Endangered

Mammals

NAME	STATUS
North Atlantic Right Whale Eubalaena glacialis There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. http://ecos.fws.gov/ecp/species/159	Endangered
West Indian Manatee Trichechus manatus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. http://ecos.fws.gov/ecp/species/4469	Endangered

Reptiles

NAME	STATUS
Eastern Indigo Snake Drymarchon corais couperi **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/646	Threatened
Gopher Tortoise Gopherus polyphemus **No critical habitat** has been designated for this species. http://ecos.fws.gov/ecp/species/6994	Candidate

Kemp's Ridley Sea Turtle Lepidochelys kempii — Endangered
No critical habitat has been designated for this species.
http://ecos.fws.gov/ecp/species/5523

Leatherback Sea Turtle Dermochelys coriacea — Endangered
There is a **final** critical habitat designated for this species.
Your location is outside the designated critical habitat.
http://ecos.fws.gov/ecp/species/1493

Loggerhead Sea Turtle Caretta caretta — Threatened
There is a **final** critical habitat designated for this species.
Your location is outside the designated critical habitat.
http://ecos.fws.gov/ecp/species/1110

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location, not a list of every bird species you may find in this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources.

NAME	SEASON(S)
American Bittern Botaurus lentiginosus http://ecos.fws.gov/ecp/species/6582	Wintering
American Kestrel Falco sparverius paulus	Year-round
American Oystercatcher Haematopus palliatus http://ecos.fws.gov/ecp/species/8935	Year-round
Bachman's Sparrow Aimophila aestivalis http://ecos.fws.gov/ecp/species/6177	Year-round
Bald Eagle Haliaeetus leucocephalus http://ecos.fws.gov/ecp/species/1626	Year-round
Black Rail Laterallus jamaicensis http://ecos.fws.gov/ecp/species/7717	Breeding

Black Skimmer Rynchops niger http://ecos.fws.gov/ecp/species/5234	Year-round
Brown-headed Nuthatch Sitta pusilla	Year-round
Chuck-will's-widow Caprimulgus carolinensis	Breeding
Common Ground-dove Columbina passerina exigua	Year-round
Fox Sparrow Passerella iliaca	Wintering
Gull-billed Tern Gelochelidon nilotica http://ecos.fws.gov/ecp/species/9501	Breeding
Henslow's Sparrow Ammodramus henslowii http://ecos.fws.gov/ecp/species/3941	Wintering
Le Conte's Sparrow Ammodramus leconteii	Wintering
Least Bittern Ixobrychus exilis http://ecos.fws.gov/ecp/species/6175	Breeding
Lesser Yellowlegs Tringa flavipes http://ecos.fws.gov/ecp/species/9679	Wintering
Loggerhead Shrike Lanius ludovicianus http://ecos.fws.gov/ecp/species/8833	Year-round
Long-billed Curlew Numenius americanus http://ecos.fws.gov/ecp/species/5511	Wintering
Marbled Godwit Limosa fedoa http://ecos.fws.gov/ecp/species/9481	Wintering
Mississippi Kite Ictinia mississippiensis	Breeding

Nelson's Sparrow Ammodramus nelsoni	Wintering
Painted Bunting Passerina ciris	Breeding
Peregrine Falcon Falco peregrinus http://ecos.fws.gov/ecp/species/8831	Wintering
Prairie Warbler Dendroica discolor	Breeding
Prothonotary Warbler Protonotaria citrea	Breeding
Red Knot Calidris canutus rufa http://ecos.fws.gov/ecp/species/1864	Wintering
Red-headed Woodpecker Melanerpes erythrocephalus	Year-round
Rusty Blackbird Euphagus carolinus	Wintering
Saltmarsh Sparrow Ammodramus caudacutus	Wintering
Seaside Sparrow Ammodramus maritimus	Year-round
Sedge Wren Cistothorus platensis	Wintering
Short-billed Dowitcher Limnodromus griseus http://ecos.fws.gov/ecp/species/9480	Wintering
Short-eared Owl Asio flammeus http://ecos.fws.gov/ecp/species/9295	Wintering
Swainson's Warbler Limnothlypis swainsonii	Breeding
Swallow-tailed Kite Elanoides forficatus http://ecos.fws.gov/ecp/species/8938	Breeding

Whimbrel Numenius phaeopus http://ecos.fws.gov/ecp/species/9483	Wintering
Wilson's Plover Charadrius wilsonia	Breeding
Wood Thrush Hylocichla mustelina	Breeding
Worm Eating Warbler Helmitheros vermivorum	Migrating
Yellow Rail Coturnicops noveboracensis http://ecos.fws.gov/ecp/species/9476	Wintering

What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAANCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the Northeast Ocean Data Portal. The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAANCCOS models: the models were developed as part of the NOAANCCOS project: Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf. The models resulting from this project are being used in a number

of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the Northeast Ocean Data Portal, which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?

Landbirds:

The Avian Knowledge Network (AKN) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest,survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the Migratory Bird Programs AKN Histogram Tools webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North, Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

Atlantic Seabirds:

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

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses

or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

APPENDIX C

SECTION 404 (B) (1) EVALUATION OF DREDGED AND FILL MATERIAL

SECTION 404(b)(1) EVALUATION

FOR

SAVANNAH HARBOR EXPANSION PROJECT
MODIFICATION OF MCCOYS CUT FEATURE (MCCOYS CUT)
CHATHAM COUNTY, GEORGIA AND JASPER COUNTY, SOUTH CAROLINA

July 2017

TABLE OF CONTENTS

SECTION 404(b)(1) EVALUATION
OF DREDGE AND FILL MATERIAL

SAVANNAH HARBOR EXPANSION PROJECT
MODIFICATION OF MCCOYS CUT FEATURE (MCCOYS CUT)
CHATHAM COUNTY, GEORGIA AND JASPER COUNTY, SOUTH CAROLINA

1.0 INTRODUCTION

The following evaluation is prepared in accordance with Section 404(b)(1) of the Clean Water Act of 1977 to evaluate the environmental effects of the proposed placement of dredged or fill material in waters of the United States. This evaluation supplements the Savannah Harbor Expansion Project (SHEP) Section 404(b)(1) evaluation which can be found in Appendix H (http://www.sas.usace.army.mil/Portals/61/docs/SHEP/Reports/EIS/Appendix%20H%20Section%20404b1%20SHEP%20FINAL%20EIS.pdf) of the SHEP 2012 Final Environmental Impact Statement. Specific portions of the regulations are cited and an explanation of the regulation is given as it pertains to the project. These guidelines can be found in Title 40, Part 230 of the Code of Federal Regulations (https://www.ecfr.gov/cgi-bin/text-idx?SID=b94f445cf586aaff7dde767b5a8a09cd&mc=true&node=pt40.27.230&rgn=div5).

2.0 PROPOSED ACTION AND ENVIRONMENTAL SETTING

2.1 ENVIRONMENTAL SETTING
The SHEP - McCoys Cut project is located off of the Savannah River on the Middle and Little Back River.

2.2 PROPOSED ACTION
The proposed action modifies the previously approved SHEP Mitigation Flow Re-routing Plan and requires an additional 2,600 feet of dredging within Middle River (stations 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide the required flows (Figure 1). In addition to the additional 2,600 feet of dredging, the dredging depth would also increase by four feet at the mouth of Union Creek to account for potential future shoaling. The area of additional dredging depth is within the same footprint as the previously approved dredging template, just four feet deeper for a distance of approximately 1,360 feet. This alternative consists of (1) using the majority of excavated sediments beneficially to create wetlands in both McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figure 2) to enhance fish and wildlife habitat, and (2) taking the remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River to either the Sediment Basin or to the approved upland Dredged Material Containment Areas (DMCA).

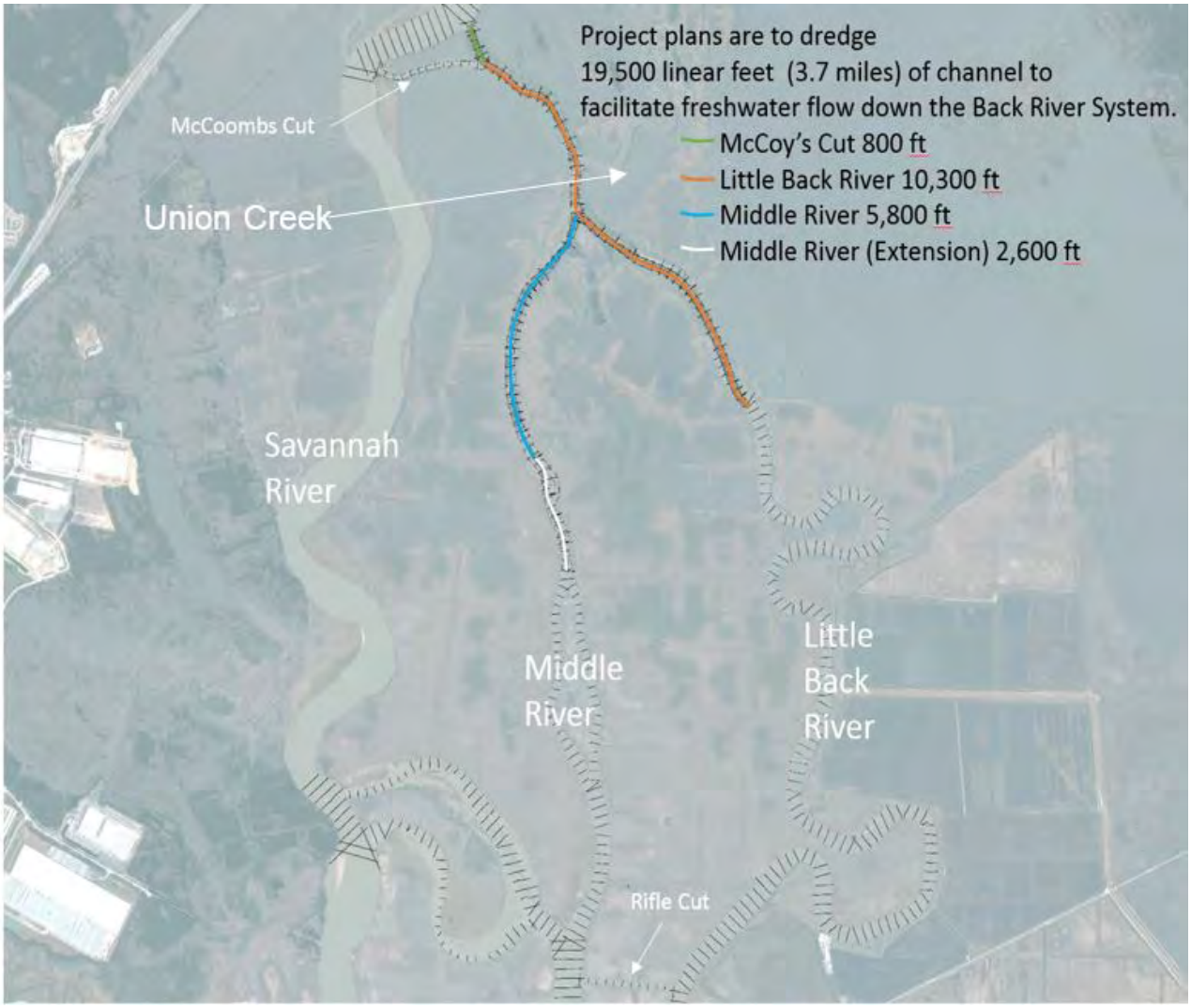


Figure 1: Location of Additional Dredging Reach in Middle River

Figure 2: Project Location – Close Up Beneficial Use Placement Areas

As a beneficial use of the sediments excavated from the Middle and Little Back Rivers, the sediment would be placed behind the cut closure structures to an elevation suitable for wetland creation. This action would occur within the Savannah National Wildlife Refuge, who conceptually supports this proposal. The volume of sediment to be dredged is sufficient to fill the two cuts to elevation +8 to +8.5 feet MLLW. Topographic surveys conducted for the project indicate that adjacent high ground in both areas are at or above elevation +8 feet MLLW. Before placement of the excavated sediments, a plug would be constructed across the western ends of both cuts to approximately elevation of +11 feet MLLW. The plug at McCoombs Cut is 80 feet wide at the base. The plug at Rifle Cut is 100 feet wide at the base. Rock or concrete would be used for this plug. The eastern end will be armored with rock to +5 feet MLLW. Above that elevation, protection

against erosion will be provided by hay bales secured with live stakes and several rows of container plantings. The plantings would reduce the risk of erosion immediately after completion of the project until vegetation establishes naturally along the length of the cuts. Approximately nine acres of wetlands would be created. The remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River would be placed in existing upland DMCAs or the Sediment Basin.

As a result of logistical concerns of using the Houlihan Bridge during construction, an area will be designated on U.S. Fish and Wildlife (USFWS) lands on the Savannah National Wildlife Refuge as a possible access area for the contractor to haul material and supplies to and from the construction site (Figure 4). A temporary pile supported platform will be installed on the edge of the existing tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Dike improvements will also be completed leading to the new platform, impacting approximately 0.23 acres of managed wetlands inside the USFWS diked system. This platform is expected to be in place for the duration of the construction and would be removed after approximately one year.

2.3 General Description:

Lands along this portion of the Savannah River estuary are largely within the Savannah National Wildlife Refuge. The Savannah National Wildlife Refuge is located in the upper portion of the harbor and consists of 29,175 acres of freshwater marshes, tidal rivers and creeks, and bottomland hardwoods. The Refuge also contains extensive unimpounded wetlands along the Savannah, Middle and Back Rivers. Wetlands located downstream of U.S. Highway 17 are vegetated predominantly by salt marsh and brackish marsh species, while those above that point are predominantly freshwater or brackish wetlands. USFWS also manages 5,700 acres of diked impoundments for waterfowl in the Refuge. Those impoundments include 3,000 acres of freshwater pools.

The McCoy's Cut project is a component of the flow re-routing mitigation plan of Savannah Harbor Expansion Project. These features work in combination to provide increased freshwater flows into the estuary and limit salinity intrusion to reduce salinity impacts to tidal freshwater and brackish wetlands. These features benefit tidally influenced wetlands adjacent to the Middle, Back and Little Back River system, which are part of the Savannah River distributary system. This system of smaller cuts and rivers joins the navigation channel on the Savannah (or Front) River in several locations. The modification of the McCoy's Cut Project is the additional dredging and the placement of the excavated sediment to create wetlands.

Most of the impacts to the environment from implementation of the proposed alternative would be beneficial, and there have not been any significant adverse impacts identified to natural resources. As designed, the diversion structure at McCoys Cut will divert water flow to reduce the upstream movement of salinity in Middle River and Little Back River associated with the Savannah Harbor deepening. This would minimize impacts to tidal freshwater marsh. Closing the western end of McCoys Cut is designed to bring

more freshwater into Little Back and Middle Rivers. Closing Rifle Cut would reduce the amount of salt water entering the Little Back River via the Middle River.

The proposed structural improvement described below includes the creation of wetlands behind previously-approved closure structures. It does not include the construction of the diversion structure at McCoys Cut or constructing closure structures at both the lower western arm at McCoys Cut-McCoombs Cut and at Rifle Cut, since those two actions were approved through coordination of the FEIS.

Description of Actions Subject to Section 404 of Clean Water Act

The majority of the project areas is within the Savannah National Wildlife Refuge and is tidally influenced and surrounded by wetlands. The Rifle Cut area is dominated by tidal, emergent wetlands, while the McCoy's Cut area contains mostly forested wetlands with small fringe areas of emergent wetlands. The material to be dredged from the Middle and Little Back Rivers will be beneficially used to create wetlands by placing them behind the Cut Closure Structures to an elevation suitable for marsh creation. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Geotechnical investigations were conducted to characterize the dredged material and found it be largely a course sandy material with very little fines and organics. Approximately 184,000 cubic yards of this material will be used to create the wetlands. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion until vegetation establishes naturally along the length of the cuts. The District expects this work to construct approximately nine acres of wetlands. Hydraulic dredge equipment will be limited to 24 inches or smaller and no overflow on scows will be allowed. In addition, no bottom dump scows will be allowed.

The remaining excavated sediments could be transported to an area within the Sediment Basin where Savannah District is planning to construct a broad berm as described in the 2012 FEIS. Approximately 45 round trips will be needed to transport the excavated sediments to the Sediment Basin. Those transits will be coordinated with the Harbor Pilots to avoid traffic conflicts with other ships in the project area. Figure 3 shows the area within the Georgia waters side of the Sediment Basin where the sediments would be dumped. The state line between Georgia and South Carolina is not mid channel, but runs along the northern side of the Federal Sediment Basin. The placement of the excavated sediments will help fill the no longer operated Sediment Basin. The area is approximately 30 acres in size, with a bottom elevation of -15 feet MLLW based on an October 2016 hydrosurvey. The placement priority will be at the downstream or eastern end of the box and will be limited to a placement elevation of -10 feet MLLW (target height for broad berm as described in the 2012 FEIS) or greater.

As a result of logistical concerns of using the Houlihan Bridge during construction, an area will be designated on the Savannah National Wildlife Refuge as a possible access

site for the contractor to haul material and supplies to and from the construction site (Figure 4). A temporary pile supported platform will be installed on the edge of the existing tidal wetland and the Back River, impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Dike improvements will also be completed leading to the new access platform, impacting approximately 0.23 acres of managed wetlands inside USFWS diked system. This platform is expected to be in place for the duration of the construction timeframe which is estimated to be approximately one year, and will be removed at the end of the construction.

Figure 3: Approximate placement location within the Sediment Basin

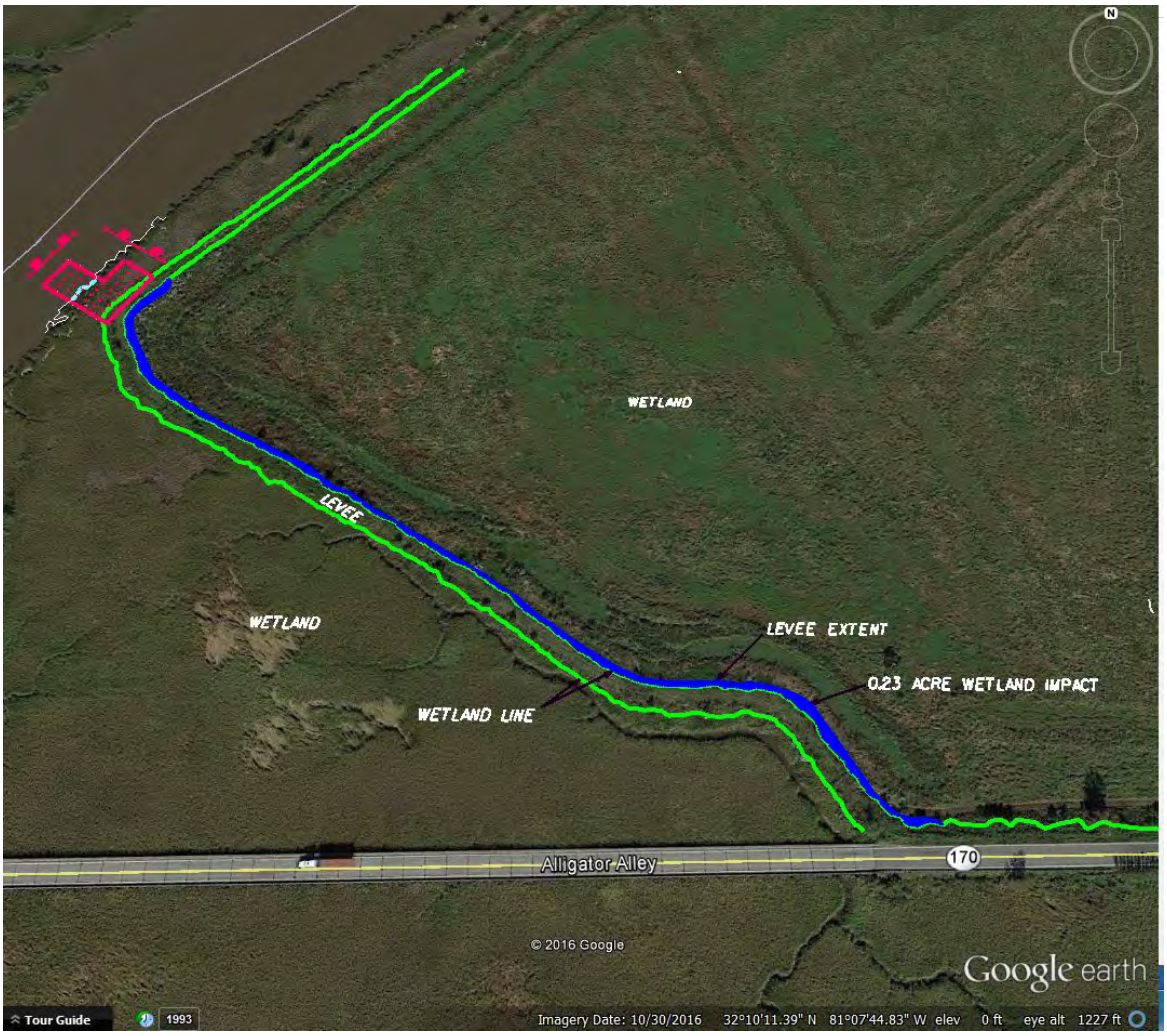


Figure 4: Approximate placement location of access area within Savannah National Wildlife Refuge

Threatened, Endangered and other Listed Species

The U.S. Fish and Wildlife Service (USFWS) provided the USACE Savannah District with the final Fish and Wildlife Coordination Act report for the Savannah River Expansion Project on March 7, 2011. The USFWS stated in that report that they preferred the alternatives that minimize the loss of already limited freshwater wetlands, minimize impacts to the Savannah National Wildlife Refuge, and minimize risk and uncertainty of impacts on fish and wildlife resources. The proposed alternative is not likely to adversely affected the protected species in the project area as the focus of the flow rerouting structures are designed to provide increase freshwater flows into the estuary and limit salinity intrusion to tidal freshwater habitat. The creation of approximately nine acres of wetlands will provide additional habitat for fish and wildlife

resources and enhance the existing wetland habitat already present at the Savannah National Wildlife Refuge.

3.0 SUBPART B - COMPLIANCE WITH THE GUIDELINES

The following objectives should be considered in making a determination of any proposed discharge of dredged or fill material into waters of the U.S.

3.1 RESTRICTIONS ON DISCHARGE - (SECTION 230.10)

"(a) ***except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practical alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."***

No other practicable alternative with less environment impacts on the aquatic ecosystem has been identified.

"(b) ***Discharge of dredged material shall not be permitted if it;"***

"(1) ***Causes or contributes, after consideration of disposal dilution and dispersions, to violations of any applicable state water quality standard;"***

"(2) ***Violates any applicable toxic effluent standard or prohibition under Section 370 of the Clean Water Act."***

The analytical results of sediment sampling indicated that no contamination exists that would impact the proposed construction activities. The visual classification of the soil samples indicate the material that will be used to create the wetland habitat is predominantly medium to coarse sands, with little to trace fines and organics. Turbidity curtains will be installed across the cuts to prevent turbidity plumes from leaving the placement site.

"(3) ***Jeopardizes the continued existence of species listed as endangered and threatened under the Endangered Species Act of 1973, as amended."***

Endangered species are addressed in the EA for this action. No federally listed species have been found on the site and the work is expected to have no affect on listed species.

"(4) ***Violates any requirements imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title Ill of the Marine Protection Research and Sanctuaries Act of 1972."***

No marine sanctuary or other items addressed under this Act would be affected by the proposed work.

"(c) ***Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by Subparts B and G of the consideration of Subparts C-F with special emphasis on the persistence and permanence of the effects contributing to significant degradation considered individually or collectively include:"***

"(1) Significantly adverse effects of the discharge of pollutants on human health or welfare including, but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites."

The proposed work is expected to improve water quality and conservation. Therefore, this project is expected to have a beneficial effect on, fish, shellfish, wildlife, and special aquatic sites.

"(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent upon aquatic ecosystems, Including the transfer, concentration, and spread of pollutants or their by-products outside the disposal site through biological, physical, and chemical processes."

The analytical results of sediment sampling indicated that no contamination exists that would impact the proposed construction activities.

"(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystems diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or"

"(4) Significantly adverse effects of the discharge of pollutants on recreational, aesthetic, and economic values."

The proposed changes to the project would create wetlands, improving fish and wildlife habitat quality. These improvements to wetland system will help improve water quality, provide food and habitat for various fish and wildlife species, and enhance the aesthetics and recreation opportunities.

"(d) ***Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practical steps have been taken which will minimize the potential adverse impacts of the discharge on the aquatic ecosystem."***

Approximately nine acres of tidal wetlands will be created using the dredged sediment to created additional habitat for fish and wildlife. Rather than just take all of the material

and place it in an upland disposal area, the excavated sediments can be used beneficially to create and enhance valuable tidal wetland habitat.

3.2 FACTUAL DETERMINATION. - (SECTION 230.11)

3.2.1 Physical Substrate Determinations

Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site and any potential changes in substrate elevation and bottom contours.

Fill material for the project would come from the dredging sites and be comprised of predominately medium to coarse sand. Based on the location of the dredging areas, there is a very low risk of contaminants being present.

Possible loss of environmental values

No long term loss of environmental values are expected. The features in the project design are designed to improve environmental values of the project area. If the contractor constructs the access point within the Refuge, there would be only temporary impacts to approximately 0.13 acres of tidal wetlands and 0.23 acres of managed diked wetlands on the Savannah National Wildlife Refuge. Impacts would be minimized by removing the pile supported platform after construction is complete and replanting the impacted areas.

Actions to minimize impacts

Any fill material used would be the minimum necessary to fulfill the project design. Existing soil on site will be re-used to the maximum extent practicable. Turbidity curtains will be installed across the cuts to prevent turbidity plumes from leaving the placement site.

3.2.2 Water Circulation, Fluctuations, and Salinity Determinations

Consideration shall be given to water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics. Also to be considered are the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime. Changing the velocity of water flow can result in adverse changes in location, structure, and dynamics of aquatic communities, shoreline erosion and deposition, mixing rates and stratification, and normal water-level fluctuation patterns. These effects can alter or destroy aquatic communities.

There is no substantial change in water circulation, fluctuation, or salinity due to the creation of wetlands from that described in the 2012 FEIS. The additional proposed dredging would increase flows, thereby enabling the SHEP flow re-routing features to perform as originally intended and approved.

3.2.2.1 Loss of Environmental Value

As described above, this project is designed to increase environmental value of the sites restoring freshwater tidal wetlands by creating approximately nine acres of additional wetlands. If the contractor constructs the access point within the Refuge there would be only temporary impacts to approximately 0.13 acres of tidal wetlands and 0.23 acres of managed diked wetlands on the Savannah National Wildlife Refuge. Impacts would be minimized by removing the pile supported platform after construction is complete and replanting the impacted areas.

3.2.2.2 Actions to Minimize Impacts

Proposed fills are the minimum necessary to accomplish the project purposes. Turbidity curtains will be installed across the cuts to prevent turbidity plumes from leaving the placement site.

3.2.3 Suspended Particulate/Turbidity Determinations

Effects due to potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site. Factors to be considered include grain size, shape and size of any plume generated, duration of the discharge and resulting plume, and whether or not the potential changes will cause violations of applicable water quality standards. Consideration shall include the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors on the movement of suspended particulates.

Turbidity impacts due to construction are expected to be temporary. In addition, plans include sediment barriers and silt screens to restrict turbidity and sediment loss during construction.

3.2.3.1 Loss of Environmental Values

Due to reduction in light transmission, reduction in photosynthesis, reduced feeding and growth of sight dependent species, direct destructive effects to nektonic and planktonic species, reduced DO, increased levels of dissolved contaminants, aesthetics.

Adverse impacts are expected to be minor and temporary and cease soon after construction is completed.

3.2.3.2 Actions to Minimize Impacts

The District follows sediment and erosion control best management practices in its designs. Turbidity curtains will be installed across the cuts to prevent turbidity plumes from leaving the placement site.

The analytical results of sediment sampling indicate that no contamination exists that would impact the proposed construction activities.

The creation of approximately nine acres of wetlands and the increase of fresh water flows in the area may create or enhance some wetland functions and values, including filtering of excessive nutrients that would contribute to turbidity that are present in the project area; decreasing sedimentation/erosion; and establishing wetland vegetation.

3.2.4 Contamination Determination

Consider the degree to which the proposed discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants. Consideration of Evaluation and Testing (parts 230.60, and 230.61).

There is no reason to expect any contaminant related impacts from the proposed work.

3.2.5 Aquatic Ecosystem and Organism Determinations

Effect on the structure and function of the aquatic ecosystem and organisms and effect on the re-colonization and existence of indigenous aquatic organisms or communities.

3.2.5.1 Threatened and Endangered Species

This work is expected to have no effect on threatened or endangered species, with implementation of the propsed protective measures.

3.2.5.2 Fish, Crustaceans, Mollusks and other Aquatic Organisms in the Food Web

Immobile biota would be lost during construction activities. This would be minor, temporary adverse impacts since these species are expected to quickly repopulate the construction site. Other biota that are mobile would avoid the construction area. Long term benefits are anticipated from the proposed action. In addition, if the access point is constructed, approximately 0.10 acres of the Back River will be shaded by the temporary pile supported platform. The newly constructed platform may attract fish by providing a shaded area for them during the summer months.

3.2.5.3 Other Wildlife

This project is expected to result in minor improvement in the habitat for other wildlife.

3.2.5.4 Special Aquatic Sites

The proposed action will enhance the Savannah National Wildlife Refuge by creating approximately nine acres of tidal wetlands. The project will enhance the freshwater tidal wetlands at the Refuge, providing additional valuable habitat for various fish and wildlife resources in the area.

3.2.5.5 Potential Effects on Human Use Characteristics

The proposed work is expected to result in positive long term impacts regarding this issue.

3.2.5.6 Possible Loss of Environmental Values
The proposed work is expected to increase the environmental value of the site.

3.2.5.7 Actions to Minimize Impacts
Turbidity (silt) curtains will be installed across the cuts to prevent turbidity plumes from leaving the placement site.

3.2.6 Proposed Disposal Site Determination
Each disposal site shall be specified through application of the guidelines. The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of the guidelines.

The proposed amount of fill required for the proposed project is the minimum required to fulfill the project purpose of the flow rerouting features and provide additional fish and wildlife habitat by creating approximately nine acres of tidal wetlands. No practicable alternatives are available that produce the same benefits.

3.2.7 Determination of Cumulative Effects on the Aquatic Ecosystem
Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical.

Beneficial impacts would result throughout this portion of the Savannah River estuary which is within a majority of the Savannah National Wildlife Refuge. The Savannah National Wildlife Refuge is located in the upper portion of the harbor and consists of 29,175 acres of freshwater marshes, tidal rivers and creeks, and bottomland hardwoods. The proposed alternative would restore some of this lost natural freshwater tidal wetland habitat by creating approximately nine acres of tidal wetlands. It would also enhance existing wetland habitats by increasing the amount of freshwater flows in the project area.

If the contractor constructs the access point in the Refuge, there would be temporary impacts to approximately 0.13 acres of tidal wetlands and 0.23 acres of managed wetlands. The impacts to the tidal wetlands will be minimized by the removal of the pile supported platform and replanting of the area. The Refuge provided a list of plants that are acceptable for use in the area. The impacts to the managed wetlands will be minimized when at the end of construction the 16 foot crest width of the dike is degraded to maintain an approximately 20 foot berm. Disturbed areas of this berm will be replanted.

3.2.8 Determination of Secondary Effects on the Aquatic Ecosystem
Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.

With the proposed project, habitat for many animals would be improved by creating additional wetlands through the beneficial use of the dredged sediments.

4.0 FINDINGS OF COMPLIANCE OR NONCOMPLIANCE WITH RESTRICTIONS ON DISCHARGE – (SECTION 230.12)

4.1 DETERMINATIONS

a. An ecological evaluation of the discharge of dredged material associated with the proposed action has been made following the evaluation guidance in 40 CFR 230.6, and the evaluation considerations at 40 CFR 230.5.

b. Potential short-term and long-term effects of the proposed action on the physical, chemical, and biological components of the aquatic ecosystem have been evaluated. The proposed discharge will not result in significant degradation of the environmental values of the aquatic ecosystem.

c. There are no less environmentally damaging practicable alternatives to the proposed work that would accomplish the project goals and objectives. Several alternatives were eliminated for not accomplishing all project goals or for being too costly. The No Action alternative is found to be less acceptable.

(1) The proposed action will not cause or contribute to violations of any applicable State water quality standards, will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act, will not jeopardize the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, and will not violate any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

(2) The proposed work will not cause or contribute to significant degradation of the waters of the United States.

(3) The discharge includes all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem.

4.2 FINDINGS

Based on the determinations made in this Section 404 (b) (1) evaluation, the finding is made that, with the conditions enumerated in this document, the proposed action complies with the Section 404(b)(1) Guidelines.

