ATLANTIC INTRACOASTAL WATERWAY FEDERAL NAVIGATION CHANNEL
CUMBERLAND DIVIDINGS MAINTENANCE DREDGING
CAMDEN COUNTY, GEORGIA

Final Environmental Assessment/Finding of No Significant Impact

Aerial view from the southwest of Cumberland Island and Atlantic Intracoastal Waterway. Image courtesy of Tim Kiser

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
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Atlantic Intracoastal Waterway Federal Navigation Channel

Cumberland Dividings Maintenance Dredging

Final Environmental Assessment and Finding of No Significant Impact

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FINDING OF NO SIGNIFICANT IMPACT

ATLANTIC INTRACOASTAL WATERWAY FEDERAL NAVIGATION CHANNEL CUMBERLAND DIVIDINGS MAINTENANCE DREDGING CAMDEN COUNTY, GA

The U.S. Army Corps of Engineers, Savannah District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. The Final Environmental Assessment (EA) dated January 2023 for the Cumberland Dividings Maintenance Dredging addresses providing a safe, reliable, efficient, and environmentally sustainable navigation channel in the Atlantic Intracoastal Waterway (AIWW) in Camden County, GA.

The Final EA, incorporated herein by reference, evaluates the maintenance dredging including various placement sites in the action area. The proposed action alternative (preferred alternative) includes:

- Maintenance dredging of shoaled areas within the Cumberland Dividings reach of the AIWW, river miles 704.5 through 709.5 using a cutterhead hydraulic dredge.

- Placement of dredged material for restoration of an eroded island that provides bird habitat, identified in the EA as beneficial use site E (BU-E).

The Corps proposes to conduct post-construction monitoring at the placement site to assess changes in elevation immediately following construction, 6 months, and 12 months post construction. This will allow a complete water year and tropical and extratropical storm cycle to occur, thus demonstrating erosional events and enabling the Corps to observe sediment migration.

In addition to a “no action” alternative, the proposed action was evaluated. While not carried forward for detailed analysis in the EA, the Corps evaluated and screened out a number of placement sites for the dredged material. These placement sites included: shoreline stabilization (BU-B, BU-F), salt marsh restoration (BU-A, BU-C), bird habitat restoration (BU-D), infrastructure support (Cumberland Upland), and confined upland placement (Big Crab Island Dredged Material Management Area [DMMA], Drum Point DMMA). Section 2.0 describes the alternatives development, placement site screening, the no action alternative, and the proposed action alternative (preferred alternative).

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in the below

table:

Summary of Potential Effects of the Recommended Plan Table

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Air quality	☒	☐	☐
Visual resources	☒	☐	☐
Noise	☒	☐	☐
Hazardous, toxic & radioactive waste	☒	☐	☐
Land use	☐	☐	☒
Navigation	☒	☐	☐
Geology/soils	☐	☐	☒
Real estate	☐	☐	☒
Economic/social	☐	☐	☒
Hydrology and hydraulics	☒	☐	☐
Water quality	☒	☐	☐
Wetlands	☒	☐	☐
Aquatic biological resources	☒	☐	☐
Protected species	☒	☐	☐
Essential fish habitat	☒	☐	☐
Historical and cultural resources	☐	☐	☒
Recreation	☒	☐	☐
Climate change	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the proposed action. These avoidance and minimization measures are summarized below:

- The template of the placement site will be designed to avoid shellfish communities and placement of material in vegetated marsh
- The Corps will follow West Indian manatee conditions and appropriate project design criteria in the 2020 South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States (2020 SARBO) (Section 3.6 and Appendix A)

No compensatory mitigation is required as part of the proposed action.

PUBLIC REVIEW

Public review of the draft EA and FONSI was initiated on January 11, 2023 for a 30-day public comment period. A copy of comments received and responses to comments are included in Appendix C of the Final EA and FONSI.

ENDANGERED SPECIES ACT

National Marine Fisheries Service

Pursuant to section 7 of the Endangered Species Act of 1973 (ESA), as amended, the National Marine Fisheries Service, issued the 2020 SARBO on March 27, 2020, revised July 30, 2020. Maintenance dredging of the AIWW federal navigation channel is a covered activity under the 2020 SARBO. The Corps will follow all terms and conditions and all relevant project design criteria of the 2020 SARBO. The 2020 SARBO covers the following federally listed species: North Atlantic Right whale, Sei whale, Blue whale, Sperm whale, Fin whale, Kemp's Ridley sea turtle, Hawksbill sea turtle, Loggerhead sea turtle, Leatherback sea turtle, Green sea turtle, Oceanic Whitetip shark, Giant manta ray, Atlantic sturgeon, and Shortnose sturgeon.

Placement activities for beneficial use of dredged material for habitat restoration is not a covered activity under the 2020 SARBO. For placement of dredged material at BU-E, the Corps has made a determination of no effect for the following federally listed species: North Atlantic Right whale, Sei whale, Blue whale, Sperm whale, Fin whale, Kemp's Ridley sea turtle, Hawksbill sea turtle, Loggerhead sea turtle, Leatherback sea turtle, Green sea turtle, Oceanic Whitetip shark, Giant manta ray, Atlantic sturgeon, and shortnose sturgeon. The analysis supporting the no effect determination can be found in Section 3.6.

U.S. Fish and Wildlife Service

Pursuant to section 7 of the ESA, as amended, the Corps has determined that the proposed action may affect, but is not likely to adversely affect the following federally listed species: West Indian manatee, eastern black rail, and wood stork. Concurrent with the public review of the Draft EA, the Corps requested informal consultation with the U.S. Fish and Wildlife Service (USFWS). On January 19, 2023, the Corps received a letter from USFWS concurring with the determination. This letter can be found in Appendix A.

The Corps has made a determination of no effect for the following federally listed species under USFWS jurisdiction: nesting sea turtles (Kemp's Ridley, Green, Hawksbill, Loggerhead, Leatherback), piping plover, and rufa red knot. The analysis supporting the no effect determination can be found in Section 3.6. On January 19, 2023 the Corps received a letter from USFWS concurring with the determination. This letter can be found in Appendix A.

NATIONAL HISTORIC PRESERVATION ACT

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), a Programmatic Agreement (PA) between the Corps, GA State Historic Preservation Officer (SHPO), SC SHPO, and the Advisory Council on Historic Preservation in 2013 (Appendix B). Per surveys performed in 1979-1980 and 2012, there are no known historic properties and/or cultural resources within the Cumberland Dividings project area that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered. Section 106 consultation for this undertaking is complete.

CLEAN WATER ACT SECTION 404(B)(1) COMPLIANCE

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in Appendix E of the EA.

CLEAN WATER ACT SECTION 401 COMPLIANCE

Pursuant to section 401 of the Clean Water Act (CWA), a water quality certification (WQC) for the maintenance dredging for of the AIWW was issued in 1983 by Georgia Department of Natural Resources (GADNR) Environmental Protection Division (EPD). It has been determined that a new 401 CWA WQC would not be required for the continued O&M dredging of the AIWW, as these actions constitute ongoing work. The placement site selected is considered a slight modification to this ongoing work and a Tier 1 Sediment Evaluation was provided to GADNR-EPD. On December 20, 2022, GADNR-EPD Wetlands Unit, provided the following concurrence: “The Georgia EPD Wetlands Unit, along with assistance from our Risk Assessment Unit, has reviewed the Tier I and are good with the continuation of dredging.” All conditions of the water quality certification shall be implemented in order to minimize adverse impacts to water quality. The requirements under section 401 of the CWA have been met for the proposed action. This documentation is found in Appendix E of the EA.

COASTAL ZONE MANAGEMENT ACT

The Corps prepared a CZMA evaluation to determine if the proposed action in the Cumberland Dividings is consistent with the Georgia Coastal Management Program (GCMP). For purposes of the CZMA, the enforceable policies of the GCMP constitute the approved state program. In accordance with the CZMA, the Corps has determined that the proposed action would be carried out in a manner which is fully consistent with the enforceable policies of the GCMP. Georgia Department of Natural Resources, Coastal Resource Division (GADNR-CRD) provided concurrence with our consistency determination on February 16, 2023. The consistency determination and coordination with the GADNR-CRD can be found in Appendix D.

OTHER APPLICABLE ENVIRONMENTAL COMPLIANCE

Pursuant to the Fish and Wildlife Coordination Act (FWCA) of 1934, on January 19, 2023, USFWS provided FWCA comments as part of the ESA consultation. USFWS concurred with USACE's determination that the project is not likely to adversely affect federally-listed species. No further action is required under Section 7(a)(2) of the Endangered Species Act. However, consultation should be resumed if the project changes, a new species is listed, or new data shows impacts to listed species may occur. This coordination can be found in Appendix C of the Final EA.

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), NMFS responded to the Corps in email correspondence dated February 13, 2023 stating that they "deem(s) the EFH Assessment comprehensive" and had no conservation recommendations. Therefore, the substantive requirements of the MSA have been met. The essential fish habitat assessment and MSA coordination for the project can be found in Appendix G of the Final EA.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed. This information can be found in Section 5.0 of the Final EA.

Technical, environmental, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

23 Mar 23
Date

Joseph R. Geary, PhD, PE
Colonel, U.S. Army
Commanding

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1 Introduction

The U.S. Army Corps of Engineers (USACE), Savannah District (Corps) has prepared this Environmental Assessment (EA) for the Operation and Maintenance Dredging of Atlantic Intracoastal Waterway (AIWW) Cumberland Dividings in Camden County, GA. This EA was prepared in compliance with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321- 4370f, and in accordance with Council on Environmental Quality (CEQ) implementing regulations for NEPA, 40 C.F.R. §§ 1500-1508, U.S. Army Corps of Engineers Implementing Regulations for NEPA, 33 C.F.R. Part 230, and in accordance with 33 C.F.R. Part 336 - Factors to be Considered in the Evaluation of Army Corps of Engineers Dredging Projects Involving the Discharge of Dredged Material Into Waters of the U.S. and Ocean Waters. This document details the alternative development process, as well as the analysis of impacts related to the proposed dredging and placement actions.

In 2015, the Corps prepared an EA for the dredged material management plan (DMMP) for the AIWW. The 2015 EA identified Big Crab Island, an upland confined placement area managed by the Department of the Navy (Navy), as the placement site for maintenance dredge material. In early coordination for the proposed action, the Corps was requested by state resource agencies to evaluate alternative sites for placement of dredged material, including sites for beneficial use. Additionally, the Navy denied access to Crab Island for material placement in 2016. Therefore, there is a requirement under Section 102 of NEPA to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources”. For the proposed action, as there are alternative uses for the dredged material (e.g., beneficial use, upland placement) the Corps has prepared this EA to further the purposes of NEPA and to assist in agency decision-making (40 CFR 1501.5).

1.1 Proposed Federal Action

The Corps is proposing to conduct maintenance dredging of shoaled areas within the Cumberland Dividings area of the Atlantic Intracoastal Waterway (AIWW), river miles 704.5 through 709.5, and has developed placement alternatives that consider previously used upland placement sites as well as beneficial use of dredged material (BUDM) placement areas consistent with Section 125 of the Water Resources Development Act (WRDA) of 2020.

Approximately 316,000 cubic yards (cy) of sediment will be removed from the channel. Hydraulic cutterhead dredges have historically performed the dredging work on the AIWW and the Corps would continue to use this method of dredging for the proposed action. This dredge type is most efficient for placing material in upland, saltmarsh, or riverine placement sites. There is no constraint on time of year to perform the work.

Through a robust process of screening alternatives, the Corps is proposing placement of dredged material at one preferred site that would restore a highly eroded island habitat (BU-E). Agencies and stakeholders were involved in the scoping and selection of the placement site (Section 2.2). The proposed location was chosen with consideration toward cultural, environmental, economic, and recreational resources. Anticipated start date for the integration of BUDM is determined by the completion of all required environmental compliance and coordination. The process for selection of placements sites is described in detail in Section 2.0 Alternatives

Figure 1 provides a visual overview of the AIWW navigation channel (blue bar) and shoaling areas (orange bars) within the Cumberland Dividings.

Figure 1: Proposed maintenance dredge locations

1.2 Purpose and Need of Proposed Action

The purpose and need for the operation and maintenance (O&M) of the AIWW is to continue to provide a safe, reliable, efficient, and environmentally sustainable navigation channel in accordance with Congressional authorizations. The Corps has identified critically shoaled locations within the Cumberland Dividings and proposes to dredge these reaches and place material in an environmentally and economically acceptable manner.

1.3 Scope of Analysis

This EA evaluates the continued maintenance dredging, including placement of dredged material, along the AIWW within the Cumberland Dividings area to determine if there will be any significant effects to the human or natural environment which would require the preparation of an Environmental Impact Statement, or a Finding of no Significant Impact (FONSI). The evaluated placement sites in this EA include Big Crab Island Dredged Material Management Area (DMMA), Drum Point DMMA, unconfined upland placement on Cumberland Island, and BU-A, BU-B, BU-C, BU-D, BU-E, and BU-F.

1.4 Location and Description of Project Area

The Cumberland Dividings is a network of rivers and estuaries within the AIWW between the Satilla River and St. Mary's River. The project area is situated entirely within this area, located between Cumberland Island to the east with back bay shoreline and marshes of unincorporated Camden County and the City of St. Mary's to the west. Protected and natural lands within the project area fall under different Federal, state, local and private jurisdiction/ownership, such as the Navy, U.S. Fish and Wildlife Service (USFWS) U.S. Department of Interior, National Park Service (NPS), The Nature Conservancy of Georgia (TNC), and the Georgia Department of Natural Resources (GADNR).

Cumberland Island, part of Camden County, is the largest and southernmost barrier island in Georgia, stretching 17.5 miles long. The island totals 36,415 acres of which 16,850 are marsh, mud flats, and tidal creeks. In addition to its natural features, the national seashore includes numerous cultural and archaeological resources, such as the ruins of Dungeness and the Plum Orchard estate. It is well known for its sea turtles, wild turkeys, wild horses, armadillos, abundant shore birds, dune fields, maritime forests, saltmarshes, historic structures, and is home to 9,886 acres of congressionally designated wilderness. The national seashore was authorized by Congress in 1972 and is administered by the NPS (Figure 2). The wilderness area was designated in 1982 (TNC, 2022).

Figure 2. Cumberland Island National Seashore Boundary (NPS 2022)

Historically, placement of material from the Cumberland Dividings has been at the upland DMMA known as Big Crab Island. Big Crab Island is administered by the Navy and the Corps possessed an easement to place AIWW dredged material at this location under

terms of a license agreement. The Navy is responsible for this DMMA, and its management is covered under the Integrated Natural Resources Management Plan for Naval Submarine Base (NSB) Kings Bay. Historical dredge volumes ranged from approximately 35,000 cy to 90,000 cy (Table 1). This section of the AIWW has not been dredged since 2001, and based on a June 2022 bathymetric survey, approximately 316,000 cy of material has accumulated above the channel's authorized depth.

Table 1. Listing of Historical Maintenance Dredging in the Cumberland Reach

Reach	Contract Number	Dredging Timeframe	Dredged Quantities (cy)	Average Dredge Volume (cy)
Cumberland	93C0010	1992	35,357	52,637
	94C0158	10/26/94-03/15/95	88,883	
	99C0027	07/31/99-11/04/99	37,005	
	01C0006	08/03/01-08/25/01	49,302	

1.5 Project Authority

The Corps maintains the AIWW through navigational dredging. The AIWW is a 739-mile inland waterway system between Norfolk, Virginia, and St. John's River, Florida. Construction and maintenance of the AIWW between Savannah, Georgia, and Fernandina, Florida, was initially authorized by the River and Harbor Act (RHA) of 1882. After authorization and construction, several other Acts such as the RHA of 1892, modified the route of the waterway to abandon old sections and include new ones which were either more convenient to traffic or easier to maintain. In 1936, the authorized navigation project consisted of a channel seven feet deep at Mean Low Water (MLW) with a width of 150-feet between Savannah, Georgia, and Fernandina, Florida.

On 20 June 1938, a 12-foot MLW channel was authorized between Savannah, Georgia, and Fernandina, Florida. The authorization included various cut-offs, and an anchorage basin at Thunderbolt (House Doc. No. 6liB, 75th Congress, 3rd Sess.). The widths of the AIWW were authorized as 90 feet in land cuts and narrow streams and 150 feet in open waters. Dredging of the 12-foot MLW channel between Beaufort, South Carolina, and Fernandina, Florida, was initiated in 1940 with the excavation of 507,275 cy and it was completed in 1941 with the removal of 6,168,556 cy.

In addition to authorizing the 12-foot MLW channel between Beaufort, South Carolina, and Fernandina, Florida, the RHA of 1937 and 1938 mandated all lands, easements, rights-of-way, and dredged material placement areas needed for the project be furnished free of cost to the Federal Government. Titles to all lands and easements needed for the authorized navigation channel around St. Andrews Sound were accepted as satisfactory by the Chief of Engineers on March 28, 1939. Rights-of-way and placement areas needed for initial work and for subsequent maintenance of the 12-foot MLW channel between

Savannah, Georgia, and Fernandina, Florida, were approved by the Chief of Engineers on April 4, 1940.

Currently, the AIWW has an authorized depth of 12-foot MLW with channel widths of 90 feet through land cuts and 150 feet in open water areas. The AIWW is a vital marine highway along the Atlantic coast, providing safe navigation for commercial and recreational vessels. The 161-mile section of the AIWW administered by the Savannah District is comprised of a 24-mile section in the State of South Carolina with the remaining 137 miles located within Georgia down to the Florida border. Thus, Savannah District's portion of the waterway constitutes approximately 22 percent of the AIWW.

1.6 Prior Reports and Studies

Previous NEPA, design, and planning reports related to the Cumberland Dividings dredging reach in Camden County, GA are summarized below.

U.S. Army Corps of Engineers, Savannah District. 2015. Atlantic Intracoastal Waterway Dredged Material Management Plan (DMMP) and Environmental Assessment (EA). The DMMP and associated EA were conducted to ensure that the Savannah District portion of the AIWW had sufficient dredged material placement capacity for a minimum of 20 years, as required by the USACE Planning Guidance Notebook (Engineering Regulation (ER) 1105-2-100). Development of this DMMP involved identifying operational reaches based on dredged material quality and the projection of future dredging quantities. Additionally, this DMMP outlines a mitigation plan to offset environmental impacts associated with associated activities. This DMMP did not incorporate BU placement options and capacity at identified placement sites was determined to be inadequate for the projected 20-year dredging cycle. For these reasons this DMMP is not sufficient for NEPA and planning documentation for present and future dredging actions. The Corps is currently drafting a new DMMP and EA that incorporates BU placement options to ensure capacity requirements are met for future dredging.

National Marine Fisheries Service (NMFS). 2020. South Atlantic Regional Biological Opinion (SARBO). Under Section 7 of the ESA, Federal agencies must consult with National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Services (USFWS) on activities that may affect ESA-listed species. In compliance with ESA Section 7 consultation requirements, the Corps is relying on the 2020 SARBO issued by NMFS on March 27, 2020 and revised July 30, 2020. The 2020 SARBO is a Biological Opinion for dredging and material placement activities under the jurisdiction of the Corps Civil Works and Regulatory Programs and dredging/sand mining in borrow sites in Federal waters under the jurisdiction of the Bureau of Ocean Energy Management (BOEM) Marine Minerals Program in the Southeast United States from the North Carolina/Virginia Border through and including Key West, Florida and the Islands of Puerto Rico and the U.S. Virgin Islands. Activities covered by the 2020 SARBO include dredging; dredge material placement, geotechnical and geophysical surveys conducted by the Corps, necessary to complete dredging and material placement projects, and monitoring for and handling of ESA-listed species. The 2020 SARBO concluded that the covered activities are not likely

to jeopardize the continued existence of ESA-listed species or result in adverse effects to designated critical habitats considered in the Opinion. See Section 8 of the 2020 SARBO, beginning on page 377, and Section 9 at page 427. The Opinion includes an Incidental Take Statement in Section 10 on page 427. The 2020 SARBO also includes PDCs which are specific criteria, including the technical and engineering specifications, indicating how an individual project must be sited, constructed, or otherwise carried out both to be covered under the 2020 SARBO and to avoid or minimize adverse effects to ESA-listed species or designated critical habitat. The 2020 SARBO includes PDCs that were developed during consultation with the action agencies and NMFS to include the measures that NMFS believes are necessary or appropriate to avoid or minimize impacts to ESA-listed species and designated critical habitat. The PDCs are considered part of the proposed action and must be followed in order for an activity to be covered under the 2020 SARBO.

CBEC. 2017. Kings Bay Hydraulic and Sediment Transport Modeling – Technical Memorandum. CBEC Eco-engineering assembled and integrated topographic and bathymetric survey data into a composite surface for the study area surrounding Kings Bay Naval Base, which serves as a key boundary condition for a three dimensional hydrodynamic and sediment transport model currently under development. The digital terrain model outlined in this memorandum was developed from the most current and reliable data at that time.

GHD. 2021. Atlantic Intracoastal Waterway Sediment Sampling & Analysis – Final Report. GHD (Corps consultant) was engaged to undertake a sediment sampling and analysis project across the stretch of the AIWW maintained by the Savannah District. In total, 34 locations were sampled based on historical shoaling events and recent hydrological surveys. The sediment samples were collected via vibracoring, analyzed for composition, and further analyzed for chemical content if needed. The results of these analyses will be used by the Corps to develop a DMMP and plan for future maintenance dredging and BU projects. Alternatives

The alternatives section describes the No Action Alternative (NAA) and the Proposed Action Alternative with dredged material placement options. This section also describes how the proposed action was developed.

2 Alternatives Development

The alternatives section describes the No Action Alternative (NAA) and the Proposed Action Alternative with dredged material placement options. This section also describes how the proposed action was developed.

In the development and assessment of the dredge material placement sites, a suite of factors including Regional Sediment Management (RSM), environmental impacts/ benefits, and constructability (e.g. techniques, distances, real estate) were considered. as part of the site screening process. Historic placement sites previously utilized in

Cumberland Dividings, in addition to several proposed beneficial use sites are described below.

Section 125 of WRDA 2020 describes the national policy on the beneficial reuse of dredged material. When evaluating placement of dredged material obtained from the construction or operation and maintenance of water resources development projects, USACE shall consider:

- the suitability of the dredged material for a full range of beneficial uses; and

- the economic and environmental benefits, efficiencies, and impacts (including the effects on living coral) of using the dredged material for beneficial uses, including, in the case of beneficial use activities that involve more than one water resources development project, the benefits, efficiencies, and impacts that result from the combined activities.

RSM is an approach to holistically manage sediment as a resource. The USACE RSM program seeks to incorporate balance and sustainability by promoting excavation, transport, and deposition of dredge material in a manner consistent with natural processes. A regional approach to sediment management results in more coastal resiliency by keeping sediment in the system and promoting economic efficiencies of that sediment (Rosati et al., 2001). Beneficial use of dredged material is defined as the placement or use of dredged material for some productive purpose.

Initial scoping of potential placement sites involved stakeholder workshops with partners from GADNR, NMFS, USFWS, NPS, GA Conservancy, TNC, as well as several academia partners. The scoping involved a geographic assessment approach with the creation of a web viewer to analyze historical, existing, and future data, conditions, and tools to help identify potential beneficial use and confined placement sites.

During the scoping process, constraints were identified to be used in the evaluation of the feasibility of a potential placement site. These constraints and their rationale are:

- No impact to Atlantic sturgeon critical habitat. This constraint was identified to ensure avoidance of impacts to critical habitat for ESA-listed species.
- No long-term adverse impacts to oyster bed habitat. Oyster beds are important essential fish habitat in the area and are also a food source for migratory birds.
- No impacts to sea turtle nesting habitat. This constraint was identified to ensure avoidance of impacts to ESA-listed species.
- Reasonable assurance of real estate access. The Corps would not be able to place material without real estate access, therefore sites were screened to ensure feasibility of obtaining access.

2.1 Comparison of Placement Sites

The Corps initially identified nine potential placement sites for the shoaled material which include beneficial use and DMMA placement options (Figure 3). Table 2 outlines the array of scoped beneficial use placement sites based on vulnerable/degraded habitats that could benefit from sediment addition (BU-A, BU-B, BU-C, BU-D, BU-E, BU-F), and need for sediment for maintenance of infrastructure on Cumberland Island (unconfined upland placement). Table 3 outlines the array of scoped placement sites based on previous authorization for confined placement (Big Crab Island), and potential future confined placement areas (Drum Point). The placement options considered are identified and summarized below.

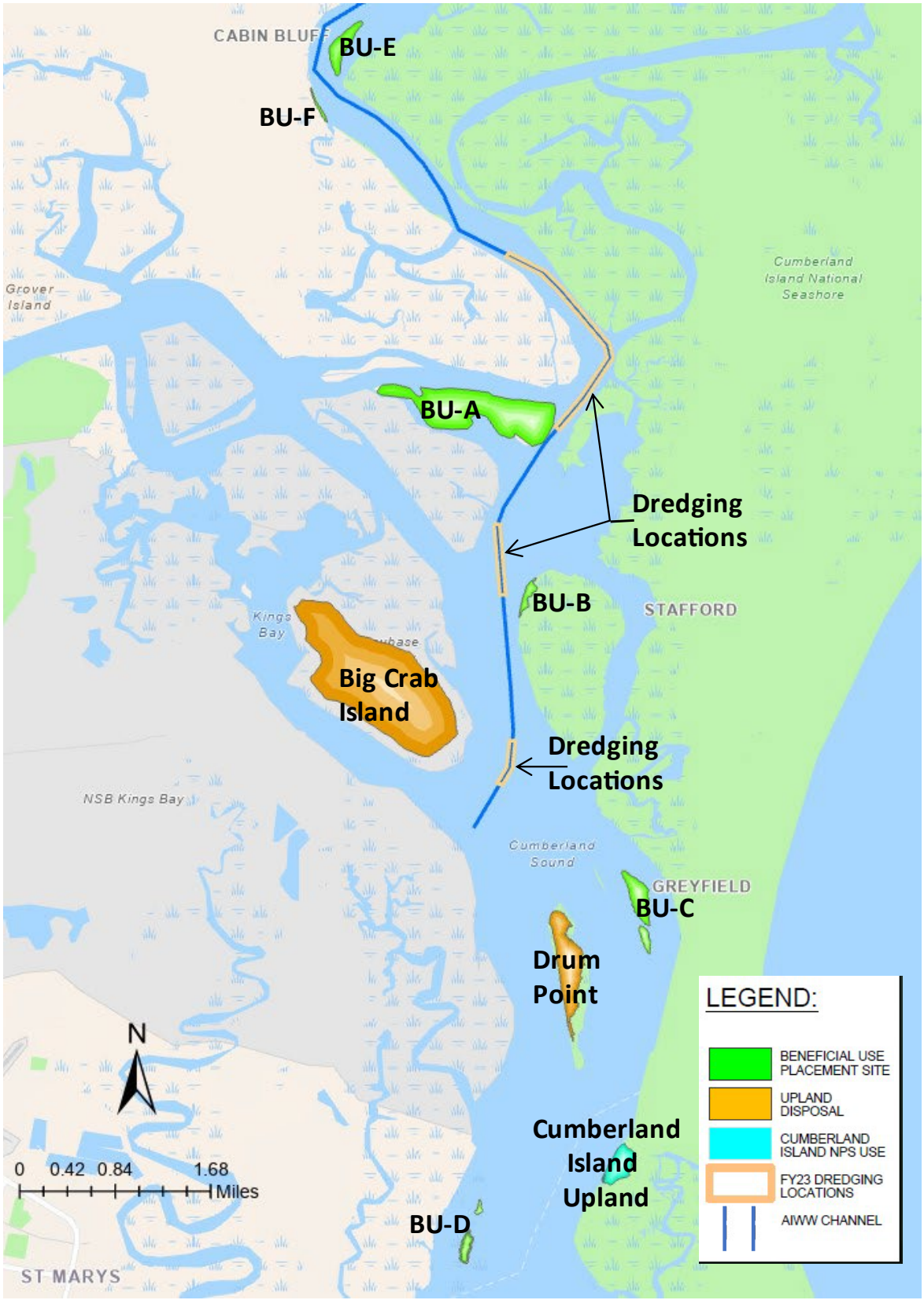

Figure 3.Overview of Full Suite of Alternative Placement Sites for Dredged Material

Table 2. Beneficial Use Placement Options

Placement Option	Location (lat/long)	Size/Capacity	Placement Method
Upland Placement-Cumberland Island	**Southern end of Cumberland Island near western shore:** 30.743906°N -81.476439°W	31.8 AC, 20,000 CY	Unconfined upland placement
BU-A	**West across the Crooked Cumberland River from Cumberland Island** 30.841641°N -81.494390°W	181.5 AC	Thin Layer Placement (TLP) unconfined open water placement
BU-B	**Western shore of Cumberland Island:** 30.811067°N -81.481819°W	9.6 AC	Unconfined nearshore placement Direct Placement
BU-C	**Western shore of Cumberland Island:** 30.777281°N -81.473519°W	38.5 AC	TLP coastal marsh
BU-D	**Island in southern area of the Cumberland Dividings:** 30.739364°N-81.494214°W	6.5 AC	Unconfined open water placement Direct Placement
BU-E	**Island in northern area of the Cumberland Dividings near Cabin Bluff:** 30.885314°N -81.512761°W	30 AC	Unconfined open water placement Direct Placement
BU-F	**Western shore near Cabin Bluff:** 30.878244°N -81.482847°W	3.2 AC	Unconfined nearshore placement Direct Placement

Table 3. DMMA Placement Options

Placement Option	**Location (lat/long)**	**Size/Capacity**	**Placement Method**
DMMA Big Crab Island	**West across the Cumberland River from Cumberland Island:** 30.807258°N -81.50595630°W	516.9 AC	Confined upland placement
Drum Point	**West across the Cumberland River from Cumberland Island:** 30.769975°N -81.482847°W	81.8 AC.	Confined upland placement

The proposed placement options are further categorized and described below by general placement methodology.

- **Cumberland Island: Unconfined Upland Placement**

  Cumberland Island National Seashore has historically used suitable dredged material beneficially to support the unimproved roadway system on the island and for other uses as determined by the NPS. The previous stockpile of sediment was exhausted and additional dredged material can be utilized to support the island's infrastructure. Approximately 20,000 cy of suitable dredged material would be pumped from a cutterhead dredge and directly placed on the island, forming an unconfined mound of sediment.

  Placement methodology: A cutterhead dredge would be used to pump the dredged material within the design template.

Figure 4. Cumberland Island: Unconfined Upland Placement

- **BU-D & BU-E: Direct Placement for Habitat Restoration**

  Direct placement of sediment onto tidal estuaries and shorelines can restore and stabilize areas that are susceptible to erosion. The purpose of direct placement is to renourish areas that have lost sediment from coastal storm events, tidal extremes, wave energy and sea level change (SLC). Returning sediment to previously degraded intertidal zones and terrestrial habitat could provide protection from wave energy and restore critical nesting/foraging habitat if the appropriate elevations are achieved.

  For sites BU-D and BU-E, the material would be placed in shallow subtidal and intertidal zones where bird foraging and nesting habitat previously existed in order to reestablish lost habitat. Placement of dredged materials at proposed bird nesting/foraging habitat restoration sites would temporarily elevate the topography

of the area and provide nesting and roosting habitat for shorebirds (American Oystercatcher, Wilson's Plover) and seabirds (Least Tern, Gull-billed Tern, Black Skimmer).

Placement methodology: A cutterhead dredge would be used to pump out the dredged material within the design template. The pipe would be moved around to adequately spread material and the material would be shaped with heavy equipment to achieve design contours as needed.

Figure 5. BU-D: Direct Placement for Habitat Restoration

Figure 6. BU-E: Direct Placement for Habitat Restoration

- **BU-A & BU-C: Thin-layer Placement (TLP) for Salt Marsh Enhancement**

  TLP is the process of depositing dredged sediment in thin, even layers over marshes or wetlands to restore or maintain a tidal marsh's elevation relative to sea level rise (Ray, 2007). TLP enhances coastal marsh resilience and mimics natural deposition processes of tidal marshes, such as their ability to store storm-driven sediments. Benefits of TLP include raised marsh elevations, improved soil stability, and reduced susceptibility to loss from SLC.

BU-A and BU-C are proposed locations that have been experiencing degraded marsh conditions due to elevation loss to coastal storm events and subsidence, which is compounded by SLC.

Placement methodology: Proposed construction activities include targeted TLP, approximately 10 cm depth of sediment, in locations with identified degraded salt marsh. Thin layers of sediment placed onto eroding marshes are generally placed through the spray technique known as “rainbowing.” This method of placement allows for a thin dispersal onto the marsh and emulates natural sediment deposition processes. Another potential method of thin layer placement includes placing the pipe outfall on the marsh, with the pipe being moved around to adequately spread material out across the design template. Additional temporary containment mechanisms such as haybales or coconut coirs may be required, along with weir or drainage devices to avoid ponding.