Appendix D

- **McCoys Cut Value Engineering Proposals Table**

Prop. No.	PROPOSALS	FIRST COST SAVINGS	LIFE CYCLE COST SAVINGS	ACCEPTED / REJECTED
1	Eliminate the plug on the eastern part of Mc Coombs Cut.	$849,849	-	
2	Provide the eastern plug on Rifle Cut. **Mutually exclusive with Proposals #6 & #7.**	<$1,400,950>	-	
3	Increase the height of the marsh land behind the plugs from 8' to 9'.	$18,150	-	
4	Fill New Cut if additional placement area is needed.	<2,865,900>	-	
5	Pulverize the spoil concrete into smaller than 2-1/2 ton sections.	<$130,810>	-	
6	Use hay bales on the eastern end of plugs in lieu of stone (temporary erosion control). **Mutually exclusive with Proposals #2, #7 & #11.**	$832,251	-	
7	Armor the eastern slope at both cuts in lieu of a plug at MCoombs Cut. **Mutually exclusive with Proposals #2, #6 & #8.**	<$618,761>	-	
8	Stabilize all fill areas of cuts w/ container plants. **Mutually exclusive with Proposals #6, #7 &#11.**	<$14,538>	-	
9	Add notes/ details to the drawings for limits and heights of fill.	COMMENT	N.A.	
10	Determine if Fish & Wildlife need additional construction quality sand for adjacent uses.	COMMENT	N.A.	

11	Combined Proposal #6 (hay bales) and #8 (planting). **Mutually exclusive with Proposals #6 & #8.**	**$203,629**	**N.A.**	
RP7	Strategic Placement of Dredged Material in Upland Sites	**COMMENT**	**-**	**Accepted**
C1	Strategically engage and partner with resource agencies in pursuit of opportunities to (1) streamline environmental compliance processing; (2) reinforce the importance of science based decisions; and (3) facilitate risk based mitigation planning concepts	**COMMENT**	**N.A.**	**Accepted**
C5	Utilize Nontraditional Dredged Material Placement Site(s) (open water, bird islands, wetland creation)	**COMMENT**	**N.A.**	**Being Done**
C8	Utilization of Navigation Channels as Borrow Sites for Shore Protection	**COMMENT**	**N.A.**	**Rejected**
C9	Regional Method for Cost Estimating	**COMMENT**	**N.A.**	**Being Done**

Appendix E

- **Georgia Coastal Zone Consistency Determination**

Georgia
Coastal Zone Consistency Determination (CZM)
McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project
Chatham County, Georgia

US Army Corps of Engineers
Savannah District
Savannah, Georgia

May 2017

In 2011, the Georgia Department of Natural Resources, Coastal Resources Division wrote that the staff of the Georgia Coastal Management Program (GCMP) had reviewed the USACE Savannah District's Savannah Harbor Expansion Project (SHEP) Tier II Draft Environmental Impact Statement (DEIS) and General Re-Evaluation Report and concluded that the Savannah Harbor Expansion Project (which included the McCoys Cut flow re-rerouting feature) was with the enforceable policies of the Georgia Coastal Management Program.

After the SHEP FEIS was approved, Savannah District began detailed engineering and environmental design studies as part of its preparation of contract drawings and specifications. Through those more recent studies, USACE learned that an additional 2,600 feet of the Middle River needs to be deepened to achieve the intended flow volume of the original mitigation plan. The design team also determined that an additional four feet of dredging will be necessary at the mouth of Union Creek to address future shoaling. This area of additional dredging depth would remain in the same footprint as the previously-approved dredging template, but four feet deeper for a distance of approximately 1,360 feet.

As a result of the need for additional dredging, Savannah District evaluated alternate placement sites for the dredged sediments. These alternate placement sites include creating wetland habitat at McCoombs Cut (western arm of McCoys Cut) and Rifle Cut. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. Using the alternate sediment placement sites would reduce the amount of sediment placed into existing upland dredged material containment areas (DMCAs). Use of the alternate sites would retain maintain the capacity of the DMCAs for future Operations and Maintenance and new work sediments.

The proposed action would occur within the coastal zone, so consistency with the state's CZM Program is required. The action would result in only minor additional temporary direct and indirect impacts to those that were described in the SHEP FEIS. The quality of the sediments being proposed to be dredged and use beneficially is comprised of predominantly medium to coarse sands with little to trace fines and organics. Four out of the nearly 100 samples were comprised of mostly silts/clays, with trace to little sand. We do not expect additional negative impacts to coastal resources from this project. The 2012 Final Environmental Impact Statement for SHEP included hazardous, toxic and radioactive waste investigations for the McCoys Cut flow re-routing feature. Based on the samples collected analyzed during the most recent subsurface investigation, Savannah District concluded that no further investigation of this issue is warranted. Based on the location of the project area, there is a very low risk of contaminants being present. In addition, during the geotechnical analysis process, no unusual colors or odors were noted.

There would be no change in the method or timing of dredging, the design of the diversion structure or the rock plugs. Construction would still take place from barges to

minimize impacts to adjacent lands. To reduce adverse effects to sturgeon during construction of the flow re-routing modifications and during the harbor deepening, special provisions would be implemented to protect sturgeon. The area of the proposed flow re-routing modifications is located in foraging and resting habitat for sturgeon and is used by juvenile shortnose sturgeon during the winter. To minimize project impacts to sturgeon, construction of the diversion and closure structure at McCoys/McCoombs Cut and Rifle Cut would only occur between May 15 and November 1. Most sturgeon are not expected to be in that portion of the estuary during that period, as discussed in the November 4, 2011 final Biological Opinion for SHEP. In addition, dredging would not occur during the spawning season for striped bass, which occurs between April 1 and May 15. As a result of coordination with NMFS in February 2017, the District incorporated the following additional measures into the proposed work to minimize potential impacts to sturgeon:

1) Monitor water quality (DO, pH, turbidity) downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River

2) Conduct dredging in only one area at a time (either in upper Middle River or the Back River, not both at the same time)

3) Regardless of dredging method used, implement precautionary warning techniques before dredging starts each day (e.g., tapping the clamshell bucket on the water surface or some similar method of providing warning)

4) Follow similar guidelines as those in NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions to protect sturgeon observed in or near the dredging area. More specifically, operation of any mechanical construction equipment shall cease immediately if a sturgeon is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition or a 30-minute waiting period.

To ensure that dredging and construction activities do not affect manatees, Savannah District has adopted and would implement on this project the “Standard State and Federal Manatee Protection Conditions.”

With the creation of approximately nine acres of intertidal wetlands, long term benefits will include improved water quality, additional food and habitat for various fish and wildlife species, and enhanced aesthetics and recreation opportunities. Therefore, USACE Savannah District believes this project is fully consistent with the enforceable policies of the State of Georgia’s Coastal Zone Management Program.

Appendix F

- **South Carolina Coastal Zone Consistency Determination**

South Carolina
Coastal Zone Consistency Determination (CZM)
McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project
Jasper County, South Carolina

US Army Corps of Engineers
Savannah District
Savannah, Georgia

May 2017

In a November 15, 2011 letter from the South Carolina Department of Health and Environmental Control (SC DHEC), SC DHEC removed their objection to the U.S. Army Corps of Engineers (USACE), Savannah District finding of Coastal Zone Consistency for the Savannah Harbor Expansion Project (SHEP) (which included the McCoys Cut flow re-rerouting feature).

After the SHEP FEIS was approved, Savannah District began detailed engineering and environmental design studies as part of its preparation of contract drawings and specifications. Through those more recent studies, USACE learned that an additional 2,600 feet of the Middle River needs to be deepened to achieve the intended flow volume of the original mitigation plan. The design team also determined that an additional four feet of dredging will be necessary at the mouth of Union Creek to address future shoaling. This area of additional dredging depth would remain in the same footprint as the previously-approved dredging template, but four feet deeper for a distance of approximately 1,360 feet.

As a result of the need for additional dredging, Savannah District evaluated alternate placement sites for the dredged sediments. These alternate placement sites include creating wetland habitat at McCoombs Cut (western arm of McCoys Cut) and Rifle Cut. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. Using the alternate sediment placement sites would reduce the amount of sediment placed into existing upland dredged material containment areas (DMCAs). Use of the alternate sites would retain maintain the capacity of the DMCAs for future Operations and Maintenance and new work sediments.

The proposed action would occur within the coastal zone, so consistency with the state's CZM Program is required. The action would result in only minor additional temporary direct and indirect impacts to those that were described in the SHEP FEIS. The quality of the sediments being proposed to be dredged and use beneficially is comprised of predominantly medium to coarse sands with little to trace fines and organics. Four out of the nearly 100 samples were comprised of mostly silts/clays, with trace to little sand. We do not expect additional negative impacts to coastal resources from this project. The 2012 Final Environmental Impact Statement for SHEP included hazardous, toxic and radioactive waste investigations for the McCoys Cut flow re-routing feature. Based on the samples collected analyzed during the most recent subsurface investigation, Savannah District concluded that no further investigation of this issue is warranted. Based on the location of the project area, there is a very low risk of contaminants being present. In addition, during the geotechnical analysis process, no unusual colors or odors were noted.

There would be no change in the method or timing of dredging, the design of the diversion structure or the rock plugs. Construction would still take place from barges to minimize impacts to adjacent lands. To reduce adverse effects to sturgeon during construction of the flow re-routing modifications and during the harbor deepening, special provisions would be implemented to protect sturgeon. The area of the proposed

flow re-routing modifications is located in foraging and resting habitat for sturgeon and is used by juvenile shortnose sturgeon during the winter. To minimize project impacts to sturgeon, construction of the diversion and closure structure at McCoys/McCoombs Cut and Rifle Cut would only occur between May 15 and November 1. Most sturgeon are not expected to be in that portion of the estuary during that period, as discussed in the November 4, 2011 final Biological Opinion for SHEP. In addition, dredging would not occur during the spawning season for striped bass, which occurs between April 1 and May 15. As a result of coordination with NMFS in February 2017, the District incorporated the following additional measures into the proposed work to minimize potential impacts to sturgeon:

1) Monitor water quality (DO, pH, turbidity) downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River

2) Conduct dredging in only one area at a time (either in upper Middle River or the Back River, not both at the same time)

3) Regardless of dredging method used, implement precautionary warning techniques before dredging starts each day (e.g., tapping the clamshell bucket on the water surface or some similar method of providing warning)

4) Follow similar guidelines as those in NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions to protect sturgeon observed in or near the dredging area. More specifically, operation of any mechanical construction equipment shall cease immediately if a sturgeon is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition or a 30-minute waiting period.

To ensure that dredging and construction activities do not affect manatees, Savannah District has adopted and would implement on this project the “Standard State and Federal Manatee Protection Conditions.”

With the creation of approximately nine acres of intertidal wetlands, long term benefits will include improved water quality, additional food and habitat for various fish and wildlife species, and enhanced aesthetics and recreation opportunities. Therefore, USACE Savannah District believes this project is fully consistent with the enforceable policies of the State of South Carolina Coastal Zone Management Program.

Appendix G

- **McCoys Cut Comment/Reponse Table**
- **Public and Agency Letters/Emails**

Organization/Public	Comment	Response
National Marine Fisheries Service	The NMFS agrees with the District's conclusion that the proposed action would have no additional impacts to EFH beyond those described in the July 2012 Final Environmental Impact Statement for SHEP.	Thank you for the response that NOAA Fisheries concurs that no additional impacts to EFH would occur.
Georgia Historic Preservation Division	HPD concurs that no historic properties that are listed or eligible for listing in the NRHP within Georgia will be affected by this portion of the undertaking, as defined in 36 CFR Part 800.4(d)(1), due to the location, scope of work, and temporary nature of the revised scope.	Thank you for the response that GA HPD agrees that no listed historic properties would be affected by the proposed action.
South Carolina Department of Archives and History	Based on the information provided, we concur with the finding of no historic properties affected.	Thank you for the response that South Carolina Department of Archives and History agrees that no listed historic properties would be affected by the proposed action, no further action is needed.
U.S. Environmental Protection Agency	Please find attached EPA's comments on the SHEP McCoy's Cut SEA	Thank you for the comments. Responses to individual comments follow:
	On page 6 and throughout the SEA, the USACE discusses disposing of a portion of dredged material in the Sediment Basin, which is a feature of SHEP. The EPA notes that there is not a citation referencing the Sediment Basin that is in the SHEP Final Environmental Impact Statement (FEIS) nor is there a detailed discussion regarding the Sediment Basin. Recommendation: Because the Sediment Basin is a prominent feature of the proposed alternative, the EPA recommends the USACE better describe the Sediment Basin and its purpose within SHEP as well as provide a citation back to the SHEP FEIS.	A statement was added in Section 1.1. of the SEA to direct the reader on where they could find more information on the Sediment Basin in the 2012 FEIS and Appendices.

	On page 11 (1.2.2), USACE discusses the operational limitations regarding the Houlihan Bridge, but does not discuss what those limitations are in the SEA. Recommendation: The EPA recommends the USACE briefly discuss these operational limitations and implications to the proposed alternative in the Final EA.	Additional information on page 11 was added on the operational limitations of the bridge.
	On page 11 (1.2.2), the USACE briefly discusses the proposed alternative as a beneficial use; however, the USACE does not provide any specific details of how this project will improve the local ecosystem other than stating that it would provide environmental enrichment and enhance fish and wildlife conditions. Recommendation: The EPA recommends the USACE discuss how many acres will be converted from open water to wetlands and the overall significance of wetlands in the Coastal Georgia ecosystem. The EPA also recommends the USACE provide more details regarding the beneficial nature of these enhancements to include a brief discussion of aquatic and terrestrial species that would benefit (especially any threatened and endangered species).	Additional information was added near the bottom of Section 1.2.2 (page 11) to discuss the wetlands in more detail as well as their significant in the Coastal Georgia ecosystem.

	On page 25 (4.2), the USACE discusses environmental impacts of the proposed alternatives on wetlands. However, the USACE does not discuss the updated Clean Water Act Section 404(b)1 analysis (located in Appendix C) that was conducted for the SEA. Recommendation: The EPA recommends the USACE discuss the findings of the updated 404(b)1 analysis and provide a reference of the 404(b)1 analysis located in Appendix C.	A statement was added in Section 4.2 to discuss the findings of the 404(b)(1) and refer the reader to Appendix C for the updated 404(b)(1) analysis.
	On page 33 (4.10), the USACE discussed the environment impacts of the proposed alternatives on water quality, but does not discuss the 401 water quality certification that was developed for the SEA (Appendix Z). Recommendation: The EPA recommends the USACE discuss the 401 water quality certification and make reference to its location in Appendix Z.	A statement was added in Section 3.2.10 (water quality existing conditions section) to state that USACE Savannah District received 401 WQC from both South Carolina and Georgia for the SHEP which included the McCoys Cut flow re-routing feature and can be found in Appendix Z.

	The EPA notes that there is no proposed monitoring or adaptive management plan for the conversion of McCoy's and Rifle Cuts into wetlands. Will there be any post-construction monitoring to ensure that wetlands species have established? EPA also notes that there are no performance standards or success criteria for the creation of the wetlands. Without performance standards and success criteria, how will the USACE know that the wetlands creation effort is developing as planned or has reached a targeted level of success? Recommendation: The EPA recommends that USACE develop a monitoring and adaptive management plan that will outline post-construction performance standards, a post construction monitoring schedule, criteria by which success will be determined, protocols for sharing data with appropriate resource agencies, etc. Additionally, the EPA recommends the USACE include the monitoring and adaptive management plan within the Final EA and commit to the monitoring and adaptive management plan within the Finding of No Significant Impact (FONSI).	USACE Savannah District will complete a short term monitoring effort for the wetlands created at both McCoombs Cut and Rifle Cut. We will monitor the wetland elevations immediately after construction has been completed as well as for 2 years afterwards. We will also monitor for vegetation growth and expansion during those two years to keep track of our progress. We will add some information about this monitoring effort under Section 6.0 (Mitigation) as well as under our Environmental Commitment section of the Finding of No Significant Impact.
U.S. Fish and Wildlife Service	The dSEA does not indicate that the changes proposed would change the impacts to listed species. The dSEA states that manatee conditions would be implemented to minimize the impacts to manatees. This is no change from the SHEP final EIS. The proposed project changes described in the dSEA do not change our ESA section 7 concurrence.	Thank you for the response that USFWS finds the proposed recommendations to minimize impacts to manatees is sufficient and therefore the proposed project changes described in dSEA does not change ESA Section 7 concurrence on the project.
Georgia Department of Natural Resources, Environmental Protection Division	In reviewing the dSEA, we find that the proposed project adjustments comprise essentially modifications of the extent, magnitude and certain accessory aspects of	Thank you for the response that Georgia Department of Natural Resources, Environmental Protection Divisions finds the

	the concept as originally put forth in the FEIS. The fundamental intent and effect of the McCoys Cut project was and continues to be the enhancement of freshwater flows into existing wetland terrain, as to minimize/avoid the effects of upriver salinity migration. Accordingly we comment that the project adjustments appear to be appropriate and reasonable.	proposed project adjustments to be appropriate and reasonable.
National Marine Fisheries Service National Oceanic and Atmospheric Administration	The work at McCoy's Cut is covered by the SHEP biological opinion and that the proposed modifications did not rise to the level of triggering a need to reinitiate consultation	Thank you for your response that the proposed project adjusts on the McCoys Cut flow re-routing feature of the SHEP project is covered by the overall SHEP's biological opinion.
South Carolina Department of Natural Resources	SCDNR does not object to the proposed modifications. Although our agency does not typically condone open-water disposal of dredged material or the conversion of one wetland type to another, SCDNR supports the proposed beneficial use of dredged material to create vegetated wetlands in this case, since both McCoombs Cut and Rifle Cut are man-made features that will be plugged as part of the flow rerouting plan regardless of which alternative is selected but has some concerns regarding the proposed modifications:	Thank you for the comments. Responses to individual comments follow:
	The sediments to be dredged and used to create vegetated wetlands within McCoombs Cut and Rifle Cut are described in the SEA as either "coarse sand" or "medium to coarse sands with little to trace fines and organics". SCDNR is concerned that predominantly sandy sediments may not have sufficient organic matter or nutrients to support wetland vegetation. Unless the proposed marsh creation areas remain inundated throughout each tidal cycle, sandy sediments will also be less likely than fine grained sediments to retain sufficient moisture to support the survival and growth of wetland species. The Final SEA	The proposed marsh creation areas are expected to remain inundated throughout each tidal cycle to allow organic matter to be deposited on the surface to support wetland vegetation. Information was added to Section 1.2 to address this comment.

	should explain how these issues will be addressed.	
	The Joint Public Notice for the proposed action lists several potential plant species "that will be planted on the edge of the newly created wetlands" and states that "The rest of the created wetland habitat will mature and fill in by the second full growing season." In order to verify this assertion and evaluate the success of the proposed beneficial use, SCDNR recommends that detailed design, construction, monitoring, and adaptive management plans be developed for each of the two proposed wetland creation areas. Greater detail regarding target elevations and proposed plantings (i.e., final selection of plant species, planting density, and total area to be planted) should be included in each plan.	USACE Savannah District will complete a short term monitoring effort for the wetlands created at both McCoombs Cut and Rifle Cut. We will monitor the wetland elevations immediately after construction has been completed as well as for 2 years afterwards. We will also monitor for vegetation growth and expansion during those two years to keep track of our progress. We will add some information about this monitoring effort under Section 6.0 (Mitigation) as well as under our Environmental Commitment section of the Finding of No Significant Impact.
	The proposed modification includes the installation of a temporary pile-supported platform on the edge of the existing tidal wetland and the Back River, impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. In addition, improvements to the dike leading to the new platform would impact approximately 0.23 acres of managed wetlands. Following construction, all wetlands impacted by this temporary structure and access road should be restored to pre-construction elevations and replanted with appropriate species.	At the end of the project, the majority of wetland areas impacted by construction will be restored to pre-construction elevations and will be replanted. However, per the request from the USFWS Savannah National Wildlife Refuge, there will be two areas that will not be returned to pre-construction elevations and will be left as access roads/turning areas for USFWS vehicle traffic.
	In addition to extending the length of dredging in the Middle River, the USACE proposes to increase the depth of dredging at the mouth of Union Creek by four feet to account for anticipated shoaling in this area. The Draft SEA does not specify what the original design depth or newly proposed depth would be for this reach of Union Creek, or how increasing the depth of dredging might affect water	Thank you for the comment. Additional language will be added to the SEA in Section 4.10 to better explain how increasing the depth of dredging would impact water quality, in particular, dissolved oxygen levels.

	quality, particularly dissolved oxygen, in this reach. The Final SEA should include a discussion of these issues.	
U.S. Fish and Wildlife Service, Savannah National Wildlife Refuge	Please accept the following comments from the Savannah National Wildlife Refuge in response to the Draft Supplemental Environmental Assessment and Finding of No Significant Impact (dSEA) evaluating changes to the McCoy's Cut flow re-routing feature of the Savannah Harbor Expansion Project, May 23, 2017.	Thank you for the comments. Responses to individual comments follow:
	The dSEA states the Savannah NWR is 29,175 acres. The current accepted acreage is 29,450.	Thank you for this information. The acreage in the SEA was updated accordingly.
	The following sentence is confusing and needs clarification as it appears to pertain to the 2,600' extension – "That plan included dredging Middle River for a distance approximately 5,800 feet downstream of the confluence with Little Back River. Recent bathymetric data indicates this channel segment would not create a large shoal in Middle River just downstream of the approved dredging template." The paragraph goes on to state "By extending the dredging template across this shoal, the deepened channel would connect to the deeper depths downstream of the shoal." We realize the Corps only learned of this shoal through recently acquired bathymetric surveys. What do you mean by "not create a large shoal in Middle River just downstream?" Are you referring to after the additional dredging a shoal would not be created?	Thank you for the comment. This sentence was worded incorrectly. It should have stated that that recent bathymetric data indicated that the original dredging template did not include a large shoal area in Middle River just downstream of the original template area. The wording in the Section 1.2.2.in the SEA has been revised.

	As stated in the dSEA, the purpose of the 2,600' extension is to increase the flow of freshwater down Middle River and meet the goals of the SHEP EIS. Furthermore, the dSEA goes on to state "Without additional dredging, freshwater flow down Middle River would likely be restricted." We were wondering if restricting flow upstream would not serve a similar purpose albeit the lower half of Middle River may be unduly inundated by saline water. If the shoal were removed to allow an increase in freshwater flow down the entire length of Middle River, would upstream movement of saline water during times of low flow and high tides be aided by the deeper channel? One of the purposes of the flow re-routing is to concentrate the increased salinity wedge into the Front River. The confluence of Middle River and Front River is a relatively short distance, approximately three (3) river miles, to the downstream extent of the additional dredging. Influence from Steamboat and Houston Cuts, only 4,000' from the southern end of the additional dredging, could exacerbate the salinity as the wedge is pushed upstream, especially at low flows regardless of tidal height. The existing shoal, in essence, would act just like the Sediment Basin in Back River.	During the SHEP study phase prior to finalizing the 2012 GRR and EIS documents a sill on the Middle River was proposed. The analysis of the potential benefits of the sill are documented in the 2009 report titled "Sensitivity Analysis of Proposed Sill on Middle River". This document is included in the 2012 GRR and can be found on the SHEP website. http://www.sas.usace.army.mil/Portals/61/docs/SHEP/Reports/GRR/35%20Sensitivity%20Analysis%20of%20Proposed%20Sill%20on%20Middle%20River%20September%202009.pdf The proposal was to construct a sill on Middle River near the confluence with the Savannah River between the mouth and the deep hole near the bend at the old New Cut closure. The idea was that the sill would be low enough to allow fish movement to the Middle River bend, but would be high enough to inhibit high concentrations of bottom salinity moving from Front River into the bend. The proposed sill was to be constructed to an elevation of -6.4 feet MLLW. This depth is similar to the elevation of the deepened channel upriver at -7 feet MLLW. The sill was modeled using the approved models for impact analysis in the harbor and was found to have little benefit. The modeling efforts evaluated the effects of the sill on DO, salinity, velocities, shoaling and potential tidal restrictions. For salinity the effects were largely localized to the area immediately upstream of the sill. The modeling results indicated a slight increase in surface salinity with a lowered bottom salinity averaging about 0.5 ppt. The decision was made at that time to not construct the Middle River sill because the benefits appeared to be minor and it was unknown how the sill may affect shoaling in the deep hole upriver.

		There are similarities between this study and conditions on Middle River within the 2600 feet extension. The shoal being removed is approximately 4 feet in depth lowering the bottom elevation in this area from approximately -3 feet to -7 feet MLLW. The sill closer to the mouth while maintaining a similar elevation, was a much more dramatic change in bottom depth from approximately -20 feet to -6.4 feet MLLW. Despite this dramatic change in depth, the benefits were considered minor. It is anticipated that any increases in salinity due to the shoal being removed would be minor as well and would be overcome by the volume of freshwater flow coming down Middle River. In addition, without the shoal removed, there could be a decrease in velocities as the freshwater flow comes into the area of the shoal causing sediments to drop and the shoal to grow to the point where it changes the hydrodynamics of the area and limits the tidal exchange. Keeping an open channel through this area will help to maintain the tidal exchange and flow of freshwater from upstream to downstream.

	Would the deeper channel and increased volume of water just upstream from the island cause increase erosion of the island? Would the Corps monitor this and, if the island shows increased erosion and loss of area (i.e. wetland), would this loss be mitigated?	It is not anticipated that the increased volume of water will cause erosion of the island. Although, it is hoped that the increased volume will work to maintain the upstream to downstream channel flow of freshwater. The volume of flow coming down Middle River is largely controlled by the Diversion Structure at McCoy's Cut. During the engineering design phase 15 flow scenarios were evaluated for 13 different design alternatives for the structure to evaluate the effectiveness of the feature and any potential problems or issues with the design. These flow scenarios included analysis of low flows. In addition to the hydrodynamic modeling a sedimentation model was developed to evaluate the potential for erosion on the Savannah River at the diversion structure. Due to the potential for increased erosion in that area, the design includes channel armoring. During the project design there were no issues or concerns regarding an increased erosion potential in the Middle or Little Back River. That being said, USACE Savannah District will monitor all the mitigation features to ensure benefits are achieved and that the feature is functioning as intended. Any problems or issues with constructed features would be addressed through the SHEP adaptive management program.

	Our preference for the additional dredged material beyond that needed for the plugs is to keep it within the estuary. That is, placed in the Sediment Basin and not removed from the estuary by placing it in a DMCA. Was placement of the excess material in Steamboat and Houston Cuts considered? These areas do influence movement of salt water into the Middle River.	Thank you for the comment that the preference would be for the additional dredged material should stay within the estuary, i.e. place the remainder of the dredged material in the Sediment Basin rather than place it in the DMCAs. Steamboat and Houston cut were not considered as possible placement areas.

	We do not see where invasive species are addressed in the dSEA. Creation of wetlands always has the potential to provide a “blank slate” for the establishment of invasive species. What is the Corps’ plan to address invasive species on these newly created wetlands?	USACE Savannah District will complete a short term monitoring effort for the wetlands created at both McCoombs Cut and Rifle Cut to monitor the wetland elevations as well as track vegetation growth. USACE Savannah District cannot guarantee however that invasive species from surrounding land sources will not grow in the newly created wetland.

From: Karla Reece - NOAA Federal
To: Kay Davy - NOAA Federal
Cc: Dayan, Nathan S CIV USARMY CESAS (US); Armetta, Robin E CIV USARMY CESAS (US); rachel.sweeney@noaa.gov
Subject: [Non-DoD Source] Re: Voice mail from Karla Reece on McCoy"s Cut (SHEP) (UNCLASSIFIED)
Date: Wednesday, May 31, 2017 9:55:02 AM

Kay, Thank you for clarifying the situation. I am going to close out this consultation request (SER-2017-18670) noting that the activity is covered under the original SHEP consultation and reinitiation of the same.

Nathan, Under the ESA we cannot consult on part of a project. We must look look at the entire project, not piecemeal portions into smaller consultations.

If you have any questions, please let me know.

Karla

On Wed, May 31, 2017 at 9:05 AM, Kay Davy - NOAA Federal <kay.davy@noaa.gov <mailto:kay.davy@noaa.gov> > wrote:

Nathan,

The work at McCoy's Cut is covered by the SHEP biological opinion. Our recent discussion on the proposed minor modifications to the planned work at McCoy's Cut concluded that the proposed modifications did not rise to the level of triggering a need to reinitiate consultation. Besides, the ITS exceedance already triggered reinitiation of the SHEP biop and we are preparing to address that and several other facets of SHEP that have developed/changed since the original biop was issued. I hope that helps to clarify the situation...

Thanks,
Kay

On Wed, May 31, 2017 at 8:14 AM, Dayan, Nathan S CIV USARMY CESAS (US) <Nathan.S.Dayan@usace.army.mil <mailto:Nathan.S.Dayan@usace.army.mil> > wrote:

CLASSIFICATION: UNCLASSIFIED

Karla,
I left you a voice mail this morning. We have been in coordination with NMFS on our modification to a portion of the SHEP work. Our intent with the letter was to inform NMFS that for this portion and modification to SHEP did not change our overall consultation activity with NMFS. Our determination is that this alternative as currently proposed, "may affect, but is not likely to adversely affect" Atlantic and shortnose sturgeon, or their critical habitat. We are requesting NMFS's concurrence of this determination and there for no additional formal consultation is required on this portion of the SHEP project and its modification. Please let me know if you have any questions or concerns on this issue.

Thank you
Nathan Dayan
Environmental Team Leader
USACE - Savannah District
912-652-5172 <tel:912-652-5172>

-----Original Message-----
From: Cisco Unity Connection Messaging System
[mailto:unityconnection@cpcunitypub.eis.ds.usace.army.mil
<mailto:unityconnection@cpcunitypub.eis.ds.usace.army.mil>]
Sent: Tuesday, May 30, 2017 2:16 PM

To: b2pdrnsd@cpcunitypub.eis.ds.usace.army.mil <mailto:b2pdrnsd@cpcunitypub.eis.ds.usace.army.mil>
Subject: Message from S499C011L0011 ((7278245348 <tel:%287278245348>)

CLASSIFICATION: UNCLASSIFIED

--

Kay Davy
Protected Resources Division
National Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)
Office: 727-415-9271

--

><((((º>´¯`·.¸¸.><((((º>¸.·´¯`·.¸><((((º>´¯`·.¸¸..><((((º>

Karla Reece
Section 7 Team Lead
National Marine Fisheries Service
Southeast Regional Office
Protected Resources
263 13th Ave. S.
St. Petersburg, FL 33701
phone: 727/824-5348
fax: 727/824-5309
email: karla.reece@noaa.gov <mailto:karla.reece@noaa.gov>
<Blockedhttps://lh5.googleusercontent.com/3iBOnbBHrH_RvoLQTucLyoX9fNTredsEGmq_4h9nZGM9xExFu3DcdYri-uH4XVU8kyLTsEf-3Sz0jz_wB0rtxDxaSpl_U9Hrzumn5jVNc1i3U-mpltQ>

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

May 31, 2017

William G. Bailey, PE
Chief, Planning Division
Savannah District, Corps of Engineers
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604
Attn: Julie Morgan, Archaeologist

RE: Savannah Harbor Navigation Channel Project
Chatham County, Georgia
HP-911120-001

Dear Mr. Bailey:

The Historic Preservation Division (HPD) has received the additional information submitted concerning the above referenced undertaking. Our comments are offered to assist the US Army Corps of Engineers (USACE) in complying with provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of several flow altering features within the Little Back and Middle Rivers in Chatham County. A Programmatic Agreement was created to govern the Section 106 process of the proposed project, which our office signed November 22, 2011. Portions of the project have previously been determined to have no adverse effect to historic properties within its area of potential effect (APE) while other portions of the project have previously or are currently going through additional archaeological testing to determine the National Register of Historic Places (NRHP) eligibility of archaeological properties within the APE, assess effects, if necessary, and conduct data recovery, if needed. Furthermore, no historic properties that are listed or eligible for listing in the NRHP were found to be affected by previous scope of work changes.

The current submitted information includes an updated scope of work and information regarding the historic properties previously identified within the APE of the revised scope. It is HPD's understanding that the project now includes a contractor staging and access area within the Savannah National Wildlife Refuge in Jackson County, South Carolina. Based on the additional information submitted regarding the portion of the revised scope's APE which falls within Chatham County, Georgia, HPD concurs that no historic properties that are listed or eligible for listing in the NRHP within Georgia will be affected by this portion of the undertaking, as defined in 36 CFR Part 800.4(d)(1), due to the location, scope of work, and temporary nature of the revised scope.

This letter evidences consultation with our office for compliance with Section 106 of the NHPA. It is important to remember that any changes to this portion of the project, as it is currently proposed, may require additional consultation. HPD encourages federal agencies and project applicants to discuss such changes with our office to ensure that potential effects to historic resources are adequately considered in project planning.

Please refer to project number **HP-911120-001** in any future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact Emma Mason, Compliance Archaeologist, at (770) 389-7877 or emma.mason@dnr.ga.gov or me at (770) 389-7851 or jennifer.dixon@dnr.ga.gov.

Sincerely,

Jennifer Dixon, MHP, LEED Green Associate
Program Manager
Environmental Review & Preservation Planning

cc: Elizabeth Johnson, South Carolina SHPO

SOUTH CAROLINA DEPARTMENT OF
ARCHIVES & HISTORY
EST. 1905

Transmitted via E-Mail

May 31, 2017

Ms. Julie Morgan
Archaeologist, Planning Division
Corps of Engineers, Savannah District
Hartwell Project
5625 Anderson Highway
Hartwell, GA 30643

Re: Savannah Harbor Expansion Project, Temporary Contractor Staging Area
Jasper County, South Carolina
SHPO Project No. 03-VM0063

Dear Ms. Morgan:

We received a letter from William G. Bailey on May 23, 2017 regarding the above-referenced project. The State Historic Preservation Office (SHPO) is providing comments to the Corps of Engineers pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

The undertaking consists of the construction of a temporary pile supported platform with access provided by upgrading an existing dike. The area has been previously surveyed for cultural resources and none are located in the area of platform construction. Cultural resources located upstream will be buffered and marked as no work zones to avoid impacts. Based on the information provided, we concur with the finding of no historic properties affected.