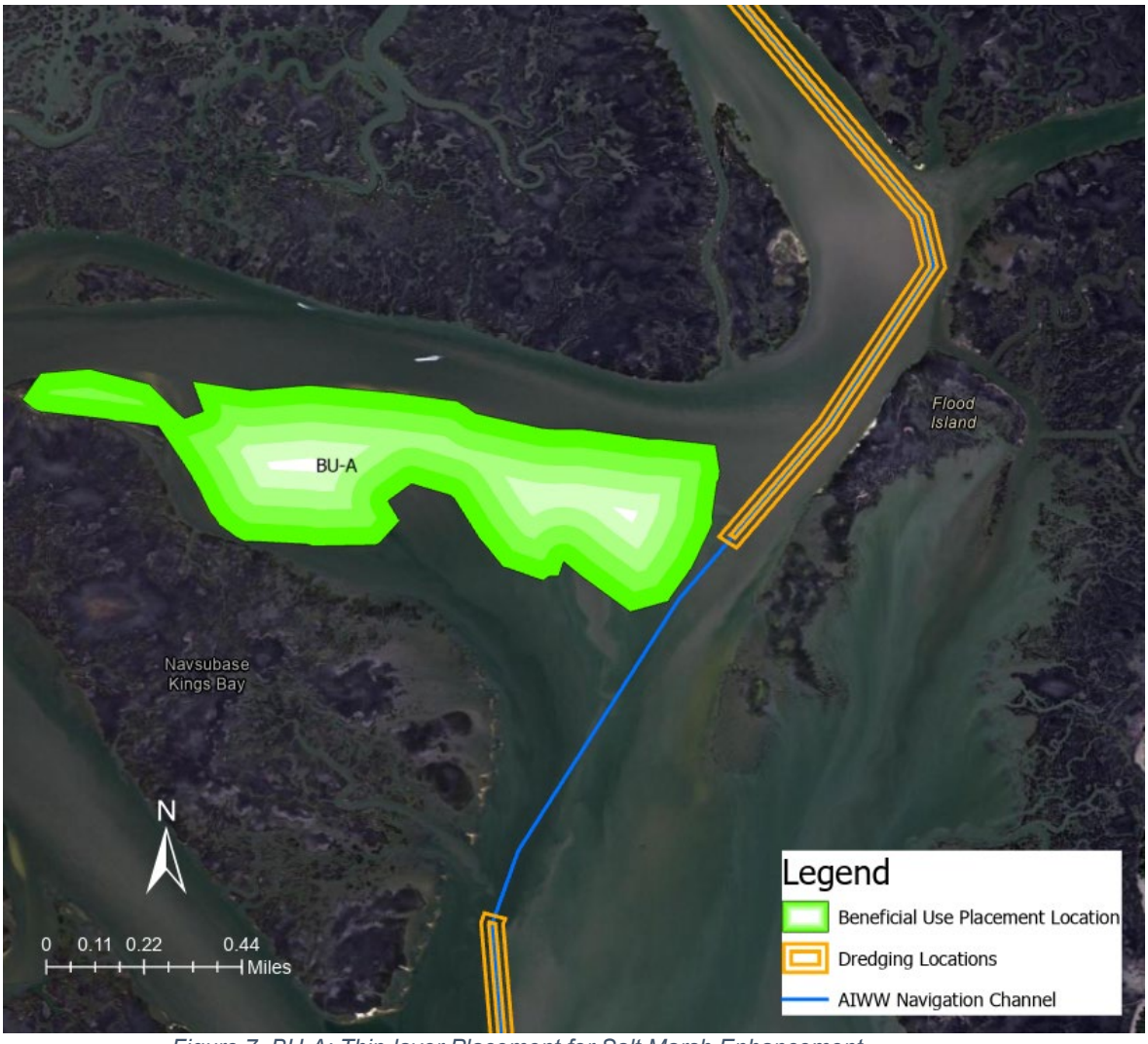

Figure 7. BU-A: Thin-layer Placement for Salt Marsh Enhancement

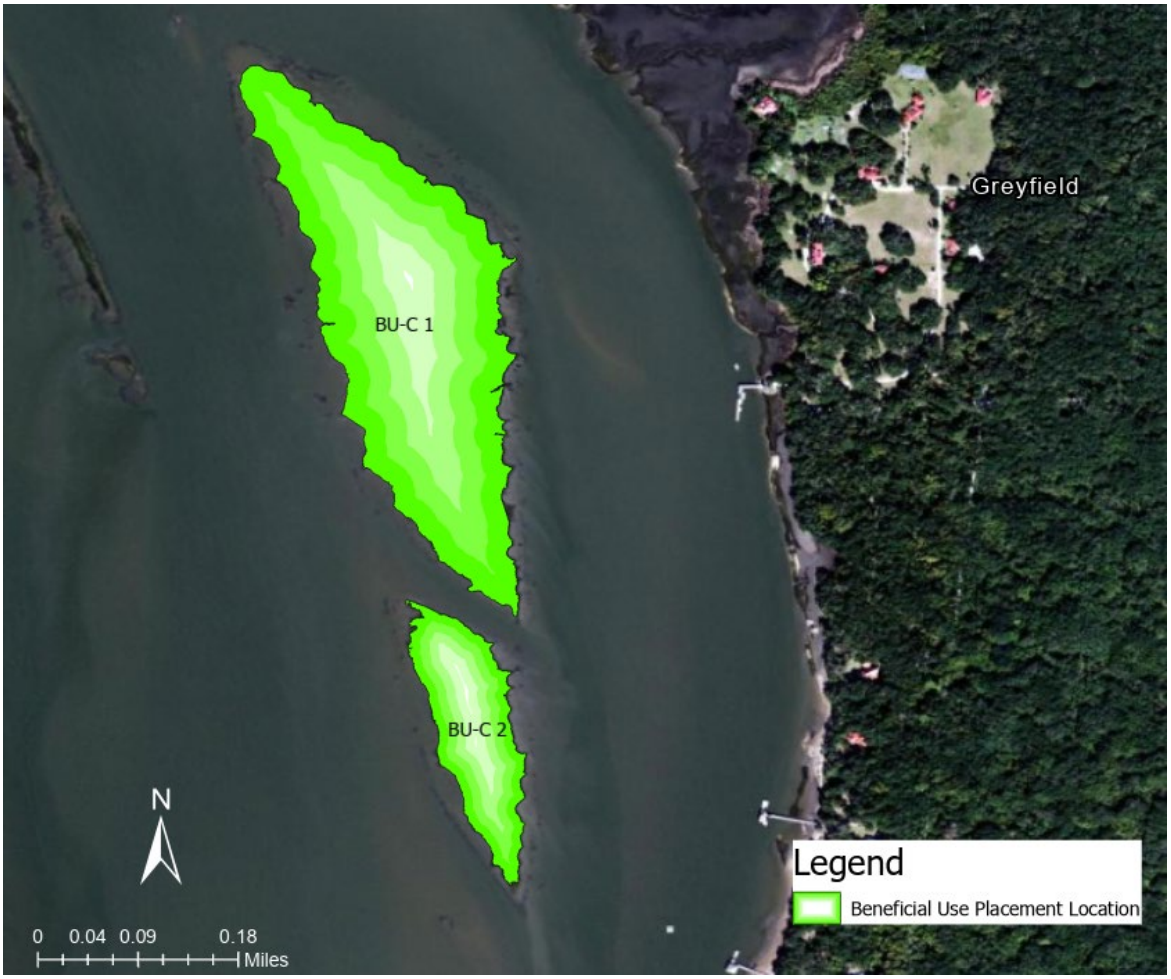

Figure 8. BU-C: Thin-layer Placement for Salt Marsh Enhancement

- **BU-B and BU-F: Near Shore Linear Berm for Shoreline Stabilization and Restoration**

  The nearshore zone of the coastline encompasses the foreshore (intertidal from the highest tide to the lowest tide) and subtidal zones. Placement in the nearshore zone of the coastline, directly adjacent to areas of degraded marsh and coastline as identified in sites BU-B and BU-F would provide an erosional buffer, designed to absorb some wave energy and provide a source of sediment to slowly feed the adjacent shoreline. Nearshore placement comes with some considerations of increased nearshore turbidity, or suspension of sediment in the water column, during and after placement. The sediment will be deposited through natural tidal dispersion and wave action.

  Placement methodology: A cutterhead dredge would be used to pump the dredged material within the design template. Additional temporary containment mechanisms such as haybales or coconut coirs may be required.

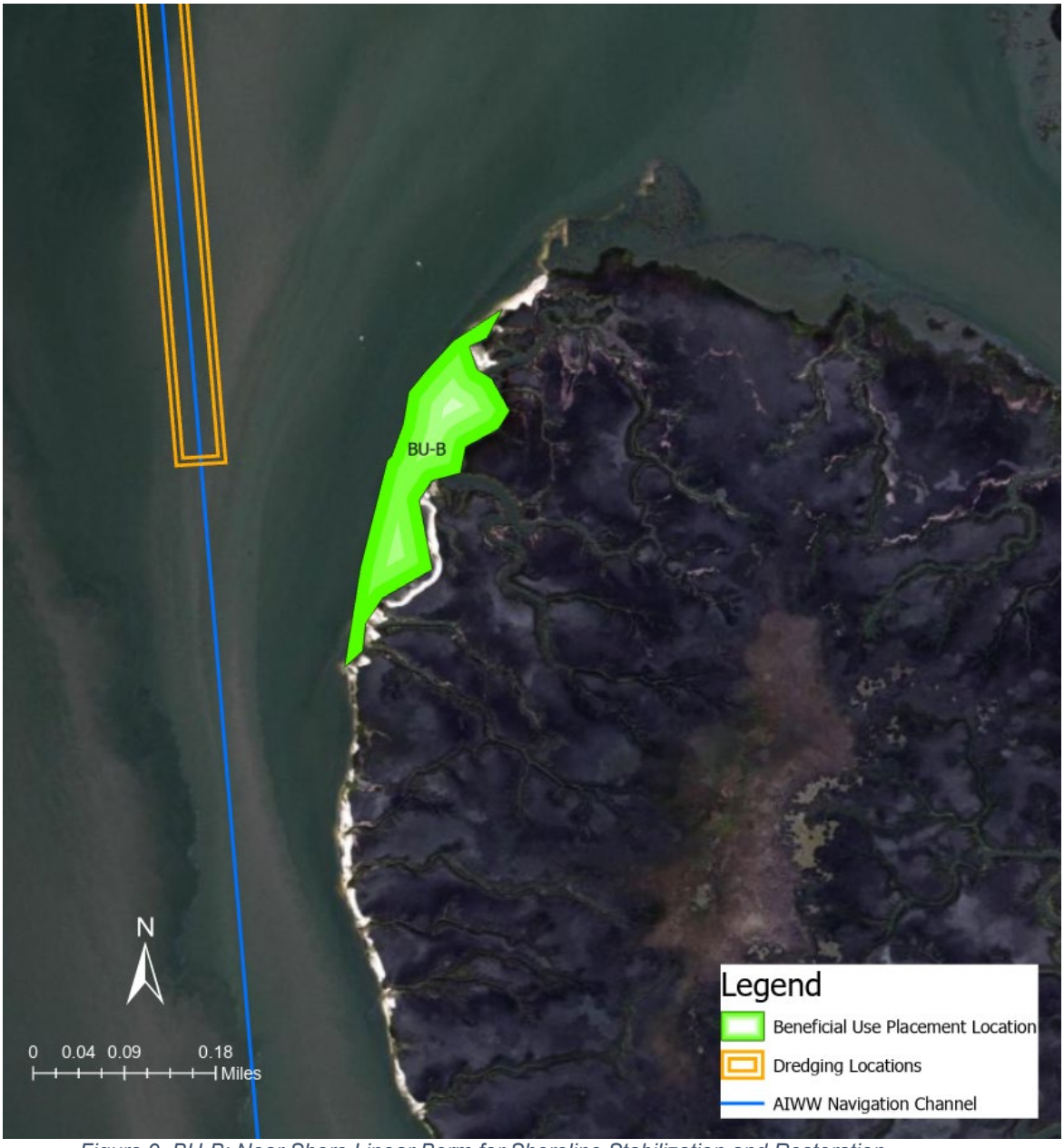

Figure 9. BU-B: Near Shore Linear Berm for Shoreline Stabilization and Restoration

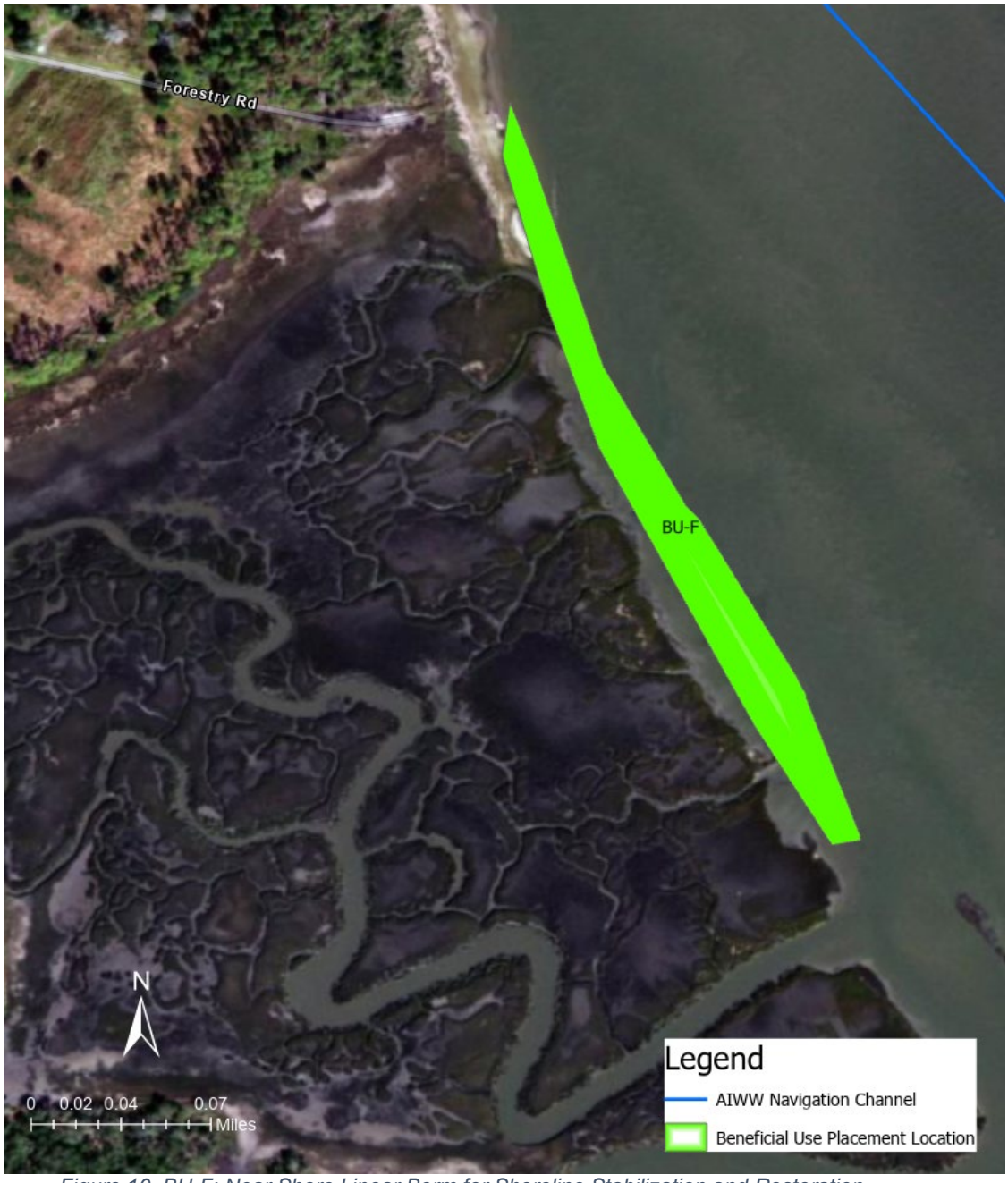

Figure 10. BU-F: Near Shore Linear Berm for Shoreline Stabilization and Restoration

- **Big Crab Island and Drum Point: Confined Upland Placement**

  Confined placement refers to the use of a diked containment area with appropriate outflow control structures. The containment area serves as a settling basin within which the dredged sediment settles out of the transporting water. The basin or DMMA outlet structure and pipeline then return the residual, clarified water to the AIWW. The dewatered sediment remains in the diked containment area unless removed.

Big Crab Island DMMA is owned and operated by the Navy and is presently used as the placement site for maintenance dredged material associated with NSB Kings Bay. Historically, the Corps has utilized Big Crab Island DMMA as the preferred placement location for AIWW dredged material from Cumberland Dividings based on a real estate out-license between the Navy and the Department of Army. The out-license granted use of approximately 860 acres of land at NSB Kings Bay for maintenance dredging activities. This license expired on 31 May 2016. Drum Point Island is a DMMA created by the Corps to clear the navigation channel prior to 1976 when Kings Bay was an Army Weapons Depot. Drum Point Island is owned by the Navy and would require extensive land clearing and grading activities to serve as a DMMA based on the existing condition.

Placement methodology: A cutterhead dredge would be used to pump the dredged material within the designated placement location within the DMMA.

Figure 11. Big Crab Island: Confined Upland Placement

Figure 12. Drum Point: Confined Upland Placement

2.2 Placement Site Screening

To evaluate and compare the full suite of placement options, a selection matrix was developed that analyzed multiple parameters to evaluate risk, benefits, and impacts of the nine proposed sites (

edged aterial agement egories	Approximate Total Placement Area (ac)	Distance to Transport Sediment (miles)	Constructability (Specialized Plant and/or Construction Techniques)	Real Estate Compliance	Qualitative Environmental B
ficial use: Recreation	31.8	3.6	Not current DMMA; would require extensive coordination and investigation to place material	Unknown	**Benefit:** No ecosystem lift* **Impact:** No impact
ficial use: ands, etlands	181.5	1.3	Techniques fairly known	No	**Benefit:** RSM, positive ecosystem li marsh elevation and eroded unvege **Impact:** localized, temporary, and r suspended sediment during placem
ficial use: etlands	9.6	2.7	Techniques fairly known	Unknown	**Benefit:** RSM, positive ecosystem li and restoring eroded marsh habitat **Impact:** localized, temporary, and r suspended sediment during placem
ficial use: etlands	38.5	5.3	Techniques fairly known	Unknown	**Benefit:** RSM, uncertain ecosystem marsh elevation **Impact:** localized, temporary, and r suspended sediment during placem
ficial use: ands, etlands	6.5	8.3	Techniques fairly known	Probable	**Benefit:** RSM, positive ecosystem li eroded bird habitat **Impact:** localized, temporary, and r suspended sediment during placem
ficial use: ands, etlands	30	3	Techniques fairly known	Probable	**Benefit:** RSM, positive ecosystem li eroded bird habitat **Impact:** localized, temporary, and r suspended sediment during placem
ficial use: etlands	3.2	3.3	Techniques fairly known	Unknown	**Benefit:** RSM, uncertain ecosystem eroded marsh habitat **Impact:** localized, temporary, and r suspended sediment during placem
nfined cement	860	4.3	Well established; Existing DMMA site (Historic placement area for reach)	No	**Benefit:** No ecosystem lift **Impact:** No impact
nfined cement	181.8	6	Not current DMMA; would require extensive earthwork	No	**Benefit:** No ecosystem lift **Impact:** No impact

Table 4). This matrix helped to inform site benefits and assess and compare a suite of construction and environmental considerations used as part of the screening process. Complexity and uncertainty associated with these criteria was considered as part of the comparison and screening process.

Construction considerations include total approximate size of the placement area (acreage), distance to transport the dredge material, constructability and type of equipment required, and real estate compliance. Environmental considerations include environmental benefits and impacts. All identified sites require a full suite of environmental compliance.

Table 4. Placement Site Screening Matrix

		Construction Considerations				Environmental Considerations
Placement Site Name	**Dredged Material Management Categories**	**Approximate Total Placement Area (ac)**	**Distance to Transport Sediment (miles)**	**Constructability (Specialized Plant and/or Construction Techniques)**	**Real Estate Compliance**	**Qualitative Environmental Benefit or Impact**
Cumberland Island Upland	Beneficial use: Parks/Recreation	31.8	3.6	Not current DMMA; would require extensive coordination and investigation to place material	Unknown	**Benefit:** No ecosystem lift* **Impact:** No impact
BU-A	Beneficial use: Islands, Wetlands	181.5	1.3	Techniques fairly known	No	**Benefit:** RSM, positive ecosystem lift from increasing marsh elevation and eroded unvegetated habitat **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement
BU-B	Beneficial use: Wetlands	9.6	2.7	Techniques fairly known	Unknown	**Benefit:** RSM, positive ecosystem lift from protecting and restoring eroded marsh habitat **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement
BU-C	Beneficial use: Wetlands	38.5	5.3	Techniques fairly known	Unknown	**Benefit:** RSM, uncertain ecosystem lift from increasing marsh elevation **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement
BU-D	Beneficial use: Islands, Wetlands	6.5	8.3	Techniques fairly known	Probable	**Benefit:** RSM, positive ecosystem lift from restoring eroded bird habitat **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement

BU-E	Beneficial use: Islands, Wetlands	30	3	Techniques fairly known	Probable	**Benefit:** RSM, positive ecosystem lift from restoring eroded bird habitat **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement
BU-F	Beneficial use: Wetlands	3.2	3.3	Techniques fairly known	Unknown	**Benefit:** RSM, uncertain ecosystem lift from protecting eroded marsh habitat **Impact:** localized, temporary, and minor impacts due to suspended sediment during placement
Big Crab Island	Confined Placement	860	4.3	Well established; Existing DMMA site (Historic placement area for reach)	No	**Benefit:** No ecosystem lift **Impact:** No impact
Drum Point	Confined Placement	181.8	6	Not current DMMA; would require extensive earthwork	No	**Benefit:** No ecosystem lift **Impact:** No impact

Construction and environmental considerations are further defined below, which includes the rationale for how they are considered as part of the screening process.

Construction Considerations:

- **Approximate Total Placement Area:** Placement options with greater capacity for dredged material is desirable. Approximately 316,000 cy of sediment are proposed to be dredged to achieve a navigable AIWW channel at the authorized depth in the Cumberland Dividings area. As a stand-alone placement option, sites lacking suitable available capacity would not support the navigation mission.

- **Distance to Transport Sediment:** Proximity to the dredging area is desirable as costs generally increase with distance (pumping distance). Operational risks, including navigational, and technical feasibility risk may increase with pipe length.

- **Constructability**: Well established placement techniques typically reduce operational and construction risks. Unprecedented placement methodologies and placements requiring extensive earthwork typically increase cost and technical feasibility risk.

- **Real Estate Compliance:** Reasonable assurance that placement would be permissible by the land administrator. Unknown or denial of real estate access would prohibit placement or require extensive coordination to execute.

Environmental Considerations:

- **Qualitative Environmental benefit:** Short-term and long-term Beneficial ecological lift provided from the placement activity (increase in resource value such as increased habitat opportunity or function over baseline pre-placement conditions). Qualitative assessment includes uncertainty of potential lift over baseline conditions.

- **Qualitative Environmental impacts:** Short-term, localized, adverse effects to habitat and associated species due to placement activity.

Based on a comparative analysis for the placement site options, certain placement options were screened out due to real estate access, navigational requirements, technical and operational feasibility, and environmental benefits/impacts. The results of the analysis and basis for screening for each site is further detailed below.

The area encompassing BU-A is administered by the Georgia Department of Natural Resources, Coastal Resource Division (GADNR-CRD). While the site appears to be environmentally acceptable and technically feasible, BU-A is associated with an intertidal shellfish lease and any placement of dredged material may interfere with the active lease, thus prohibiting placement of dredged material at this site. Therefore, this placement option was not carried forward.

Placement options BU-B, BU-C and Cumberland Island Upland is part of the Cumberland Island National Seashore which is administered by the NPS. Real estate agreements for placement within these sites has not been authorized. During early stakeholder coordination, resource agencies raised concern that based on the existing functional condition of the salt marsh, the ecological lift may be uncertain or minimal through the proposed on-site activity of TLP. In the future condition, if erosion and marsh recession continue due to sediment deposition deficits and SLC, this placement site may become viable. Additionally, the capacity needs as identified by NPS is approximately 20,000 cy, which limits the Cumberland Island Upland as a viable stand-alone placement location. Therefore, these placement options were not carried forward.

Placement option BU-D is administered by the GADNR-CRD. This option is environmentally acceptable and appears to have capacity to utilize all 316,000 cy of dredged material, in addition to keeping sediment in the system. By restoring historic bird nesting habitat, the proposed placement would increase the ecological value of the degraded existing habitat. This site is located greater than seven miles from the northern shoaling area, which creates complex navigational and technical feasibility issues due to the excessive length of pipeline necessary to place dredged material at this site. Therefore, placement at this site is not operationally feasible and was not carried forward.

Placement option BU-E is administered by the GADNR-CRD and consists of direct placement of O&M dredged material for habitat restoration. This option is technically feasible and environmentally acceptable and fulfills the navigation mission by providing a site with capacity to utilize all 316,000 cy of dredged material, in addition to keeping sediment in the system. By restoring historic bird nesting habitat, the proposed placement would increase the ecological value of the degraded existing habitat.

Placement option BU-F has complex real estate access due to its location adjacent to Cabin Bluff. Resource agencies raised concern that based on the existing functional condition of the salt marsh and adjacent tidal creeks, uncertain or minimal ecological lift may occur through the proposed near-shore berm in the existing condition. Additionally, due to its approximate size (~3.2 ac) and total sediment capacity, this site would not be a viable stand-alone placement location.

Big Crab Island and Drum Point are administered by the Navy. Per the 2015 AIWW DMMP, placement at Big Crab Island was defined as the baseline federal standard placement option for the AIWW maintenance dredging activities in Cumberland Dividings. Continuation of the real estate out-license was denied by the Navy in 2016. Due to limited capacity at Big Crab Island, placement has not been authorized. Similarly, there is no authorized access for placement at Drum Point by the Navy. Drum Point would require extensive earthwork and coordination with the Navy to become a feasible confined placement location.

In summary, based on the results of the screening analysis, placement at Big Crab Island, Drum Point, BU-A, BU-B, BU-C, BU-D, BU-F, and Cumberland Island Upland was not carried forward as part of the preferred alternative. For placement options Cumberland

Island Upland, BU-A, BU-B, BU-C, BU-F, Big Crab Island DMMA and Drum Point, real estate compliance and reasonable assurance for access to place material are either unknown or unavailable at this time based on coordination with the current ownership or administration for each site. Should real estate access change, these placement sites may be viable in the future. BU-D was screened out due to operational feasibility of placing material at this location. Placement at BU-D would require additional boosters to transport the sediment to the site and the transport pipe would likely cross submarine traffic routes. BU-E is therefore carried forward as the preferred alternative.

2.3 Alternatives Carried Forward

2.3.1 No Action Alternative

The NAA is to perform no maintenance dredging of the Cumberland Dividings of the federal navigation channel. This alternative would also result in no placement of dredged material. Over time the channel would continue to shoal, thus reducing the ability to navigate through the area. Current shoaled conditions, surveyed in 2022, show shoaled material covering more than half the channel width and several feet above the authorized depth, creating an impediment to navigation. While the NAA would not meet the purpose and need, it is carried forward as a basis for comparison against the proposed action alternative.

2.3.2 Proposed Action Alternative (Preferred Alternative)

After the Corps completed the screening process, the placement option that is carried forward is BU-E as the proposed action (a combination of O&M dredging and placement at BU-E). BU-E meets the navigation mission as it is both environmentally acceptable and technically and operationally feasible.

The proposed action is to conduct maintenance dredging of shoaled areas within the Cumberland Dividings of the AIWW river mile 704.5-709.5 and place dredged material at BU-E (Figure 13). Approximately 316,000 cy of material has accumulated within the channel's authorized depth of 12-foot MLW. Within this reach there are three sections being dredged: AIWW miles 704.5-706.5, 707.25-708, and 709.25-709.5. Hydraulic cutterhead dredges have historically performed the dredging work on the AIWW and the Corps would continue to use this method of dredging. This dredge type is most efficient for placing material in upland, saltmarsh, or riverine placement sites. There is no constraint on time of year to perform the work.

In consideration of applicable factors listed in 33 CFR section 320.4, the Corps has determined this proposed plan is not contrary to public interest and that BU-E and is the least environmentally damaging practicable alternative. Therefore, BU-E is carried forward as the Preferred Alternative.

Table 5. Summary of Proposed Action Placement Site

Name	Location (lat/long)	Dimensions/Size (acres)	Capacity for placement (cy)	Placement Method
BU-E	**Island in Northern Area of the Cumberland Dividings:** 30.885314°N -81.512761°W	3.2	≥ 316,000	unconfined open water placement, habitat restoration

BU-E: Direct Placement for Habitat Restoration

The purpose of direct placement is to renourish areas that have lost sediment from coastal storm events, tidal extremes, wave energy, and SLC. Returning sediment in previously degraded subtidal to intertidal zones will restore the historic footprint, provide protection from wave energy, and ultimately provide nesting/foraging habitat. The material would be placed in shallow areas that were historically intertidal and upland habitat that has been extirpated or degraded due to loss of elevation from erosional forces.

Placement of dredged material at the proposed BUDM site would temporarily elevate the topography of the area and provide additional substrate to the existing estuarine habitat (Figure 13). The additional substrate will provide greater opportunity for tidal fringe marsh and upland vegetation growth, thus further stabilizing the existing topographic landscape. The additional sediments will be subject to tidal influence. Overall, there will be a long-term beneficial effect to the topography and soils of the proposed areas for bird habitat restoration due to the additional material providing more elevation and stabilization for the shoreline and restoring foraging and roosting habitat for birds.

The Corps proposes to conduct bathymetric monitoring on the restored island to assess changes in elevation immediately following, six months, and one year post construction.

Placement methodology: A cutterhead dredge would be used to pump out the dredged material within the design template. The pipe would be moved around to adequately spread material and the material would be shaped with heavy equipment to achieve design contours as needed.

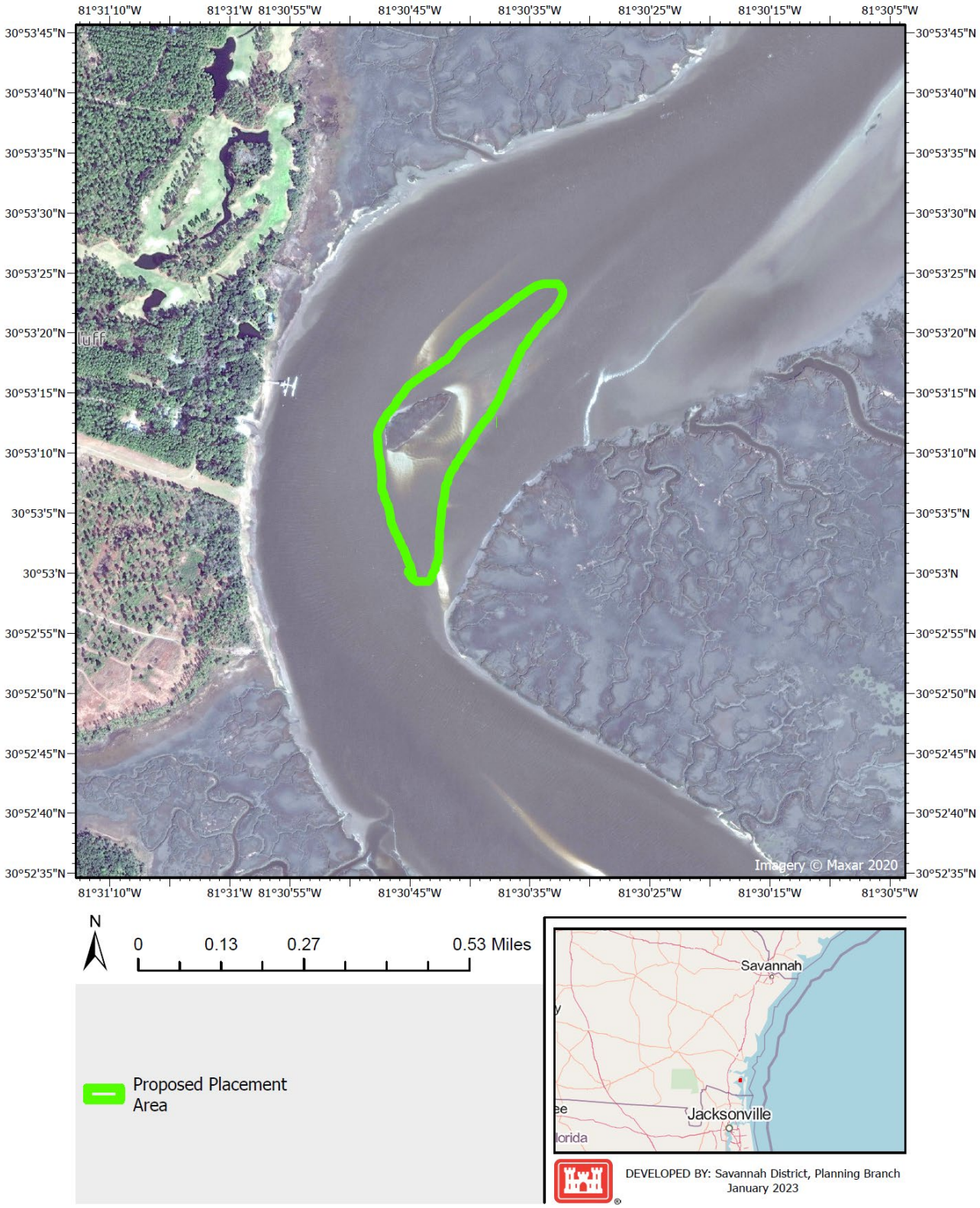

Figure 13. BU-E Placement Site

3 Affected Environment and Environmental Consequences

This section provides a discussion of the affected environment and potential consequences of the Proposed Action in comparison with the NAA.

3.1 Resources Dismissed from Detailed Analysis

Table 6. Environmental Resources Dismissed from Detailed Analysis

Resource	Reason for Dismissal
Air Quality	There will be a negligible short-term reduction of air quality due to emissions from dredging and placement operations. Placement activities involve placement of slurried material, so limited fugitive dust would occur. The area is currently in attainment for air quality standards and none of the alternatives evaluated would affect the attainment status of the area. Therefore, the project would have an overall negligible effect on air quality.
Visual Resources (aesthetic)	During construction, equipment used for dredging would be visible, resulting in a temporary change in the visual aesthetics. Placement within beneficial use sites would mimic natural habitats in the project area. Therefore, the project would have a temporary negligible effect on aesthetics.
Noise	A negligible temporary increase in the noise level during construction in the vicinity of the project would occur but would be similar to noise levels of created by motorized vessels transiting the AIWW. Construction noise would cease upon completion. Therefore, the Corps has determined that the proposed project would have an overall negligible effect on noise level concerns.
Hazardous, Toxic, and Radioactive Waste	Dredged material is not designated as hazardous waste unless within a CERCLA site. This proposed action is not within a CERCLA site and a Tier 1 Evaluation (Appendix E) was completed for this proposed project demonstrating that there is no source or indication of contamination within the dredged sediments.
Land Use	The proposed project will have no effect to land use in the vicinity of project area as the proposed action will enhance an eroded bird island, but not change how the bird island is used. The AIWW federal navigation channel will continue to provide navigation access for commercial and recreational vessels.
Navigation	BUDM provides a long-term benefit to navigation by ensuring navigability of the channel while also increasing the longevity of DMMAs and ensuring compliance with WRDA 2020.
Geology/Soils	The substrate of the proposed project areas is largely unconsolidated sand and will remain unaffected by the proposed placement. No unique or noteworthy topographical or geological features will be permanently impacted. Degraded intertidal and terrestrial features are expected to benefit from additional

	elevation through the proposed placements. Additionally, the sediment being placed is native sediment and will not change the overall composition of the sediment within the system.
Real Estate	Real estate was identified as a screening constraint for placement sites. Only those sites with assurance to access were carried forward in the proposed action, therefore this resource is not assessed in detail in Chapter 3. Real estate requirements are discussed in Section 2.2
Economics/Social	This section of the AIWW is primarily used for recreation and by the Navy. The proposed action will maintain the channel for commercial vessels. Additionally, the placement sites were screened to exclude impacts to shellfish leasing areas and oyster reefs and would not impact commercial or recreational shellfish harvesting. Implementation of the proposed action will therefore have no impact to socioeconomics in the area.

3.2 Hydrology and Hydraulics

3.2.1 Existing Conditions

The Cumberland Dividings area of the AIWW is highly influenced by coastal tides, causing the waterway to ebb and flow. The AIWW is a complex network of rivers, creeks, marshlands and islands. NOAA operates and maintains one nearby active tide gauge (8720030 Fernandina Beach with datum information) which tracks tidal fluctuations in the area and is located approximately 13 miles from the project area.

Table 7. Fernandina Beach Mean Tide Range

Station ID	Station Name	Mean Higher High Water (feet)	Mean High Water (feet)	Mean Tide Level (feet)	Mean Sea Level (feet)	Mean Low Water (feet)	Mean Lower Low Water (feet)	NAVD 88 (feet)
8720030	Fernandina Beach, FL	6.56	6.21	3.2	3.29	0.19	0.00	6.82

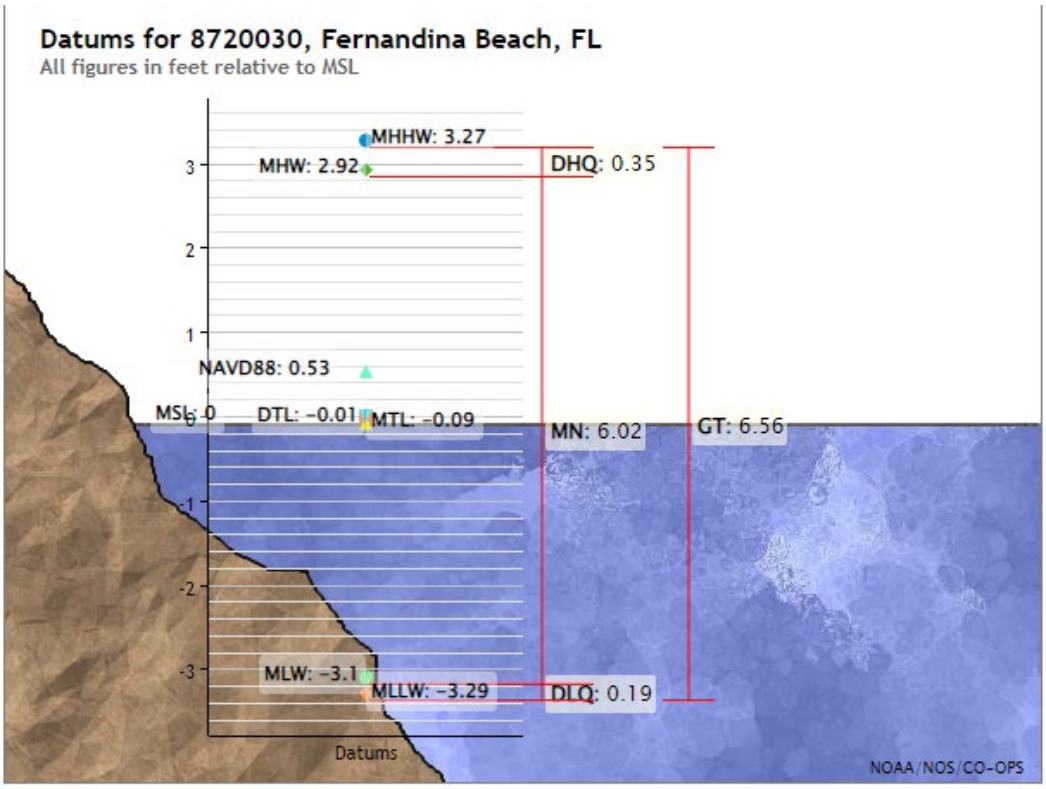

Figure 14: Fernandina Beach, FL Datum Relationships (NOAA)

The Navy completed a hydrodynamic model of Kings Bay in 2005 which encompasses most of the Cumberland Dividings and can be used to estimate rough order magnitude of the velocities and hydrodynamic environment in the Cumberland Dividings area.

3.2.2 Environmental Consequences of No Action Alternative

The implementation of the NAA would have no effect on hydrology or hydraulics in the proposed project area and shoaling would continue at current rates. Due to the dynamic nature of the system and continuation of shoaling within the channel, local changes in flow characteristics may naturally occur over time.