Thank you for the opportunity to provide comments. If you have any questions, please contact me at (803) 896-6168 or ejohnson@scdah.sc.gov.

Sincerely,

Elizabeth M. Johnson

Elizabeth M. Johnson
Director, Historical Services, D-SHPO
State Historic Preservation Office

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

June 5, 2017

William G. Bailey
Chief, Planning Branch
Savannah District, Corps of Engineers
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604
Attn: Nathan Dayan, Environmental Resources

RE: Savannah Harbor Navigation Channel Project
Chatham County, Georgia
HP-911120-001

Dear Mr. Bailey:

The Historic Preservation Division (HPD) has received the additional information concerning the above referenced project requesting comments pursuant to the National Environmental Policy Act of 1969 (NEPA). Our comments are offered to assist the US Army Corps of Engineers (USACE) in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for notifying HPD of the update to this federal undertaking. We look forward to continued Section 106 consultation, as appropriate.

Please refer to project number **HP 911120-001** in future correspondence regarding this project. If we may be of further assistance, please contact me at (770) 389-7851 or Jennifer.dixon@dnr.ga.gov.

Sincerely,

Jennifer Dixon, MHP, LEED Green Associate
Program Manager
Environmental Review & Preservation Planning

Cc: Julie Morgan, USACE

JEWETT CENTER FOR HISTORIC PRESERVATION
2610 GA HWY 155, SW | STOCKBRIDGE, GA 30281
770.389.7844 | FAX 770.389.7878 | WWW.GEORGIASHPO.ORG

Savannah Harbor Expansion Project, Mitigation Plan 6A [McCombs Cut]
Proposed Staging and Access
Savannah National Wildlife Refuge
Jasper County, South Carolina

Cultural Resource Assessment

June 6, 2017

Rick Kanaski, Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region

The U.S. Army Corps of Engineers [COE], in consultation with Savannah National Wildlife Refuge's [Refuge] biological staff, have identified a potential staging area and access route on SNWR (Fig. 1). This area would be used by the COE's contractor as a temporary platform to move materials needed for the closures of McCoy's [McCombs] and Rifle Cuts and subsequent wetland creations. The closures and wetland creations, both located in Georgia, were addressed by this office in an earlier review dated April 21, 2017. The current assessment deals solely with the propose staging area and access route.

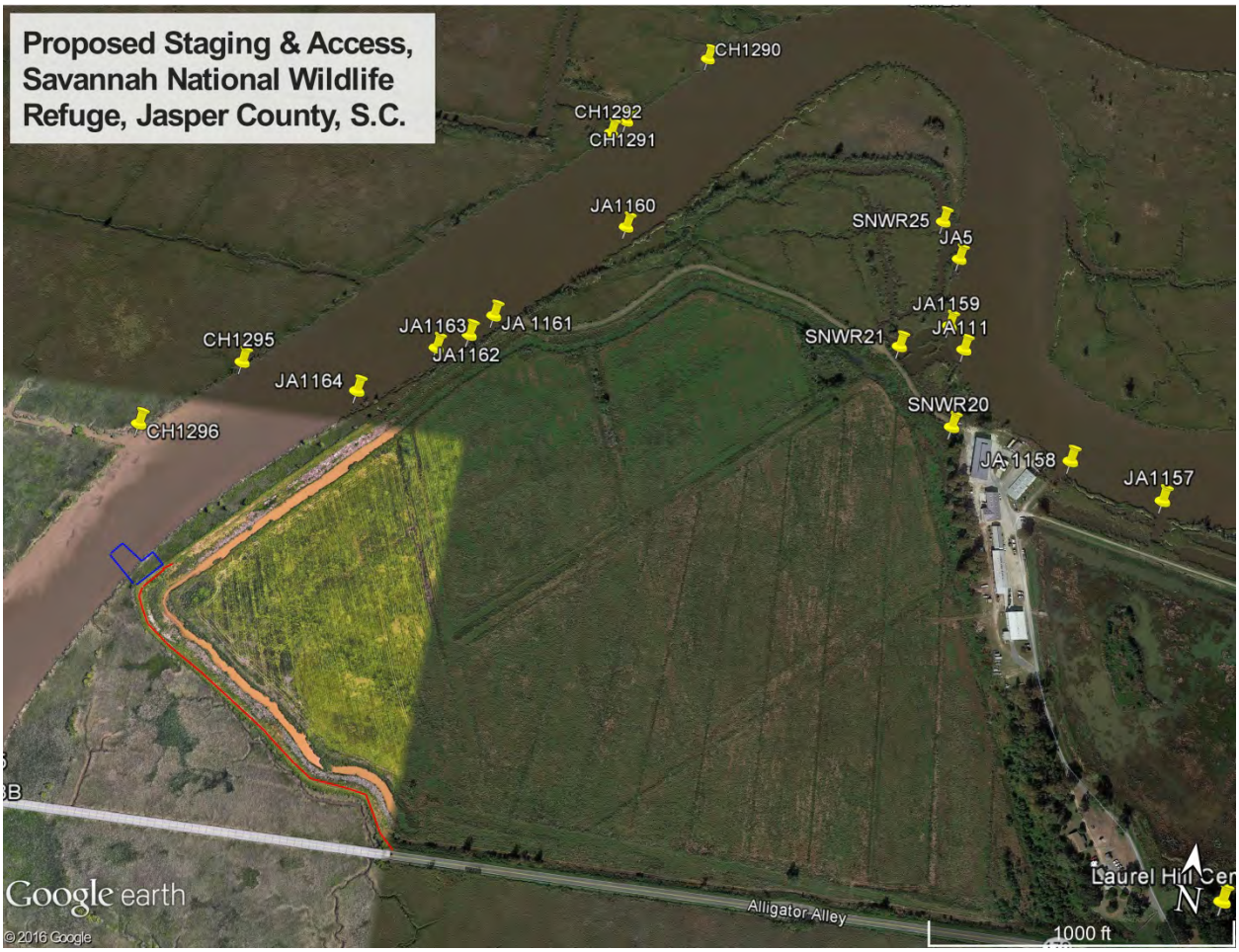


Figure 1. Aerial photograph of the project area, recorded historic properties, and surrounding landscape. The Refuge's Maintenance Complex is visible on the east side of the pool. The staging area is outlined in blue; the access is shown as a red line.

Project Area

The proposed access route runs along the southern perimeter levee of the Refuge's Pool 6 for approximately 1457 feet. Its beginning point is the intersection of the levee with SC 170 [Alligator Alley]; the end point will be just northeast of the temporary staging platform. This segment of the perimeter levee will be upgraded using material from the borrow area/ditch that parallels it. The staging area will be a temporary pile supported platform installed on the edge of the existing tidal wetland and the Back River.

Assessment

This part of the Refuge has been subjected to two archaeological and historic investigations – Marrinan (1978) and James, Faught, Lydecker, Carruth, Murray and Gifford (2013). Many, but not all, of the recorded historic properties are associated with the 19th century rice plantations and their agricultural infrastructure. The staging area and access route fall within the footprint of the Upper Laurel Hill Plantation (Figs. 2 & 3). Just south of the highway is Ancrum's Plantation, later known as Lower Laurel Hill and which became part of Laurel Hill Plantation by 1888 (Fig. 4).

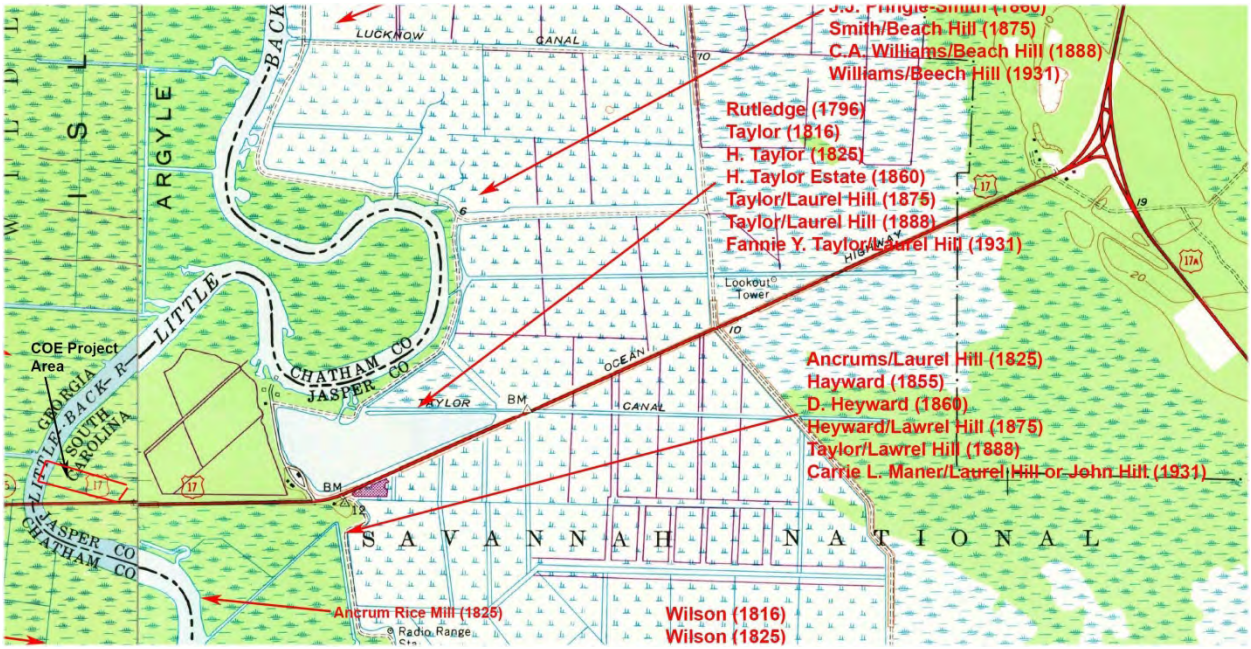


Figure 2. Sections of the Port Wentworth, GA and Limehouse, GA-SC quadrangles showing the COE's project area and the Refuge's network of managed impoundments, as well as the former rice plantation owners [in red].

A review of the available plats and maps show this area as "rice fields." No standing structures, such as a rice mill or slave settlements, are present. The Upper Laurel Hill Plantation's overseer's house, slave settlement, rice mill, and other outbuilding are located on three large hammocks east of the project area [highlighted as red dots in Figure 3]. South of the highway and project area are Ancrum's Rice Mill and slave settlement [highlighted as red dots in Figure 4. Across the Back River is J. Potter's Argyle Island Plantation. Potter also owned 379 acres on Onslow Island and Colerain, all of which he purchased from William Mein in 1817 (James, et al 2013: 45). Potter's Argyle Island Plantation was the southern part of the Estate of Dr. Houstoun. Houstoun's northern fields, including the slave settlement were acquired by McLauren [McLester] by circa 1816. The slave settlement was located on the west side of the plantation

overlooking the Middle River. McKinnon's 1825 map depicts a rice mill and house on the plantation's eastern half overlooking the Back River and north of Taylor's Upper Laurel Plantation (Fig. 5).

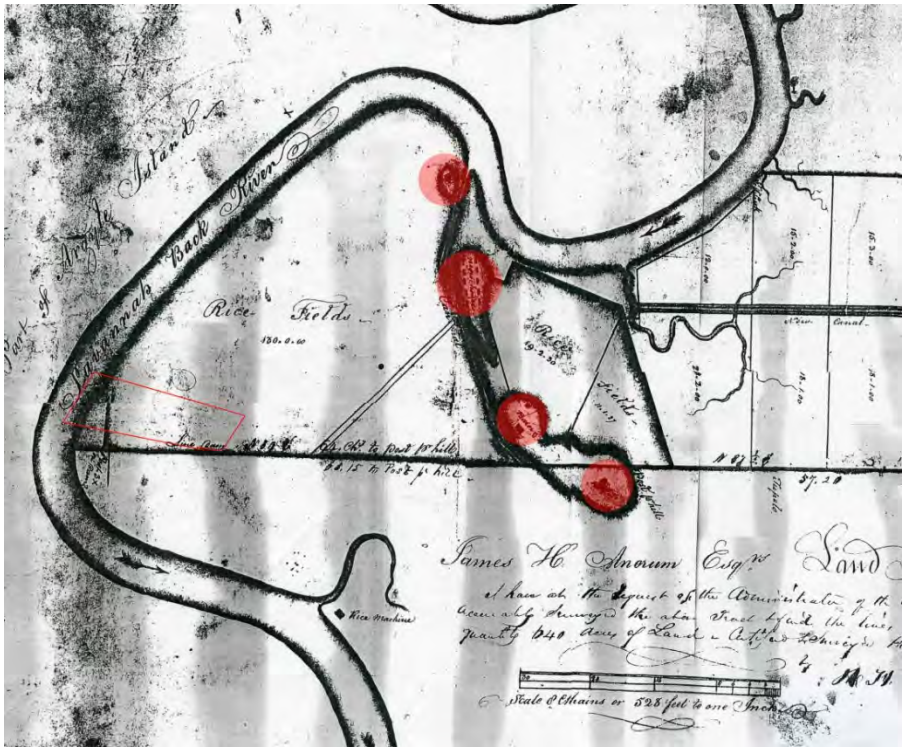


Figure 3. Section of the 1815 plat of Upper Laurel Hill formerly owned by John Rutledge [deceased] and then owned by Henry Taylor. The plantation's buildings are highlighted in red.

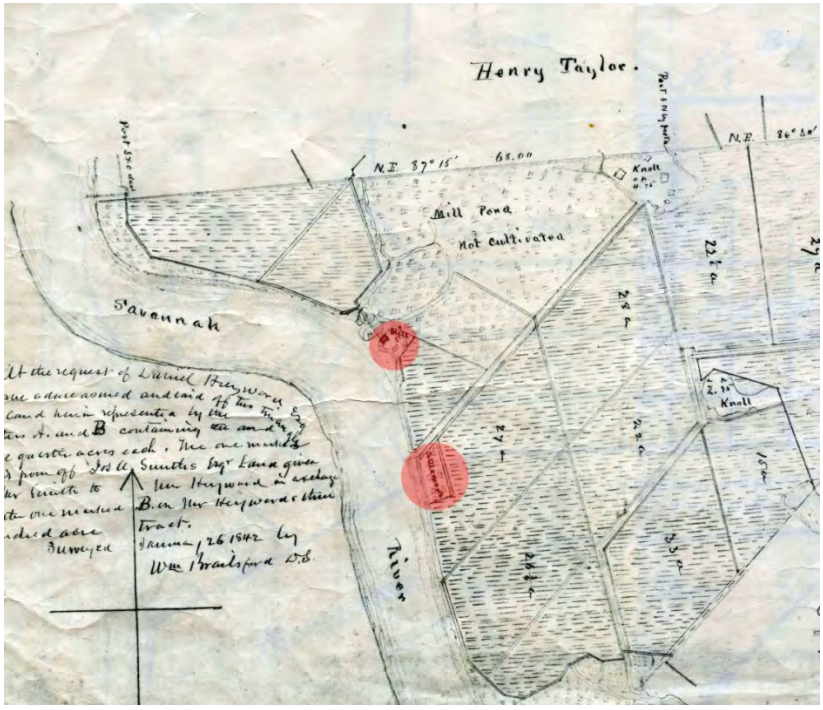


Figure 4. Section of the 1827 plat of Lower Laurel Hill formerly owned by James H. Ancrum [deceased] and then owned by Daniel Heyward. The plantation's buildings [rice mill and slave settlement] are highlighted in red.

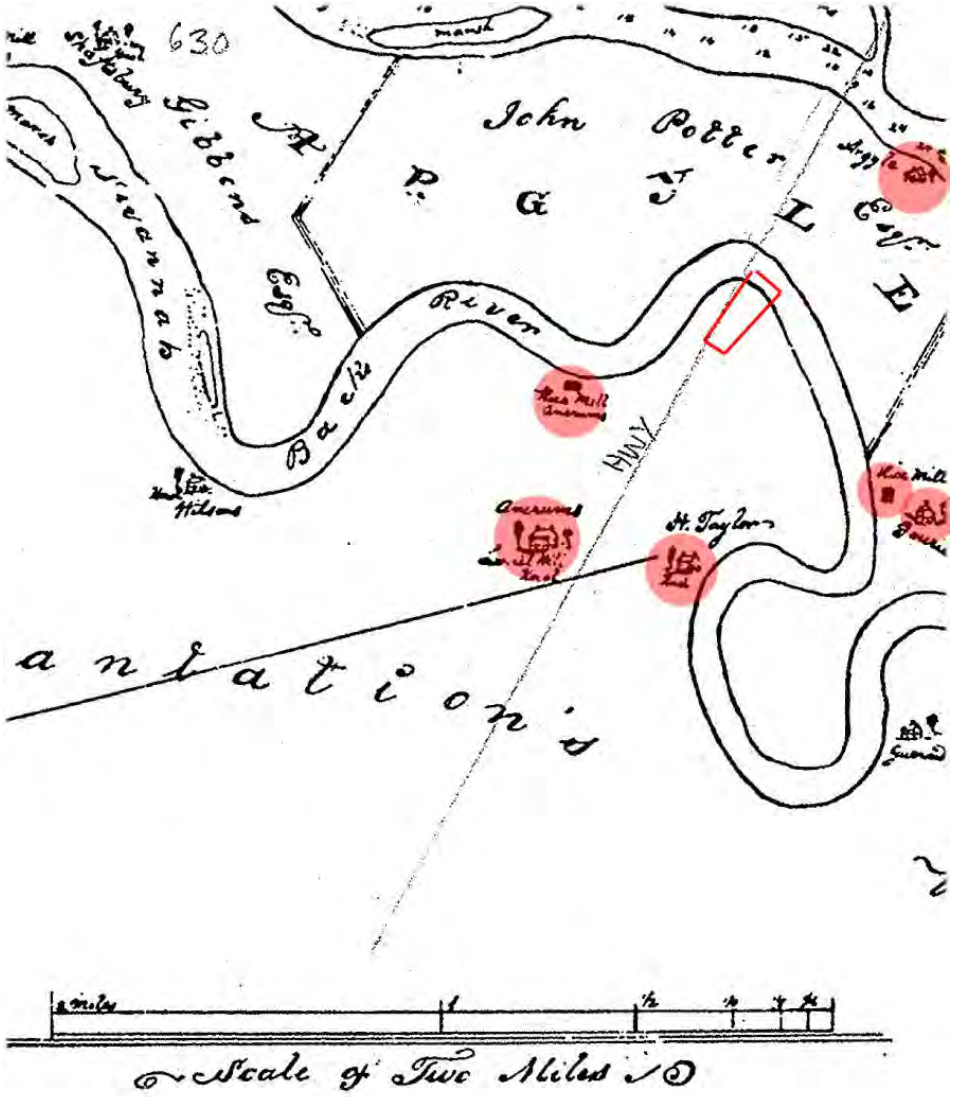


Figure 5. Section of McKinnon's 1825 depicting the land owners, rice mills, and houses located near the COE's project area, which is outlined in red.

The Taylor family still owned Upper Laurel Hill in 1875, though Lower Laurel Hill was now owned by Heyward. Taylor's overseer's house, the rice mill, slave settlement and other outbuildings were still extant. J. Potter still owned the Argyle Island Plantation opposite Laurel Hill. Manigault acquired McLauren's 300-acre Gowrie Plantation in 1833. In 1875, Gowrie's rice mill and two other structures still stood at or near their 1825 locations (Fig. 6). The 1942 Savannah, GA-SC quadrangle labelled Gowrie's rice mill as Manigaults Pounding Mill Ball.

Savannah National Wildlife Refuge was established in 1927 as a migratory bird and wildlife refuge. By 1940, its 9,086-acre core, including Argyle Island and Laurel Hill, had been acquired (Fig. 7). By 1937, the Refuge had created a managed pools or impoundments by refurbishing the former rice plantation agricultural infrastructure. The levee, which will be used to access the staging area, appears on the 1937 engineering drawings, but not the plat of the Fanny Y. Taylor tract or the 1935 map (Fig. 7-9). The 1937 drawing indicated that the levee was 12 feet in height and had a 100-foot wide spillway. The

spillway seems to have filled in by 1954 to provide better control of the pool's water levels (Refuge files).

Archaeological Sites

James et al (2013) conducted a Phase I terrestrial and underwater archaeological surveys along the Savannah, Middle, and Back Rivers. The firm's terrestrial investigations focused on the rivers' shorelines identifying a number of features associated with the area's historic rice plantations, such as trunks, bulkheads, and wharves. James et al (2013) identified six sites/features along this stretch of the Back River. Table 1 lists each site, as well as provides a brief description, the associated plantation, and National Register status. Note none of these historic plantation features are within the COE's proposed project footprint.

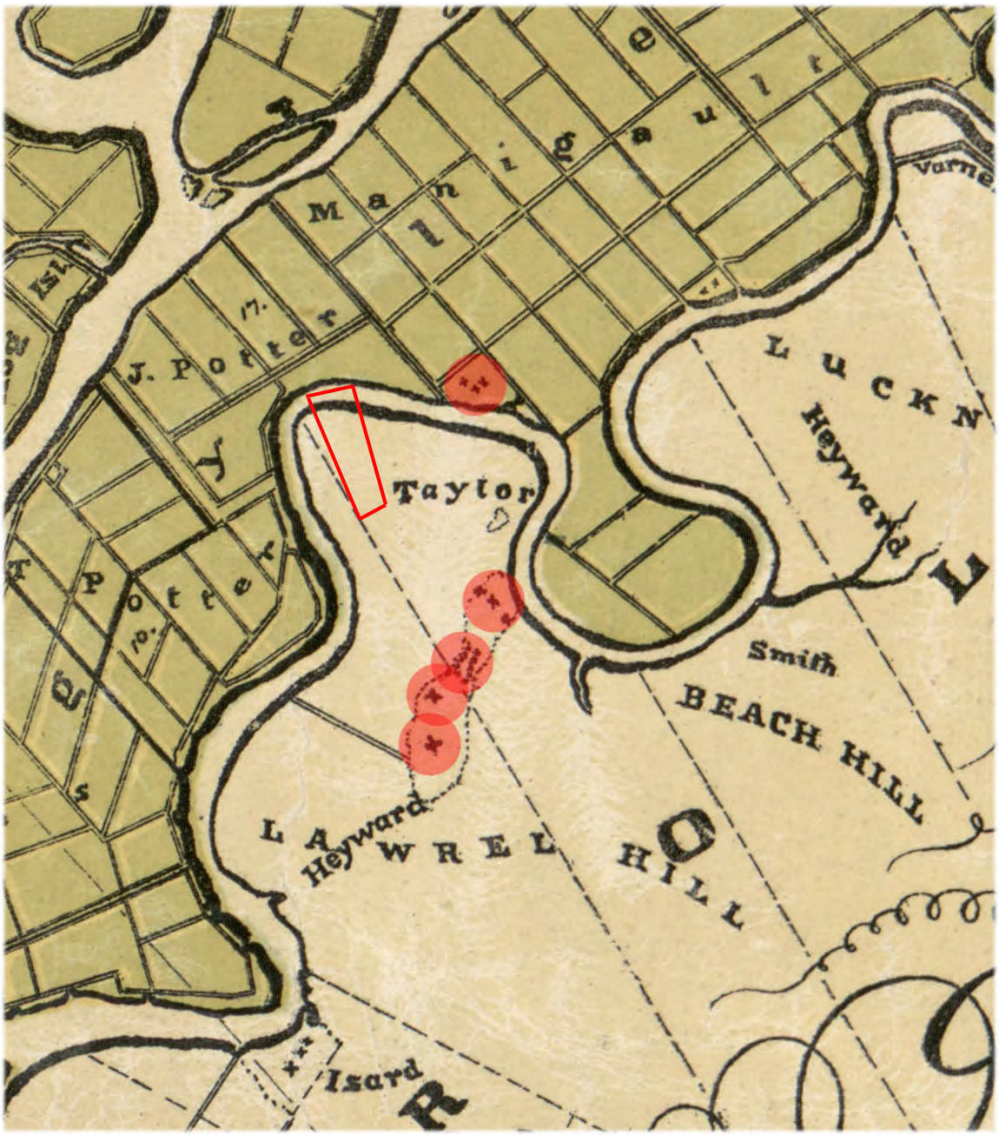


Figure 6. Section of Platen's 1875 Chatham County map showing the COE's project area [outlined in red] and nearby plantations.

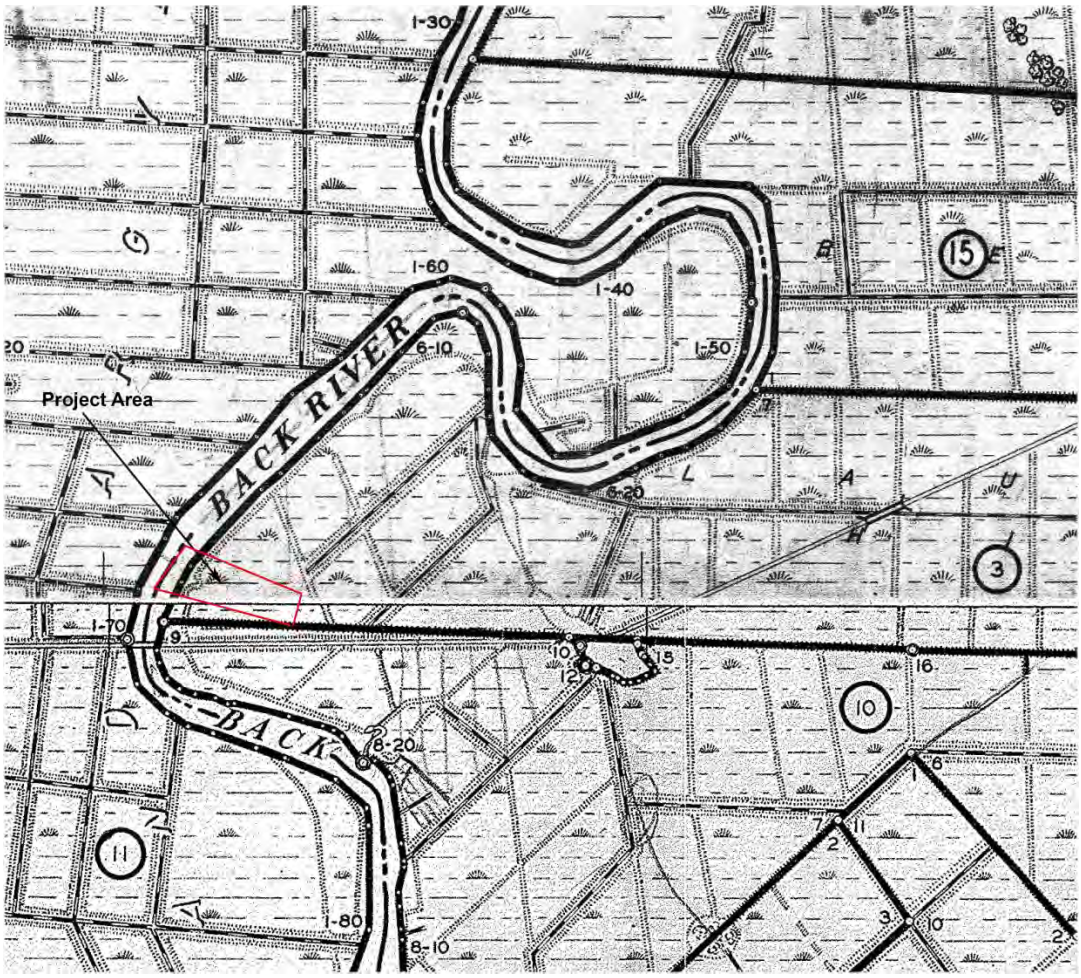


Figure 7. The Refuge's tract map, dated 1935. The former rice agricultural system, though dilapidated, is visible. The COE's project is outlined in red. SC 170 appears to run along a section of levee that originally separated Taylor's Upper Laurel Hill fields from Heyward's Lower Laurel Hill fields. The segment of levee running northeast from the highway to the perimeter dike on the Back River does not appear to exist.

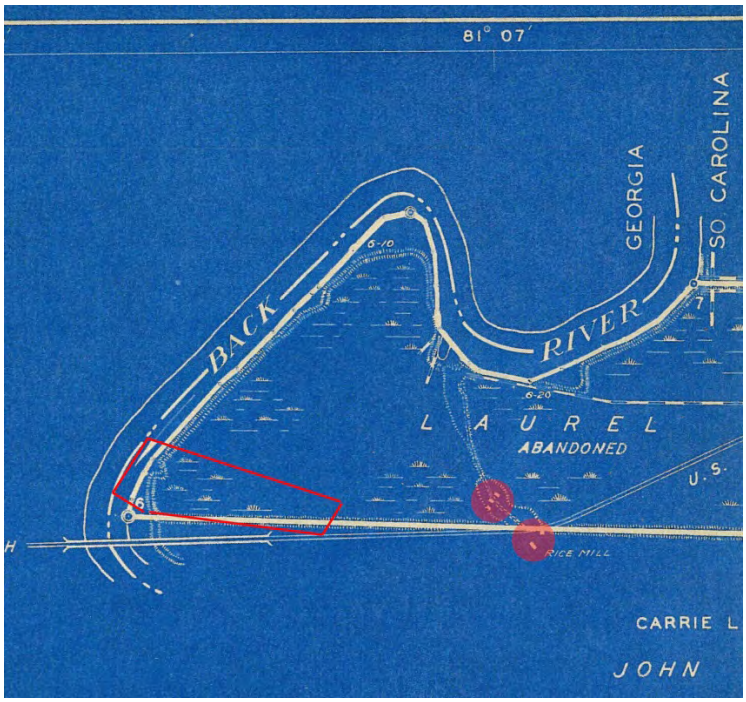


Figure 8. The western half of the Fanny Y. Taylor Tract (3) with the COE's project area outlined in red. The former or abandoned rice fields are not shown, except for the perimeter dike or levee along the Back River. The red dots identify the extant buildings, including the plantation's rice mill. By the 1930s, the rice mill had been transformed into the Rice Mill Tavern.

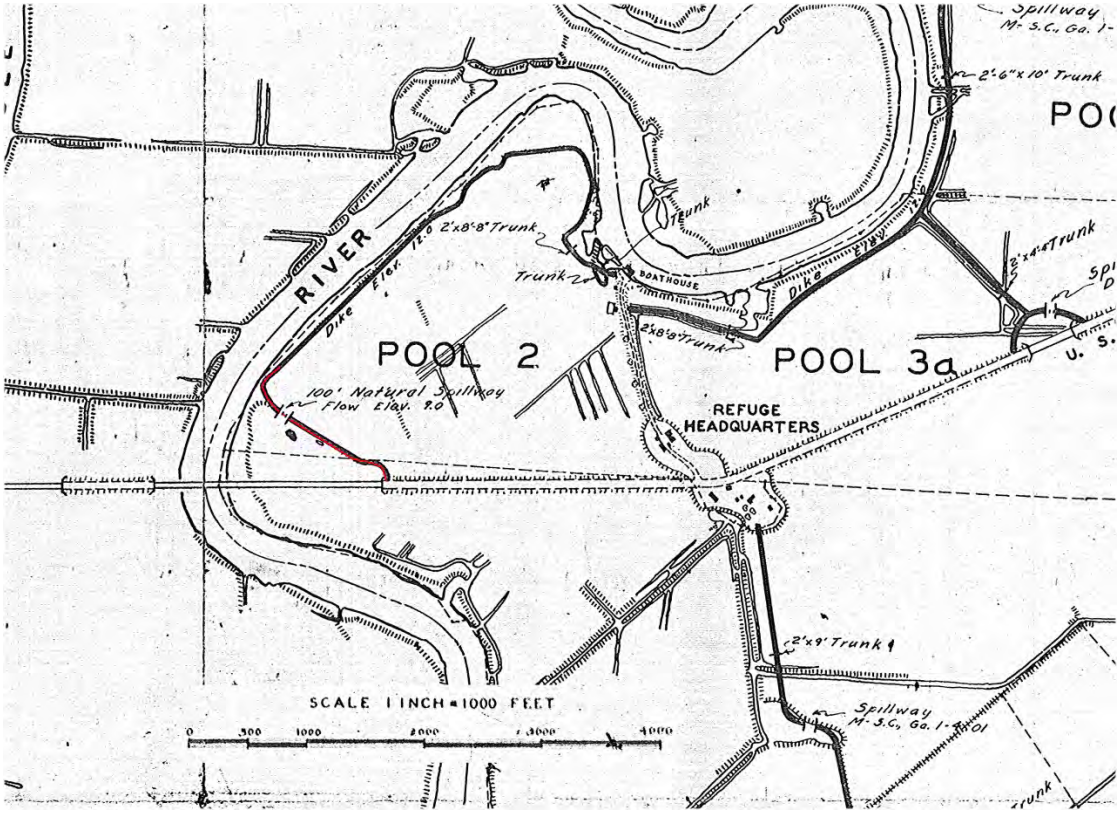


Figure 9. Section of the 1937 Refuge's engineering drawing showing recently refurbished or completed dikes around Pool 2 [later renamed Pool 6]. The COE's access is highlighted in red.

Table 1. Recorded Sites/Features located near the COE's project area.