3.2.3 Environmental Consequences of Proposed Action

The implementation of this action would have a minimal and localized effect to the hydrology and hydraulics in the project area due to the change in morphology of the channel. Due to the minimal placement volume (~316,000 cy) and the location of the proposed placement location adjacent to the main channel within an inside meander, the change to tidal ranges and flow regimes within this river system would be negligible.

3.3 Water Quality

3.3.1 Existing Conditions

The State of Georgia assesses its water bodies for compliance with water quality standards established for their designated uses as required by the Federal Clean Water Act (CWA) (33 U.S.C § 1251 et. seq.). Assessed water bodies are placed into one of three categories, supporting designated use, not supporting designated use, or assessment pending, depending on water quality assessment results. These water bodies are found on Georgia's 2020 305(b) list, which is a list of impaired waters in the state of Georgia. The subset of the water bodies that do not meet designated uses on the 305(b) list are also assigned to Georgia's 303(d) list. Although the 305(b) and 303(d) lists are two distinct requirements under the CWA, Georgia reports both lists in one combined format called the Integrated 305(b)/303(d) List. Refer to Figure 15 for designation of supporting water bodies within the project area.

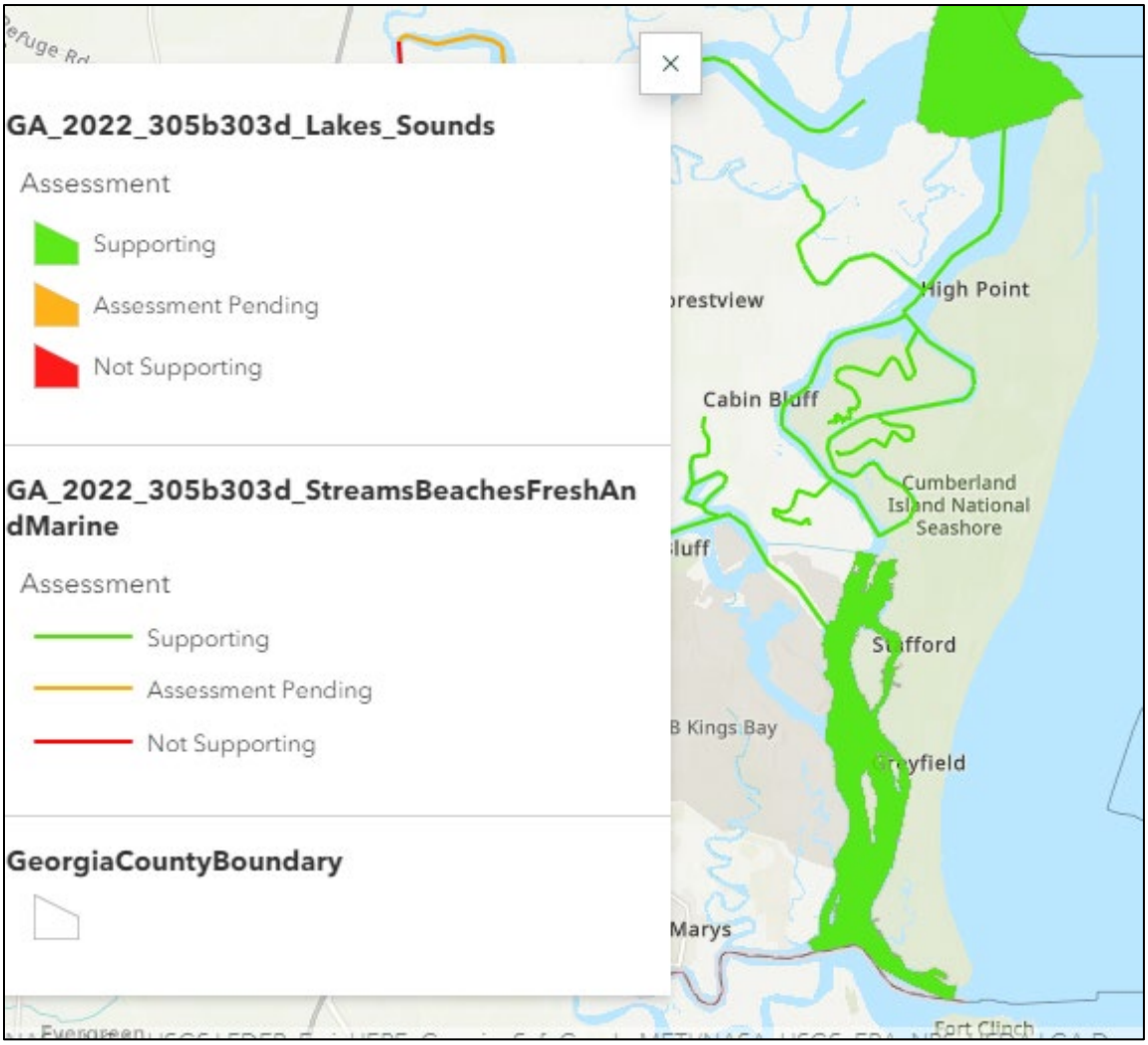

Figure 15: 305(b)/303(d) List Supporting Water Bodies in Project Area

All identified waters bodies above are categorized as category 1 (the water quality data indicates the designated use(s) are being met). These water bodies support the designated use of fishing. The results of this analysis demonstrate that the project area, has good water quality and poses no threat to human and wildlife safety.

Georgia's Rules and Regulations for Water Quality Control, Rule 391-3-6-.03(5)(d) states that all waters shall be free from turbidity which results in a substantial visual contrast in a water body due to a man-made activity. Turbidity levels at the study area are influenced by the dynamic currents associated with the riverine and coastal influences within the Cumberland Sound, including wave, wake and tidal action. Higher turbidity levels are typically expected around inlet areas, and particularly in estuarine areas, due to high nutrient and entrained sediment levels. High turbidity episodes usually return to background conditions within several days to several weeks, depending on the duration of the disturbance (storm event, dredging, etc.) and on the volume of suspended fines. A qualitative assessment of turbidity was conducted to identify turbidity pathways utilizing spatial analysis of historic and current satellite imagery, LiDAR, and known sediment characteristics.

Additionally, a Tier 1 Evaluation (Appendix E) was completed for the Cumberland Dividings. Three geotechnical samples were obtained and assessed from each section that will be dredged (Figure 16). Table 8 describes the composition of these samples. Borings were also analyzed for organic content. All three had organic content of less than 2%. No pesticides, Polycyclic Aromatic Hydrocarbons (PAHs), and Polychlorinated biphenyls (PCBs) were detected above the screening levels in the three boring samples (GHD, 2021).

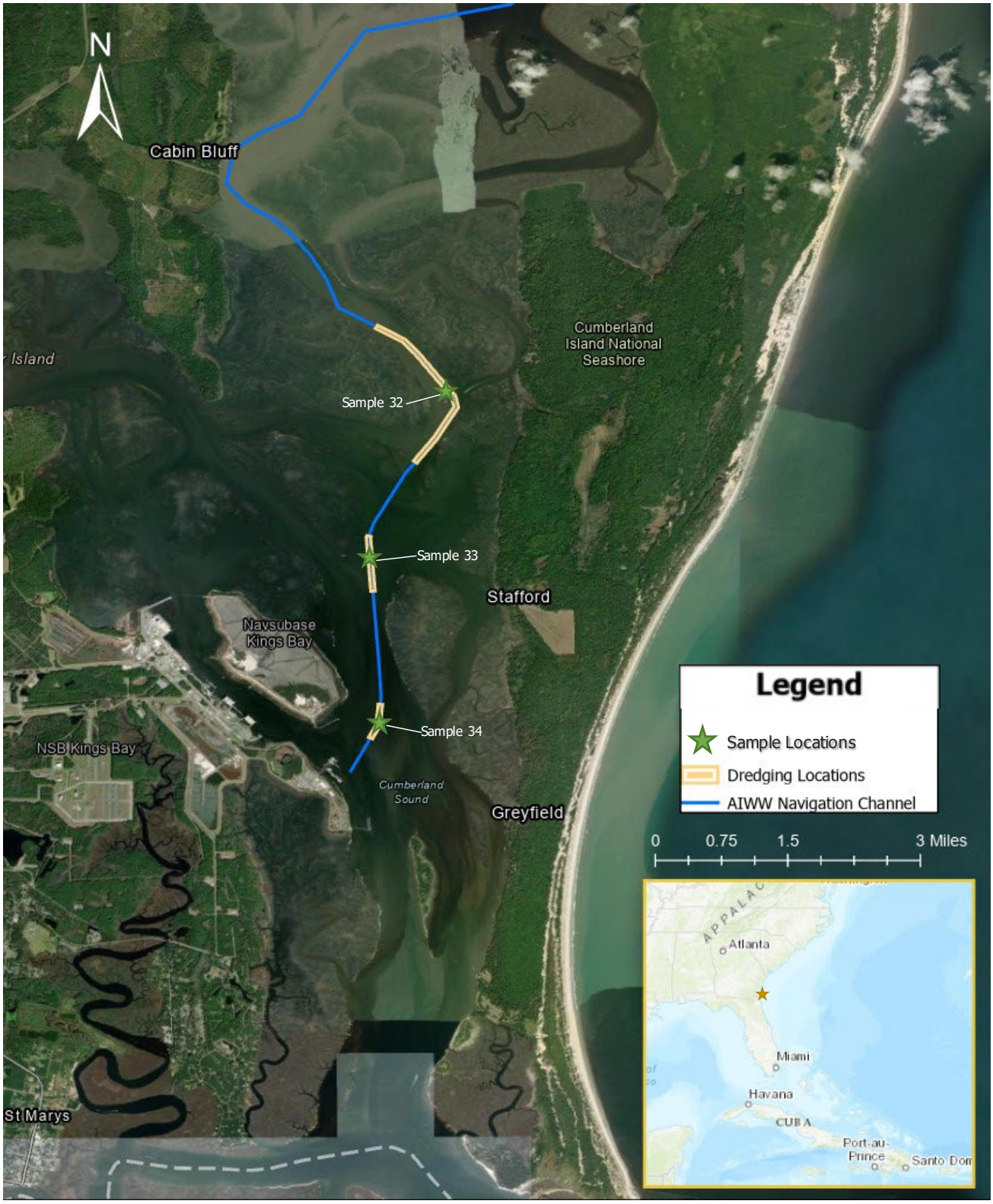

Figure 16: Location of Geotechnical Samples

Table 8. Physical Analysis Results

Sample Number	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
32	0.00	99.80	0.20	0.00
33	0.00	78.30	17.10	4.60
34	0.00	99.80	0.20	0.00

3.3.2 Environmental Consequences of No Action Alternative

Due to ongoing shoaling in the absence of O&M dredging, implementation of the NAA will result in shallow channel depths. It is likely that vessel transit through the shallow depths may stir up the shoaled sediments in the channel, resulting in increased turbidity. Generally, activities that stir up sediments and increase turbidity are believed to temporarily reduce dissolved oxygen levels as sediments are dispersed in the water column. Impacts to dissolved oxygen are therefore expected to be similar as described for turbidity. It is anticipated that any turbidity plumes would dissipate rapidly and effects to turbidity and water quality would be negligible.

3.3.3 Environmental Consequences of Proposed Action

Maintenance dredging and placement of dredged material for beneficial use are anticipated to primarily affect turbidity and dissolved oxygen in the project area. The suspension of sediment in the water column during dredging and material placement can result in a temporary increase in turbidity in the area. The proposed action may also temporarily impact dissolved oxygen levels at the site of the active dredging and placement. Generally, dredging is believed to reduce dissolved oxygen levels as sediments are dispersed in the water column, thereby increasing sediment oxygen. Impacts to dissolved oxygen are therefore expected to be similar as described for turbidity.

Dredging and material placement-generated turbidity plumes are limited to an area only a few hundred feet to a few thousand feet and most turbidity settles out quickly once dredging or material placement is complete (2020 SARBO Section 3.1.1.2, p.96). The distance suspended solids can travel outside of the project footprint can vary depending on the density of the suspended solids (generally referred to as the percent of fines in the material) and local hydrographic patterns, such as the local tides and currents. The velocity of water movement in the area can affect the time that suspended solids remain in the area. For example, riverine environments with an outgoing tide will flush away turbidity quicker than areas with less current such as an estuary with limited tidal flushing. In rivers, the currents also act to compress the turbidity plume as it moves downstream and settles, reducing the overall area/volume affected by it (2020 SARBO Section 3.1.1.2, p.97). As the shoaled material is of high sand content and the project area is subject to tidal flushing, turbidity plumes are expected to settle out quickly and any impacts would be negligible, localized, and temporary.

Placement at BU-E (bird island restoration) may result in temporary generation of turbidity plumes from placement activities. The turbidity plume generated from the placement activities is expected to settle out quickly once material placement is completed (2020 SARBO, Section 3.1.1.2). The high sand content and low percent fines of the sediment would also reduce turbidity levels during construction. General sediment migration pathways are identified in Figure 16 below, with the primary transport in the northeastern direction based on current shoaling patterns. No long-term significant effects are expected to occur as a result of this bird island restoration. Short-term effects would be localized and negligible.

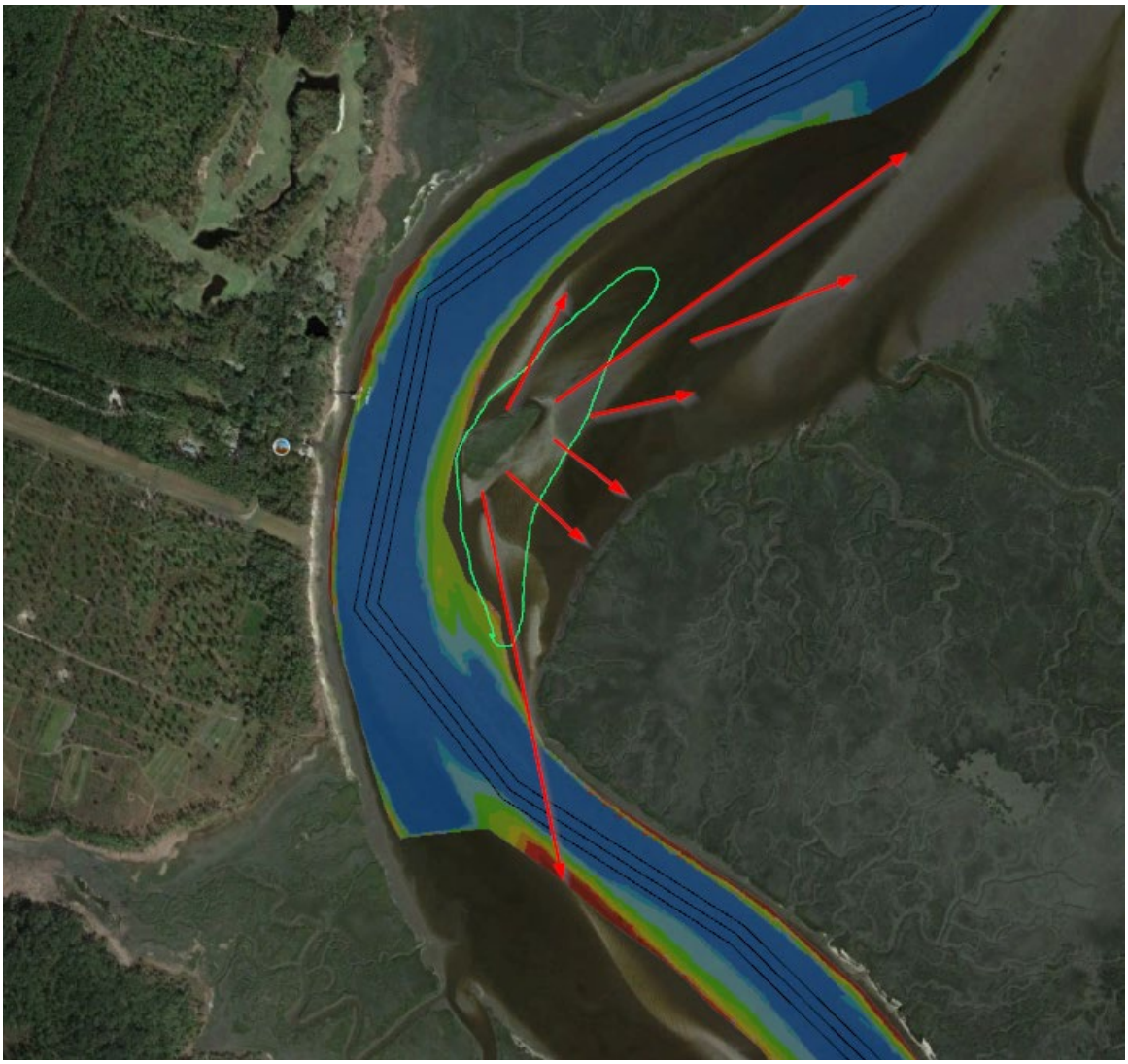

Figure 17: Turbidity pathway for BU-E

Any impacts to water quality would normalize quickly at the conclusion of maintenance dredging and dredged material placement. Additionally, the Corps, in compliance with section 401 of the Clean Water Act, has provided GADNR-EPD a Tier 1 Evaluation (Appendix E), which indicates no contamination of dredged material. The proposed action

is not anticipated to result in degradation of water quality. Overall impacts to water quality would be localized, temporary, and minor.

3.4 Wetlands

3.4.1 Existing Conditions

Within the project area, the majority of the habitat within and adjacent to the AIWW consists of Estuarine and Marine Wetland habitat (E2EM1N) and Estuarine and Marine Deepwater habitat (E1UBL) (USFWS, NWI) (Figure 18). The estuarine wetlands consist primarily of natural levee and low marsh habitat which is characterized by the native cordgrass *Spartina alterniflora*. Salt marshes play a role in coastal hydrological and sediment transport processes and are vital foraging and spawning habitat for many species of fish, crabs, and shrimp. Many of the salt marshes in the Cumberland Dividings have experienced erosion and are currently vulnerable to further degradation and retreat due to SLC and increased coastal storm intensity.

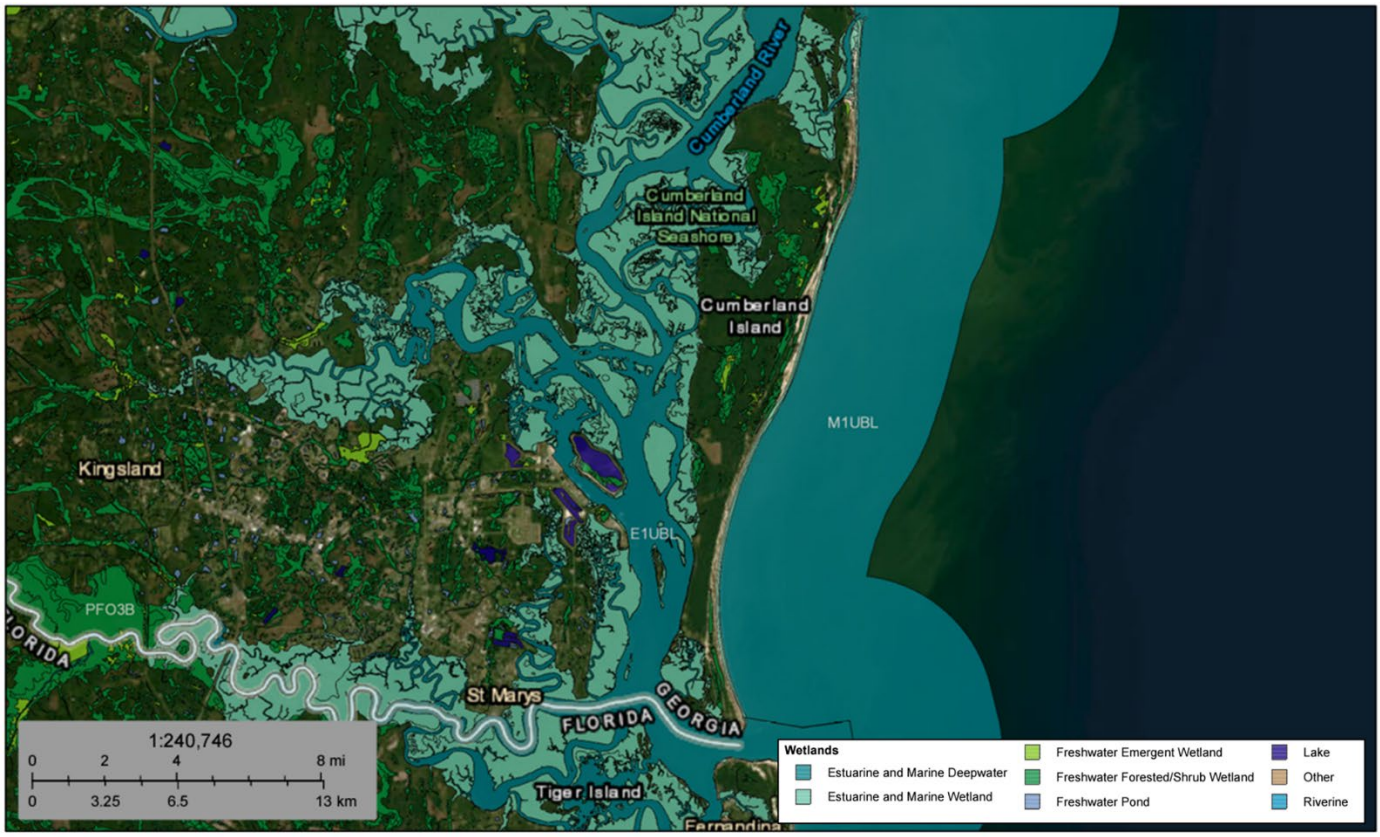

Figure 18. National Wetland Inventory Map of Cumberland Dividings

3.4.1 Environmental Consequences of No Action Alternative

With implementation of the NAA, dredging and placement of sediments in the project area would not occur and there would be no impacts to wetlands.

3.4.2 Environmental Consequences of Proposed Action

With implementation of the proposed action, the estuarine and marine wetlands located east of Cabin Bluff would be enhanced through the addition of dredged material providing additional supporting elevation to the area. Placement in this location would not obstruct the area from continued open access to the river and tidal influences, however it will provide some buffering against future erosional forces. None of the placement activities would directly impact these wetlands, and as described there could be insignificant long-term indirect beneficial effects by mitigating erosional forces in the project area and improving long term resiliency. There will be negligible temporary adverse impacts to the estuarine and marine wetlands as a result of placement.

3.5 Aquatic Biological Resources

3.5.1 Existing Conditions

The Cumberland Dividings is the network of rivers and estuaries between mainland Georgia and Cumberland Island in Camden County. To the north, water is exchanged with the Satilla River and to the south it is exchanged with the St. Mary's River. The habitat is primarily marine influence, flushing with the tides semidiurnally, with marine water input from the Atlantic Ocean and freshwater inputs from the rivers to the north and south. Due to the marine influence, the Cumberland Dividings contains fish species such as sea trout, bluefish, redfish, mullet, flounder, whiting, sheepshead, black drum, red drum, croaker, stingrays, speckled trout, King mackerel, and Spanish mackerel.

Several dolphin and shark species occur in the Atlantic Ocean and within the action area. The Atlantic bottle-nosed dolphin is the most common and only resident. Common shark species include bonnet head, Atlantic blacktip, tiger, and lemon.

Macrobenthic invertebrates inhabiting these proposed placement sites within the action area range from species used directly by man for food, such as shrimp, crabs, oysters, and clams to other species such as polychaetes, crustaceans, mollusks, and other less well known, but valuable, species which make up the remainder of the food chain. Open water areas are populated by a variety of species of phytoplankton and zooplankton.

3.5.2 Environmental Consequences of No Action Alternative

The NAA would have no effect on aquatic resources within the action area as dredging and placement of material would not occur.

3.5.3 Environmental Consequences of Proposed Action

Dredging and direct placement of material for habitat restoration will result in short term impacts to aquatic resources from both the direct placement and turbidity during

construction within the action area. These impacts would be minor in nature and are expected to quickly dissipate once construction is completed. It is expected that during construction activities most mobile aquatic species would avoid the disturbance and find other suitable areas until construction activities are completed.

Open water placement of material to restore bird island habitat will temporarily cover a maximum area of approximately 30 acres of unconsolidated bottom/intertidal non-vegetated flats with sandy material. Temporary impacts resulting from the proposed beneficial use of dredged material placement activities are expected to result in minimal effects to aquatic resources within the action area. It is expected that the area will rapidly recolonize with benthic species, as there is abundant adjacent habitat in the project area. Additionally, given the adjacent foraging habitat, impacts to mobile aquatic species would be temporary and minor. No long-term adverse impacts are anticipated from the proposed action.

3.6 Protected Species

3.6.1 Existing Conditions

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1543) regulates activities affecting plants and animals that are Federally listed as endangered or threatened, as well as the designated critical habitat of ESA-listed species. USFWS and NMFS each have regulatory responsibilities for ESA-listed species under their jurisdiction.

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712; Ch. 128; July 3, 1918; 40 Stat. 755) prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. The project area provides important foraging and nesting habitat for many migratory species and shorebirds.

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) prohibits anyone from "taking" bald eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior.

Under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, 51 species of birds have been identified under the USFWS's Information, Planning, and Consultation System (IPAC) (USFWS, 2022) that are protected within the project area, including the American bald eagle.

The Marine Mammal Protection Act (MMPA) of 1972 established a national policy to prevent marine mammal species and population stocks from declining beyond the point where they are no longer significant functioning elements of their ecosystems. It must be noted that all marine mammals are protected under the MMPA, and some are additionally protected under the ESA. Three federal entities share responsibility for implementing the MMPA:

- NOAA National Marine Fisheries Service—responsible for the protection of whales, dolphins, porpoises, seals, and sea lions.
- U.S. Fish and Wildlife Service—responsible for the protection of walrus, manatees, sea otters, and polar bears.
- Marine Mammal Commission—provides independent, science-based oversight of domestic and international policies and action of federal agencies addressing human impacts on marine mammals and their ecosystems (NOAA MMPA).

ESA-listed Species Potential Occurrence within the Project Area

The USFWS's IPAC indicated several federally listed species potentially within the project area. These included a total of three federally listed endangered species, eight federally listed threatened species, and two federally listed candidate species. Table 9 identifies USFWS ESA listed species occurring within Camden County, GA, which encompasses the Cumberland Dividings project area and would have the potential to be impacted by the proposed project. Five of these species are also under National Marine Fisheries Service (NMFS) jurisdiction which is indicated with an asterisk.

Table 9. USFWS Federally Listed Species occurring within Camden County, GA

Category	Common Name	Scientific Name	Federal Status	Critical Habitat Designated (Yes/No)
Birds	Eastern Black Rail	*Laterallus jamaicensis ssp. Jamaicensis*	Threatened	No
Birds	Piping Plover	*Charadrius melodus*	Threatened	Yes, Project Area outside designated critical habitat
Birds	Rufa Red Knot	*Calidris canutus rufa*	Threatened	Yes, Proposed Listing: 86 FR 37410 July 15, 2021 Project Area outside designated critical habitat
Birds	Wood Stork	*Mycteria americana*	Threatened	No
Mammals (Marine)	West Indian Manatee	*Trichechus manatus*	Threatened	No
Reptiles	Eastern Indigo Snake	*Drymarchon couperi*	Threatened	No
Reptiles	Gopher Tortoise	*Gopherus plyphemus*	Candidate	No
Reptiles	Green Sea Turtle*	*Chelonia mydas*	Threatened	No
Reptiles	Hawksbill Sea Turtle*	*Eretmochylys imbricata*	Endangered	No
Reptiles	Kemp's Ridley Sea Turtle*	*Lepidochelys kempii*	Endangered	No
Reptiles	Leatherback Sea Turtle*	*Dermochelys coriacea*	Endangered	No
Reptiles	Loggerhead Sea Turtle*	*Caretta caretta*	Threatened	Yes Project Area outside designated critical habitat
Insects	Monarch Butterfly	*Danaus plexippus*	Candidate	No
* Species also under the National Marine Fisheries Service (NMFS) Jurisdiction Note: List developed from the USFWS, Information for Planning and Consultation (IPaC) Website.				

NMFS ESA listed species were assessed using the NMFS Threatened and Endangered Species List for the State of Georgia (NMFS, 2022).

Table 10 identifies NMFS ESA listed species occurring within the State of Georgia.

Table 10. NMFS Federally Listed Species occurring within State of Georgia

Category	Common Name	Scientific Name	Federal Status	Likely Occurrence in Project Area
Mammal	North Atlantic Right whale*	*Eubalaena glacialis*	Endangered	No
Mammal	Sei whale	*Balenoptera borealis*	Endangered	No
Mammal	Blue whale	*Balaenoptera musculus*	Endangered	No
Mammal	Sperm whale	*Physeter macrocephalus*	Endangered	No
Mammal	Fin whale	*Balaenoptera physalus*	Endangered	No
Reptile	Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered	Yes
Reptile	Hawksbill sea turtle	*Eretmochelys imbricata*	Endangered	Yes
Reptile	Loggerhead sea turtle[+]	*Caretta caretta*	Threatened	Yes
Reptile	Leatherback sea turtle[+]	*Dermochelys coriacea*	Endangered	No
Reptile	Green sea turtle[+]	*Chelonia mydas*	Threatened	Yes
Fish	Oceanic Whitetip shark	*Carcharhinus longimanus*	Threatened	No
Fish	Giant manta ray	*Manta birostris*	Threatened	No
Fish	Atlantic sturgeon	*Acipenser oxyrinchus oxyrinchus*	Endangered	Yes
Fish	Shortnose sturgeon	*Acipenser brevirostrum*	Endangered	Yes

*Critical Habitat for this species found within Camden County or adjacent coastal waters.
[+]Species under both U.S. Fish and Wildlife and National Marine Fisheries Service Jurisdiction that nest in Georgia.
NOTE: List developed by NOAA Fisheries Southeast Region Protected Resources Division, Threatened and Endangered Species Directory for Georgia, Southeast U.S.

NOAA ESA-listed species that may occur in the project area include sea turtle species (Kemp's, Hawksbill, Loggerhead, and Green) and Atlantic and shortnose sturgeon. The project area is not located in a sturgeon river as designated in Appendix E of the 2020 SARBO, which indicates that spawning and aggregation areas are not known to occur in Cumberland Dividings. Additionally, there is no designated critical habitat for Atlantic sturgeon in the project area. According to GADNR's Biodiversity Portal, sturgeon have been known to use the AIWW and individuals may be present (GADNR 2022). There is no nesting habitat or critical habitat for sea turtle species (Figure 19) in the project area. While individual transient sea turtles may be present such occurrences would be rare.

All other listed species in Table 9 inhabit deep water, open ocean areas and would not occur within the project area. Additionally, leatherback sea turtles have pelagic, deepwater life history, where they forage primarily on jellyfish. As this habitat is not present in the project area, leatherback sea turtles are also assumed to not be present.

Figure 19. Sea turtle nesting areas on Cumberland Island, GA. (Dodd, 2022)

3.6.2 Environmental Consequences of No Action Alternative

Under the NAA, the Corps would not dredge or participate in beneficial use of dredged material placement activities within the project area and therefore there would be no effect to federally listed species or other protected species, such as migratory birds.

3.6.3 Environmental Consequences of Proposed Action

The Corps assessed impacts of dredging and placement activities to ESA-listed species that are under USFWS and NMFS jurisdiction. For USFWS listed species, a Biological Assessment was prepared, and informal consultation was initiated (Appendix A), Table 11 summarizes the Corps finding of effects to USFWS regulated species. For NMFS listed species, dredging activities are covered under the 2020 SARBO, for placement activities the Corps has made a determination of no effect for NMFS species. These effects are described below and summarized in Table 10 and Table 11.

USFWS Dredging and Placement:

A Biological Assessment was prepared to address impacts to Federally listed threatened and endangered species and designated critical habitat under USFWS jurisdiction (Appendix A) and the Corps initiated informal section 7 consultation with the USFWS. This assessment contains a thorough review of potential impacts to species and critical habitat listed in Table 9 and is summarized in Table 11.

Table 11. Summary of Effects Determination for USFWS ESA-listed species

Category	Common Name	USACE Effect Determination
Birds	Eastern Black Rail	MANLAA, as there are large quantities of higher quality habitat in proximity to the project area.
Birds	Piping Plover	No Effect, preferred habitat is not located within proposed dredging and placement sites.
Birds	Rufa Red Knot	No Effect, preferred habitat is not located within proposed dredging and placement sites.
Birds	Wood Stork	MANLAA, as there are large quantities of higher quality habitat in proximity to the project area.
Mammals (Marine)	West Indian Manatee	MANLAA- with implementation of West Indian manatee conditions.
Reptiles	Eastern Indigo Snake	No Effect, preferred habitat is not located within proposed dredging and placement sites.
Reptiles	Gopher Tortoise	No Effect, preferred habitat is not located within proposed dredging and placement sites.
Reptiles	Green Sea Turtle*	No Effect, no known nesting areas located within project area
Reptiles	Hawksbill Sea Turtle*	No Effect, no known nesting areas located within project area
Reptiles	Kemp's Ridley Sea Turtle*	No Effect, no known nesting areas located within project area
Reptiles	Leatherback Sea Turtle*	No Effect, species not present
Reptiles	Loggerhead Sea Turtle*	No Effect, no known nesting areas within project area
Insects	Monarch Butterfly	No Effect, preferred habitat is not located within proposed dredging and placement sites.
*Species under both U.S. Fish and Wildlife and National Marine Fisheries Service Jurisdiction that nest in Georgia. MANLAA: May affect, not likely to adversely affect		

Based on the analysis, and by following the conditions for West Indian manatee as outlined in Appendix A, the Corps determined that the proposed dredging and placement activities “may affect, but not likely to adversely affect” West Indian manatee, eastern black rail, and wood stork. For all other species listed, the Corps has determined that proposed dredging and placement activities would have no effect as either these species would not occur in the project area, or their preferred habitat is not within the project area. There is no sea turtle nesting habitat in the project area, and therefore no effect to nesting sea turtles.

NMFS – Dredging Impacts to Sturgeon and Sea Turtles:

Maintenance dredging of the AIWW is covered by the 2020 SARBO. Routes of effects from cutterhead dredging are evaluated in the 2020 SARBO; for purposes of NEPA, these effects are summarized in this EA. This analysis is not meant to replace or substitute the effects analysis in the 2020 SARBO, but rather serves as the analysis to support decision-making under NEPA. As sturgeon and sea turtle species are the species that may occur in the project area, the impacts analysis focuses on those species.

The Cumberland River is not a sturgeon river listed in Appendix E of 2020 SARBO, and, while transient sturgeon may be present within the Cumberland Dividings, it is not anticipated that sturgeon would aggregate or spawn in the project area. Therefore, entrainment in a cutterhead dredge during O&M dredging is extremely unlikely to occur (2020 SARBO, Section 6.1.3). Other routes of effect to sturgeon from cutterhead dredging including entanglement, as indicated in the 2020 SARBO this route of effect for mobile species is extremely unlikely. Implementation of applicable Project Design Criteria (PDC) from the 2020 SARBO will further reduce any impacts, such that they are discountable.

As indicated in the 2020 SARBO (Section 3.1.1.4.1), “NMFS has no reported takes of sea turtles by cutterhead dredging, despite frequent use of cutterhead dredging within the action area [SARBO action area]. Therefore, we believe the risk of physical injury or take of sea turtles (green, Kemp’s ridley, hawksbill, leatherback, and loggerhead) by cutterhead dredging is an extremely unlikely event that we do not expect [to] occur.”

NMFS – Placement Impacts to Sturgeon and Sea Turtles:

Placement activities in the proposed action are not a covered activity in the 2020 SARBO. Therefore, separate compliance under ESA for species under NMFS jurisdiction is required. For species under NMFS jurisdiction, the Corps has made a finding of no effect. Open water species (whales, sharks, and rays) would not occur in the project area and therefore there would be no effect to these species. Additionally, there is no designed critical habitat located in project area and there are no potential routes of effect to any designated critical habitat. The nearest designated critical habitat is for the Atlantic Sturgeon and is located in the St. Mary’s River, approximately 12 miles south of the proposed placement site. All proposed dredging and placement activities are geographically distant, and any turbidity plumes would disperse before reaching Atlantic sturgeon critical habitat, therefore there would be no modification to critical habitat.