Site No.	*Description*	*Site Size [Area]*	*Plantation*	*National Register Status*
9CH1295	Late 18th – Early 20th Century Rice Trunk	1.95 m^2	J. Potter's Argyle Plantation	Potentially Eligible
9CH1296	Late 18th – Early 20th Century Wooden Bank Reinforcement or Bulkhead	2.18 m^2	J. Potter's Argyle Plantation	Potentially Eligible
38JA1161	Late 18th – Early 20th Century Wooden Bank Reinforcement or Bulkhead	44.59 m^2	Taylor's Upper Laurel Hill	Potentially Eligible
38JA1162	Late 18th – Early 20th Century Wooden Bank Reinforcement or Bulkhead	37.16 m^2	Taylor's Upper Laurel Hill	Potentially Eligible
38JA1163	Late 18th – Early 20th Century Wooden Bank Reinforcement or Bulkhead	7.62 m^2	Taylor's Upper Laurel Hill	Potentially Eligible
38JA1164	Late 18th – Early 20th Century Wooden Bank Reinforcement Puncheons	3.66 m^2	Taylor's Upper Laurel Hill	Potentially Eligible

Summary & Recommendation

The proposed installation of the staging area, as well as use of the Refuge's perimeter dike for Pool 6 [formerly Pool 2], will have "no effect" upon any of the recorded historic properties or features. This part of the Refuge has been surveyed by Marrinan (1978) and James et al (2013). Additional archaeological investigations, as long as the COE remains within their proposed project footprint, are not recommended or warranted.

References Cited

James, Stephen R., Jr., Michael K. Faught, Andrew D.W. Lydecker, Warren Carruth, Michael C. Murray, and Matt J. Gifford

2013 ***Terrestrial and Remote Sensing Survey and Diving, Mitigation Plan 6A, Savannah Harbor Expansion Project***. Contract No. W912HN-12-D-0016, Delivery Order No. 0006. Prepared for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia by Panamerican Consultants, Inc., Memphis, Tennessee.

Marrinan, Rochelle A.

1978 ***The Cultural Resources of Savannah National Wildlife Refuge, South Carolina and Georgia*** (Two Volumes). Prepared for the U.S. Fish and Wildlife Service, Southeast Region, and the Interagency Archaeological Services, Heritage Conservation and Recreation Service, Atlanta, Georgia, by Georgia Southern College.

Savannah National Wildlife Refuge

n.d. ***Realty Files***. Savannah Coastal Refuge, Administrative Headquarters, Hardeeville, South Carolina.

U.S. Fish and Wildlife Service

n.d. ***Southeast Region Master Site Files***. Maintained at the Office of the Regional Archaeologist, Savannah Coastal Refuges, Hardeeville.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

June 12, 2017 F/SER47:CC/pw

(Sent via Electronic Mail)

Col. Marvin Griffin, Commander
Savannah District Corps of Engineers
100 W. Oglethorpe Avenue
Savannah, Georgia 31402-0889

Attention: Nathan Dayan

Dear Colonel Griffin:

NOAA's National Marine Fisheries Service (NMFS) reviewed the *Draft Supplemental Environmental Assessment (SEA)* and *Draft Finding of No Significant Impact (FONSI)* for the Savannah Harbor Expansion Project (SHEP) issued on May 23, 2017. The SEA and the FONSI focus on modification of the McCoys Cut Feature of SHEP. The NMFS Habitat Conservation Division reviewed both documents and has no objection to the proposed action (Alternative 3). This alternative includes: dredging an additional 2,600 feet within Middle River to provide the designed flows; dredging an additional four feet of depth at the mouth of Union Creek to account for potential future shoaling; using the majority of excavated sediments beneficially to create nine acres of wetlands in McCoombs Cut and Rifle Cut; and taking the remaining dredged material to either the Sediment Basin or upland Dredged Material Containment Areas. The NMFS agrees with the District's conclusion that the proposed action would have no additional impacts to EFH beyond those described in the July 2012 Final Environmental Impact Statement for SHEP.

The NMFS appreciates the opportunity to provide these comments. Please direct related correspondence to the attention of Cindy Cooksey at our Charleston Area Office. She may be reached at (843) 762-8610 or by e-mail at Cynthia.Cooksey@noaa.gov.

Sincerely,

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: COE, Nathan.S.Dayan@usace.army.mil,
SCDHEC, prestohs@dhec.sc.gov, joynercm@dhec.sc.gov
GDNR, Kelie.Moore@dnr.ga.gov, Bradley.Smith@dnr.ga.gov
F/SER3, Kay.Davy@noaa.gov
F/SER4, David.Dale@noaa.gov
F/SER47, Cynthia.Cooksey@noaa.gov

Savannah District, US Army Corps of Engineers (USACE)
Savannah Harbor Expansion Project (SHEP) McCoy's Cut
Supplemental Environmental Assessment (SEA)
US Environmental Protection Agency (EPA) Comments
June 14, 2017

Supplemental EA:

- On page 6 and throughout the SEA, the USACE discusses disposing of a portion of dredged material in the Sediment Basin, which is a feature of SHEP. The EPA notes that there is not a citation referencing the Sediment Basin that is in the SHEP Final Environmental Impact Statement (FEIS) nor is there a detailed discussion regarding the Sediment Basin. Recommendation: Because the Sediment Basin is a prominent feature of the proposed alternative, the EPA recommends the USACE better describe the Sediment Basin and its purpose within SHEP as well as provide a citation back to the SHEP FEIS.
- On page 11 (1.2.2), USACE discusses the operational limitations regarding the Houlihan Bridge, but does not discuss what those limitations are in the SEA. Recommendation: The EPA recommends the USACE briefly discuss these operational limitations and implications to the proposed alternative in the Final EA.
- On page 11 (1.2.2), the USACE briefly discusses the proposed alternative as a beneficial use; however, the USACE does not provide any specific details of how this project will improve the local ecosystem other than stating that it would provide environmental enrichment and enhance fish and wildlife conditions. Recommendation: The EPA recommends the USACE discuss how many acres will be converted from open water to wetlands and the overall significance of wetlands in the Coastal Georgia ecosystem. The EPA also recommends the USACE provide more details regarding the beneficial nature of these enhancements to include a brief discussion of aquatic and terrestrial species that would benefit (especially any threatened and endangered species).
- On page 25 (4.2), the USACE discusses environmental impacts of the proposed alternatives on wetlands. However, the USACE does not discuss the updated Clean Water Act Section 404(b)1 analysis (located in Appendix C) that was conducted for the SEA. Recommendation: The EPA recommends the USACE discuss the findings of the updated 404(b)1 analysis and provide a reference of the 404(b)1 analysis located in Appendix C.
- On page 33 (4.10), the USACE discussed the environment impacts of the proposed alternatives on water quality, but does not discuss the 401 water quality certification that was developed for the SEA (Appendix Z). Recommendation: The EPA recommends the USACE discuss the 401 water quality certification and make reference to its location in Appendix Z.
- The EPA notes that there is no proposed monitoring or adaptive management plan for the conversion of McCoy's and Rifle Cuts into wetlands. Will there be any post-construction monitoring to ensure that wetlands species have established? EPA also notes that there are no performance standards or success criteria for the creation of the wetlands. Without

performance standards and success criteria, how will the USACE know that the wetlands creation effort is developing as planned or has reached a targeted level of success? Recommendation: The EPA recommends that USACE develop a monitoring and adaptive management plan that will outline post-construction performance standards, a post construction monitoring schedule, criteria by which success will be determined, protocols for sharing data with appropriate resource agencies, etc. Additionally, the EPA recommends the USACE include the monitoring and adaptive management plan within the Final EA and commit to the monitoring and adaptive management plan within the Finding of No Significant Impact (FONSI).

From: Dayan, Nathan S CIV USARMY CESAS (US)
To: Armetta, Robin E CIV USARMY CESAS (US)
Subject: FW: GaEPD Comments per McCoys Cut Draft Supplemental EIS (UNCLASSIFIED)
Date: Thursday, June 22, 2017 11:27:20 AM

CLASSIFICATION: UNCLASSIFIED

Thank you
Nathan Dayan
Environmental Team Leader
USACE - Savannah District
912-652-5172

-----Original Message-----
From: Wiedl, Stephen [mailto:Stephen.Wiedl@dnr.ga.gov]
Sent: Thursday, June 22, 2017 10:41 AM
To: Dayan, Nathan S CIV USARMY CESAS (US) <Nathan.S.Dayan@usace.army.mil>; BAILEY, William G CIV USARMY CESAS (US) <William.G.Bailey@usace.army.mil>
Cc: Larson, Jeff <Jeff.Larson@dnr.ga.gov>; Weinstein, Bennett <Bennett.Weinstein1@dnr.ga.gov>; Smith, Bradley <Bradley.Smith@dnr.ga.gov>; Stockton, Jenna <jenna.stockton@dnr.ga.gov>; Moore, Kelie <Kelie.Moore@dnr.ga.gov>; Letosky, Melissa <melissa.letosky@dnr.ga.gov>
Subject: [Non-DoD Source] GaEPD Comments per McCoys Cut Draft Supplemental EIS

GaEPD has reviewed the subject McCoys Cut Draft Supplemental EIS document as circulated by Savannah USACE Planning Branch. The proposed adjustments to the original McCoys Cut plan include: a 2600' lengthening of the Middle River channel reach to be dredged; utilization of dredge material produced to backfill existing open water channels at Riffle Cut and McCoombs Cut (Little Back River) as to foster establishment of restored wetland terrain; placement of certain remaining dredge material in the Federal Sediment Basin (at Savannah Back River) and/or in approved Dredged Material Containment Areas; and, preparation of a contractor access area within a small footprint of USFWS Savannah National Wildlife Refuge for the purpose of logistics and transport of project material and supplies.

We find that the proposed project adjustments comprise essentially modifications of the extent, magnitude and certain accessory aspects of the concept as originally put forth in the FEIS. The fundamental intent and effect of the McCoys Cut project was and continues to be the enhancement of freshwater flows into existing wetland terrain, as to minimize/avoid the effects of upriver salinity migration. Accordingly we comment that the project adjustments appear to be appropriate and reasonable.

Stephen C. Wiedl, PWS
Manager - Wetlands Unit
Georgia Environmental Protection Division
7 Martin Luther King, Jr. Drive, Suite 450
Atlanta, GA 30334

404-452-5060
Stephen.Wiedl@dnr.ga.gov <mailto:Stephen.Wiedl@dnr.ga.gov>

From:	Wikoff, Bill
To:	Dayan, Nathan S CIV USARMY CESAS (US)
Cc:	Andrews, Jill; Anthony Sowers; Arega, Feleke; BAILEY, William G CIV USARMY CESAS (US); Booth, Elizabeth; Bradley smith (Bradley.Smith@dnr.ga.gov); Chuck Hayes; Claude Jackson (CJackson@dot.ga.gov); Cynthia Cooksey (Cynthia.Cooksey@noaa.gov); Felicia Sanders; Heather Preston (prestohs@dhec.sc.gov); Higgins, Jamie; hmoorer@gaports.com; Holliman, Daniel; Holly Gaboriault; Jeff Larson; Jennifer Welte; Kay Davy; Moore, Kelie; Pace.Wilber@noaa.gov; Parkin Hunter; "Paul Lamarre" (E-mail); perryb@dnr.sc.gov; rlowell@willoughbyhoefer.com; Russell Webb; Shaw_Davis@fws.gov; Somerville, Eric; Trey Daniell (rdaniell@dot.ga.gov); Wade Cantrell; wendtp@dnr.sc.gov; Williams, Blair N.; Joyner, Curtis; Wimberly, Taylor L CIV USARMY CESAS (US); Davis, Spencer W CIV USARMY CESAS (US); Armetta, Robin E CIV USARMY CESAS (US); Donald Imm; wdmossjr@gmail.com
Subject:	[Non-DoD Source] Comments: SHEP -McCoys Cut dSEA
Date:	Thursday, June 22, 2017 10:48:51 AM

The Savannah District, U.S. Army Corps of Engineers (USACE), has prepared a Draft Supplemental Environmental Assessment (dSEA) to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). On May 23, 2017, the Corps, by email requested comments on the dSEA and by letter requested our review under the Endangered Species Act (ESA) and the Fish and Wildlife Coordination Act.

The proposed action would extend the dredging area within Middle River to ensure sufficient freshwater flow to intended areas, as well as save space in the upland DMCA sites by reusing some of the dredged sediments. The reused sediments would create wetland habitat rather than going into approved upland DMCA sites.

The dSEA does not indicate that the changes proposed would change the impacts to listed species. The dSEA states that manatee conditions would be implemented to minimize the impacts to manatees. This is no change from the SHEP final EIS. The proposed project changes described in the dSEA do not change our ESA section 7 concurrence.

The majority of the work will be on the Savannah National Wildlife Refuge (refuge) or may affect it. The refuge may send additional comments on the dSEA.

Bill Wikoff fish and wildlife biologist

bill_wikoff@fws.gov
U.S. Fish and Wildlife Service
Ecological Services - Coastal Georgia Sub Office
4980 Wildlife Drive, NE
Townsend, Georgia 31331
912-832-8739 ext.5, 912-832-8744 fax

On Tue, May 23, 2017 at 2:09 PM, Armetta, Robin E CIV USARMY CESAS (US) <Robin.E.Armetta@usace.army.mil> wrote:

> Good Afternoon!
>
> Please see attached Joint Public Notice/Notice of Availability of a Draft Supplemental Environmental Assessment to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). The changes consist of the following:

(1) dredge an additional 2,600 feet in Middle River (stations 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide the required flows. An additional four feet of dredging depth is also proposed at the mouth of Union Creek to account for potential future shoaling,

(2) using the majority of excavated sediments beneficially to create wetlands in both McCoombs (western arm of McCoys Cut) and Rifle Cuts to enhance fish and wildlife habitat, and

(3) taking the remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River to either the Sediment Basin or to existing upland Dredged Material Containment Areas (DMCA).

I have also included a combined PDF of the draft report, draft FONSI, and appendices for your review. Comments will be received at the Savannah District Office until June 26, 2017.

Sincerely,
Robin

Robin Armetta
Biologist
USACE, Savannah District, Planning Branch
Phone: 912-652-6148
Email: Robin.E.Armetta@usace.army.mil

South Carolina Department of
Natural Resources

PO Box 12559
Charleston, SC 29422
843.953.9305 Office
843.953.9399 Fax
WendtP@dnr.sc.gov

Alvin A. Taylor
Director
Robert D. Perry
Director, Office of
Environmental Programs

June 26, 2017

Colonel Marvin L. Griffin
U.S. Army Corps of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah, Georgia 3140

ATTN: Mr. Nathan Dayan
Mr. William G. Bailey
Planning Division

RE: Draft Supplemental Environmental Assessment (SEA) and
Draft Finding of No Significant Impact (FONSI)
Savannah Harbor Expansion Project (SHEP)
Modification of McCoys Cut Feature
Chatham County, GA and Jasper County, SC

Dear Colonel Griffin:

The South Carolina Department of Natural Resources (SCDNR) has reviewed the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for the proposed modification referenced above and offers the following comments for your consideration.

Background: The Savannah District, U.S. Army Corps of Engineers (USACE) proposes to modify certain features of the flow rerouting plan for McCoys Cut as originally described in the Savannah Harbor Expansion Project (SHEP) Final Environmental Impact Statement (FEIS). The original flow rerouting plan was designed to increase freshwater flows into the upper estuary in order to limit salt water intrusion and reduce salinity impacts from SHEP to freshwater and brackish wetlands. The USACE has determined that additional dredging in the upper Middle River will be required to achieve the intended freshwater flow volume. The Draft SEA discusses this

and several other proposed modifications to the McCoys Cut mitigation plan as described below.

Proposed Modifications: The Draft SEA evaluates several alternatives for modifying the McCoys Cut mitigation plan. The USACE's preferred alternative (Alternative 3) includes the following proposed changes: (1) dredging an additional 2,600 feet within the Middle River (stations 58+00 to 84+00) to a depth of -7 feet mean lower low water (MLLW) to provide the designed flows; (2) dredging four feet deeper than originally planned at the mouth of Union Creek, within the previously approved footprint, to account for potential future shoaling; (3) beneficially using the majority of excavated sediments to create a total of approximately nine acres of vegetated wetlands in McCoombs Cut and Rifle Cut to enhance fish and wildlife habitat; and (4) taking the remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of the Middle and Little Back rivers to either the Sediment Basin or to the approved upland Dredged Material Containment Areas (DMCAs). In addition, the USACE proposes to construct a temporary platform and access road to facilitate construction of the diversion structure at McCoys Cut.

As stated in the Draft SEA, the proposed beneficial use of dredged material to create wetlands in McCoombs and Rifle cuts would also reduce project costs and maintain capacity in the existing DMCAs for Operations and Maintenance (O&M) and new work sediments. It should be noted that both cuts are man-made open-water features that, under the currently approved plan, will be "plugged" at one end using concrete rubble and rock to minimize the flow of saline waters from the Savannah River into the Middle, Back, and Little Back rivers.

Comments: Overall, SCDNR does not object to the proposed modifications. Although our agency does not typically condone open-water disposal of dredged material or the conversion of one wetland type to another, SCDNR supports the proposed beneficial use of dredged material to create vegetated wetlands in this case, since both McCoombs Cut and Rifle Cut are man-made features that will be plugged as part of the flow rerouting plan regardless of which alternative is selected. Nevertheless, SCDNR does have some concerns regarding the proposed modifications, which are described below.

1) The sediments to be dredged and used to create vegetated wetlands within McCoombs Cut and Rifle Cut are described in the SEA as either "coarse sand" or "medium to coarse sands with little to trace fines and organics". SCDNR is concerned that predominantly sandy sediments may not have sufficient organic matter or nutrients to support wetland vegetation. Unless the proposed marsh creation areas remain inundated throughout each tidal cycle, sandy sediments will also be less likely than fine grained sediments to retain sufficient moisture to support the survival and growth of wetland species. The Final SEA should explain how these issues will be addressed.

2) The Joint Public Notice for the proposed action lists several potential plant species "that will be planted on the edge of the newly created wetlands" and states that "The rest of the created wetland habitat will mature and fill in by the second full growing season." In order to verify this assertion and evaluate the success of the proposed beneficial use, SCDNR recommends that detailed design, construction, monitoring, and adaptive management plans be developed for each of the two proposed wetland creation areas. Greater detail regarding target elevations and proposed plantings (i.e., final selection of plant species, planting density, and total area to be planted) should be included in each plan.

3) The proposed modification includes the installation of a temporary pile-supported platform on the edge of the existing tidal wetland and the Back River, impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. In addition, improvements to the dike leading to the new platform would impact approximately 0.23 acres of managed wetlands. Following construction, all wetlands impacted by this temporary structure and access road should be restored to pre-construction elevations and replanted with appropriate species.

4) In addition to extending the length of dredging in the Middle River, the USACE proposes to increase the depth of dredging at the mouth of Union Creek by four feet to account for anticipated shoaling in this area. The Draft SEA does not specify what the original design depth or newly proposed depth would be for this reach of Union Creek, or how increasing the depth of dredging might affect water quality, particularly dissolved oxygen, in this reach. The Final SEA should include a discussion of these issues.

Provided the concerns described above are adequately addressed in the Final SEA, SCDNR would concur that the proposed modifications are unlikely to have a significant adverse effect on fish, wildlife, or their habitats, and may in fact have a beneficial effect on fish and wildlife through the use of suitable dredged material to create vegetated wetland habitat. SCDNR appreciates the opportunity to comment on the Draft SEA and FONSI for proposed modifications to the McCoys Cut mitigation feature. If you have any questions regarding these comments, please contact me by phone (843-953-9305) or by e-mail (wendtp@dnr.sc.gov).

Sincerely,

Priscilla H. Wendt

Priscilla H. Wendt
Office of Environmental Programs

Cc: SRMC
SCDHEC/EQC
SCDNR/OCRM
NOAA/ NMFS
USFWS
USEPA
GADNR

From: Dayan, Nathan S CIV USARMY CESAS (US)
To: Armetta, Robin E CIV USARMY CESAS (US)
Subject: FW: [Non-DoD Source] Comments on Draft Supplemental EA and FONSI (UNCLASSIFIED)
Date: Thursday, July 06, 2017 2:49:10 PM

CLASSIFICATION: UNCLASSIFIED

Thank you
Nathan Dayan
Environmental Team Leader
USACE - Savannah District
912-652-5172

-----Original Message-----
From: Hayes, Chuck [mailto:chuck_hayes@fws.gov]
Sent: Monday, June 26, 2017 7:38 AM
To: Dayan, Nathan S CIV USARMY CESAS (US) <Nathan.S.Dayan@usace.army.mil>; Williams, Laura E CIV USARMY CESAS (US) <Laura.E.Williams@usace.army.mil>; BAILEY, William G CIV USARMY CESAS (US) <William.G.Bailey@usace.army.mil>; Wimberly, Taylor L CIV USARMY CESAS (US) <Taylor.Wimberly@usace.army.mil>
Cc: Holly Gaboriault <holly_t_gaboriault@fws.gov>; Davis, Shaw <shaw_davis@fws.gov>; Russell Webb <russell_webb@fws.gov>; Bill Wikoff <bill_wikoff@fws.gov>; Billy Harris <billy_harris@fws.gov>; Donald Imm <donald_imm@fws.gov>
Subject: [Non-DoD Source] Comments on Draft Supplemental EA and FONSI

Dear Nathan:

Please accept the following comments from the Savannah National Wildlife Refuge in response to the Draft Supplemental Environmental Assessment and Finding of No Significant Impact (dSEA) evaluating changes to the McCoy's Cut flow re-routing feature of the Savannah Harbor Expansion Project, May 23, 2017.

1. The dSEA states the Savannah NWR is 29,175 acres. The current accepted acreage is 29,450.

2. We have some questions concerning the extension of the dredging operations across the newly discovered shoal downstream of the original 5,800' section identified in the SHEP EIS.

a. The following sentence is confusing and needs clarification as it appears to pertain to the 2,600' extension – "That plan included dredging Middle River for a distance approximately 5,800 feet downstream of the confluence with Little Back River. Recent bathymetric data indicates this channel segment would not create a large shoal in Middle River just downstream of the approved dredging template." The paragraph goes on to state "By extending the dredging template across this shoal, the deepened channel would connect to the deeper depths downstream of the shoal." We realize the Corps only learned of this shoal through recently acquired bathymetric surveys. What do you mean by "not create a large shoal in Middle River just downstream?" Are you referring to after the additional dredging a shoal would not be created?

b. As stated in the dSEA, the purpose of the 2,600' extension is to increase the flow of freshwater down Middle River and meet the goals of the SHEP EIS. Furthermore, the dSEA goes on to state "Without additional dredging, freshwater flow down Middle River would likely be restricted." We were wondering if restricting flow upstream would not serve a similar purpose albeit the lower half of Middle River may be unduly inundated by saline water. If the shoal were removed to allow an increase in freshwater flow down the entire length of Middle River, would

to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figures 2 and 3), rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. Approximately nine acres of wetlands would be created using the dredged sediments from the project. The material dredged from the Middle and Little Back Rivers would be placed behind the cut closure structures to an elevation suitable for wetland creation. These new deposition sites are within the boundary of the Savannah National Wildlife Refuge. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion while vegetation establishes naturally along most of the length of the cuts. Potential plant species that will be planted on the edge of the newly created wetlands include; River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*). The rest of the created wetland habitat will mature and fill in by the second full growing season. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. The dredged sediment would be transported either mechanically or hydraulically. Additionally, with logistical concerns in using the Houlihan Bridge (S. C. 170) during construction, a temporary pile-supported platform would be installed on the edge of the existing causeway (off S. C. 170 and the Back River Bridge), tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Upland areas of disturbance will consist of 1.20 of a 1.50 acre site and is subject to State of South Carolina NPDES Stormwater permitting. Improvement to the dike leading to the new platform would be completed, impacting approximately 0.23 acres of managed wetlands. This platform is expected to be in place for the duration of the construction timeframe, which is estimated to be approximately one year and would be removed after construction has been completed.

SCDHEC OCRM Decision, SCCZMP Enforceable Policies and Conditions:

Pursuant to 15 C.F.R. § 930., subpart C SCDHEC OCRM ***concurs*** with the District's determination that the project is consistent to the maximum extent practicable with the enforceable polices of the SCCZMP based upon additional Environmental Design Commitments specified in the Draft FONSI received by this office on July 21, 2017.

Applicable Enforceable Policies of the SCCZMP: Guidelines for Evaluation of All Projects as well as the (1) Marine Related Facilities *(Docks),* (2) Dredging *(Dredging and Spoil Disposal),* and (3) Activities in Areas of Special Resource Significance *(Public Open Spaces and Wetlands)* policies contained in the SCCZMP.

This letter does not alleviate the District's responsibility to obtain other required local, state or federal approvals for the work described above. Please do not hesitiate to contact me should you have any questions.

Sincerely,

Curtis M. Joyner
Manager, Coastal Zone Consistency Section
DHEC OCRM
1362 McMillan Avenue, Suite 400
Charleston, SC 29405
843-953-0205
joynercm@dhec.sc.gov

cc: Elizabeth von Kolnitz, SCDHEC OCRM
Heather Preston, SCDHEC BOW
Chuck Hightower SCDHEC BOW
Mark Giffin, SCDHEC BOW
Shannon Hicks, SCDHEC BOW

Appendix H

Environmental Compliance Documentation

- **South Carolina, Department of Health and Environmental Control, Coastal Zone Management concurrence letter**
- **Georgia, Department of Natural Resources, Coastal Resources Division, Coastal Zone Management concurrence letter**
- **South Carolina, Department of Health and Environmental Control, Section 401 Water Quality Permit**
- **Savannah River Maritime Commission Navigable Waters Permit**
- **South Carolina, Department of Health and Environmental Control, Erosion and Sedimentation Control Permit**
- **South Carolina, Department of Transportation, Encroachment Permit**
- **Georgia Department of Natural Resources, Environmental Protection Division, 401 Water Quality Certificate email**

July 24, 2017

Colonel Marvin Griffin
United States Army Corps of Engineers, Savannah District
100 West Oglethorpe Avenue
Savannah, GA. 31401-3604

Attn: Mr. William G. Bailey, Chief Planning Branch

Re: Federal Consistency Determination – SAC-2010-SHEP, SCDHEC OCRM ID's # CZC-17-0602; NPDES ID # SCR10BQ44, CZC-17-0702

Dear Col. Griffin:

Thank you for coordinating with South Carolina's Department of Health and Environmental Control, Ocean and Coastal Resources Management (SCDHEC OCRM) on the above referenced project pursuant to pursuant to 15 C.F.R. § 930 Subpart C, Federal Consistency regulations associated with the Coastal Zone Management Act of 1972 (CZMA) as amended. Under the CZMA, federal Agency activities which may have reasonably likely effects on any land or water use or natural resource of the coastal zone, regardless of the location, must be consistent to the maximum extent practicable with the enforceable policies of the State's federally-approved S. C. Coastal Zone Management Program (SCCZMP).

SCDHEC OCRM is in receipt of the Consistency Determination dated May 26, 2017, for the U.S. Army Corps of Engineers (USACE), Savannah District draft Supplemental Environmental Assessment (SEA) and Coastal Zone Consistency Concurrence to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). The request is submitted as a modification to the original SHEP project that SCDHEC OCRM found conditionally consistent on September 30, 2011 and again on June 5, 2013. This certification is issued for this project at this time and should not be considered an ongoing certification.

Project Description:

The proposed action consists of dredging an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide required flows. Within the SEA, Figure 1 shows the location of additional dredging reach in Middle River. Figure 2 shows the additional dredging reach along with locations of the proposed beneficial use placement sites. The green, orange, and blue colors shown on Figure 1 indicate areas covered by the FEIS (approximately 3.1 miles of dredging and 315,000 cubic yards of dredged material). The area in white shown on Figure 1 indicates new work being proposed (approximately 2,600 feet of additional dredging, about 24,000 cubic yards). In addition dredging an additional 4 feet at the mouth of Union Creek (also shown on Figure 1 and 2) is proposed to account for potential future shoaling. This additional depth remains within the same footprint, but would be four feet deeper for a distance of approximately 1,360 feet. A large portion of the sediment removed as part of the project would be used beneficially

to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figures 2 and 3), rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. Approximately nine acres of wetlands would be created using the dredged sediments from the project. The material dredged from the Middle and Little Back Rivers would be placed behind the cut closure structures to an elevation suitable for wetland creation. These new deposition sites are within the boundary of the Savannah National Wildlife Refuge. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion while vegetation establishes naturally along most of the length of the cuts. Potential plant species that will be planted on the edge of the newly created wetlands include; River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*). The rest of the created wetland habitat will mature and fill in by the second full growing season. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. The dredged sediment would be transported either mechanically or hydraulically. Additionally, with logistical concerns in using the Houlihan Bridge (S. C. 170) during construction, a temporary pile-supported platform would be installed on the edge of the existing causeway (off S. C. 170 and the Back River Bridge), tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Upland areas of disturbance will consist of 1.20 of a 1.50 acre site and is subject to State of South Carolina NPDES Stormwater permitting. Improvement to the dike leading to the new platform would be completed, impacting approximately 0.23 acres of managed wetlands. This platform is expected to be in place for the duration of the construction timeframe, which is estimated to be approximately one year and would be removed after construction has been completed.

SCDHEC OCRM Decision, SCCZMP Enforceable Policies and Conditions:

Pursuant to 15 C.F.R. § 930., subpart C SCDHEC OCRM ***concurs*** with the District's determination that the project is consistent to the maximum extent practicable with the enforceable polices of the SCCZMP based upon additional Environmental Design Commitments specified in the Draft FONSI received by this office on July 21, 2017.

Applicable Enforceable Policies of the SCCZMP: Guidelines for Evaluation of All Projects as well as the (1) Marine Related Facilities *(Docks),* (2) Dredging *(Dredging and Spoil Disposal),* and (3) Activities in Areas of Special Resource Significance *(Public Open Spaces and Wetlands)* policies contained in the SCCZMP.

This letter does not alleviate the District's responsibility to obtain other required local, state or federal approvals for the work described above. Please do not hesitiate to contact me should you have any questions.

Sincerely,

Curtis M. Joyner
Manager, Coastal Zone Consistency Section
DHEC OCRM
1362 McMillan Avenue, Suite 400
Charleston, SC 29405
843-953-0205
joynercm@dhec.sc.gov

cc: Elizabeth von Kolnitz, SCDHEC OCRM
Heather Preston, SCDHEC BOW
Chuck Hightower SCDHEC BOW
Mark Giffin, SCDHEC BOW
Shannon Hicks, SCDHEC BOW

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. 'SPUD' WOODWARD
DIRECTOR

July 25, 2017

Mr. Nathan Dayan
Environmental Resources, Savannah District USACE
100 West Oglethorpe Avenue
Savannah, Georgia 31401-0889

RE: Coastal Zone Management Act Federal Consistency Determination DSEA Modifications to McCoys Cut Flow Re-Routing Mitigation Feature for SHEP

Dear Mr. Dayan:

Staff of the Georgia Coastal Management Program (The Program) have reviewed a May 23, 2017 consistency determination, joint public notice, and draft supplemental environmental assessment (DSEA, May 2017), received May 26, 2017, to modify the previously-approved Savannah Harbor Expansion Project (SHEP) Mitigation Flow Re-Routing Plan. The previously-approved re-routing plan includes dredging 800 lf in McCoys Cut; 10,300 lf in Little Back River; and 5,800 lf in Middle River. The proposed modifications include extending the Middle River dredging by 2,600 lf to -7 MLLW (an additional 24,000 cy); dredging approximately 1,360 lf of Little Back River 4' deeper at the mouth of Union Creek; using the majority of excavated sediments beneficially to create 9 acres of intertidal wetlands in McCoombs Cut (western arm of McCoys Cut) and Rifle Cuts to an elevation of +8 to +8.5' MLLW; and taking the remaining balance of approximately 100,000 cy of coarse sand from the upper reaches of Middle and Little Back River to either the Sediment Basin or to an existing upland DMCA.

The Georgia-South Carolina border runs through the center of McCoombs Cut, so only the southern half of the fill in that cut will be within the State of Georgia. A total of 19,500 lf (3.7 miles) of creeks will be dredged and 315,000 cy of material removed. There is no change in the method or timing of dredging or the design of the diversion structure or the rock plugs. Construction will still take place from barges to minimize impacts to adjacent lands.

The Proposed Alternative 3 described above varies only slightly from Alternative 2 where the remaining balance of approximately 100,000 cy of coarse sand would go only to the Sediment Basin, which requires filling in as part of the SHEP overall project. The River and Harbors Development Act (O.C.G.A. § 52-9-1 and § 52-9-2) requires beneficial use of beach quality sand when feasible and is an enforceable policy of The Program. Additionally, the Act requires an estimation of the increased cost in beneficially using dredge material before that option can be discarded. Alternative 2 incorporates beneficial use aspects that would further both the State and Federal interest in keeping material within the system and the State supports selection of

Alternative 2 if economically feasible. The stated rationale for selecting Alternative 3 over Alternative 2 is a potential reduction in cost from allowing the contractor flexibility to place the remaining balance of dredged materials at either an approved DMCA site or within the Sediment Basin. The potential increased cost of Alternative 2 should be factually determined or estimated before Alternative 3 is selected as the Preferred Alternative. Additionally, Alternative 3 has the indirect cost to the ecosystem of permanently removing beach quality sands from the system which should be incorporated into the federal standard when possible in comparing total cost between alternatives.

The Program requests the Corps isolate the cost differences, if any, between Alternative 2 and Alternative 3 and re-evaluate the Preferred Alternative. The Program concurs that this project has been designed to comply with the enforceable policies of the Georgia Coastal Management Program and that it is consistent to the maximum extent practicable. Please contact Kelie Moore or me if we can be of additional assistance.

Sincerely,

Jill Andrews
Chief, Coastal Management Section

SW/km

dhec
Healthy People. Healthy Communities.

February 5, 2018

US Army Corps of Engineers Savannah District
100 W Oglethorpe Ave
Savannah GA 31401-3604

Re: Certification in Accordance with Section 401 of the Clean Water Act, as amended.

US Army Corps of Engineers Savannah District
Modification of McCoys Cut Flow Re-routing Feature of the Savannah Harbor Expansion Project (SHEP)
McCoombs Cut, Little Back River and Union Creek
Jasper County
P/N 2010 SHEP

Dear Sir or Madam:

South Carolina Department of Health and Environmental Control (DHEC) staff have reviewed plans for this project and determined there is a reasonable assurance that the proposed project will be conducted in a manner consistent with the Certification requirements of Section 401 of the Federal Clean Water Act, as amended. In accordance with the provisions of Section 401, we certify that this project, subject to the indicated conditions, is consistent with applicable provisions of Section 303 of the Federal Clean Water Act, as amended. We also hereby certify that there are no applicable effluent limitations under Sections 301(b) and 302, and that there are no applicable standards under Sections 306 and 307.

This certification is subject to the following conditions:

1. The Savannah Corps is authorized to dredge an additional 2,600 feet within the Middle River (station 58+00 to 84+00) to -7 feet MLLW.

2. The Savannah Corps is authorized to dredge an additional four (4) feet deeper than the depth previously-approved for a distance of approximately 1,360 feet at the mouth of Union Creek.

3. The Savannah Corps is authorized to create a plug, using rock or concrete, at the western ends of both McCoombs Cut (at an approximate base width of 80 feet) and Rifle Cut (at an approximate base width of 100 feet) to a respective

depth of +11 feet MLLW. The Savannah Corps is further authorized to armor the eastern ends of McCoombs and Rifle Cuts with rock to a level of _5 feet MLLW. Once the cut closure plug structures are constructed and functioning, the Savannah Corps is authorized to deposit a portion of the additional sediment generated through the dredging activities authorized herein within McCoombs and Rifle Cuts behind the cut closure structures to an elevation of not more than +8.5 feet MLLW, suitable for wetland creation. Once filled the Savannah Corps is required to guard against the erosion of these created wetland areas through the means and materials described in the SEA.

4. The Savannah Corps is authorized to place the remaining balance of the additional sediment generated through the dredging activities in the existing upland DMCAs or the Sediment Basin under the plan approved under the SEA.

5. All necessary measures must be taken to prevent oil, tar, trash, debris and other pollutants from entering the adjacent waters or wetlands during construction.

6. All spoil, dredged material, or other fill material must be tested on a regular basis to ensure the quality of the material disposed of consistent with the Inland Testing Manual, as amended or revised. U.S. Envtl. Protection Agency and U.S. Army Corps of Eng'rs. Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. - Testing Manual, EPA-823-B-98-004 (Feb. 1998).

7. No spoil, dredged material, or any other fill material may be paced below the mean high water or ordinary high water elevation, unless specifically authorized herein.

8. Spoil materials must be properly contained and managed to prevent the discharge of silt-laden water into adjacent waters.

9. Once the work consisting of the approved modifications of McCoombs and Rifle Cuts is initiated, the Savannah Corps must carry said work to completion in an expeditious manner in order to minimized the period of disturbance to the environment.

10. Should the amount of sediment material from the Middle River prove insufficient to complete the authorized deposition within McCoombs and Rifle Cuts and creation of new wetland habitats, the Savannah Corps must fulfill the project with dredged material of similar type and consistency appropriate for creation of the new wetland habitats and within the specified timeline of work authorized herein.

11. Any excess material that is dredged pursuant to this authorization that is not required for the creation of new wetland habitats in the current locations of McCoombs and Rifle Cuts must be placed into approved Dredged Material Containment Areas or in a portion of the Sediment Basin in accordance with the procedures approved by the SEA.

12. Within the Period of Performance under the contract issued by the Savannah Corps for the work that constitutes the Proposed Modification, or four hundred five (405) days from the commencement of such contract, whichever is longer (Project Period), the Savannah Corps will update the SHEP hydrodynamic (EFDC) and water quality (WASP) models to reflect the additional dredging depths authorized hereunder, as well as the conversion of McCoombs and Rifle Cuts to wetlands. The Savannah Corps will produce a report (Report) no later than the conclusion of the Project Period, which shall be shared with the SRMC and DHEC and which isolates and reflects the incremental effect of the Proposed Modification on instream D.O. concentrations in the applicable model zones. The purpose of this additional modeling is to provide data to the SRMC and DHEC to evaluate the SEA's assertion that the additional dredging and creation of wetlands would improve water quality in these areas. Consistent with the FEIS, Settlement Agreement, Decision, and the prior 401 Certification of DHEC, full mitigation of the D.O. impacts of the SHEP is required. Should the report show that the Proposed Modification will cause an incremental adverse impact to water quality in the studied model zones, the Savannah Corps shall propose and implement appropriate mitigation for such impacts consistent with its current obligations under the FEIS, Settlement Agreement, Decision, and prior 401 certification of DHEC.

DHEC reserves the right to impose additional conditions on the Certification to respond to unforeseen, specific problems that might arise and to take any enforcement action to ensure compliance with State water quality standards.

Sincerely,

Heather Preston, Director
Division of Water Quality
Bureau of Water

cc: US Army Corps of Engineers
Charleston District Office
Low Country-Beaufort County Environmental Affairs District Office
OCRM

Savannah River Maritime Commission

In Re: Draft Supplemental Environmental Assessment, Modification of McCoys Cut Feature.	))))

Notice of Proposed Decision

The U.S. Army Corps of Engineers, Savannah District (Savannah Corps), proposes to modify the McCoys Cut flow re-routing feature (Proposed Modification) which was authorized as a part of the Savannah Harbor Expansion Project (SHEP) Final Environmental Impact Statement (FEIS), dated January 2012, Revised July 2012, and the Record of Decision dated October 26, 2012, pursuant to, inter alia, the Construction in Navigable Waters Permit (Navigable Waters Permit) issued by the Savannah River Maritime Commission (Commission), dated May 8, 2012, Modified June 3, 2013 (Decision). In support of the Proposed Modification, the Savannah Corps prepared a Draft Supplemental Environmental Assessment (SEA) and Finding of No Significant Impact (FONSI), published May 24, 2017.

This matter is before the Commission pursuant to its statutory authority under S.C. Code Ann. § 54-6-10, which established the Commission to represent the State of South Carolina "in all matters pertaining to the navigability, depth, dredging, wastewater and sludge disposal, and related collateral issues in regard to the use of the Savannah River as a waterway for ocean-going container or commerce vessels." Moreover, the Commission is "empowered to negotiate on behalf of the State of South Carolina and enter into agreements with the State of Georgia [and] U.S. Army Corps of Engineers." Id. Further, the Commission's responsibilities "supersede any other concurrent responsibilities of a particular state agency or department." Id.

The Proposed Modification requires authorizations from the State of South Carolina pursuant to Section 401 of the Federal Clean Water Act, including a Navigable Waters Permit from the

Commission,[1] as well as a Coastal Zone Consistency Determination (CZCD) regarding the consistency of the proposed activities with the South Carolina Coastal Zone Management Program (CZMP). This notice of proposed decision constitutes the Commission's decision related to the Navigable Waters Permit portion of the Savannah Corps' request for authorization from South Carolina and shall become final and binding in 15 days unless challenged at the South Carolina Administrative Law Court by the Savannah Corps or an affected person.

Project Description

The stated purpose of the Proposed Modification is to extend the dredging area authorized under the FEIS within Middle River to ensure sufficient freshwater flow to intended areas, as well as save space in the upland Dredged Material Containment Areas (DMCA) sites by reusing a portion of the dredged sediments to create wetland habitat. The Proposed Modification consists of dredging an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet mean lower low water (MLLW). In addition, the Savannah Corps proposed to dredge an additional 4 feet at the mouth of Union Creek for the stated purpose of accounting for potential future shoaling. The additional depth at the mouth of Union Creek is proposed to remain within the same footprint as the previously approved dredging template, but the proposed dredging would be an additional four (4) feet deeper than the depth previously-approved, for a distance of approximately 1,360 feet. The stated purpose and need of the additional dredging is to meet the FEIS requirement for an increase in freshwater flows into the estuary and limitation of salt water intrusion to reduce salinity impacts from the SHEP navigation project. The Savannah Corps posits that the additional 2,600 feet of dredging of Middle

[1] The submission of the request for the 401 Certification simultaneously serves as the request for a Navigable Waters Permit, and no separate application is required. See S.C. Code Ann. Regs. 19-450.D.1. This is because the criteria for the Navigable Waters Permit and its subsequent terms and conditions are separately and independently enforceable components of and a part of the 401 Certification.

River is required in order to get beyond a large shoal downstream of the original 5,800 feet of dredging called for under the FEIS. The SEA submits that by extending the dredging area beyond the shoal, the deepened channel would connect to the deeper depths downstream of the shoal and thereby allow the diverted freshwater flow to pass the entire length of Middle River.

The additional dredging would take place in areas corresponding to FEIS hydrodynamic model cells MR4 and MR5. The FEIS and supporting documentation indicate that both MR4 and MR5 are expected to experience a slight improvement in dissolved oxygen as a result of the SHEP and oxygen injection mitigation project. However, the SEA does not include sufficient information from which the Commission can made a determination as to whether the additional dredging will have an adverse or beneficial impact on dissolved oxygen in model cells MR4, MR5, or any other locations, because no additional modeling has been completed.

A secondary purpose and effect of the Proposed Modification is the use of a large portion of the additional dredge sediment to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts,[2] rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. In the FEIS, both McCoombs and Rifle Cuts were to be plugged at one end (east end for McCoombs Cut, measuring approximately 80 feet wide at the base, and the west end for Rifle Cut, measuring approximately 100 feet wide at the base). At both locations, the FEIS predicted that these plugs could create small dead-end creeks that would fill over time, but were expected to provide valuable fish habitat until the depths became too shallow. Rifle Cut was not included in the water quality modeling for the SHEP, but McCoombs Cut was included as model zone MR6. Notably, MR6 was predicted to have the second largest dissolved oxygen deficit of all model

[2] These areas are alternatively identified as "Old Little Back River", "Lower Arm at McCoys Cut", and "Western Arm of McCoys Cut" in the FEIS. The SEA refers to this channel as "McCoombs Cut." MR6 is the corresponding FEIS hydrodynamic model cell. However, all names refer to the same open water channel.

zones as a result of the SHEP with oxygen injection mitigation. Therefore, a secondary benefit to the Savannah Corps from its proposal to fill in these areas as prescribed in the SEA is that, if McCoombs Cut (i.e., MR6) is filled in using the additional sediment generated by the proposed additional dredging, then there will be no water in these areas to experience dissolved oxygen impairments. The stated purpose of placing a portion of the dredged sediments in the McCoombs and Rifle Cuts is to convert these manmade cuts from open water to wetlands. The conversion of the cuts from open water to wetlands is not required by the FEIS and the SEA does not state that the creation of wetlands is done for the purpose of SHEP mitigation.

The SEA submits that approximately nine acres of wetlands would be created using the dredged sediments by placing material behind the cut closure structures to an elevation suitable for wetland creation. The quantity of material to be dredged is enough to fill the McCoombs and Rifle Cuts to an elevation of +8 to +8.5 feet MLLW. According to the SEA, once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings[3] to reduce the risk of erosion while vegetation establishes naturally along the cuts. The SEA hypothesizes that the remaining portions of the newly created wetland habitats will mature and fill in by the second full growing season. The portions of the dredged sediment that are not used to fill in McCoombs and Rifle Cuts will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. The dredged sediment is proposed to be transported either mechanically or hydraulically.

---

[3] The SEA suggests that potential plant species to be utilized in plantings include: River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*).

Subsequent to issuance of the SEA, representatives of the Savannah Corps, DHEC, and the Commission engaged in multiple conversations regarding the issues presented by the Proposed Modification. During these discussions, the Savannah Corps made the independent determination to withdraw the proposed dredging of the mouth of Union Creek. Subsequently, on August 30, 2017, the Savannah Corps cancelled the solicitation for contract for the work proposed by the SEA, for the stated reason of having not received the necessary permits from the Commission and DHEC for the proposed work in time to complete the work before the spring environmental exclusion window. In announcing the rescission of the solicitation, the Savannah Corps stated that it was not withdrawing its application for the proposed work and would continue to work with the Commission and DHEC to receive the necessary approvals for the work. Thereafter, on October 30, 2017, the Savannah Corps requested, in writing, that the Commission and DHEC reconsider the Savannah Corps' decision to withdraw the proposed dredging at the mouth of Union Creek and clarified that it was once again seeking approval for the full scope of work proposed in the SEA. Consequently, the Commission has considered the Union Creek dredging feature of the SEA and this permit authorizes, subject to the terms and conditions provided herein, the changes to the McCoys Cut flow re-routing feature proposed in the SEA.

Jurisdiction

Public notice was issued for the Proposed Modification on May 24, 2017, which triggered this review. The Proposed Modification involves the dredging, filling, and construction or alteration activity in, on, and over a navigable water and the bed under navigable waters and also lands or waters subject to a public navigational servitude under Article 14, Section 4 of the South Carolina Constitution and S.C. Code Ann. § 49-1-10 (including submerged lands under the navigable waters of the State) and is an activity significantly affecting the flow of any navigable water. As a result, the

Proposed Modification will adversely impact the water quality and environment of South Carolina.[4] The Proposed Modification requires a Section 401 of the Clean Water Act certification from the State of South Carolina (the 401 Certification) under 33 U.S.C.A. § 1341, S.C. Code Ann. Regs. 61-101, which is the responsibility of the South Carolina Department of Health and Environmental Control (DHEC), and the additional proposed dredging must satisfy the Navigable Waters Permit criteria under S.C. Code Ann. Regs. 19-450. The Commission issues this decision pursuant to its authority under S.C. Code Ann. § 54-6-10.

Discussion of Findings and Conclusions

In considering and examining the Savannah Corps' application and request for authorization, the Commission reviewed documents of the Savannah Corps, including the SEA, the comments of resource and regulatory agencies,[5] and the reports and analysis of the Commission's staff and independently retained experts and consultants. See S.C. Code Ann. § 54-6-10(D). Based on the information presently available, the Commission makes the following findings, conclusions, and decision, and the terms and conditions set forth herein are made a part of the 401 Certification.

(A) *Analytical Framework*

By statute, the Commission is charged with evaluating the navigability, depth, dredging, wastewater and sludge disposal, and collateral issues related to the use of the Savannah River as a waterway for ocean-going container or commerce vessels. S.C. Code Ann. § 54-6-10(A). Additionally,

[4] Dredging constitutes a discharge under the Clean Water Act triggering DHEC's and the Commission's respective jurisdiction. See S.D. Warren Co. v. Maine Bd. of Envtl. Protection, 547 U.S. 370, 376 (2006); AES Sparrow Point LNG v. Wilson, 589 F.3d 721, 731 (4th Cir. 2009) (dredging constitutes pollutant discharge through lowering of dissolved oxygen levels); Alabama Rivers Alliance v. Federal Energy Regulatory Comm'n, 325 F.3d 290, 293 (D.C. Cir. 2003) (consideration of discharges into navigable waters an appropriate component of state law considerations under 33 U.S.C.A. § 1341(d)).

[5] These comments included the June 12, 2017 comments of the National Marine Fisheries Service, the June 14, 2017 comments of the United States Environmental Protection Agency, and the June 26, 2017 comments of the South Carolina Department of Natural Resources.

as the permitting staff for a navigable waters permit, the Commission is responsible for assessing the total impact of the projected activity on the navigable waters and lands subject to the jurisdiction of this regulation, including the impact on the economy, environment, and natural resources of the State. The Commission is concerned with the utilization and protection of important State resources and balancing the extent and permanence of reasonably foreseeable benefits and detriments of the projected activity, including its impact on conservation, economics, aesthetics, general environmental concerns, cultural values, fish and wildlife, navigation, erosion and accretion, recreation, water quality, water supply, and conservation. The Commission also is tasked with determining whether the projected activity is consistent with the needs and welfare of the public. In particular, the Commission must consider the extent to which, among other things:

- the activity requires construction in, on, or over a navigable waterway, and the economic benefits to the State and public from construction in such location;
- the activity would impact fish and wildlife, water quality, and other natural resource values or could affect the habitats of rare and endangered species of wildlife and irreplaceable historic and archaeological sites associated with public lands and waters;
- the economic benefits to the State and public from the authorized use of lands and waters meets or exceeds the benefits from preservation of the area in its unaltered state;
- there is any adverse environmental impact which cannot be avoided by reasonable safeguards;
- all feasible alternatives are taken to avoid adverse environmental impact resulting from the project; and,
- the long-range, cumulative effects of the project, including the cumulative effects of similar projects, may affect navigable waters.

S.C. Code Ann. Regs. 19-450.9.A.

Thus, the Commission is charged with the duty of evaluating environmental impacts and balancing those impacts with benefits to the State, and undertaking an analysis of appropriate pollution control requirements under the rubric established by statute and regulation. See S.C. Code Ann. § 54-6-10; S.C. Code Ann. Regs. 19-450. The terms and conditions herein are premised and founded upon protecting the environment of the State of South Carolina and imposing reasonable terms and conditions to protect water quality, natural resources, fish and wildlife species, populations, and habitats, and limit pollution to acceptable levels.

Terms and Conditions

The Commission is committed to working with the Savannah Corps to ensure that the SHEP moves forward in accordance with this decision. However, the Commission must balance economic development with the protection of the environment to ensure the responsible implementation of the SHEP.

Based on the information presently available and analysis undertaken by the Commission, the Commission authorizes the requested modification of the McCoys Cut flow re-routing feature, consisting of:

a) The Savannah Corps is authorized to dredge an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet MLLW.

b) The Savannah Corps is authorized to dredge an additional four (4) feet deeper than the depth previously-approved, for a distance of approximately 1,360 feet, at the mouth of Union Creek.

c) The Savannah Corps is authorized to create a plug, using rock or concrete, at the western ends of both McCoombs Cut (at an approximate base width of 80 feet) and Rifle Cut (at an approximate base width of 100 feet) to a respective depth of +11 feet MLLW. The Savannah Corps is further authorized to armor the eastern ends of McCoombs and Rifle Cuts, respectively, with rock to a level of +5 feet MLLW. Once the respective cut closure plug

structures are constructed and functioning, the Savannah Corps is authorized to deposit a portion of the additional sediment generated through the dredging activities authorized herein within McCoombs and Rifle Cuts behind the cut closure structures to an elevation of not more than +8.5 feet MLLW, suitable for wetland creation. Once filled, the Savannah Corps is required to guard against the erosion of these beneficially created wetland areas through the means and with such materials as described in the SEA.

d) The Savannah Corps is authorized to place the remaining balance of the additional sediment generated through the dredging activities authorized herein in the existing upland DMCAs or the Sediment Basin under the plan approved by the Commission under the FEIS.

The Commission further concurs in the issuance of the 401 Certification by DHEC for the project. The foregoing authorization of the Commission is subject to the following terms and conditions to protect the environment and natural resources of the State of South Carolina and provide reasonable assurance that the Proposed Modification will not cause a violation of water quality standards or other environmental standards:

a) The authorization for activities or structures granted herein shall constitute a revocable license to use the lands and waters within the jurisdiction of the State. This authorization is issued for a period of twenty (20) years. This authorization may be renewed provided that there have been no material adverse change in circumstances.

b) All activities taken pursuant to this authorization shall be consistent with and limited by the terms and conditions of this authorization; any unauthorized work or activity different from or inconsistent with these terms and conditions may result in the modification, suspension, or revocation of this authorization in whole or in part, and the institution of such legal proceeding as the Commission may consider appropriate.

c) This authorization shall not convey, nor be interpreted as conveying, expressly or implicitly, any property interest in the land or water in which the permitted activity is located. This authorization shall not be construed or interpreted as alienating public property for private use, nor does it authorize the Savannah Corps to alienate, diminish, infringe upon, or otherwise restrict the property rights of other persons or the public.

d) The work authorized herein, and specifically the filling in of McCoombs Cut, which waterway currently serves as a portion of the state boundary between South Carolina and Georgia, is an avulsive action and not one of natural accretion. Nothing authorized herein alters the existing state boundary line between South Carolina and Georgia, which boundary is intended to remain in the location of the centerline of the former McCoombs Cut, once filled, with the area north of the current centerline of McCoombs Cut remaining property of the State of South Carolina.

e) The grant, denial, modification, suspension, or revocation of this authorization shall not be the basis for any claim for damages against the State of South Carolina. In no way shall the State be liable for any damage as a result of the authorized works.

f) The authorized activities shall not block or obstruct navigation or the flow of any waters unless specifically authorized herein, and no activity should prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work.

g) All necessary measures must be taken to prevent oil, tar, trash, debris and other pollutants from entering the adjacent waters or wetlands during construction.

h) All spoil, dredged material, or other fill material must be tested on a regular basis to ensure the quality of the material disposed of consistent with the Inland Testing Manual, as amended or revised. U.S. Envtl. Protection Agency and U.S. Army Corps of Eng'rs, Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. – Testing Manual, EPA-823-

B-98-004 (Feb. 1998). Copies of such reports shall be provided to the Commission.

i) No spoil, dredged material, or any other fill material may be placed below the mean high water or ordinary high water elevation, unless specifically authorized herein.

j) Spoil materials must be properly contained and managed to prevent the discharge of silt-laden water into adjacent waters.

k) Once the work consisting of the approved modifications of McCoombs and Rifle Cuts is initiated, the Savannah Corps must carry said work to completion in an expeditious manner in order to minimize the period of disturbance to the environment.

l) Should the amount of sediment material dredged from Middle River prove insufficient to complete the authorized deposition within McCoombs and Rifle Cuts and creation of new wetland habitats, the Savannah Corps must fulfill the project with dredged material of similar type and consistency appropriate for creation of the new wetland habitats and within the specified timeline of work authorized herein.

m) Any excess material that is dredged pursuant to this authorization that is not required for the creation of new wetland habitats in the current locations of McCoombs and Rifle Cuts must be placed into approved Dredged Material Containment Areas or in a portion of the Sediment Basin in accordance with the procedures approved by the FEIS and Settlement Agreement.

n) Within the Period of Performance under the contract to be issued by the Savannah Corps for the work that constitutes the Proposed Modification, or four hundred five (405) days from the commencement of such contract, whichever is longer (Project Period), the Savannah Corps will update the SHEP hydrodynamic (EFDC) and water quality (WASP) models to reflect the additional dredging depths authorized hereunder, as well as the conversion of McCoombs and Rifle Cuts to wetlands. The Savannah Corps will produce a report (Report) no later than the conclusion of the Project Period, which shall be shared with the Commission

and DHEC and which isolates and reflects the incremental effect of the Proposed Modification on instream DO concentrations in the applicable model zones. The purpose of this additional modeling is to provide data to the Commission and DHEC to evaluate the SEA's assertion that the additional dredging and creation of wetlands would improve water quality in these areas. Consistent with the FEIS, Settlement Agreement, Decision, and the prior 401 Certification of DHEC, full mitigation of the DO impacts of the SHEP is required. Should the Report show that the Proposed Modification will cause an incremental adverse impact to water quality in the studied model zones, the Savannah Corps shall propose and implement appropriate mitigation for such impacts, as approved by the Commission and which is consistent with its current obligations under the FEIS, Settlement Agreement, Decision, and prior 401 Certification of DHEC. The Commission reserves the right to take any appropriate action if its independent determination is that these terms and conditions have not been fulfilled, including but not limited to suspension, rescission, and revocation of this permit, or initiation of an enforcement or other legal action.

o) The Savannah Corps shall allow the Commission or its authorized agents or representatives to make periodic inspections on reasonable notice as deemed necessary by the Commission to assure that the activity being performed is in accordance with the terms and conditions herein, including but not limited to observers on dredging vessels.

p) The Proposed Modification must comply with any applicable 401 Water Quality Certifications issued by the Georgia Department of Natural Resources and DHEC and those terms and conditions are incorporated into this authorization by reference.

q) This authorization may not be assigned in whole or in part without the prior written permission of the Commission and the written agreement of the transferee to abide by all the terms and conditions herein.

r) These terms and conditions may be modified, amended, or revised by further action of the Commission in its sole discretion after review of a request for such action and the evaluation of appropriate supporting documentation provided by the applicant or sua sponte on the Commission's own initiative based on a change of circumstances or conditions.

s) If any term, condition, or provision of this decision is for any reason held to be invalid, such holding shall not affect the validity of the remaining portions of the decision.

Conclusion

IT IS THEREFORE DETERMINED that the Proposed Modification to the SHEP may proceed only on the terms and conditions as set forth above to ensure compliance with South Carolina law. This Navigable Waters Permit and Commission approval and authorization is independently enforceable by the Commission pursuant to South Carolina law. S.C. Code Ann. §§ 48-1-10 et seq.; 54-6-10; S.C. Code Ann. Regs. 19-450. Further, in accordance with applicable law, these terms and conditions are incorporated into and made enforceable terms and conditions of the 401 Certification issued by DHEC.

ISSUED ON BEHALF OF THE COMMISSION:

By: William D. Moss, Jr.
Its: Chairperson

This 11 day of January, 2018.
Columbia, South Carolina

March 20, 2018

LAURA WILLIAMS
US ARMY CORPS OF ENGINEERS
100 W OGLETHORPE AVE
SAVANNAH, GA 31401

RE: **Stormwater Construction – Coastal Automatic Permit Coverage Notification**
Updates to MCCOYS CUT DIVERSION STRUCTURE, Jasper County
Notification No.: 27-14-06-01

Dear LAURA WILLIAMS:

Based on your Notification to the Department and certification that this project will disturb 0.5 acres or less, is not part of a Larger Common Plan (LCP) for development or sale, and is located within ½ mile of a coastal receiving water, this project qualifies for automatic coverage under the NPDES General Permit for Storm Water Discharges from Large and Small Construction Activities. As indicated in your Notification disturbed area for this site is **0.35 acres**.

Please note the following requirements of this notification:

1. **This notification is only for the activity identified in Notification No. 27-14-06-01;**
2. **This notification does not constitute DHEC's approval of the stormwater management and sediment control plan. You are responsible for ensuring appropriate Best Management Practices are being used during construction activities.**
3. **You are responsible for ensuring your contractor complies with the site development plan prepared for this project.**
4. **You must obtain federal, state, or local permits that may be required for this project. In particular, if this project is located in an area of the state where a local government implements a stormwater program, such as an MS4, a permit may be required for this activity.**
5. **The Department does not regulate the placement of fill in floodplains. You must contact your local city or county official for such approvals; and**
6. **You are responsible for overall compliance with the Storm Water Management and Sediment Reduction Act of 1991, South Carolina Pollution Control Act and the Federal Clean Water Act.**

This project is subject to a Coastal Zone Consistency (CZC) determination from the Department's CZC Section and automatic permit coverage is not effective until this project has been determined consistent with the Coastal Zone Management Program (CZMP). This project required an individual certification which is attached to this letter.

Please note that the Department does not send a copy of this letter to any county or city building official. You must provide a copy of this letter to these agencies, as appropriate. Any future submittals to the Department for this project and/or this site, should reference this project/site name (as listed on the notification form), county, and assigned notification number **(Notification No.27-14-06-01).**

The Department may conduct periodic inspections of this site to ensure compliance with all related requirements, including LCP status. Failure to comply with the site plan resulting in discharge of sediment to Waters of the State and/or adjacent properties may subject you to applicable penalties under the S. C. Pollution Control Act. Additional construction activities beyond the scope of this notification may require permit coverage.

If you have any questions, please call me at 843.953.0240.

Sincerely,

Shannon Hicks, P.E.
Manager, Coastal Stormwater Permitting

ec: EQC Region - **Lowcountry EA Beaufort**

PRINT | SUBMIT BY EMAIL

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Notification Form for Sites Disturbing Less Than 1-Acre, Not Located within 0.5 Miles of a Coastal Receiving Water and Automatic Permit Coverage (Not Part of a Larger Common Plan, Coastal County)

Notification #: _____ (For Official Use Only)

Note: This form is for use on projects LOCATED WITHIN THE EIGHT COASTAL COUNTIES (Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper) and that are NOT part of a larger common plan for development or sale.

Date: 7 March 2017
Project/ Site Name: SHEP - McCoy's Cut Area Works **County:** Jasper

I. Project Information

A. Is any portion of this Project's boundary located within an Urbanized Area or MS4? ☐ Yes ☒ No
If yes, list the MS4 Operator or Urbanized Area Name. _____

B. Project Owner/ Operator (Company or person): US Army Corps of Engineers, Savannah District
Company EIN: __ __ - __ __ __ __ __ __ __ Phone: 912-652-5268 or -5020 Fax: _____
Mailing Address: 100 W. Oglethorpe Ave City: Savannah State: GA Zip: 31401
Email address: Laura.E.Williams@usace.army.mil or Mary.E.Richards@usace.army.mil

C. Permit Contact (If Owner Is Company): To be determined. Construction contract not yet awarded.
Phone: (Day) _____ Email Address: _____

II. Property Information

A. Site Location (street address, nearest intersection, etc.): Accessible by water only. Savannah River south of I-95.
Is the Property located Within City Limits? ☐ Yes ☒ No Nearest City/Town: Limehouse, SC
Latitude: 32 ° 13 ' 25 " N Longitude: -81 ° 08 ' 42 " W Tax Map # (List All): _____
Tax Map # (Continued): _____

B. Property Owner (if different from section **I. B** above): Federal Government - US Fish & Wildlife Service
Mailing Address: 765 Alligator Alley City: Hardeeville State: SC Zip: 29927
Phone: (Day) 843-784-6262 Email address: Chuck_Hayes@fws.gov

III. Site Information

A. Disturbed Area (to the nearest tenth of an acre): 0.35 Total Area (to the nearest tenth of an acre): 0.35
B. Start Date (MM/DD/YYYY): 09 / 01 / 2017 Completion Date (MM/DD/YYYY): 09 / 01 / 2019
C. Are there any Flooding Problems Downstream of or Adjacent to this Site? ☐ Yes ☒ No
D. Has S.C. DHEC or MS4 issued a *Notice to Comply, Notice of Violation or a Warning Notice* for this site or LCP? ☐ Yes ☒ No
E. Type of Activity (check all that apply):
☐ Commercial ☐ Industrial ☐ Institutional
☐ Residential: Single-family ☐ Residential: Multi-family ☐ Linear ☑ Other:
☐ Multi-use (Commercial & Residential) ☐ Site Preparation (No new impervious) Flow Diversion

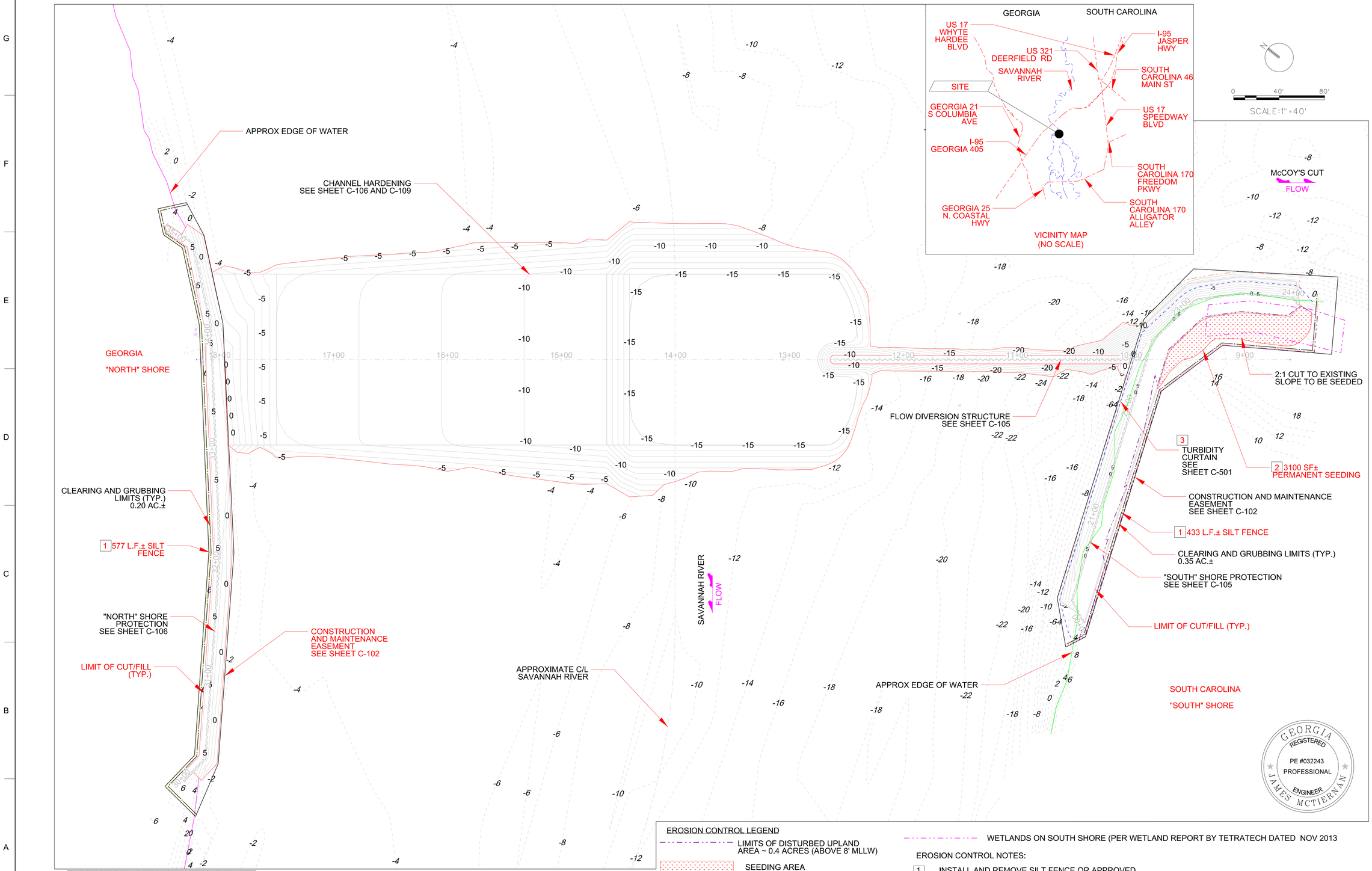
IV. Waterbody Information

A. Nearest Receiving Waterbody(s) [RWB]: Savannah River Distance to Nearest RWB (feet): connected
B. Drains to Coastal Receiving Water? ☒ Yes ☐ No Distance to Coastal Receiving Water [CRW] (feet): connected
C. 1. Are there any Waters of the United States/ Waters of the State, jurisdictional or non-jurisdictional wetlands, or any other waters located on site? ☒ Yes ☐ No
2. Are there any impacts to any of the on-site Waters of the U.S./State, jurisdictional or non-jurisdictional wetlands, or any other waters? ☒ Yes ☐ No
D. If checked yes for impacts in item C.2, describe each impact and activity, and list all permits (e.g., USACOE Nationwide Permit, DHEC General Permit) and certifications that have been applied for or obtained for each impact.
See attached.