Shortnose and Atlantic sturgeon are common in the Satilla River to the north and the St. Mary’s River to the south. The Cumberland River does not have any aggregation or spawning areas; therefore, placement activities would have no effect to sturgeon spawning or aggregation. The placement sites also do not provide preferred foraging habitat for sturgeon species, sturgeon prefer deep hole habitat with soft substrate (GADNR 2022). The placement site is a combination of shallow depth and exposed upland bird island habitat, and it is unlikely that a sturgeon may be encountered during placement. Entanglement is also a potential route of effect from flags or other markings of pipeline. As indicated in SARBO 2020 (Section 3.1.2) “The presence of flexible

materials in the water, such as buoy lines used to mark pipelines or turbidity curtains and in-water lines could create an entanglement risk to mobile species (i.e., sea turtles, fish, elasmobranchs, and whales); however, we believe entanglement from flexible materials in the water associated with activities covered under this Opinion is extremely unlikely to occur. We therefore believe that this route of effect is discountable." Additionally, all PDCs from the 2020 SARBO related to entanglement of mobile species would be followed. As it is highly unlikely that sturgeon would be present within the placement area as it is not preferred habitat, and any individuals that may be present would be a transient, and able to easily avoid the dredging equipment, the Corps finds that there would be no effect to Atlantic and shortnose sturgeon from placement activities.

The potential route of effect to sea turtles from placement activities would be possible temporary loss of access to habitat at the placement sites. Individuals may be temporarily unable to use the placement site for forage and shelter habitat due to avoidance of dredging and placement activities, related noise, and physical exclusion from areas. However, as indicated in the 2020 SARBO (section 3.1.6), it is believed that species will avoid these areas and any animals would conduct activities in the surrounding area not disrupted by the activity. While transient sea turtles may be present at the placement site, any such occurrence would be rare and unlikely as the placement site is not preferred forage or shelter habitat and does not provide nesting habitat (Figure 19). For these reasons the Corps has determined that placement activities will have no effect to sea turtle species.

Migratory Birds

Migratory birds are expected to be present within the project area and may be temporarily impacted from dredging and placement activities. Impacts would include the loss of access to habitat at the placement site during construction activities. However, because of the current elevation of the placement site, nesting habitat is not present. During construction timeframe there will be other suitable foraging habitat and any adverse impacts would be temporary and negligible. Long-term benefits would be realized as placement at BU-E would restore an eroding bird island and provide additional foraging habitat and restore nesting habitat for migratory species and shorebirds. The Corps will coordinate the design and construction of the bird island at BU-E with GADNR Wildlife Resources Division (GADNR-WRD) biologists to minimize adverse impacts during construction of the project, and to ensure design of the bird island provides suitable habitat.

Overall, the project would not result in significant impacts to protected species, including ESA-listed species and migratory bird species. The Corps would apply the applicable PDCs from the 2020 SARBO and the agreed upon conditions for West Indian manatee to minimize impacts from cutterhead dredging and placement activities. The Corps will coordinate the design and construction of the bird island at BU-E with GADNR wildlife biologist to minimize adverse impacts to bird species during construction and to ensure long-term benefits from restoration of the bird habitat is realized

3.7 Essential Fish Habitat

3.7.1 Existing Conditions

Essential fish habitat (EFH) is defined by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1802(10)) of 1996 as those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. The MSA is the primary law responsible for governing marine fisheries management in U.S. federal waters and aims to promote conservation, reduce bycatch, and rebuild overfished industries. A detailed EFH assessment pursuant to MSA can be found in Appendix G. The following information summarizes that analysis.

Within the project area, EFH adjacent to the proposed placement sites include estuarine emergent wetlands, estuarine water column, intertidal non-vegetated flats, coastal Inlets, oyster reefs and shell banks, open waters/unconsolidated bottom, and marine water column.

Habitat Areas of Particular Concern (HAPC) are EFHs that are considered atypical, particularly ecologically important, susceptible to anthropogenic degradation, or located in environmentally challenged or stressed areas. HAPCs may include areas used for migration, reproduction, and development. HAPCs can include intertidal and estuarine habitats. Within the project area, there are two HAPC: oyster reefs/shell banks and coastal inlets.

Managed fish species occurring in the project area include king mackerel, Spanish mackerel, bluefish, gag grouper, penaeid shrimp (brown, white, and pink), summer flounder, and red snapper. Additionally, the Corps evaluated the presence of coastal sharks and although transient individuals could occur, their presence is highly unlikely.

3.7.2 Environmental Consequences of No Action Alternative

Under the NAA, the Corps would not dredge or participate in beneficial use of dredged material placement activities within the project area and therefore would not have any impacts to EFH and HAPC. However, not using dredged material from the AIWW in beneficial ways within the action area would mean long-term benefits would not be realized. The NAA would have no short-term, direct adverse effects to EFH, and minor, insignificant long-term adverse effects due to ongoing degradation of important estuarine emergent wetland habitat from SLC and ongoing erosional forces.

3.7.3 Environmental Consequences of Proposed Action

Impacts to EFH and HAPC within the action area include unconsolidated bottom, estuarine emergent wetlands, intertidal flats, estuarine and marine water column, and coastal inlets. During placement activities of dredged material, some direct and indirect effects will occur within unconsolidated bottom, estuarine emergent wetlands, intertidal flats, estuarine and marine water column, and coastal inlets. These direct impacts include

temporary loss of intertidal non-vegetated flats (mudflats) and unconsolidated bottom through placement of sediment for various beneficial uses. It is expected, however, that recolonization of benthic communities in the action area would begin soon after construction activities are completed as sediment will be allowed to migrate naturally within the river system. Fairly quick recovery of benthic organisms occurs at subtropical regions than at what is observed at higher latitudes (Clarke and Miller-Way, 1992).

Additional impacts to EFH, HAPC, and managed species include short-term and minor increases in turbidity during placement activities. Turbidity and suspended sediments that may result from placement activities within the action area could interfere with foraging activities by managed species. It is expected that the turbidity plume could extend approximately 1.5 times the length of the placement site but once the placement of sediment is completed, turbidity will quickly dissipate and will go back to pre-construction conditions (2020 SARBO, Section 3.1.1.2). It is anticipated that the effect will be insignificant as the AIWW is generally turbid and the additional turbidity generated by the sediment placement will be minimal and temporary relative to background levels. Once these activities are completed, any turbidity will quickly dissipate given the riverine/tidal currents.

Impacts to managed species from the proposed project are expected to occur as a result from potential impacts to their respective EFH/HAPC associated with placement activities rather than direct impacts to the species themselves. It is expected that during construction activities most managed species would move out of construction areas and find other suitable area until construction activities are completed.

The proposed action is not expected to cause significant adverse impacts to EFH, HAPC, or managed species located within the action area. Impacts to EFH, HAPC, as well as the managed species that use this habitat are expected to be minor and temporary in nature.

3.8 Historical and Cultural Resources

3.8.1 Existing Conditions

The management of cultural resources is regulated under Federal laws such as the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. §300101 *et seq.*), the Archaeological and Historic Preservation Act of 1974 (54 U.S.C. §§312501- 312508), the American Indian Religious Freedom Act of 1978 (42 U.S.C. §§1996 and 1996a), the Archeological Resource Protection Act of 1979 (16 U.S.C. §§470aa-470mm), NEPA (42 U.S.C. §4321 *et seq.*), the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. §3001 *et seq.*), the Abandoned Shipwreck Act of 1987 (43 U.S.C. §§2101-2106), and the Sunken Military Craft Act of 2004 (10 U.S.C. § 113 *et seq.*).

Cultural resources considered in this EA are those defined by the NHPA as properties listed, or eligible for listing, on the National Register of Historic Places (NRHP) and are referred to as historic properties. Historic properties include buildings, structures, sites,

districts, objects, cultural items, Indian sacred sites, archaeological artifact collections, and archaeological resources (36 CFR 800.16(l)(1)). Cultural resources also include resources with unknown NRHP eligibility status.

The area of potential effect (APE) for cultural resources includes areas located within Savannah District's portion of the AIWW where the proposed action would occur. This would include activities such as dredging of navigation channels, actions related to the placement of the dredged material and construction of new access roads, construction staging areas, and any other ground disturbing activities.

Appendix B contains an analysis of effects and more information on the archaeological and historic setting of the APE. This undertaking was included as part of a Programmatic Agreement (PA) executed in 2013 between the Corps, Georgia State Historic Preservation Office (GA SHPO), South Carolina State Historic Preservation Office (SC SHPO), and the Advisory Council on Historic Preservation (ACHP). The PA can be found in Appendix B. Surveys were performed in 1979-1980 and again in 2012 to identify and assess anomalies and potential sites. Based on these assessments, no project impacts were identified for the Cumberland Dividings APE, and therefore no further surveys were recommended. Section 106 consultation is complete for this undertaking.

3.8.2 Environmental Consequences of No Action Alternative

Implementation of the NAA would have no effect on cultural resources.

3.8.3 Environmental Consequences of the Proposed Action

Implementation would have no effect on cultural resources as there are no known historic properties and/or cultural resources within the Cumberland Dividings project area that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered. Section 106 consultation for this undertaking is complete.

3.9 Recreation

3.9.1 Existing Conditions

Commercial and recreational fishing boats make extensive use of the waterway. These vessels, in addition to touring pleasure craft, make up the overwhelming proportion of waterway users. Recreational boaters access the AIWW from marinas near the project area. Boaters use the AIWW for sheltered passage along the Atlantic coastline and common activities include fishing, swimming, and kayaking.

3.9.2 Environmental Consequences of No Action Alternative

Under the NAA, the Corps would not dredge and participate in beneficial use of dredged material placement activities within the project area. This would result in negative impacts to recreational boating within the action area as grounding incidents have occurred at low tide in the shoaled in areas.

3.9.3 Environmental Consequences of Proposed Action

The proposed action includes dredging and placement in areas that can be easily avoided by recreational vessels traversing this reach of the AIWW. Activities associated with dredging will have a beneficial effect to recreation as maintaining the authorized depth will prevent grounding incidents. The placement activity will have no effect on recreation as the bird island will not obstruct the channel. Most of the river and sound are navigable for recreational vessels and for other recreation activities (such as fishing), so transits would only be minimally impeded during project construction. Therefore, this action would not affect to the navigability of the AIWW, or recreation vessels' ability to access it.

3.10 Climate Change

3.10.1 Existing Conditions

The main climate change assessment is the potential impacts from future SLC. Relative sea-level change (RSLC) was calculated using the USACE SLC curve calculator (2022.60) which is available at: https://cwbiapp.sec.usace.army.mil/rccslc/slcc_calc.html.

Relative sea level (RSL) refers to local elevation of the sea with respect to land, including the lowering or rising of land through geologic processes such as subsidence and glacial rebound. It is anticipated that sea level will rise within the next 50 years. To incorporate the direct and indirect physical effects of projected future SLC on design, construction, operation, and maintenance of coastal projects, USACE has provided guidance in ER 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs, dated June 15, 2019, and Engineer Pamphlet (EP) 1100-2-1, Procedures to Evaluate Sea Level Change: Impacts, Responses, and Adaptation, dated June 30, 2019. Three estimates are required by the guidance, a Low (Baseline) estimate representing the minimum expected SLC, an Intermediate estimate, and a High estimate representing the maximum expected SLC.

This analysis was based on the National Ocean Service (NOS) tide gauge, located in Fernandina Beach, Florida (Station #8720030), approximately 13 miles south of Cumberland Dividings. This gauge was selected to represent the project site since it was the closest gauge compliant with USACE guidance (>40 years) to the project location. The gauge is active and compliant with data from 1897 to present. The linear relative sea level trend for this gauge is 2.20 mm/year (0.00722 ft/year) with a 95% confidence interval of +/- 0.17 mm/year (0.00056 ft/year) based on monthly mean sea level data from 1897 to 2021. The NOAA RSLC trend shows a linear change of +0.00722 ft/yr for a total change of +0.361 ft over 50-years.

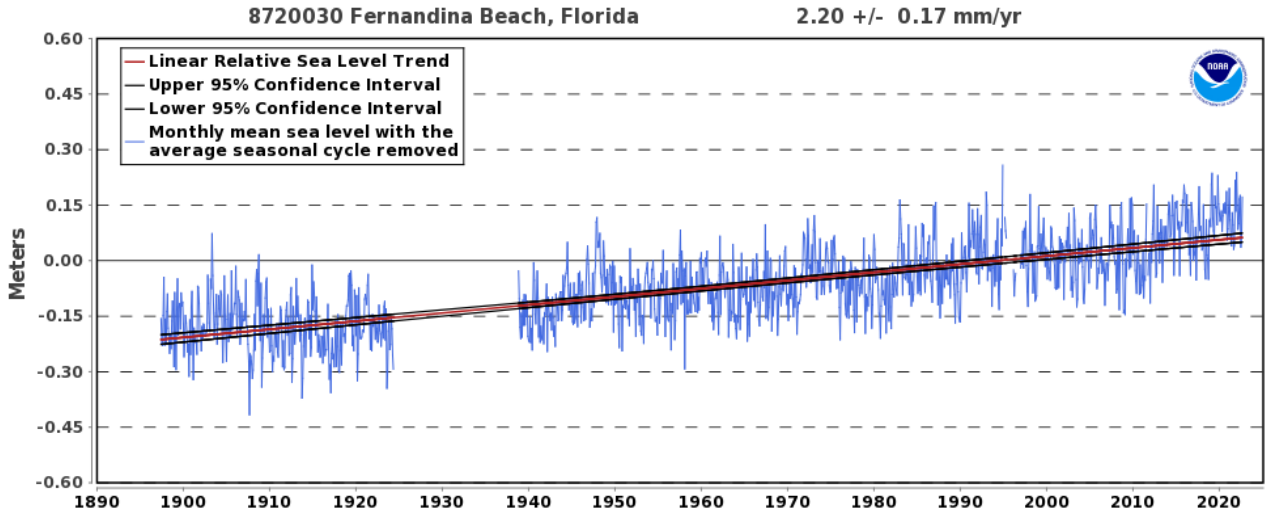

Figure 20. Relative Sea level Trend for Gauge 8720030

The USACE SLC curve calculator was used to compute estimated relative SLC projections for Gauge 8720030. SLC values for the USACE scenarios have an origin year of 1992 (the midpoint of latest National Tidal Datum epoch) and the 2022 NOAA SLC rate of 2.20 mm/year (0.00722 ft/year) was selected. Estimates for the year 2073 at Cumberland Dividings are 0.06, 0.64, and 2.49 feet NAVD88 under the USACE low, intermediate, and high SLC projections. Currently, SLC in the region is trending to the USACE Intermediate Scenario based on the 19-year moving average. Long-term predictions of SLC indicate that the study area will be highly vulnerable to sea level-related hazards.

Table 12. USACE Sea Level Calculator Summary for Gauge 8720030

	Gauge 8720030
Location	Fernandina Beach, Florida
Period of Record	1897– 2021
National Oceanic and Atmospheric Administration (NOAA) 2022 Relative Sea Level (RSL) Trend (feet/year)	0.00722
NOAA 2022 95% Confidence Interval (feet/year)	0.00056
Equivalent Change over 50 years (feet)	0.361
USACE Low Scenario 2073 (ft, NAVD88)	0.06
USACE Intermediate Scenario 2073 (ft, NAVD88)	0.64
USACE High Scenario 2073 (ft, NAVD88)	2.49
Conversion NAVD88 ft to 1992 MSL ft	0.53

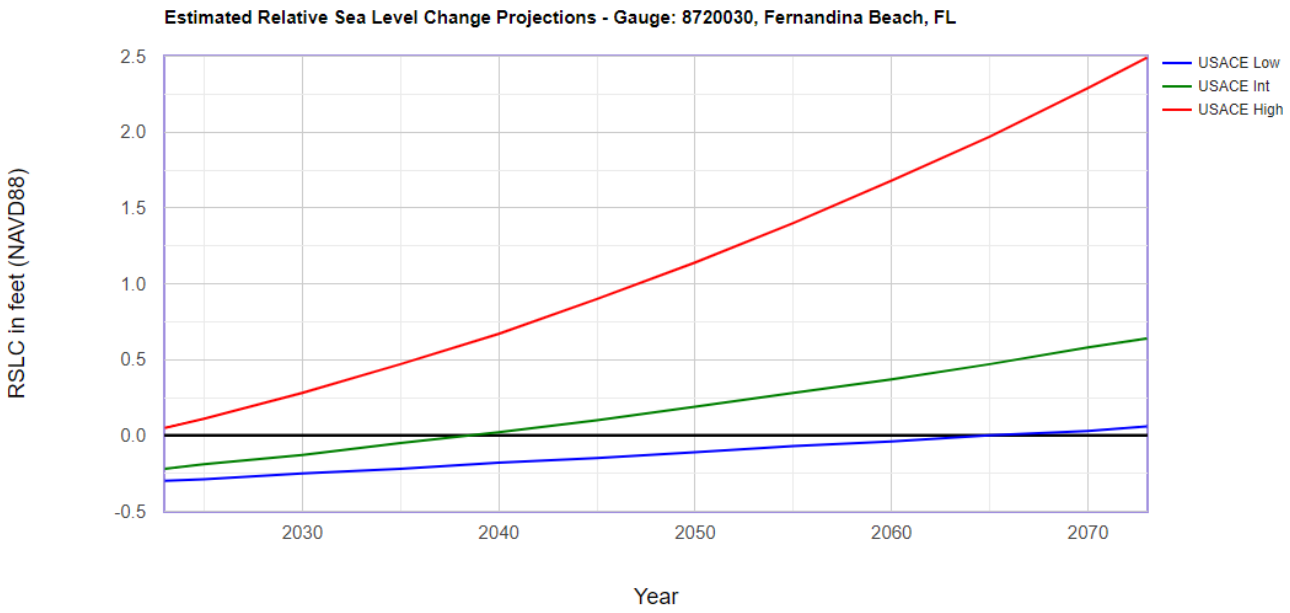

Figure 21. Sea level change curve calculator output for Fernandina Beach, FL showing three USACE scenarios for Gauge 8720030

3.10.2 Environmental Consequences of No Action Alternative

The USACE intermediate projection predicts a relative SLC of +0.86 ft by 2073. With no implementation of the proposed action, no dredging or placement of material would occur. The placement site locations will continue to be susceptible to coastal storms and SLC, increasing the risk of loss of important cultural resources and fish and wildlife habitat due to erosion and inundation.

3.10.3 Environmental Consequences of Proposed Action

The proposed action of placing material to restore the degraded bird habitat will increase resilience against the effects of SLC associated with climate change. Placement at each location is intended to provide increased elevation or stabilization at each site, and this will help reduce the loss of habitat from SLC. Additionally, the dredging and placement activities will not contribute to climate change through release of greenhouse emissions.