V. Signatures and Certifications: DO NOT SIGN IN BLACK INK!

A. Per my signature below, I hereby certify that this project is not part of a Larger Common Plan (LCP) for Development or Sale. I understand that additional construction activities at this site may require permit coverage and I am responsible for obtaining any federal, state, or local permits that may be required for this project.In the case that the site associated with this project is located within an Urbanized Area (UA) or MS4, I certify that the respective UA or MS4 has been informed about the scope of all land-disturbing construction and associated activity pertaining to this site, and that all additional requirements mandated by the UA or MS4 have been addressed. I certify that all land-disturbing construction and associated activity pertaining to this site shall be accomplished pursuant to and in keeping with the terms and conditions of all relevant laws and regulations, including the Storm Water Management and Sediment Reduction Act of 1991 and the Federal Clean Water Act. Failure to do so may result in penalties. I hereby grant authorization to the Department of Health and Environmental Control and/or the local implementing agency the right of access to the site at all times for the purpose of on site inspections during the course of construction and to perform maintenance inspections following the completion of the land-disturbing activity. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Laura E. Williams, Engineering Lead	WILLIAMS.LAURA.E.1229869279 Digitally signed by WILLIAMS.LAURA.E.1229869279 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=WILLIAMS.LAURA.E.1229869279 Date: 2017.03.07 13:17:58 -05'00'	7 March 2017
Printed name of Project Owner/Operator	**Signature of Project Owner/Operator**	**Date**



EROSION CONTROL QUANTITES THIS SHEET	
SILT FENCE	1010 L.F. ±
PERMANENT SEEDING	3100 SF ±
CLEARING AND GRUBBING AREA	0.55AC. ±
TURBIDITY CURTAIN	500 L.F. ±

EROSION CONTROL LEGEND

- LIMITS OF DISTURBED UPLAND AREA ~ 0.4 ACRES (ABOVE 8' MLLW)
- SEEDING AREA
- SILT FENCE
- WORK LIMITS
- TURBIDITY CURTAIN
- WETLANDS ON SOUTH SHORE (PER WETLAND REPORT BY TETRATECH DATED NOV 2013

EROSION CONTROL NOTES:

1. INSTALL AND REMOVE SILT FENCE OR APPROVED EQUIVALENT PER SCDHEC STD. DRAWING NO. SC-03. SEE SHEET C-501
2. PERMANENT SEEDING PER SOUTH CAROLINA DHEC STORM WATER MANAGEMENT BMP HANDBOOK.
3. INSTALL TYPE III TURBIDITY CURTAIN PER MANUFACTURERS RECOMMENDATIONS SEE C-501 FOR DETAILS.

GEORGIA REGISTERED PE #032243 PROFESSIONAL ENGINEER JAMES MCTIERNAN

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: APRIL 2017
SOLICITATION NO.: W912HN-17-B-0002
CONTRACT NO.: XXXXXX-XX-X-XXXX
CATEGORY CODE CWK0654
FILENAME: $$FILE NAME$$

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

GEORGIA AND SOUTH CAROLINA
MCCOOMB'S/RIFLE CUT CLOSURES AND CHAN. IMPROVEMENTS
FY17, PN 113006

TEMPORARY EROSION CONTROL MEASURES

SHEET ID
C-111

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$

95% SUBMITTAL

July 24, 2017

Colonel Marvin Griffin
United States Army Corps of Engineers, Savannah District
100 West Oglethorpe Avenue
Savannah, GA. 31401-3604

Attn: Mr. William G. Bailey, Chief Planning Branch

Re: Federal Consistency Determination – SAC-2010-SHEP, SCDHEC OCRM ID's # CZC-17-0602; NPDES ID # SCR10BQ44, CZC-17-0702

Dear Col. Griffin:

Thank you for coordinating with South Carolina's Department of Health and Environmental Control, Ocean and Coastal Resources Management (SCDHEC OCRM) on the above referenced project pursuant to pursuant to 15 C.F.R. § 930 Subpart C, Federal Consistency regulations associated with the Coastal Zone Management Act of 1972 (CZMA) as amended. Under the CZMA, federal Agency activities which may have reasonably likely effects on any land or water use or natural resource of the coastal zone, regardless of the location, must be consistent to the maximum extent practicable with the enforceable policies of the State's federally-approved S. C. Coastal Zone Management Program (SCCZMP).

SCDHEC OCRM is in receipt of the Consistency Determination dated May 26, 2017, for the U.S. Army Corps of Engineers (USACE), Savannah District draft Supplemental Environmental Assessment (SEA) and Coastal Zone Consistency Concurrence to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). The request is submitted as a modification to the original SHEP project that SCDHEC OCRM found conditionally consistent on September 30, 2011 and again on June 5, 2013. This certification is issued for this project at this time and should not be considered an ongoing certification.

Project Description:

The proposed action consists of dredging an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide required flows. Within the SEA, Figure 1 shows the location of additional dredging reach in Middle River. Figure 2 shows the additional dredging reach along with locations of the proposed beneficial use placement sites. The green, orange, and blue colors shown on Figure 1 indicate areas covered by the FEIS (approximately 3.1 miles of dredging and 315,000 cubic yards of dredged material). The area in white shown on Figure 1 indicates new work being proposed (approximately 2,600 feet of additional dredging, about 24,000 cubic yards). In addition dredging an additional 4 feet at the mouth of Union Creek (also shown on Figure 1 and 2) is proposed to account for potential future shoaling. This additional depth remains within the same footprint, but would be four feet deeper for a distance of approximately 1,360 feet. A large portion of the sediment removed as part of the project would be used beneficially

to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figures 2 and 3), rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. Approximately nine acres of wetlands would be created using the dredged sediments from the project. The material dredged from the Middle and Little Back Rivers would be placed behind the cut closure structures to an elevation suitable for wetland creation. These new deposition sites are within the boundary of the Savannah National Wildlife Refuge. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion while vegetation establishes naturally along most of the length of the cuts. Potential plant species that will be planted on the edge of the newly created wetlands include; River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*). The rest of the created wetland habitat will mature and fill in by the second full growing season. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. The dredged sediment would be transported either mechanically or hydraulically. Additionally, with logistical concerns in using the Houlihan Bridge (S. C. 170) during construction, a temporary pile-supported platform would be installed on the edge of the existing causeway (off S. C. 170 and the Back River Bridge), tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Upland areas of disturbance will consist of 1.20 of a 1.50 acre site and is subject to State of South Carolina NPDES Stormwater permitting. Improvement to the dike leading to the new platform would be completed, impacting approximately 0.23 acres of managed wetlands. This platform is expected to be in place for the duration of the construction timeframe, which is estimated to be approximately one year and would be removed after construction has been completed.

SCDHEC OCRM Decision, SCCZMP Enforceable Policies and Conditions:

Pursuant to 15 C.F.R. § 930., subpart C SCDHEC OCRM ***concurs*** with the District's determination that the project is consistent to the maximum extent practicable with the enforceable polices of the SCCZMP based upon additional Environmental Design Commitments specified in the Draft FONSI received by this office on July 21, 2017.

Applicable Enforceable Policies of the SCCZMP: Guidelines for Evaluation of All Projects as well as the (1) Marine Related Facilities *(Docks),* (2) Dredging *(Dredging and Spoil Disposal),* and (3) Activities in Areas of Special Resource Significance *(Public Open Spaces and Wetlands)* policies contained in the SCCZMP.

This letter does not alleviate the District's responsibility to obtain other required local, state or federal approvals for the work described above. Please do not hesitiate to contact me should you have any questions.

Sincerely,

Curtis M. Joyner
Manager, Coastal Zone Consistency Section
DHEC OCRM
1362 McMillan Avenue, Suite 400
Charleston, SC 29405
843-953-0205
joynercm@dhec.sc.gov

cc: Elizabeth von Kolnitz, SCDHEC OCRM
Heather Preston, SCDHEC BOW
Chuck Hightower SCDHEC BOW
Mark Giffin, SCDHEC BOW
Shannon Hicks, SCDHEC BOW

South Carolina Board of Health and Environmental Control
Guide to Board Review
Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of $100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars ($100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15th day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
   - The grounds for amending, modifying, or rescinding the staff decision;
   - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
   - the relief requested;
   - a copy of the decision for which review is requested; and
   - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:

   South Carolina Board of Health and Environmental Control

   Attention: Clerk of the Board
   2600 Bull Street
   Columbia, South Carolina 29201

   Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).
4. The filing fee may be paid by cash, check or credit card and must be received by the 15th day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by certified mail to the Requestor, with copy by

regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter.

NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

II. Final Review Conference Scheduling

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
    - include the place, date and time of the Conference;
    - state the presentation times allowed in the Conference;
    - state evidence may be presented at the Conference;
    - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
    - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

III. Final Review Conference and Decision

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
    - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
        - Type of decision (permit, enforcement, etc.) and description of the program.
        - Parties
        - Description of facility/site
        - Applicable statutes and regulations
        - Decision and materials relied upon in the administrative record to support the staff decision.
    - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] *NOTE: The burden of proof is on the Requestor(s)*
    - Rebuttal by Department staff [15 minutes]
    - Rebuttal by Requestor(s) [10 minutes]

    Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
3. At any time during the conference, the officers conducting the Conference may request additional information and may question the Requestor, the staff, and anyone else providing information at the Conference.
4. The presiding officer, in his or her sole discretion, may allow additional time for presentations and may impose time limits on the Conference.
5. All Conferences are open to the public.
6. The officers may deliberate in closed session.
7. The officers may announce the decision at the conclusion of the Conference or it may be reserved for consideration.
8. The Clerk will mail the written final agency decision (FAD) to parties within 30 days after the Conference. The written decision must explain the basis for the decision and inform the parties of their right to request a contested case hearing before the Administrative Law Court or in matters pertaining to decisions under the South Carolina Mining Act, to request a hearing before the South Carolina Mining Council.. The FAD will be sent by certified mail, return receipt requested.
9. Communications may also be sent by electronic mail, in addition to the forms stated herein, when electronic mail addresses are provided to the Clerk.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

dhec
Healthy People Healthy Communities

March 20, 2018

WILLIAM G. BAILEY
US ARMY CORPS OF ENGINEERS
100 W OGLETHORPE AVE
SAVANNAH, GA 31401

RE: TEMP WILDLIFE REFUGE ACCESS ROAD AND LOADING AREA, Jasper County
NPDES Coverage Number: SCR10BQ44

Dear WILLIAM G. BAILEY:

The Department of Health and Environmental Control (Department or DHEC) has approved the Stormwater Pollution Prevention Plan (SWPPP) for the referenced project on **3/20/18**. Based on your submission of the Notice of Intent (NOI) and in accordance with the NPDES General Permit for Stormwater Discharges from Construction Activities (CGP), this project has been granted coverage under the CGP. This project's general permit coverage number is **SCR10BQ44**. The total disturbed area for this site is **1.2 acres**.

See attached DHEC Office of Ocean and Coastal Resource Management (DHEC-OCRM) certification dated 7/24/17 for additional conditions related to the Coastal Zone Consistency determination.

The CGP can be downloaded at the following website: http://www.scdhec.gov/Environment/docs/CGP-permit.pdf or you may request a copy from us via email (stormwatercgp@dhec.sc.gov). You are responsible for ensuring your contractor(s) complies with the approved SWPPP and the minimum requirements of the CGP. Also, you are responsible for overall compliance with the Storm Water Management and Sediment Reduction Act of 1991 (1991 Act), SC Pollution Control Act, and the Federal Clean Water Act (CWA). Failure to comply with the approved SWPPP or applicable statutes and regulations may result in enforcement actions.

You must notify the local EA Office prior to starting any land-disturbing activity. The address and telephone number are as follows:

Lowcountry EA Beaufort
104 Parker Drive
Beaufort, SC 29906
843-846-1030

Inspections of this site must be performed by qualified personnel as described in Section 4.2.E of the CGP.

You should be aware that this approval is only applicable for the SWPPP that was submitted for this project. Any additional construction or land disturbing activity beyond the scope of the approved plans is not authorized. Any future work for this project not shown on the stamped, approved plans will require that you submit another site plan for review and approval. All major modifications require review and approval by the Department. Minor modifications to the approved SWPPP may be made by the SWPPP preparer and do not require review and approval by the Department; these changes should be signed and dated by the SWPPP

preparer. If you have a question about whether a modification is major or minor, contact the Coastal Stormwater Permitting Section at (843) 953-0200.

A copy of the stamped, approved SWPPP (including a copy of the CGP, contractor certifications, inspection records, rainfall data, etc.), NOI, and CGP coverage letter from DHEC must be retained and available at the construction site (or accessible within 30 minutes during normal business hours) from the date of commencement of construction activities to the date of final stabilization. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.

All contractors who will conduct land-disturbing activities at the site must complete a Contractor Certification Form. You are also responsible for listing all contractors in the SWPPP and for holding a pre-construction conference with each contractor before they can conduct land-disturbing activity at the site.

The Department may conduct periodic inspections of your site. Any violations found during these inspections may result in enforcement action.

This NPDES coverage should be terminated by the permittee when the conditions listed in Section 5.1 of the CGP have been met. You must submit a Notice of Termination (NOT) to cancel your NPDES coverage under the CGP. Please see section 5.1 of the CGP for additional information required to be submitted with the NOT.

You are responsible for obtaining any other federal, state, or local permit that may be required for this project. In particular, any permits through the U.S. Army Corps of Engineers for the placement of fill material in Waters of the United States. Please note we have not sent a copy of this letter to any county or city building official. You must send a copy of this letter to these agencies, if necessary.

If material excavated during construction activities leaves the site, a mine operating permit may be needed. You are responsible for contacting the Mining and Reclamation Section to determine if a mining permit is required for the site. The Mining and Reclamation Section can be reached at (803)898-1362 or via e-mail at AskMines@dhec.sc.gov.

Please see the enclosed "Guide to Board Review" document for information about the procedures for appealing this NPDES coverage.

If you have any questions or cannot access the referenced websites, please call me at 84309530240.

Sincerely,

Shannon Hicks, P.E.
Manager, Coastal Stormwater Permitting Section

cc: William W Wright
Lowcountry EA Beaufort

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

NOTICE OF INTENT (NOI)

For Coverage(s) of Primary Permittees Under South Carolina NPDES General Permit For Stormwater Discharges From Construction Activities SCR100000

(Maintain As Part of On-Site SWPPP)

For Official Use Only

File Number: _____

Permit Number: SCR10_____

Submittal Package Complete: _____

Submission of this Notice of Intent constitutes notice that the Applicant identified in Section II intends to be authorized as a Primary Permittee in the state of South Carolina under NPDES General Permit SCR1000000. ***Fees required for review and NPDES coverage of each application type are as listed on page 2 of the Instructions.***

SOUTH CAROLINA
DEPT OF HEALTH AND ENVIRONMENTAL CONTROL
ENVIRONMENTAL QUALITY CONTROL
STORMWATER PERMITTING SECTION
APPROVED - FOR CONSTRUCTION ONLY
DHEC PERMIT #: SCR10BQ44
FILE #: 27+17-06-01
DATE ISSUED: 3-20-18
BY: Shannon

Date: 05/16/2017

Project/Site Name: Temp. Wildlife Refuge Access Road and Loading Area **County:** Jasper

(Modification or Change of Information Only) **Prior Approved NPDES Permit or File Number:** _____

Do you want this project to be considered for the Expedited Review Program (ERP)? ☑ **Yes or** ☐ **No (See instructions)**

I. Notice of Intent (NOI) Application Type(s)

A. **Project (Application/Review) Type(s)** (Select **ALL** that apply):

☑ New Project (Initial Notification) Ongoing Project: ☐ Permitted or ☐ Un-Permitted

☐ Late Notification ☐ Low Impact Development (LID) or Project Design Above Regulatory Requirements

☐ New Owner/Operator or Company Name Change **(see instructions, attach Form A (Transfer of Ownership))**

☐ Major Modification: **(see instructions, attach Form B (Major Modifications))**

☐ MS4 Project Review

☐ Ocean and Coastal Resource Management (OCRM) Review

☐ Change of Information/Other (Specify): _____

B. If Applicable, identify the entity designated as **MS4 Reviewer and MS4 Operator** (i.e., Lexington County, City of Greer, etc.): **MS4 Reviewer**_____ **MS4 Operator** _____

II. Primary Permittee Information

☐ **Change of Information**

☐ Person or ☐ Company | If a Company, are you a ☐ Lending Institution or ☑ Government Entity? Company EIN **(If applicable)**: EIN: 58-6007630

A. **Primary Permittee Name:** US Army Corps of Engineers (William G. Bailey)
Mailing Address: 100 W. Oglethorpe Ave (EN-DG) City: Savannah State: GA Zip: 31401
Phone: 912-652-5781 Fax: _____ Email Address: william.g.bailey@usace.army.mil

B. **Contact /ODSA Name** (If different from above OR if owner is a company): _____
Mailing Address: _____ City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____ Email Address: _____

C. **Property Owner Name** (If different from above): US Fish and Wildlife
Mailing Address: 694 Beech Hill Lane City: Hardeeville State: SC Zip: 29927
Phone: 843-784-2468 Fax: _____ Email Address: chuck_hayes@fws.gov

III. Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) Preparer Information

☐ **Change of Information**

A, **C-SWPPP Preparer Name:** WILLIAM W. WRIGHT P.E.

B. **Registered Professional** ☑ Engineer ☐ Landscape Architect ☐ Tier B Land Surveyor **S. C. Registration #:** 9880

C. **Company/Firm Name:** US ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT **S. C. COA # :** _____
Mailing Address: 100 W. OGLETHORPE AVENUE City: SAVANNAH State: GA Zip: 31401
Phone: 912-652-5532 Fax: _____ Email Address: william.w.wright@usace.army.mil

IV. Project/Site Information

☐ **Change of Information**

A. **Type of Construction Activity(ies)** (Select **ALL** that apply):

☐ Commercial ☐ Industrial ☐ Institutional ☐ Mass Grading ☑ Linear ☐ Utility/Infrastructure

☐ Residential: Single-family ☐ Residential: Multi-family ☐ Multi-use (Commercial & Residential)

☑ Site Preparation (No New Impervious Area) ☐ Other (Specify) _____

B. **Site Address/Location** (street address, nearest intersection, etc.) Intersection of SC170 & Little Back River
City/Town (If in limits): _____ Zip Code: _____
Latitude: 32 ° 9 ' 58 " N Longitude: - 81 ° 7 ' 29 " W (Source): ☐ GPS ☑ Web Site: Google Earth Pro
Tax Map Number (s) (List all): _____

RECEIVED
JUL 10 2017
Stormwater Construction & Agricultural Permitting Division

C. Is this site located on **Indian Land**? ☐ Yes ☑ No

D. **Proposed Start Date:** 10/01/2017 **Proposed Completion Date:** 10/31/2018

E. **Disturbed Area** (nearest tenth of an acre): 1.2 **Total Area** (acres): 1.5

F. **Modification Only:** (nearest tenth of an acre): **Disturbed Area: Current (Approved) Area:** _____
Disturbed Area Change (Increase Only): _____ **Total Disturbed Area (After Change):** _____

G. Is this project part of a **Larger Common Plan for Development or Sale (LCP)**? ☐ Yes ☑ No
LCP/ Overall Development Name: _____ Check here if this is the **First Phase.** ☐

Previous State Permit/File Number: _____ **Previous NPDES Coverage Number:** SCR10 _____

H. Any **Flooding Problems** exist downstream of or adjacent to this site? ☐ Yes ☑ No (If yes, provide detailed description of flooding problems and applicable floodway/flood zone information in the C-SWPPP).

I. Active **S.C. DHEC Warning Notice, Notice to Comply or Notice of Violation** for this site or LCP? ☐ Yes ☑ No

J. List Relevant **State and Federal Environmental Permits or Approvals** applied for or obtained for this site (e.g., **RCRA, USACOE, Nationwide**, etc.). **If None, list None.**
USACOE

K. **Any Waiver(s)/Variances/Exceptions Requested for this Project?** (If yes, identify below and include **Waiver Request and Justifications** in the C-SWPPP for each proposed request).

1. Small Construction Activity Waiver(s) From NPDES permitting **(Section 1.4 & Appendix B)**? ☐ Yes ☑ No If yes, Identify requested waiver: ☐ Rainfall Erosivity Waiver ☐ TMDL Waiver ☐ Equivalent Analysis Waiver	
2. Detention Waiver **(72-302(B)**? ☐ Yes ☑ No	3. Other (Specify):

V. Waterbody Information (Attach additional sheet(s) as needed) ☐ Change of Information

A. **Receiving Waterbody(s) (RWB) Information** (List the nearest and next nearest receiving waterbodies to which the sites stormwater discharges will drain. If stormwater discharges drain to multiple waterbodies, list all such waterbodies).

1. Name of Receiving Waterbodies (RWB)	2. Distance to RWB (feet)	3. Classification of RWB
a. Nearest: Little Back River (Savannah River)	<100 feet	Freshwater-Tidal
b. Next Nearest: Back River (Savannah River)	9.2 miles	Freshwater-Tidal
c. Coastal Zone ONLY: Coastal Receiving Water (CRW): Little Back River	<100 feet	Not Applicable
d. Other Waterbodies:		

B. **Waters of the U.S. / State Information** (Attach additional sheet(s) as needed)

Waters of the U.S./ State	1. On the site?	2. Delineated/ Identified?	3. Impacts?	4. Amount of impacts
a. Jurisdictional wetlands	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	0.23 Ac
b. Non-jurisdictional wetlands	☐ Yes ☑ No	☑ Yes ☐ No	☐ Yes ☑ No	____ Ac
c. Other Water(s): _____	☐ Yes ☑ No	☑ Yes ☐ No	☐ Yes ☑ No	____ Ac ____ Feet
d. Coastal Zone ONLY: Direct Critical Area	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	____ Ac ____ Feet

5. If yes for impacts in B.3, describe each impact and activity, and list all permits (e.g., USACOE Nationwide Permit, DHEC General Permit) and certifications that have been applied for or obtained for each impact:
USACOE 404 B1 Evaluation (See attached)

C. **S.C. Navigable Waters (SCNW) Information (Section 2.6.5)** The Department will address any issues related to State Navigable Waters' Program under SC Regulation 19-450 during the review of the C-SWPPP for activities that will **NOT** require a 404 permit or a 401 certification. (Attach additional sheet(s) as needed).

1. Are S. C. Navigable Waters (SCNW) on the site: ☑ Yes ☐ No
a. If **no**, do not complete this question. Proceed to Section D (Impaired Waterbodies).
b. If **yes**, provide the name of S.C. Navigable Waters (SCNW) on the site: Little Back River (Savannah River)

2. If **yes for C.1**, will construction activities cross over or occur in, under, or thru the SCNW? ☐ Yes ☐ No
If yes, describe SCNW activities (e.g., road crossing, sub-aqueous utility line, temporary or permanent structures, etc.) and proceed to Section C.3: Temporary pile supported platform ~ 0.1 acre

3. Identify permits providing coverage of SCNW activities proposed for your site. If NONE, list none.

Permits/Certifications	Permit or Certification No.	Corresponding Covered SCNW Activity(ies)
a. DHEC General/ Other DHEC Permit		
b. USACOE **404 Permit or 401 Certification**	404 B1 Evaluation	SHEP
c. SCNW Permit If applied for or issued, identify **Date applied for or issued:** May 23, 2017		☑ **All Activities** or ☐ **Some Activities (Describe):** Temporary platform for river access

d. If a SCNW Permit has NOT been applied for provide an additional plan sheet that shows plan and profile views (drawn to scale) of the SCNW and associated activities. Include a description of all proposed activities on this plan.

RECEIVED
JUL 10 2017
Stormwater, Construction & Agricultural Permitting Division

D. **Impaired Waterbodies Information** (Attach additional sheet(s) as needed)

1. 303(d) Listed Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4 and the **Name of the Corresponding Waterbody?**		b. **Is this WQMS(s) listed on the most current 303(d) List? If No, proceed to Section 2 of this table. If Yes, complete items c thru f.**	c. List the pollutant(s) identified as **"CAUSES"** of the impairment	d. Will any pollutants causing the impairment be present in your site's construction stormwater discharges?	e. If **yes for d,** list the **"USE SUPPORT"** impairment(s) affected by the pollutant(s) identified in c.
Nearest DHEC WQMS(s)	**Corresponding Waterbody**				
SV-805	Savannah R. @ Millstone	☑ Yes ☐ No	Mercury	☐ Yes ☑ No	
SV-370	Savannah River	☐ Yes ☑ No		☐ Yes ☐ No	
		☐ Yes ☐ No		☐ Yes ☐ No	

f. If **yes for d** above, **will use of the BMPs proposed for your project ensure the site's discharges will NOT contribute to or cause further WQS violations for the impairment(s) listed in c?** ☐ Yes ☐ No
(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

2. TMDL Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4?	b. Has a TMDL(s) been developed for this WQMS(s)? **If No, identify as such below and proceed to Section VI. If Yes, complete items c thru f of this table.**	c. **If yes for b,** what pollutants are listed as "CAUSES" or causing the impairment?	d. If **yes for b,** has the standard been **"ATTAINED" or " Fully Supported"** for the impairment(s)?	e. If **no for d (Not Attained),** will any pollutants causing the impairment be present in your site's construction stormwater discharges?
SV-805	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☑ No
SV-305	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No
	☐ Yes ☐ No		☐ Yes ☐ No	☐ Yes ☐ No

f. If **yes for e** above, **are your discharges consistent with the assumptions and requirements of the TMDL(s)?** ☐ Yes ☐ No
(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

VI. Signatures and Certifications DO **NOT** SIGN IN BLACK INK! **Read the Certifications below (in entirety). Provide date, printed name, and signatures below.** If you are a **New Owner/Operator,** as Primary Permittee you must also sign and date the applicable Comprehensive SWPPP Acceptance & Compliance Agreement below.

C-SWPPP PREPARER: "One copy of the C-SWPPP, all specifications and supporting calculations, forms, and reports are herewith submitted and made a part of this application. I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000." **(This should be the person identified in Section III).**

William W. Wright — **Printed Name of C-SWPPP Preparer**

William W. Wright — **Signature of C-SWPPP Preparer**

9880 — **S. C. Registration #**

PRIMARY PERMITTEE: "I or I (on behalf of my company and its contractors and agents), as the case may be, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that DHEC enforcement actions may be taken if the terms and conditions of the C-SWPPP are not met and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
"I or I (on behalf of my company and its contractors and agents), as the case may be, also hereby certify that all land-disturbing construction and associated activity pertaining to this site shall be accomplished pursuant to and in keeping with the terms and conditions of the approved plans and SCR100000. I also certify that a responsible person will be assigned to the project for day-to-day control. I hereby grant authorization to the to S. C. Department of Health and Environmental Control (DHEC) and/or the local implementing agency the right of access to the site at all times for the purpose of on site inspections during the course of construction and to perform maintenance inspections following the completion of the land-disturbing activity." **(See Section 122.22 of S.C. Reg. 61-9 for signatory authority information.)** Having understood the above information, I am signing this certification as Primary Permittee to the aforementioned NPDES general permit."

William G. Bailey — **Printed Name of Primary Permittee**

William G. Bailey — **Signature of Primary Permittee**

Chief, Planning Branch — **Title/Position**

June 7, 2017 — **Date Signed**

RECEIVED
JUN 7 2017
Stormwater, Construction & Agricultural Permitting Division

DHEC 2617 (10/2012)

dhec
Healthy People. Healthy Communities.

July 24, 2017

Colonel Marvin Griffin
United States Army Corps of Engineers, Savannah District
100 West Oglethorpe Avenue
Savannah, GA. 31401-3604

Attn: Mr. William G. Bailey, Chief Planning Branch

Re: Federal Consistency Determination – SAC-2010-SHEP, SCDHEC OCRM ID's # CZC-17-0602; NPDES ID # SCR10BQ44, CZC-17-0702

Dear Col. Griffin:

Thank you for coordinating with South Carolina's Department of Health and Environmental Control, Ocean and Coastal Resources Management (SCDHEC OCRM) on the above referenced project pursuant to pursuant to 15 C.F.R. § 930 Subpart C, Federal Consistency regulations associated with the Coastal Zone Management Act of 1972 (CZMA) as amended. Under the CZMA, federal Agency activities which may have reasonably likely effects on any land or water use or natural resource of the coastal zone, regardless of the location, must be consistent to the maximum extent practicable with the enforceable policies of the State's federally-approved S. C. Coastal Zone Management Program (SCCZMP).

SCDHEC OCRM is in receipt of the Consistency Determination dated May 26, 2017, for the U.S. Army Corps of Engineers (USACE), Savannah District draft Supplemental Environmental Assessment (SEA) and Coastal Zone Consistency Concurrence to evaluate proposed changes to the McCoys Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). The request is submitted as a modification to the original SHEP project that SCDHEC OCRM found conditionally consistent on September 30, 2011 and again on June 5, 2013. This certification is issued for this project at this time and should not be considered an ongoing certification.

Project Description:

The proposed action consists of dredging an additional 2,600 feet within Middle River (station 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide required flows. Within the SEA, Figure 1 shows the location of additional dredging reach in Middle River. Figure 2 shows the additional dredging reach along with locations of the proposed beneficial use placement sites. The green, orange, and blue colors shown on Figure 1 indicate areas covered by the FEIS (approximately 3.1 miles of dredging and 315,000 cubic yards of dredged material). The area in white shown on Figure 1 indicates new work being proposed (approximately 2,600 feet of additional dredging, about 24,000 cubic yards). In addition dredging an additional 4 feet at the mouth of Union Creek (also shown on Figure 1 and 2) is proposed to account for potential future shoaling. This additional depth remains within the same footprint, but would be four feet deeper for a distance of approximately 1,360 feet. A large portion of the sediment removed as part of the project would be used beneficially

to create wetlands in McCoombs (western arm of McCoys Cut) and Rifle Cuts (Figures 2 and 3), rather than place all of the material in the approved Dredged Material Containment Areas (DMCA) as described in the FEIS. Approximately nine acres of wetlands would be created using the dredged sediments from the project. The material dredged from the Middle and Little Back Rivers would be placed behind the cut closure structures to an elevation suitable for wetland creation. These new deposition sites are within the boundary of the Savannah National Wildlife Refuge. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet MLLW. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by the placement of hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion while vegetation establishes naturally along most of the length of the cuts. Potential plant species that will be planted on the edge of the newly created wetlands include; River oats (*Chasmanthium latifolium*), Slender spikegrass (Chasmanthium laxum), Cane (*Arundinaria gigantea*), Yaupon (*Ilex vomitoria*), Alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), Sweet pepperbush (*Clethra alnifolia*). The rest of the created wetland habitat will mature and fill in by the second full growing season. The remaining balance of dredged sediment will be placed either in approved DMCAs or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP. The dredged sediment would be transported either mechanically or hydraulically. Additionally, with logistical concerns in using the Houlihan Bridge (S. C. 170) during construction, a temporary pile-supported platform would be installed on the edge of the existing causeway (off S. C. 170 and the Back River Bridge), tidal wetland and the Back River impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Upland areas of disturbance will consist of 1.20 of a 1.50 acre site and is subject to State of South Carolina NPDES Stormwater permitting. Improvement to the dike leading to the new platform would be completed, impacting approximately 0.23 acres of managed wetlands. This platform is expected to be in place for the duration of the construction timeframe, which is estimated to be approximately one year and would be removed after construction has been completed.

SCDHEC OCRM Decision, SCCZMP Enforceable Policies and Conditions:

Pursuant to 15 C.F.R. § 930., subpart C SCDHEC OCRM ***concurs*** with the District's determination that the project is consistent to the maximum extent practicable with the enforceable polices of the SCCZMP based upon additional Environmental Design Commitments specified in the Draft FONSI received by this office on July 21, 2017.

Applicable Enforceable Policies of the SCCZMP: Guidelines for Evaluation of All Projects as well as the (1) Marine Related Facilities *(Docks),* (2) Dredging *(Dredging and Spoil Disposal),* and (3) Activities in Areas of Special Resource Significance *(Public Open Spaces and Wetlands)* policies contained in the SCCZMP.

This letter does not alleviate the District's responsibility to obtain other required local, state or federal approvals for the work described above. Please do not hesitiate to contact me should you have any questions.

Sincerely,

Curtis M. Joyner
Manager, Coastal Zone Consistency Section
DHEC OCRM
1362 McMillan Avenue, Suite 400
Charleston, SC 29405
843-953-0205
joynercm@dhec.sc.gov

cc: Elizabeth von Kolnitz, SCDHEC OCRM
Heather Preston, SCDHEC BOW
Chuck Hightower SCDHEC BOW
Mark Giffin, SCDHEC BOW
Shannon Hicks, SCDHEC BOW

South Carolina Board of Health and Environmental Control
Guide to Board Review
Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of $100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars ($100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15th day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
   - The grounds for amending, modifying, or rescinding the staff decision;
   - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
   - the relief requested;
   - a copy of the decision for which review is requested; and
   - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:
   South Carolina Board of Health and Environmental Control
   Attention: Clerk of the Board
   2600 Bull Street
   Columbia, South Carolina 29201
   Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).
4. The filing fee may be paid by cash, check or credit card and must be received by the 15th day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR.
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by certified mail to the Requestor, with copy by

regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter.
NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

II. Final Review Conference Scheduling

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
   - include the place, date and time of the Conference;
   - state the presentation times allowed in the Conference;
   - state evidence may be presented at the Conference;
   - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
   - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

III. Final Review Conference and Decision

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
   - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
     - Type of decision (permit, enforcement, etc.) and description of the program.
     - Parties
     - Description of facility/site
     - Applicable statutes and regulations
     - Decision and materials relied upon in the administrative record to support the staff decision.
   - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] *NOTE: The burden of proof is on the Requestor(s)*
   - Rebuttal by Department staff [15 minutes]
   - Rebuttal by Requestor(s) [10 minutes]

   Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
3. At any time during the conference, the officers conducting the Conference may request additional information and may question the Requestor, the staff, and anyone else providing information at the Conference.
4. The presiding officer, in his or her sole discretion, may allow additional time for presentations and may impose time limits on the Conference.
5. All Conferences are open to the public.
6. The officers may deliberate in closed session.
7. The officers may announce the decision at the conclusion of the Conference or it may be reserved for consideration.
8. The Clerk will mail the written final agency decision (FAD) to parties within 30 days after the Conference. The written decision must explain the basis for the decision and inform the parties of their right to request a contested case hearing before the Administrative Law Court or in matters pertaining to decisions under the South Carolina Mining Act, to request a hearing before the South Carolina Mining Council. The FAD will be sent by certified mail, return receipt requested.
9. Communications may also be sent by electronic mail, in addition to the forms stated herein, when electronic mail addresses are provided to the Clerk.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
Encroachment Permit

Permit No : 204342
Permit Decision Date : 7/20/2017
Expiration Date : 7/20/2019
Extension Date : 2/7/2018

Type
Permit :DRIVEWAY - COMMERCIAL

Location:

District	Work County	Type	Route	Aux	Begin MP	End MP
6	Jasper, SC	SC	170	None	0.059	0.059

Contact Information

Applicant: USArmyCorpsofEngineersSavannahDistrictATTNLauraEWilliams Phone:
Contact: Laura E. Williams
Address: 100 W. Oglethorpe Ave,
City: Savannah State: GA Zip: 31401

Comments

The project site is located adjacent to the westbound lane of SC Hwy 170 near the Back River. The project site is located on Federally owned property by US Fish and Wildlife Service and is within the bounds of the Savannah National Wildlife Refuge. The construction access entrance is for construction traffic only and is gated and locked while not in use.

Special Provisions:

0004 - SCDOT SHALL BE NOTIFIED WHEN WORK DEFINED IN THE PERMIT STARTS AS WELL AS WHEN THE WORK IS COMPLETED. REFERENCE SHALL BE MADE BY PERMIT NUMBER.

0209 - DISTURBED VEGETATION SHALL BE RESEEDED ACCORDING TO THE SPECIFICAION FOR HIGHWAY CONSTRUCTION.

0301 - THE DITCHES AND/OR SHOULDERS DISTURBED DURING THE INSTALLATION SHALL BE RE-ESTABLISHED TO PROPER GRADE, ORIGINAL CROSS SECTION, STABILIZED, AND ALL DRAIN PIPES CLEARED.

0305 - FLASHING ARROW BOARDS SHALL BE USED FOR ALL LANE CLOSURES ON PRIMARY ROUTES AND/OR ROADS WITH HIGH TRAFFIC VOLUMES.

0306 - TRAFFIC CONTROL, LIGHTS, SIGNS AND FLAG-MEN WILL BE FURNISHED BY APPLICANT AND WILL CONFORM TO PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

0310 - FIELD CHANGES, IF NECESSARY, MUST BE APPROVED IN WRITING BEFORE ACTUAL CONSTRUCTION OF PROPOSED CHANGES.

0311 - SEDIMENT AND EROSION CONTROL DEVICES SHALL BE USED TO MINIMIZE THE MOVEMENT OF SEDIMENT.

0312 - THE PERMITTEE SHALL HOLD THE DEPARTMENT HARMLESS FOR DAMAGES TO BOTH UPSTREAM AND DOWNSTREAM PROPERTIES.

0318 - THE APPLICANT SHALL BE RESPONSIBLE FOR IMMEDIATE REMOVAL OF SUCH TRAFFIC HAZARDS AS MUD, DEBRIS, LOOSE STONE, AND TRASH AS MAY BE WASHED OR SPILLED ON THE TRAVELED ROADWAY AS A RESULT OF THE PROPOSED WORK.

9999 - See Attached for Additional Special Provisions

From: Dayan, Nathan S CIV USARMY CESAS (US)
To: Armetta, Robin E CIV USARMY CESAS (US)
Subject: FW: GaEPD Comments per McCoys Cut Draft Supplemental EIS (UNCLASSIFIED)
Date: Thursday, June 22, 2017 11:27:20 AM

CLASSIFICATION: UNCLASSIFIED

Thank you
Nathan Dayan
Environmental Team Leader
USACE - Savannah District
912-652-5172

-----Original Message-----
From: Wiedl, Stephen [mailto:Stephen.Wiedl@dnr.ga.gov]
Sent: Thursday, June 22, 2017 10:41 AM
To: Dayan, Nathan S CIV USARMY CESAS (US) <Nathan.S.Dayan@usace.army.mil>; BAILEY, William G CIV USARMY CESAS (US) <William.G.Bailey@usace.army.mil>
Cc: Larson, Jeff <Jeff.Larson@dnr.ga.gov>; Weinstein, Bennett <Bennett.Weinstein1@dnr.ga.gov>; Smith, Bradley <Bradley.Smith@dnr.ga.gov>; Stockton, Jenna <jenna.stockton@dnr.ga.gov>; Moore, Kelie <Kelie.Moore@dnr.ga.gov>; Letosky, Melissa <melissa.letosky@dnr.ga.gov>
Subject: [Non-DoD Source] GaEPD Comments per McCoys Cut Draft Supplemental EIS

GaEPD has reviewed the subject McCoys Cut Draft Supplemental EIS document as circulated by Savannah USACE Planning Branch. The proposed adjustments to the original McCoys Cut plan include: a 2600' lengthening of the Middle River channel reach to be dredged; utilization of dredge material produced to backfill existing open water channels at Riffle Cut and McCoombs Cut (Little Back River) as to foster establishment of restored wetland terrain; placement of certain remaining dredge material in the Federal Sediment Basin (at Savannah Back River) and/or in approved Dredged Material Containment Areas; and, preparation of a contractor access area within a small footprint of USFWS Savannah National Wildlife Refuge for the purpose of logistics and transport of project material and supplies.

We find that the proposed project adjustments comprise essentially modifications of the extent, magnitude and certain accessory aspects of the concept as originally put forth in the FEIS. The fundamental intent and effect of the McCoys Cut project was and continues to be the enhancement of freshwater flows into existing wetland terrain, as to minimize/avoid the effects of upriver salinity migration. Accordingly we comment that the project adjustments appear to be appropriate and reasonable.

Stephen C. Wiedl, PWS
Manager - Wetlands Unit
Georgia Environmental Protection Division
7 Martin Luther King, Jr. Drive, Suite 450
Atlanta, GA 30334

404-452-5060
Stephen.Wiedl@dnr.ga.gov <mailto:Stephen.Wiedl@dnr.ga.gov>

Appendix I

Draft Section 7(a)(2)/7(d) Evaluation for Critical Habitat for Atlantic sturgeon Savannah River Expansion Project

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3604

APR 0 3 2018

Executive Office

Dr. Roy Crabtree, Ph.D.
Regional Administrator
National Oceanic and Atmospheric Administration
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Dr. Crabtree:

This letter is a follow-up to coordination between your staff and the U.S. Army Corps of Engineers (USACE) Savannah District, (December 2017) on the Savannah Harbor Expansion Project (SHEP) and the identification of the Savannah River as critical habitat for Atlantic sturgeon. As requested, the enclosed Endangered Species Act (ESA) Section 7(a)(2)/7(d) Evaluation has been updated, and now provides information on expected impacts based on the four physical and/or biological features of critical habitat.

The conclusion of the revised Section 7(a)(2)/7(d) Evaluation continues to be that SHEP will not result in any long term adverse impacts to critical habitat for Atlantic sturgeon.

Savannah District again commits to not make any irreversible or irretrievable commitment of resources before receiving your response that would foreclose the formulation or implementation of reasonable and prudent alternatives to avoid jeopardizing the continued existence of critical habitat for Atlantic sturgeon within the action area of SHEP.

Sincerely,

LTC, EN
DC

Marvin L. Griffin, P.E.
Colonel, U.S. Army
Commanding

Enclosure

Section 7(a)(2)/7(d) Evaluation for
Critical Habitat for Atlantic sturgeon
Savannah River Expansion Project

April 2018

Summary:

In accordance with Sections 7(a)(2) and 7(d) of the Endangered Species Act (ESA), Savannah District, U.S. Army Corps of Engineers (USACE) provides the following information for NOAA Fisheries Service to re-initiate consultation on the Savannah Harbor Expansion Project (SHEP) as a result of NOAA's August 17, 2017 final rule designating the Savannah River as critical habitat for Atlantic sturgeon.

NOAA's designation of critical habitat for Atlantic sturgeon included four physical and/or biological features (PBF) essential to the conservation of the species. PBFs are defined as the features that support the life history needs of the species, including but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms of relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. The four PBFs identified for critical habitat for Atlantic sturgeon are:

- Hard substrate in freshwater = Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range).
- Salinity gradient and soft substrate below spawning areas = Aquatic habitat between the river mouth and spawning sites with a gradual downstream gradient of 0.5, up to as high as 30 parts per thousand salinity, and soft substrate (e.g., sand, mud).
- Unobstructed water of appropriate depth = Water between the river mouth and spawning sites of appropriate depth and absent physical barriers to passage (e.g., locks, dams, gear, thermal plumes, turbidity, sound, reservoirs, etc.).
- Water quality = Water quality conditions, especially in the bottom meter of the water column, with appropriate temperature and oxygen values.

The purpose of critical habitat is to increase the number of adults spawning, then protect the eggs/larvae/juveniles they produce so those individuals survive to subsequent life stages and ultimately spawn themselves.

The analysis also discusses whether irreversible or irretrievable commitment of resources would be made during the upcoming SHEP construction activities, in accordance with Section 7(d).

Consultation History:

The original SHEP Biological Opinion (SER-2010-05579, referred to heretofore as the original Opinion) was issued in November 2011. NOAA issued a first amendment to the Opinion (SER-2013-11301) in September 2013. They issued a second addendum (SER-2017-18749) in October 2017. The second addendum addresses changes to the SHEP Fish Passage feature at the New Savannah Bluff Lock and Dam (NSBLD) resulting from the Water Infrastructure Improvements for the Nation (WIIN) Act and provides revised Reasonable and Prudent Measures and associated Terms and Conditions. The second amendment also addresses a review of the first two seasons (December 2015 through March 2016 and December 2016 through March 2017) of dredging on the entrance channel that resulted in unforeseen impacts to green sea turtles and Atlantic sturgeon. The second amendment stated that the "potential effects of the proposed action to newly designated Atlantic sturgeon critical habitat will be evaluated in a subsequent amendment."

Applicable Law:

Section 7(a)(2) of the ESA requires each Federal agency, in consultation with the resource agency, to ensure that any action authorized, funded, or implemented is not likely to jeopardize the continued existence of any endangered or threatened species or result in the adverse modification of designated critical habitat. Section 7(d) states that after initiation of consultation required by subsection 7(a)(2), the Federal agency and the permit applicant shall not make any irreversible or irretrievable commitment of resources that has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives. The implementing regulations are at 50 C.F.R. Part 402, with definitions in Section 402.02; irreversible or irretrievable commitment of resources is addressed in Section 402.09; and formal consultation is addressed in Section 402.14.

Descriptions of the SHEP Construction Actions that remain:

1. McCoys Cut Flow Re-routing Feature:

The McCoy's Cut feature is a component of the flow re-routing mitigation plan of SHEP. Construction is expected to begin in August 2018. The flow re-routing features work in combination to increase freshwater flows into portions of the estuary and limit salinity intrusion. This would reduce salinity impacts to tidal freshwater and brackish wetlands from the deepening project. These features benefit tidally influenced wetlands adjacent to the Middle, Back and Little Back River system, which are part of the Savannah River distributary system. This system of smaller cuts and rivers joins the navigation channel on the Savannah (or Front) River in several locations. The original approved plan can be found in Appendix C (http://www.sas.usace.army.mil/Missions/Civil-Works/Savannah-Harbor-Expansion/Final-Environmental-Impact-Statement/) of the 2012 Final Environmental Impact Statement for SHEP (SHEP FEIS). USACE proposed a modification to the McCoy's Cut feature in 2017 which included additional dredging and placing the excavated sediment to create wetlands. Those actions are described in detail

in the Draft Supplemental Environmental Assessment found at the following website: (http://www.sas.usace.army.mil/Portals/61/docs/Planning/PlansandReports2/McCoys%20Cut%20EA,Draft%20FONSI,%20Appendices.pdf?ver=2017-05-23-145815-383). The Final EA and signed FONSI is expected to be completed by mid-April 2018 and will replace the draft document on the website.

The majority of the McCoy's Cut work area is within the Savannah National Wildlife Refuge and is tidally influenced and surrounded by wetlands. The Rifle Cut area is dominated by tidal, emergent wetlands, while the McCoy's Cut area contains mostly forested wetlands with small fringe areas of emergent wetlands. The material to be dredged from the Middle and Little Back Rivers will be beneficially used to create wetlands by placing them behind the cut closure structures to an elevation suitable for marsh creation. The quantity of material to be dredged is enough to fill the two cuts to elevation +8 to +8.5 feet mean lower low water (MLLW). Geotechnical investigations were conducted to characterize the dredged material and found it be largely a course sandy material with very little fines and organics. Approximately 184,000 cubic yards of this material will be used to create the wetlands. Once the excavated sediments have been placed in the cuts, the eastern ends of both cuts will be armored with rock to approximately elevation +5 feet MLLW. Above this elevation, protection against erosion will be provided by hay bales secured with live stakes and several rows of container plantings. This will reduce the risk of erosion until vegetation establishes naturally along the length of the cuts. Savannah District expects this work to construct approximately nine acres of wetlands. Hydraulic dredge equipment will be limited to 24 inches or smaller and no overflow on scows will be allowed. Mechanical dredge could be used. In addition, no bottom dump scows will be allowed.

The remaining excavated sediments could be transported to an area within the Sediment Basin or to DMCA IN. The location in the Sediment Basin where Savannah District is planning to construct a broad berm as described in the 2012 final environmental impact statement (FEIS). Approximately 45 round trips will be needed to transport the excavated sediments to the Sediment Basin. Those transits will be coordinated with the Harbor Pilots to avoid traffic conflicts with other ships in the project area. The sediments would be placed within the Georgia waters side of the Sediment Basin. The placement of the excavated sediments will help fill the no longer operated Sediment Basin. The area is approximately 30 acres in size, with a bottom elevation of -15 feet MLLW based on an October 2016 hydrosurvey. The placement priority will be at the downstream or eastern end of the box and will be limited to a placement elevation of -10 feet MLLW (target height for broad berm as described in the 2012 SHEP FEIS) or greater.

As a result of logistical concerns of using the Houlihan Bridge during construction, an area was identified on the Savannah National Wildlife Refuge as a possible access site for the contractor to haul material and supplies to and from the construction site. A temporary pile supported platform will be installed on the edge of the existing tidal wetland and the Back River, impacting approximately 0.13 acres of tidal wetlands and 0.10 acres of river. Dike improvements will also be completed leading to the new access platform, impacting approximately 0.23 acres of managed wetlands inside U.S. Fish and Wildlife Service (USFWS) diked system. This platform is expected to be in place for the duration of the

construction timeframe which is estimated to be approximately one year, and will be removed at the end of the construction.

2. Boat Ramp on Hutchinson Island:

The boat ramp on Hutchinson Island will be constructed to mitigate for adverse impacts to recreational boaters from closing Rifle Cut. Construction is expected to begin by December 2020. Closing Rifle Cut will lengthen the transit time and distance travelled by recreational boaters currently using this area to reach the Back River from the only public boat ramp in this area at Houlihan Bridge on the Front River. To mitigate for this impact, Savannah District agreed to construct a new boat ramp on the north side of Hutchinson Island on the Back River. The 2-lane concrete boat ramp would include a floating dock, The Hutchinson Island boat ramp would be located in Georgia in a site that was heavily disturbed during Tide Gate construction. Construction of the boat ramp would not require the filling of jurisdictional wetlands, however some fill material (concrete, rock) would be placed into the unconsolidated river bottom in Back River. Detailed designs for the boat ramp in Back River have not been developed. However, construction of a two-lane boat ramp would only involve placing a small amount of concrete into Back River and placing some riprap along the bank for stabilization. The boat ramp will measure approximately 36 feet across with a width of approximately 40 feet

3. Inner Harbor Dredging:

Dredging the inner harbor will deepen the channel to -47 feet MLLW (5 feet deeper) from the mouth of the harbor (Station 0+000) to Station 103+000. Construction is expected to begin in October 2018. Dredging improvements in the inner harbor would also include deepening and expanding the Kings Island Turning Basin and deepening of the eight container vessel berths at the Garden City Terminal. Inner harbor channel deepening would also require construction of two meeting areas (Table 1) and two bend wideners (Table 2) as described in the 2012 SHEP FEIS.

Table 1: Proposed Meeting Areas

Location	Description
GA waters: Station 14+000 to 22+000	The existing 400-foot wide channel would be widened 100 feet on the south to provide an average width of 500 feet. Side slopes would be 3H:1V
GA and SC waters: Station 55+000 to 59+000	The existing 400-foot wide channel would be widened 100 feet to the north to provide an average width of 500 feet. Side slopes would be 3H:1V

Table 2: Proposed Bend Wideners

Widener	Location	Description
1	GA waters: Stations 27+500 to 31+500	156-foot bottom width plus side of slope of less than 100 feet. South of channel
2	SC waters: Stations 52+250 to 55+000	76-foot bottom width plus side of slope of less than 100 feet. North side of channel

A cutterhead pipeline dredge and/or mechanical dredge will be used to deepen the inner harbor channel from Stations 0+000 to 103+000. The material dredged from the inner harbor will be placed in existing upland dredged material containment areas (DMCAs). The most recent sediment characterization completed for the 2012 SHEP FEIS of the inner harbor maintenance sediments indicated that the sediments are primarily silts and clays from Station 56+000 to 103+000. The reach from Station 25+000 to 56+000 is a transition reach that has a higher percentage of sand in its distributions than the sediment distributions of the upstream reach. A notable exception is in the vicinity of Station 36+000, which has a high percentage of silts and clays and almost no sand. This location is near the confluence of the inner harbor channel and both Elba Island and Fields Cut. The inner channel sediment distributions from Stations 0+000 (mouth of the Savannah River) to 25+000 are primarily sand, which indicates that the source of sediment from this reach is offshore.

4. Marsh Restoration (DMCA 1S)

As a result of direct impacts to brackish marsh habitat as a result of the SHEP, Savannah District evaluated possible sites within coastal Georgia that could support the long term success of a restored salt and brackish marsh system. The 2012 FEIS identified restoration of a previously-used sediment placement area -- DMCA 1S as meeting those requirements. Construction is expected to begin in May/June 2019. DMCA 1S is located at the confluence of Front River and Middle River, and is within the boundaries of the Savannah National Wildlife Refuge. Restoration of the site would occur by grading it down to an elevation that would allow the growth of *Spartina alterniflora* (i.e., +7.6 to +7.8 MLLW). Once the new elevations have been established, the approximately 40.3-acre site would be allowed to naturally vegetate. A “feeder creek” system would be constructed toward the interior of the restored marsh. The creek would provide another mechanism of ensuring adequate exchange of brackish surface water with the interior of the site. Savannah District would then let the site naturally re-vegetate. More information regarding the marsh restoration efforts at DMCA 1S can be found in Section 5.01.1.2 of the 2012 SHEP FEIS.

5. Fish Passage at the NSBLD

During the 2012 SHEP study and environmental approval process; creating a fish passage at the NSBLD was identified by the natural resource agencies as an appropriate mitigation for the impacts of SHEP to sturgeon habitat after the consideration of numerous other options. Because of the tidal nature of the estuary, the interagency team could not identify any measure that could be constructed in the harbor that would improve or increase sturgeon habitat on all tidal and river flows. The National Marine Fisheries Service (NMFS) specifically viewed the NSBLD fish passage feature of SHEP as a significant contribution to recovery of sturgeon and other anadromous fish in the Savannah River, especially when combined with other mitigation features such as dissolved oxygen injection systems and flow re-routing features. More information on the original design of the fish passage at NSBLD can be found in Section 5.03.2.1 of the 2012 FEIS.

The WIIN Act 2016 deauthorized the NSBLD as a stand-alone structure, substantially altering the mitigation design described and approved as part of the 2012 SHEP FEIS. The 2016 Act provided the Secretary of the Army with the following options to modify the SHEP fish passage feature:

1. Repair the NSBLD lock wall and modify the structure such that the structure is able to:
    - Maintain the pool for navigation, water supply, and recreational activities
    - Allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; OR

2. Construct at an appropriate location across the Savannah River a structure that is able to maintain the pool for water supply and recreational activities; and
    - Removal of the New Savannah Bluff Lock and Dam on completion of construction of the fish passage structure; and

The design and construction to fulfill the SHEP fish passage mitigation requirements will be cost shared under the project.

In response to the WIIN Act of 2016, Savannah District is currently evaluating several alternatives to identify the best design to fulfill SHEP's mitigation requirement to enable sturgeon to pass that point in the river. Construction is expected to begin by January 2021. USACE is coordinating with engineering and biology staff from NMFS as part of this evaluation of new alternatives.

6. Sediment Basin Sill Construction:

The Sediment Basin sill construction is a feature of the SHEP flow re-routing plans to reduce the expected increase in upstream salinity levels. That re-routing would, in turn, minimize adverse impacts to fishery habitat. As part of the flow re-routing plan, Savannah District would deposit both new work sediment and rock to construct a sill and broad berm

at the lower end of the Sediment Basin. Those features would allow natural processes to later fill that basin. It is anticipated that a small dredge will be used to construct broad berm at mouth of Sediment Basin. Information regarding the Sediment Basin can be found in Section 5.26 and 6.19.2 of the 2012 SHEP FEIS. Construction is expected to begin in July/August 2020. A bathymetric survey is conducted in the Sediment Basin every four months during the channel deepening. The monitoring will continue after completion of the Tidegate removal to document changes in the sedimentation rate within the Sediment Basin.

7. Dissolved Oxygen Injection System:

As stated in Section 5 of the 2012 FEIS, deepening the navigation channel would adversely impact dissolved oxygen levels in the harbor without mitigation. Since dissolved oxygen is a critical environmental resource in the harbor, Savannah District will be using a land-based oxygen injection system to mitigate for impacts to dissolved oxygen levels as a result from the SHEP. The systems would use water withdrawn from the river through pipes, super-saturate it with oxygen, and then return it to the river. The water intake structure would include screens to reduce the intake of trash and other suspended solids. The screens would be sized to keep flow velocities from exceeding 0.5 foot per second to minimize entrainment of fish larvae. The intake and discharge would be located along the side of the river and not extend into the authorized navigation channel. More information on the dissolved oxygen system can be found in Section 5.02.2 of the 2012 SHEP FEIS. Construction of the system is underway, and the downriver plant is expected to be complete in May 2018. Construction of the upriver plant is scheduled to be complete by June 2018. Maintenance dredging around the intakes will be required to keep the system operating.

8. Aids to Navigation:

As stated in Section 5.22 of the 2012 SHEP FEIS, no utilities are expected to be impacted by the proposed deepening of the harbor. Savannah District contacted the U.S. Coast Guard and they indicated that U.S. Coast Guard would need to purchase and install new navigational markers for the approximately 38,000-foot extension to the existing ocean bar channel (from Stations -60+000B to -97+680B). If the harbor deepening project inadvertently damages any aids to navigation (i.e., existing beacons, electronic components in the lighted buoys or their hulls), Savannah District would work with the Coast Guard to move, repair, and/or replace those navigational markers. Installation of the aids to navigations is expected to be complete by May 2020.

Action Area

The action area (defined in 50 CFR 402.02 as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action”) for this action is the Savannah Harbor Navigation Channel, along with the Savannah River leading up to the NSBLD.

Effects Analysis on Critical Habitat for Atlantic Sturgeon

1. **PBF 1: Hard substrate in freshwater = Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range**)

    a. Eggs: Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 ppt range) necessary for the settlement and development of fertilized eggs

Of all of the SHEP construction features that will be constructed, there are not any that are expected to cause immediate impacts to the egg life stage of critical habitat for Atlantic sturgeon for the hard substrate. There are two SHEP construction features, however, that are expected to affect the egg life stage of critical habitat for Atlantic sturgeon at a later time period. Creation of the diversion structure for McCoys Cut has the potential to provide approximately 200,000 square feet of hard substrate in low salinity waters, providing substrate necessary for the settlement and development of fertilized eggs. As a result of the construction of the fish passage at the NSBLD, the gravel bar downstream of NSBLD may spread out or move to a new location as a result of the change in flow direction. This may change the location of where potential substrate is available for the settlement and development of fertilized eggs.

    b. Larvae: Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 ppt range) necessary for the growth and development of juveniles

Of all of the SHEP construction features that will be constructed, there are not any that are expected to cause immediate impacts to the larvae life stage of critical habitat for Atlantic sturgeon for the hard substrate PBF. There are two SHEP construction features, however, that are expected to effect the egg life stage of critical habitat for Atlantic sturgeon at a later time period. Creation of the diversion structure for McCoys Cut has the potential to provide hard substrate in low salinity waters, providing substrate necessary for the growth and development of juveniles. As a result of the construction of the fish passage at the NSBLD, the gravel bar downstream of NSBLD may spread out or move to a new location as a result of the change in flow direction. This may change the location of where potential substrate is available for the growth and development of juveniles.

    c. Adult: Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 ppt range) necessary for the settlement of fertilized eggs

Of all of the SHEP construction features being proposed, there are not any that are expected to cause immediate impacts to the adult life stage of critical habitat for Atlantic sturgeon for the hard substrate. There are two SHEP construction features, however, that are expected to effect the egg life stage of critical habitat for Atlantic sturgeon at a later time period. Creation of the diversion structure for McCoys Cut has the potential to provide hard substrate in low salinity waters, providing substrate necessary for the settlement of

fertilized eggs. As a result of the construction of the fish passage at the NSBLD, the gravel bar downstream of NSBLD may spread out or move to a new location as a result of the change in flow direction. This may change the location of where potential substrate is available for the settlement of fertilized eggs.

d. Evaluation

The proposed McCoys Cut Flow Re-routing feature "**May Affect but Not Adversely Modify**" critical habitat for Atlantic sturgeon for the hard substrate PBF for all three life stages (eggs, larvae, and adults) but in a positive way. One aspect of the McCoys Cut flow re-routing is the placement of crushed stone/rock next to the sheet pile as part of the construction of the diversion structure. This placement of crushed stone/rock has the potential to help provide critical habitat for Atlantic sturgeon with regards to the availability of approximately 200,000 square feet of hard substrate in fresh water. In addition, the Fish Passage at the NSBLD "May Affect but Not Adversely Modify" critical habitat for Atlantic sturgeon for the Hard Substrate PBF for all three life stages of the Atlantic sturgeon. As a result of the construction of the fish passage at the NSBLD, the gravel bar downstream of NSBLD may spread out or moved to a new location by the change in flow direction changing the location of where potential substrate is available for the settlement/development of fertilized eggs as well as the growth and development of juveniles. This habitat will not be lost, however there is the potential it could be moved slightly as a result of the change in water flow as a result of the construction of the fish passage structure.

The following SHEP construction features will have "**No effect"** on critical habitat for any of the three life stages for the hard substrate PBF for Atlantic sturgeon: the construction of the boat ramp at Hutchinson Island, Inner Harbor dredging, Sediment Basin weir construction, marsh restoration at DMCA 1S, installation of the dissolved oxygen injection system and the placement of aids to navigation. All of these proposed SHEP construction features occur in habitat where the water's salinity is greater than 0.5 ppt and where hard substrate is not present as most of the channel bottom consists of sand and silt.

2. **PBF 2: Salinity gradient and soft substrate below spawning areas = Aquatic habitat between the river mouth and spawning sites with a gradual downstream gradient of 0.5, up to as high as 30 parts per thousand salinity, and soft substrate (e.g., sand, mud).**

    a. Juvenile: Aquatic habitat inclusive of waters with a gradual downstream gradient of 0.5 up to as high as 30 ppt and soft substrate (e.g., sand, mud) between the river mouth and spawning sites necessary for juvenile foraging and physiological development

Of all of the upcoming SHEP construction features being proposed, there are several that are expected to immediately impact the juvenile life stage of the salinity gradient and soft substrate PBF during and after construction is completed. The construction of the McCoys Cut diversion structure as designed, is expected to change salinities within Middle and Front Rivers from 0.5-30 ppt to salinities less than 0.5 ppt to reduce salinity

impacts to tidal freshwater and brackish wetlands as a result of the SHEP. The construction of the boat ramp at Hutchinson Island will remove approximately 200 square feet of soft substrate within habitat that has a salinity range between 0.5 to 30 ppt that would have been available be used for foraging habitat for juvenile Atlantic sturgeon. Dredging the inner harbor as well as filling in the sediment basin with new work sediment will cause a temporary loss of foraging habitat but is expected to quickly recover and will not cause a permanent loss of critical habitat for the salinity gradient and soft substrate PBF for juvenile Atlantic sturgeon.

b. Evaluation

The McCoys Cut diversion structure, construction of the boat ramp at Hutchinson Island, dredging the inner harbor, and the filling of the Sediment Basin **"May Affect but Not Adversely Modify"** critical habitat for Atlantic sturgeon for the salinity gradient and soft substrate PBF. The construction of the McCoys Cut diversion structure will cause a conversion of an area of approximately 44 million square feet within the Back River portion of the Savannah River that was between 0.5-30 ppt to less than 0.5 ppt. This area will see a decrease in river salinities that would have otherwise been available for juvenile foraging, but with the conversion of the habitat to salinities less than 0.5 ppt, it would not be considered ideal foraging habitat. There will also be two areas within the Front River portion Savannah River totaling approximately 100 million square feet whose salinities will change from 0.5 ppt and less to 0.5-30 ppt which will provide additional suitable foraging habitat for juvenile Atlantic sturgeon. The benefit of the construction of the McCoys Cut flow re-routing feature is even with the loss of the area within the Back River for suitable foraging habitat for juvenile Atlantic sturgeon, as a result of the width size of the river areas within the Front River where there will be an increase in salinities, there will be an overall gain in suitable foraging habitat by about half.

The construction of the boat ramp on Hutchinson Island will remove a small area (approximately 200 square feet) of soft substrate. Approximately 44 million square feet of suitable forging habitat will be lost but approximately 109 square feet of suitable foraging habitat will be gained as a result of the McCoys Cut flow re-routing feature, as well as the construction of the boat ramp on Hutchinson Island. Deepening the inner harbor as well as the filling of the Sediment Basin will temporarily remove the bottom sediments and any benthos that reside there. This will decrease sturgeon foraging habitat for a period of time. Most of the deepening activities will occur within the footprint of the existing maintained navigation channel. Though an initial loss of benthic resources are likely, recovery between 6-months to two years is expected. Thus, the impacts to sturgeon foraging habitat are expected to be short-term as a result of deepening the inner harbor. The filling of the Sediment Basin will also cause a temporary loss of foraging habitat during the filling process, but this will only be a temporary loss of foraging habitat, not a permanent loss.

The following SHEP construction features will not impact the juvenile life stage of critical habitat for the salinity gradient and soft substrate PBF for Atlantic sturgeon: Fish passage at NSBLD, marsh restoration at DMCA 1S, installation of the dissolved oxygen injection system, placement of aids to navigation, as well as the conversion of McCoombs Cut from open water to wetlands as part of the McCoys Cut Flow re-routing feature. The fish

passage feature will occur in habitat where salinities are less than 0.5 ppt, which is not preferable habitat for juvenile foraging and physiological development as they prefer water where the salinities range from 0.5 to 30 ppt. The marsh restoration efforts at DMCA 1S involve grading down existing uplands to convert upland habitat to wetland habitat. This would not involve construction within the Savannah River itself and therefore would not impact any of the existing foraging habitat for juvenile Atlantic sturgeon. The installation of the dissolved oxygen injection system is also land-based and does not require any construction within the Savannah River or removal/conversion of soft bottom habitat and therefore will not impact the juvenile life stage of the "salinity gradient and soft substrate" PBF. The placement of aids to navigation would require work within the Savannah River, however the field work to perform these functions is short term and would have temporary effects and would not remove or change the existing soft substrate for juvenile foraging and physiological development. The conversion of McCoombs Cut from open water to wetlands as part of the McCoys Cut Flow re-routing would not impact critical habitat for juvenile Atlantic sturgeon for the "salinity gradient and soft substrate" PBF as McCoombs cut is located within a section of the Savannah River where salinities are less than 0.5 ppt, which is not preferable juvenile foraging and physiological development as they prefer water where the salinities range from 0.5 to 30 ppt.

3. **PBF 3: Unobstructed water of appropriate depth = Water between the river mouth and spawning sites of appropriate depth and absent physical barriers to passage (e.g., locks, dams, gear, thermal plumes, turbidity, sound, reservoirs, etc.).**

    a. Juvenile (Locating, accessing and using habitat for development): Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support seasonal and physiologically dependent movement of juveniles to appropriate salinity zones within the river estuary

None of the upcoming the SHEP construction features will impact critical habitat for juvenile Atlantic sturgeon for the unobstructed water depth PBF since there are no designs that would cause obstructions within the 0.5 to 30 ppt range.

    b. Subadults (Holding): Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support holding of subadults. Water depths in main river channels must also be deep enough (at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.

    c. Adults (Spawning movements): Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary for unimpeded movement of adults to and from spawning

sites. Water depths in main river channels must also be deep enough (at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.

d. Adults (Staging or resting): Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support staging or resting for pre-/post-spawning condition adults. Water depths in main river channels must also be deep enough (at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.

The construction of the McCoys Cut diversion structure and the construction of the closure structure at McCoombs Cut to create wetland habitat is expected to immediately impact the subadult and adult life stages of the "unobstructed water depth" PBF. These features would cause an obstruction within the Savannah River for Atlantic sturgeon subadults and adults between the river mouth and spawning site for their holding, spawning movements, and staging/resting life stages, thereby causing the Atlantic sturgeon to travel approximately 2,400 feet to McCoys Cut to continue their way up river to find additional spawning and resting areas. The diversion structure will increase flows through McCoys Cut and will act as an attractor for upstream migration. The construction of the diversion structure as part of the McCoys Cut flow re-routing feature will modify approximately 1/3 of the river's width. While it is expected that most of structure will remain underwater most of the time and provide approximately eight feet of water between the top of the diversion structure and the water's surface, the sturgeon will most likely seek the unobstructed two-thirds of the river's width before they continue heading upstream.

e. Evaluation:

The construction of the McCoys Cut diversion structure and the construction of the closure structure at McCoombs Cut to create wetland habitat **"May Affect but Not Adversely Modify"** critical habitat for Atlantic sturgeon for the "unobstructed water depth" PBF for the following life stages (subadults, adults (spawning movement), and adults (staging or resting)).

The following SHEP construction features will not impact any of the life stages of critical habitat for the unobstructed water depth PBF for Atlantic sturgeon: construction of the fish passage at NSBLD, the construction of the rock sill/weir at the Sediment Basin, the construction of the boat ramp at Hutchinson Island, dredging the Inner Harbor, marsh restoration at DMCA 1S, installation of the dissolved oxygen injection system, and placement of aids to navigation.

Implementation of the fish passage feature at NSBLD will remove an obstruction that has prevented Atlantic sturgeon from passing between the river mouth and their historic spawning sites. The area above the NSBLD was not designated as critical habitat.

The rock sill/weir as designed at the Sediment Basin will be constructed at approximately -9 feet MLLW, so it would not be an obstruction to sturgeon traveling up or down the river. The -9 feet MLLW was selected because it matches the natural river depth just upstream of the Tide Gate. The construction of the boat ramp is also not expected to obstruct the movement of Atlantic sturgeon moving up and down the Savannah River as the boat ramp will only encompass approximately 200 square feet of the river. Dredging the Inner Harbor involves temporarily removing the bottom sediments and therefore will not cause an obstruction within the Savannah River. The turbidity plume for dredging is localized and temporary to the dredge and does not cover the whole width of the river. Therefore it would not act as an obstruction. In addition water release from the DMCA will not cause a turbidity plume that will block the river. The marsh restoration efforts at DMCA 1S and the installation of the dissolved oxygen injection system are both land based activities and do not involve any in-water work that would prevent the sturgeon from freely traveling the Savannah River. The placement of the aids to navigation would not obstruct the movement of sturgeon or any other fish species from transiting up the river such as a lock, dam, etc. The size of the aids are small enough that that the sturgeon should easily swim around them and continue their path up the Savannah River.

The construction of the diversion structure at McCoys Cut and the conversion of open water to wetland habitat in McCoombs cut will not cause an obstruction for critical habitat for juvenile Atlantic sturgeon. The location where the construction of the diversion structure and the creation of wetlands at McCoombs Cut would occur in water where the salinity is less than 0.5 ppt, which is less preferable than where the water's salinity is 0.5-30 ppt.

There are not new locks, dams, thermal plumes, sound, reservoirs, gear, etc that would act as a barrier.

4. **PBF 4: Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values necessary to support annual and inter-annual larval survival, growth, development, and recruitment.**

    a. Larvae: Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values necessary to support annual and inter-annual larval survival, growth, development, and recruitment.

Of all of the upcoming SHEP construction features, only the construction of the fish passage structure at NSBLD has the potential to impact the water quality PBF for larval Atlantic sturgeon. The USACE Savannah District will follow best management practices during the construction of the fish passage structure to reduce impacts to critical habitat for Atlantic sturgeon during all life stages, especially during the spawning period. Reasonable and Prudent Measure 9.3.2.1 to the NMFS Biological Opinion amendment dated October 13, 2017 states "To protect spawning sturgeon and their offspring, no in-water construction will be performed at the downstream entrance of the fish passage

channel during the late winter/spring spawning period through the early summer larval period".

b. Juveniles: Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values necessary to support annual and inter-annual juvenile survival, growth, development, and recruitment.

c. Subadults: Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values necessary to support annual and inter-annual subadult survival, growth, development, and recruitment.

d. Adults: Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values necessary to support spawning; annual and inter-annual adult survival

Of all of the upcoming SHEP construction features, only the dredging of the Inner Harbor and the dredging associated with the McCoys Cut flow re-routing feature has the potential to impact the juvenile, subadult, and adult water quality PBF for Atlantic sturgeon.

Dredging activities associated with the McCoys Cut flow re-routing feature could cause some temporary turbidity which could temporarily impact water quality (dissolved oxygen levels in particular) within the project area. The effects are expected to be minor in amount, localized in extent, and short in duration. Dredging the Inner Harbor also has the potential to cause decreased DO levels as a result of the deeper water depths. However, the installation of the dissolved oxygen injection will compensate for those DO impacts.

e. Evaluation:

Dredging activities associated with McCoys Cut flow re-routing feature as well as the Inner Harbor, **"May Affect but Not Adversely Modify"** the water quality PBF for juvenile, subadults, and adult Atlantic sturgeon.

Savannah District will follow best management practices during the dredging activities associated with the McCoys Cut flow re-routing feature including the monitoring of water quality (dissolved oxygen, pH, turbidity) downstream of the dredging activity to prevent sediment plumes that could adversely affect the water quality in the deep hole located in the lower Middle River. It will also only conduct dredging in only one area at a time (either in upper Middle River or the Back River, but not both at the same time). In addition, the size of the dredge will be limited.

Dredging the inner harbor **"May Affect But Not Likely to Adversely Modify"** critical habitat for Atlantic sturgeon because the water quality impacts will be short in duration and will recover after dredging ends. It is expected that the installation of the dissolved oxygen injection system will compensate for the DO impacts caused by the deeper water depths from the Inner Harbor dredging. The system's design provides the best balance of system

spacing, size and effectiveness. Installation of the dissolved oxygen injection system will substantially reduce the projected negative impacts to dissolved oxygen levels within the harbor from the harbor deepening. The design studies indicate that the dissolved oxygen system will increase by 6.5 percent or 89 acres the amount of acceptable summer habitat for sturgeon, a highly stressful time for the species in this river because of recurring low dissolved oxygen levels. In addition, once the bottom sediments are dredged from inner harbor, they will be placed in existing upland DMCAs. Savannah District will monitor the water quality within the DMCAs and will only discharge water into the receiving waters of the harbor when dissolved oxygen, turbidity, and pH levels are within state standards.

Construction of the fish passage structure at NSBLD is not expected to impact for the water quality PBF for larval Atlantic sturgeon. In addition to minimizing effects to spawning sturgeon and their offspring, by limiting construction so that no in-water fish passage construction downstream of the NSBLD occurs between August 15 and April 15 of any year, Savannah District will adhere to the following protective measures:

a) Appropriate erosion and turbidity controls shall be used wherever necessary to limit sediments from entering the water.
b) Dredging and construction shall be conducted with minimum environmental impact.
c) No construction debris shall be allowed to enter the water.
d) To ensure passage throughout the habitat, adequate pathways must be provided at all times so that fish can migrate between foraging habitat and spawning habitat; no blocking of the channel is allowed.
e) Normal water flows must be maintained throughout the construction areas.
f) Savannah District shall not reduce flows during spring/early summer to aid in the construction of the fish passage.

The following SHEP construction features will not impact the water quality PBF for any of the life stages of Atlantic sturgeon: the construction of the boat ramp at Hutchinson Island, construction of the rock sill/weir at the Sediment Basin, marsh restoration at DMCA 1S, and placement of aids to navigation.

The construction of the boat ramp at Hutchinson Island will be performed in water shallower than four feet; therefore, not in critical habitat. Turbidity, associated with the disturbance of sediments during construction of the boat ramp would occur within critical habitat for Atlantic sturgeon, but it would be minor and would not affect dissolved oxygen levels or temperature levels at the site. As a result of the construction of the rock sill/weir at the Sediment Basin, there is the potential for temporary water quality impacts during the construction, but these are anticipated to be minor and short-term in nature. It is not anticipated that either temperature or dissolved oxygen levels would reach unacceptable levels as a result of those construction activities.

The movement, repair, installation of the navigational aids, and the marsh restoration efforts at DMCA 1S would not have any negative impacts to the water quality PBF. The field work to perform these functions is short term and would have temporary effects. Once the work is complete, any impacts to water quality would be minor and would not

change either temperature or dissolved oxygen levels within the area where work is performed.

Section 7(d) Statement

To reduce potential impacts to critical habitat for Atlantic sturgeon during the construction of the SHEP – including its McCoys Cut flow re-routing feature, the fish passage at NSBLD, and inner harbor dredging; various protective measures will be followed. These protections include time of year restrictions on when work cannot be performed. For the McCoys Cut flow re-routing feature, construction of the diversion and closure structure at McCoys/McCoombs Cut would only occur between May 15 and November 1 since most sturgeon are not expected to be in that portion of the Savannah River during that timeframe. To minimize effects to spawning sturgeon and their offspring during the construction of the fish passage at the NSBLD, bubble curtains/screens or other recommended methods could be used just downstream of the NSBLD structure rather than preforming no in-water construction downstream of the NSBLD for eight months (August 15 and April 15 of any year). Impacts to critical habitat for Atlantic sturgeon from the Inner Harbor dredging will be offset by the other SHEP project features, particularly construction and operation of the dissolved oxygen injection system and fish passage at NSBLD. Savannah District will not make any irreversible or irretrievable commitment of resources that would foreclose the formulation or implementation of any reasonable and prudent alternatives to avoid jeopardizing the continued existence of Atlantic sturgeon as covered in the NMFS Biological Opinion for SHEP and present in Savannah Harbor.

Conclusion of Section 7(a)(2) Evaluation

The protective measures that will be used during the SHEP construction, including fish passage at the NSBLD, the McCoys Cut flow re-routing feature, and the Inner Harbor dredging, should reasonably protect Atlantic sturgeon and not jeopardize their critical habitat.

References

November 04, 2011. NOAA Fisheries Final Biological Opinion for Savannah Harbor Expansion Project (SHEP)

September 23, 2013. NOAA Fisheries Amendment to Biological Opinion for Savannah Harbor Expansion Project (SHEP).

October 13, 2017. NOAA Fisheries Amendment to Biological Opinion for Savannah Harbor Expansion Project (SHEP).

USACE. Final Environmental Impact Statement, Savannah Harbor Expansion Project Chatham County, Georgia and Jasper County S.C. January 2012.

Appendix J
Inland Testing Manual Tier 1 Evaluation

Savannah Harbor Expansion Project
Modification of McCoy's Cut Area Work

Inland Testing Manual Tier I Evaluation

13 February 2018

Prepared by

U.S. Army Corps of Engineers,
Savannah District
100 West Oglethorpe Avenue
Savannah, Georgia 31401

Savannah Harbor Expansion Project
Modification of McCoy's Cut Area Work (McCoy's Cut)
Inland Testing Manual Tier 1 Evaluation

1 Project Information

1.1 Project Overview

This is an evaluation of the suitability of disposing dredged material in waters of the United States from the McCoy's Cut flow re-routing feature of the Savannah Harbor Expansion Project (SHEP). The evaluation follows the procedures for a Tier 1 evaluation under the 1998 Inland Testing Manual (ITM).

The ITM contains technical guidance for evaluating the potential for contaminant-related impacts associated with the discharge of dredged material in waters regulated under Section 404 of the Clean Water Act (CWA) (inland waters, near coastal waters, and surrounding environs) through chemical, physical, and biological evaluations. The tiered-testing procedure described in Section 3.1 of the ITM is comprised of four levels (tiers) of increasing investigative intensity which generate information to assist in making contaminant-related determinations. Tiers I and II use existing or easily acquired information and apply relatively inexpensive and rapid tests to predict environmental effects. Tiers III and IV contain biological evaluations which are more intensive and require field sampling, laboratory testing, and rigorous data analysis.

The U.S. Army Corps of Engineers, Savannah District (Savannah District) prepared this Tier 1 evaluation as part of the project feature's compliance with Section 404 of the CWA. This evaluation considers the sediments to be dredged from 2,600 feet in Middle River (Stations 58+00 to 84+00). A large portion of the dredged material is proposed for placement behind the cut closure structures in McCoombs (western arm of McCoy's Cut) and Rifle Cuts. Placement at these sites would beneficially use the sediments to create wetlands. Excess dredged sediment will be placed either in approved upland Dredged Material Containment Areas (DMCAs) or in a portion of the Sediment Basin, which is another flow re-routing feature of SHEP.

Savannah District reviewed the February 1998 Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Inland Testing Manual to determine the suitability of the material to be dredged for inland disposal (the 1998 joint EPA/USACE Manual is the most recent version of that guidance document). After reviewing that document and project-specific data, the District has concluded that the material described herein is suitable for inland disposal to create wetlands at McCoombs and Rifle Cuts, and to be placed within the Sediment Basin.

1.2 Project Description

1.2.1 Environmental Setting

The SHEP – McCoy's Cut project is located off of the Savannah River on the Middle and Little Back River.

1.2.2 Proposed Action

The proposed action modifies the previously-approved SHEP McCoy's Cut flow re-routing feature by requiring an additional 2,600 feet of dredging within Middle River (Stations 58+00 to 84+00) to -7 feet mean lower low water (MLLW) to provide the required flows (Figure 1). In addition to the additional 2,600 feet of dredging, the dredging depth would also increase by four feet at the mouth of Union Creek to account for potential future shoaling. The area of additional dredging depth is within the same footprint as the previously-approved dredging template; just four feet deeper for a distance of approximately 1,360 feet. This alternative consists of (1) using the majority of excavated sediments beneficially to create wetlands in both McCoombs (western arm of McCoy's Cut) and Rifle Cuts (Figure 2) to enhance fish and wildlife habitat, and (2) taking the remaining balance of approximately 100,000 cubic yards of course sand from the upper reaches of Middle and Little Back River to either the Sediment Basin or to an approved upland DMCA. Details can be found in Section 2 of the Supplemental Environmental Assessment (SEA) entitled Savannah Harbor Expansion Project Modification of McCoy's Cut Feature (McCoy's Cut), dated May 2017.

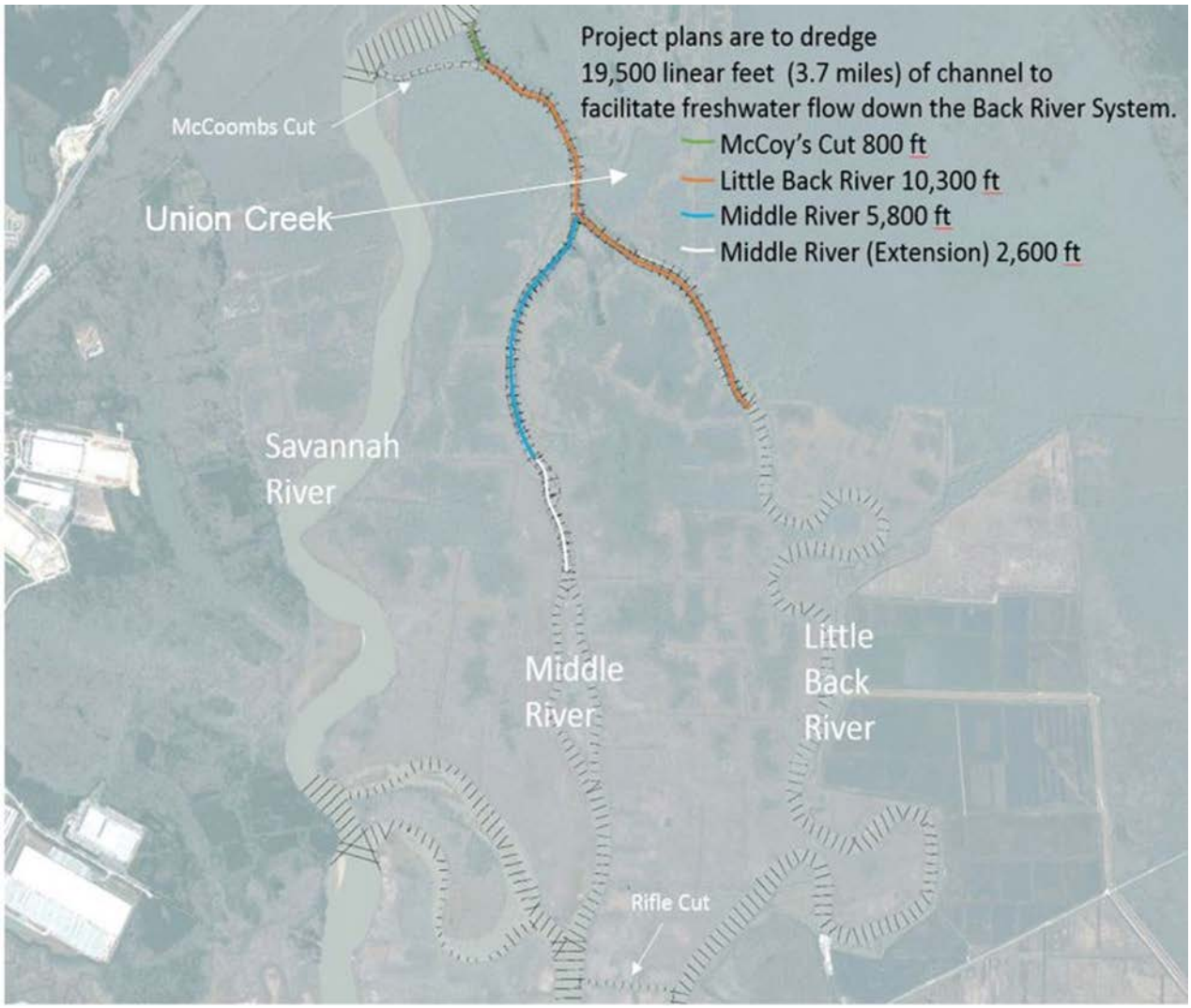


Figure 1: Location of Additional Dredging Reach in Middle River

Figure 2: Project Location - Close Up Beneficial Use Placement Areas

1.2.3 General Description

Lands along this portion of the Savannah River estuary are largely within the Savannah National Wildlife Refuge. The Savannah National Wildlife Refuge is located in the upper portion of the harbor and consists of 29,175 acres of freshwater marshes, tidal rivers and creeks, and bottomland hardwoods. The Refuge also contains extensive unimpounded wetlands along the Savannah, Middle and Back Rivers. Wetlands located downstream of U.S. Highway 17 are vegetated predominantly by salt marsh and brackish marsh species, while those above that point are predominantly freshwater or brackish wetlands. The U.S. Fish and Wildlife Service also manages 5,700 acres of diked impoundments for waterfowl in the Refuge. Those impoundments include 3,000

acres of freshwater pools.

Description of Actions Subject to Section 404 of Clean Water Act

Geotechnical investigations were conducted to characterize the sediments to be dredged and found them to largely consist of course sands (about 90%), with very little fines and organics.

The majority of the project area is located within the Savannah National Wildlife Refuge and is tidally influenced and surrounded by wetlands. The Rifle Cut area is dominated by tidal, emergent wetlands. The McCoy's Cut area contains mostly forested wetlands with small fringe areas of emergent wetlands. The sediments to be dredged from Middle and Little Back Rivers will be beneficially used to create wetlands by placing them behind the cut closure structures to an elevation suitable for marsh creation, as described in the SEA.

The remaining excavated sediments could be transported to an area within the Sediment Basin where Savannah District is planning to construct a broad berm as described in the 2012 SHEP Final Environmental Impact Statement (FEIS). Figure 3 shows the area within the Georgia waters side of the Sediment Basin where the sediments would be deposited. The placement of the excavated sediments will help fill the no-longer-operated Sediment Basin. The placement area within the Sediment Basin is approximately 30 acres in size. The present bottom elevation of that site is -15 feet MLLW, based on an October 2016 hydrosurvey. The placement priority will be at the downstream or eastern end of the box and will be limited to a placement elevation of no shallower than -10 feet MLLW (target height for broad berm as described in the 2012 FEIS).

Figure 3: Approximate Placement Location within the Sediment Basin

1.2.4 Most Recent Testing

Section 4.01.2 and Section 3 of Appendix H of the 2012 FEIS describe the sediment characteristics found in the SHEP project area. Sediments excavated from the Savannah Harbor are a mixture of sands, silts, and clays. Sand is defined as grain size between 0.07 and 5.0 mm while silt and clay measures less than 0.07 mm in diameter. Fill material that would be used to construct the various mitigation features of the project include clean sand, rock and riprap. The FEIS included hazardous, toxic and radioactive waste investigations for this project feature. None of the sediments that would be excavated during the harbor deepening are considered to be or include hazardous or toxic wastes.

In late November 2016, subsurface investigations were performed in portions of McCoy's Cut, Little Back River, Middle River and McCoombs Cut. Thirty-three boring holes were drilled, ranging from 0 feet to -10 feet. A total of 24 sediment samples were summarized and are included in this Tier 1 Evaluation. Boring hole locations are shown in Figure 4. The U.S. Army Corps of Engineers - Materials Testing Regional Technical Center of Expertise in Marietta, GA performed the material testing.

Figure 44: Map of boring hole locations (blue) at McCombs and Rifle Cuts (orange)*.*

2. Tier 1 Evaluation

2.1 Locations, Quantities and Types of Pollutants Discharged Upstream and Within the Dredged Area

Based on the location of the project area, there is a very low risk of contaminants being present.

2.2 Changes Since Last Testing

No significant changes have occurred in Savannah Harbor since the last sediment evaluation on sediments that would be dredged for SHEP. This project feature is located in a remote area near the Savannah National Wildlife Refuge. The site is away from commercial and/or industrial activity, which reduces the potential for any sources of containments that would impact the sediments.

3. Results of Sediment Review

The 2016 sediment sampling revealed no unusual colors or odors in the sediments. Analysis of the results indicate that no contamination exists that would impact the proposed construction activities. The visual classification of the soil samples indicate the majority of the material that will be used to create the wetland habitat or be placed in the Sediment Basin is predominantly medium to coarse sands, with little to no trace fines and organics (Table 1).

Table 1: Visual Classification of Sediment

Sample ID	Depth (ft)	Color	Class.	D2487 Unified Soil Classification System
DMC-2	0.0 to 5.0	Pale Brown & Grayish Brown	SP	Poorly Graded Sand (SP).
DMC-3	0.0 to 2.5	Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-3	2.5 to 3.0	Light Grayish Brown, Very Dark Gray & Black	SP-SM	Poorly Graded Silty Sand (SP-SM).
DMC-5	0.0 to 5.0	Pale Brown	SP	Poorly Graded Sand (SP).
DMC-7	0.0 to 5.0	Dark Gray & Yellowish Brown	SP	Poorly Graded Sand (SP), with a trace of gravel.
DMC-7	5.0 to 10.0	Brown	SP	Poorly Graded Sand (SP).
DMC-9	0.0 to 5.0	Dark Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-9	5.0 to 7.0	Greenish Gray & Light Olive Brown	CL	(Visual) Sandy Lean Clay (CL).
DMC-9	7.0 to 9.0	Grayish Brown	SP	Poorly Graded Sand (SP).
DMC-10	0.0 to 5.0	Dark Gray & Brown	SP	Poorly Graded Sand (SP).
DMC-12	0.0 to 5.0	Black, Yellowish Brown & Pale Brown	SP	Poorly Graded Sand (SP).
DMC-14	0.0 to 3.0	Yellowish Brown & Black	SP	Poorly Graded Sand (SP).
DMC-14	3.0 to 5.0	Yellowish Brown & Very Dark Gray	SC	(Visual) Clayey Sand (SC).
DMC-16	0.0 to 5.0	Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-18	0.0 to 5.0	Dark Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-19	0.0 to 5.0	Yellowish Brown & Dark Gray	SP	Poorly Graded Sand (SP).
DMC-20	0.0 to 5.0	Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-22	0.0 to 5.0	Yellowish Brown & Very Dark Gray	SP	Poorly Graded Sand (SP).
DMC-24	0.0 to 5.0	Yellowish Brown & Dark Gray	SP	Poorly Graded Sand (SP).
DMC-26	0.0 to 5.0	Yellowish Brown, Dark Gray & Pale Brown	SP	Poorly Graded Sand (SP).
DMC-28	0.0 to 5.0	Gray, Yellowish Brown & Pale Brown	SP	Poorly Graded Sand (SP).
DMC-30	0.0 to 5.0	Dark Yellowish Brown & Very Dark Grayish Brown	SP	Poorly Graded Sand (SP).
DMC-32	0.0 to 3.0	Dark Yellowish Brown	SP	Poorly Graded Sand (SP).
DMC-33	1.0 to 5.0	Dark Gray & Light Yellowish Brown	CL	(Visual) Lean Clay (CL), with Some Sand.

Results from the standard test method for particle-size analysis of soils, ASTM D422, show the majority (89.6%) of sediment found within the project area is comprised of sand. Pebbles comprise 1.9%, and particles smaller than very fine sand comprise 8.5% of the sediment (Figure 5).

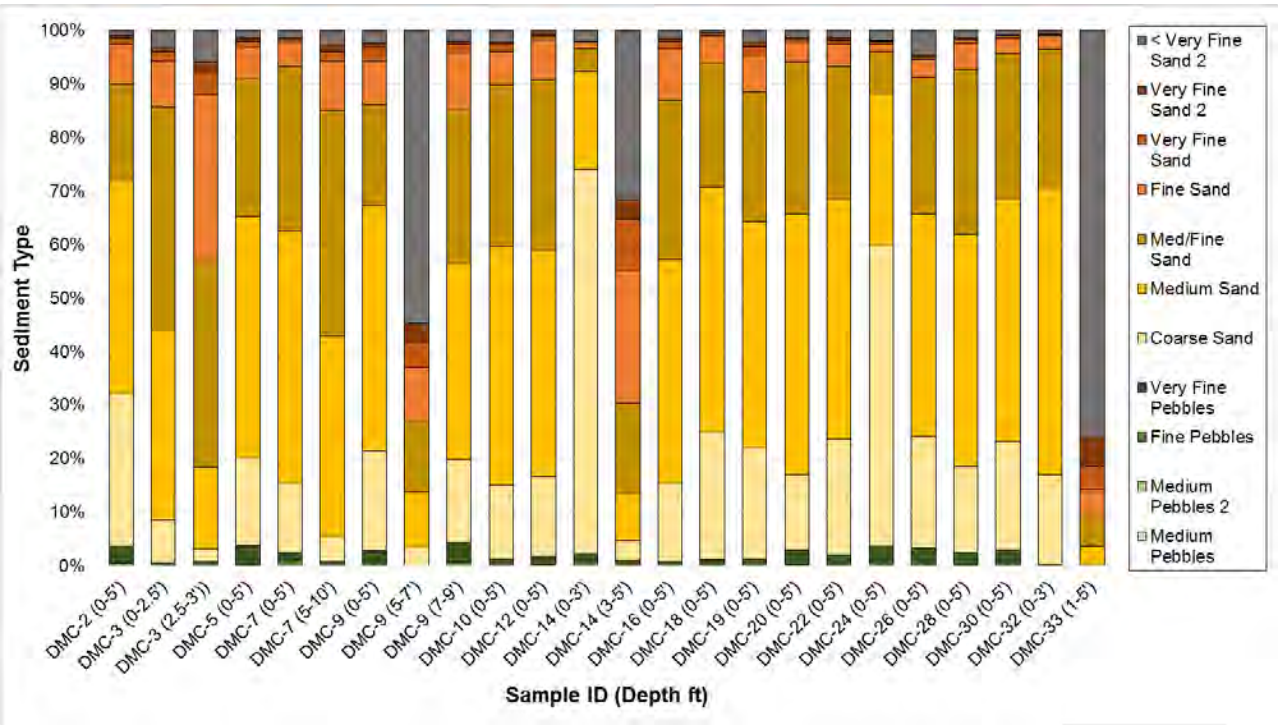


Figure 5: Summary of Sediment ASTM D422 analysis.

4. CFR 40 Part 230.60(a-d) Section 404(b)(1) Disposal in Waters of the United States Compliance Evaluation, as discussed in Section 4 of the February 1998 Inland Testing Manual

4.1 Compliance with Part 230.60

*"***(a)** ***If the evaluation under paragraph (b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material so composed is generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels. However, when such material is discolored or contains other indications that contaminants may be present, further inquiry should be made."***

Analysis of the sediment samples indicate that no contamination exists in those sediments that would impact the proposed construction activities. The visual classification of the soil samples indicate the material that will be used to create the wetland habitat or be placed in the Sediment Basin is predominantly medium to coarse sands (almost 90%), with little to trace fines and organics. The standard test method for particle-size analysis of soils (ASTM D422) confirms that the majority of the proposed sediments are comprised of sands.

*"***(b)** ***The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants."***

The distance of the excavation site from industrial development in the estuary indicates there is a very low risk of contaminants being present.

"**(c)** ***Where the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar, the fact that the material to be discharged may be a carrier of contaminants is not likely to result in degradation of the disposal site. In such circumstances, when dissolved material and suspended particulates can be controlled to prevent carrying pollutants to less contaminated areas, testing will not be required.*****"**

Based on the location of the project area, there is a very low risk of contaminants being present in either the excavation site or the discharge site. The sites are substantially similar based on their close proximity.

"**(d)** ***Even if the Sec. 230.60(b) evaluation (previous tests, the presence of polluting industries and information about their discharge or runoff into waters of the U.S., bioinventories, etc.) leads to the conclusion that there is a high probability that the material proposed for discharge is a carrier of contaminants, testing may not be necessary if constraints are available to reduce contamination to acceptable levels within the disposal site and to prevent contaminants from being transported beyond the boundaries of the disposal site, if such constraints are acceptable to the permitting authority and the Regional Administrator, and if the potential discharger is willing and able to implement such constraints."***

Based on the location of the project area, there is a very low risk of contaminants being present in the sediments proposed for excavation. The analytical results of sediment sampling indicate that no contamination exists in those sediments that would restrict the proposed construction activities.

5. Determination

5.1 After consideration of all available information, including the location and the lack of spills and discharges into the waters near McCoy's Cut, Savannah District believes that the proposed sediment excavation and placement would not significantly degrade or endanger the waters of the United States. In addition, maintenance materials dredged material the site would also comply with Section 404(b) of the Clean Water Act of 1977. As a result, Savannah District believes that no additional sediment testing is required, a Tier II evaluation is not needed, and that the proposed action complies with the requirements of 40 CFR Parts 220-227.

6. References

U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. 1998. Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. - Testing Manual. EPA-823 -B-98 -O04, Washington, D.C.