4 Cumulative Impacts

Cumulative effects result from the proposed action when added to other past, present, and reasonably foreseeable projects or actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

4.1 Past, Present, and Reasonably Foreseeable Future Actions

This section of the AIWW, within the Cumberland Dividings, was last dredged in 2001, and placement of dredged material occurred in Big Crab Island DMMA. Currently, no placement activities are ongoing at this location. In the future, it is expected that BU

placement will occur at this location periodically or as needed over time to restore or protect habitat that is lost or vulnerable due to erosion and storms.

Placement at the proposed bird island has not previously occurred. Currently, there are no placement activities ongoing at this location. In the future, placement at the proposed bird island may occur to provide nesting and foraging habitat for shorebirds.

NSB Kings Bay is a large submarine base in the project area. NSB Kings Bay has partnered with numerous conservation organizations to purchase easements that will manage wildfire risk and preserve the coastal wetlands for threatened and endangered species, while protecting the invaluable mission at NSB Kings Bay. As part of the Georgia Sentinel Landscape and a participating member of the Southeast Regional Partnership for Planning and Sustainability, NSB Kings Bay has been successful in leveraging multiple partners' priorities and resources to achieve large-scale land protection immediately adjacent to the base. Land protections achieved through this effort are shown in Figure 22 (REPI 2021).

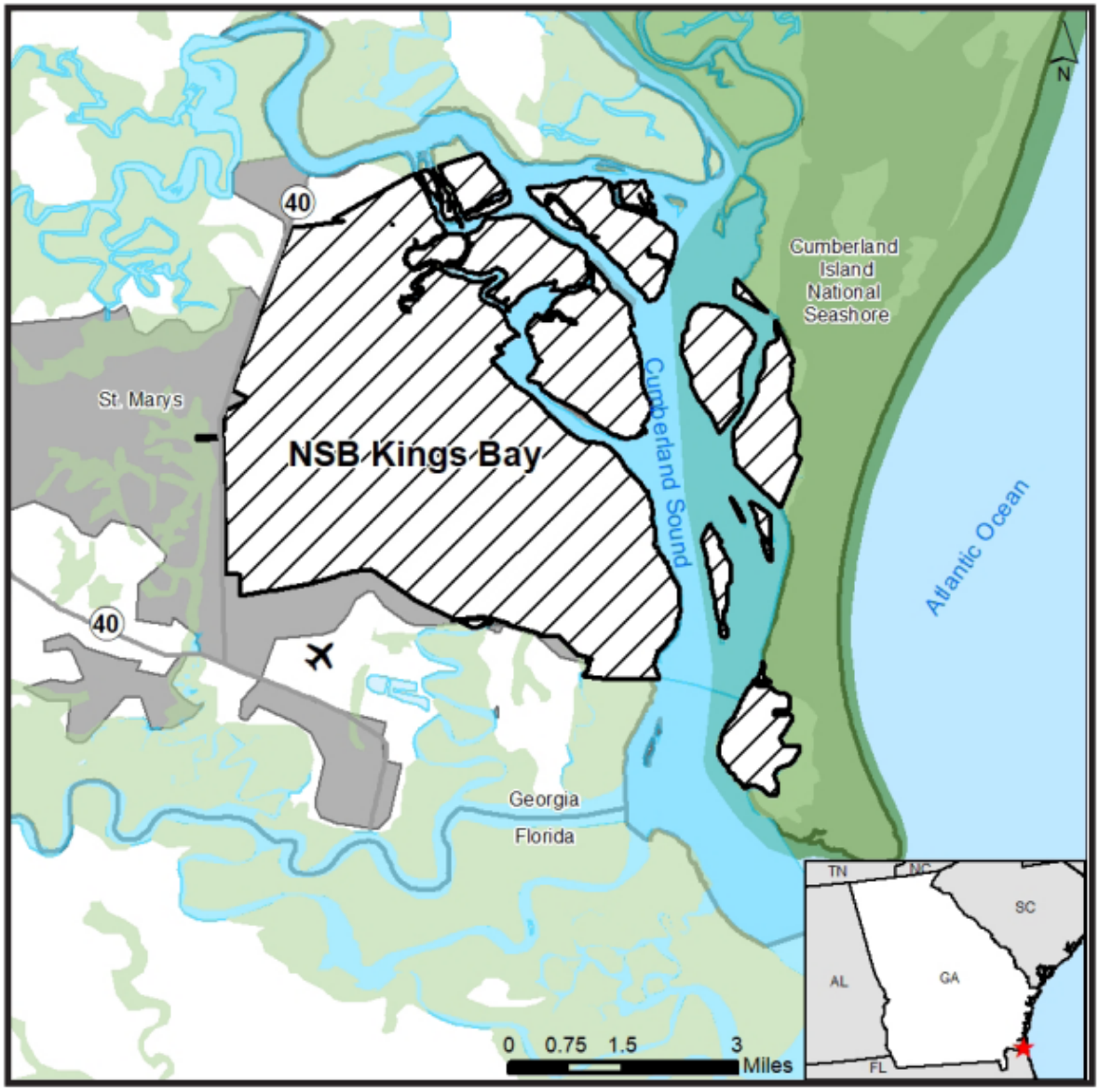

Figure 22. NSB Kings Bay Land Protection Areas, shown as crosshatched area. Source: https://www.repi.mil/Portals/44/Documents/Buffer_Fact_Sheets/Navy/NSBKingsBay.pdf

4.2 Resource Areas Evaluated for Cumulative Effects

The remainder of this chapter describes the results of the cumulative effects analysis for each resource considered from Chapter 3. The text below summarizes the past, present, and reasonably foreseeable actions that might impact each resource category identified to have an incremental cumulative effect. If a resource was not identified to have a cumulative effect, then this resource was not discussed in detail within the chapter. The cumulative effects analysis discusses future conditions as follows:

- Without Project: No Corps Action
- With Project: Implementation of beneficial use of dredged material

4.2.1 Hydrology and Hydraulics

Without Project: The NAA would have no effect on the hydrology of the nearshore environment of Cumberland Island, the Cumberland River, and the adjacent salt marshes.

With Project: The proposed action, when considered with past, present, and reasonably foreseeable future projects, would result in minimal effect to hydrology and hydraulics. This action would have minimal localized effects to the hydraulics of the AIWW channel. Placing material adjacent to the channel will change the cross-sectional area and therefore could negligibly increase velocities in the deeper parts of the channel.

4.2.2 Historical and Cultural Resources

Without Project: The NAA would have no effect on the cultural resources of Cumberland Island, the Cumberland River, or any other adjacent lands within or near the project area.

With Project: The proposed action, when considered with past, present, and reasonably foreseeable future projects would have no effect to cultural resources as dredging and placement activity will not impact these resources within the project area.

4.2.3 Water Quality

Without Project: The NAA would have no effect or change to water quality of the nearshore environment of Cumberland Island, the Cumberland River, and the adjacent salt marshes.

With Project: The proposed beneficial use action, when considered with past, present, and reasonably foreseeable projects, would result in temporary, negligible adverse effects to water quality of the nearshore environment of Cumberland Island, the Cumberland River, and the adjacent salt marshes. During placement activities, temporary turbidity plumes may be generated but would quickly dissipate.

4.2.4 Wetlands

Without Project: The NAA would have no adverse cumulative impacts to wetlands. Long term, the existing wetland habitat located near the BU site may migrate or degrade due to natural erosional and sedimentation processes.

With Project: The proposed beneficial use action, when considered with past, present, and reasonably foreseeable future projects, would have temporary, negligible adverse effects during placement activities due to an increase in turbidity during dredging and placement activities. Overall, a long-term beneficial effect is expected as the beneficial use of dredged material will keep sediment in this coastal system and allow for passive sediment transport to the surrounding wetlands, thus increasing resiliency to SLC and coastal storm activity.

4.2.5 Aquatic Biological Resources

Without Project: The NAA would have no effect to existing aquatic resources within the action area as no construction activities associated with placement of dredged material would occur.

With Project: No negative cumulative impacts would occur with the proposed beneficial use activities when considered with past, present, and reasonably foreseeable future projects. Overall, any temporary impacts resulting from the proposed beneficial use of dredged material placement activities are expected to result in minimal effects to aquatic resources within the action area and will not cause any long-term adverse impacts.

4.2.6 Protected Species

Without Project: The NAA would have no effect to protected resources within the action area as no construction activities associated with placement of dredged material would occur.

With Project: With implementation of the proposed project, no significant cumulative impacts would occur for federally listed species within the project area, with implementation of various construction protection measures including those for migratory bird species and West Indian manatees and by following various design criteria guidelines as outlined in the 2020 SARBO. Combined with the ongoing Kings Bay land protection project, there would be an overall long-term benefit to bird species in the area through the restoration and protection of habitat.

4.2.7 Essential Fish Habitat

Without Project: The NAA would have no effect to EFH within the action area as no construction activities associated with placement of dredged material would occur. It is expected, however, that implementation of the NAA may have long-term minor negative impacts on existing EFH within the proposed project area due to ongoing degradation of important estuarine emergent wetland habitat from SLC and ongoing erosional forces.

With Project: No long-term negative cumulative impacts would be expected from the proposed action, combined with other present actions by others, and reasonably foreseeable future actions. The proposed beneficial use activities would have slight adverse effects to EFH within the action area during construction activities. These slight adverse impacts are anticipated to be temporary in nature as no hardening structures will be constructed and sediment would be allowed to move freely within the system over time.

4.2.8 Recreation

Without Project: The NAA would have negative impacts to recreational boating within action area as grounding incidents have occurred at low tide in the shoaled in areas. Aside from the negative impact of not dredging this section of the river, no other negative impacts would occur for Cumberland Island, the Cumberland River, and the adjacent salt marshes.

With Project: The proposed beneficial use action, when considered with past, present, and reasonably foreseeable future projects, would have temporary, slight adverse effects. The majority of the work will occur in water and the presence of dredging and placement equipment may require recreational boaters to detour slightly to avoid impacts with this equipment. The presence of these obstructions would be temporary, only during dredge and placement activity, and the effect would be negligible as there is sufficient space within the river to avoid construction equipment.

4.2.9 Climate Change

Without Project: The NAA would have no effect to vulnerable habitat in the project area due to climate change. The placement site location will continue to be susceptible to coastal storms and SLC, increasing the risk of degradation and loss to fish and wildlife habitat due to erosion and inundation.

With Project: The proposed beneficial use action, when considered with past, present, and reasonably foreseeable future projects, would have moderate long-term benefits to habitats susceptible to the impacts of climate change. The proposed action of placing material to restore the degraded bird habitat would increase resilience against the effects of SLC associated with climate change. Placement at each location is intended to provide increased elevation or stabilization at each site, and this would help reduce the loss of habitat from SLC. Additionally, the dredging and placement activities would not contribute to climate change through release of greenhouse emissions.

5 Compliance with Environmental Laws, Statutes and Executive Orders

This chapter provides documentation on how the recommended plan for the modification study and the preferred alternative for O&M dredging comply with all applicable Federal environmental laws, statues, and executive orders.

5.1 Statutes

Abandoned Shipwreck Act of 1987 (43 U.S.C. §§ 2101-2106)

There are no known shipwrecks that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered.

Anadromous Fish Conservation Act of 1965, as amended (16 U.S.C. § 757a *et. seq.)*

Any future planning for the use or development of water or land resources affecting anadromous fish will be coordinated with local, State and Federal resource agencies in accordance with NEPA regulations and submitted to Congress.

Archaeological and Historic Preservation Act, as amended (54 U.S.C §§ 312501-312508) and Archeological Resources Protection Act (16 U.S.C § 470 aa-mm)

There are no known historic properties and/or cultural resources in this area that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered.

Bald Eagle Act of 1972 (16 U.S.C. §§ 668-668d)

No impacts are expected to bald and golden eagles from the proposed action, all activities would take place in open water environment, during site visit to survey for resources in the area no bald and golden eagle nests were observed.

Clean Air Act of 1972, as amended (42 U.S.C. § 7401 *et. seq.)*

The “general conformity” requirements of Section 176(c)(4) of the Clean Air Act, are met as only short-term negligible impacts are anticipated. The area is in attainment and the proposed action would not affect the attainment status.

Clean Water Act of 1971, as amended (33 U.S.C. § 1251 *et. seq.*)

CWA 401 WQC for O&M in the AIWW was issued in 1983. GADNR-EPD determined that a new 401 CWA WQC would not be required for the continued O&M dredging of the AIWW, as these actions would constitute ongoing work. The placement sites selected are considered a slight modification to this ongoing work and a Tier 1 Evaluation was provided to GADNR-EPD to review pursuant to Section 401 of the CWA. On December 20, 2022, GADNR-EPD wetlands unit, provided the following concurrence: “The Georgia EPD Wetlands Unit, along with assistance from our Risk Assessment Unit, has reviewed the Tier I and are good with the continuation of dredging.” The requirements under section 401 of the CWA have been met for the proposed action.

While the Corps does not process and issue permits for its own activities, pursuant to 33 CFR 336.1, we do authorize our own discharges of dredged or fill material by applying all applicable substantive legal requirements, including application of the Section 404(b)(1) guidelines. As part of our review, the Corps evaluated the probable impacts, including cumulative impacts, of the placement of dredged material, which is the relevant activity resulting in discharge, and the intended use on the public interest. All factors which may be relevant to the proposal must be considered including the cumulative effects. For reasons identified in Appendix E, the Corps concludes that the proposed activity is in the public interest.

Coastal Barrier Resources Act of 1982 (16 U.S.C. § 3501 *et seq.)*

CBRA consultation was initiated 22 November 2022 with USFWS. The dredging locations and placement site are within the same CBRA zone (N06); therefore no exceptions would be required, and the proposed action would be consistent with CBRA regulations. On 29 November 2022 USFWS responded and concurred with the Corps' assessment.

Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1451 *et seq.*)

The Corps prepared a CZMA evaluation to determine if the proposed action in the Cumberland Dividings is consistent with the Georgia Coastal Management Program (GCMP). For purposes of the CZMA, the enforceable policies of the GCMP constitute the approved state program. In accordance with the CZMA, the Corps has determined that the proposed action would be carried out in a manner which is fully consistent with the enforceable policies of the GCMP. In a letter dated February 16, 2023 GADNR-CRD provided concurrence with the Corps' determination. This correspondence can be found in Appendix D.

Endangered Species Act of 1973 (16 U.S.C. § 1531 *et. seq)*

Pursuant to section 7 of the ESA, the NMFS issued the 2020 SARBO, dated July 30, 2020, that determined that operations and maintenance dredging in accordance with the 2020 SARBO will not jeopardize the continued existence of the ESA-listed species in the action area. The 2020 SARBO is a programmatic opinion that considers effects to the following species: sea turtles (Kemp's Ridley, green, hawksbill, leatherback, and loggerhead), sturgeon (shortnose and Atlantic), Nassau grouper, Giant manta ray, scalloped hammerhead shark, smalltooth sawfish, oceanic whitetip shark, whales (North Atlantic right, Blue, Fin, Sei, and Sperm), Johnson's seagrass, and corals (Boulder star, elkhorn, Lobed star, Mountainous star, Pillar, rough cactus, and staghorn). All project design criteria, terms and conditions, and reasonable and prudent measures in the 2020 SARBO shall be implemented in order to avoid and minimize effects to endangered species. Maintenance dredging is a covered activity of the 2020 SARBO.

The placement of dredged material for beneficial use at site BU-E is not a covered activity of the 2020 SARBO. For NMFS ESA-listed species, the Corps has made a determination

of no effect from the placement of dredged material and no further consultation is required. The effects analysis can be found in section 3.6 of this EA.

With regards to species under USFWS jurisdiction, pursuant to section 7 of the ESA, the Corps has made a “may affect, but not likely to adversely affect” determination for the West Indian manatee, rufa red knot, piping plover, eastern black rail and wood stork. A no effect determination was made for all other USFWS-regulated ESA-listed species with the potential to occur in the action area (Section 3.6). There is no designated critical habitat in the project location. The Corp prepared a biological assessment detailing the effect analysis. In a letter dated January 19, 2023 the USFWS concurred with our effects determination. Section 7 ESA correspondence and the Biological Assessment is located in Appendix A.

Estuary Protection Act of 1968 (16 U.S.C. § 1221 et. seq.)

The protection and conservation of estuaries were considered in this EA. Any future planning for the use or development of water or land resources affecting estuaries will be coordinated with local, State and Federal resource agencies.

Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. §§ 661-665;665a; 666; 666a-666c)

The Corps completed coordination with USFWS in conjunction with review under section 7 ESA consultation regarding the proposed action. The USFWS did not provide any recommendations pursuant to the Fish and Wildlife Coordination Act. This correspondence can be found in Appendix A.

Flood Control Act of 1944, as amended, Section 4 (16 U.S.C. § 460d)

Not applicable since congressional authorization already exists (refer to section 1.5 of this EA) for O&M of the Atlantic Intracoastal Waterway.

Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et. seq.)*

The Corps received concurrence with the EFH determination from NMFS on February 16, 2023, after review of the draft EA and EFH Assessment (Appendix G) regarding the proposed action.

Marine Mammal Protection Act of 1972, as amended (16 U.S.C. § 1361 *et. seq.)*

Contract specifications for future O&M dredging activities will include marine mammal protective measures required by the ESA Section 7 consultation with USFWS. The proposed action will not result in take of marine mammals.

Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. § 1401 *et. seq.)*

This act is not applicable as ocean disposal of dredged material is not included in the proposed action.

Migratory Bird Conservation Act of 1928, as amended (16 U.S.C. § 715)

The beneficial use of dredged material will restore bird nesting and foraging habitat, providing benefits to migratory species. For this reason, the Corps has determined the proposed action is compliant with this Act.

Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712)

This Act makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. The Corps does not anticipate that migratory birds would be adversely (directly or indirectly) affected by the proposed action. The beneficial use of dredged material will restore bird nesting and foraging habitat, providing benefits to migratory species.

National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321 *et. seq.)*

Compliance with NEPA is accomplished through the preparation of this EA and FONSI.

National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 *et. seq)*

Pursuant to Section 106 of the NHPA, a PA between the Corps, GA SHPO, SC SHPO, and ACHP in 2013 (Appendix B). Per surveys performed in 1979-1980 and 2012, there are no known historic properties and/or cultural resources within the Cumberland Dividings APE that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered. Section 106 consultation for this undertaking is complete.

Native American Graves and Repatriation Act (25 U.S.C. § 3001 *et. seq)*

Federal or Tribal lands are not involved. No known cultural resources sites with NAGPRA association are located in this area. Any inadvertent discoveries of human remains and/or associated funerary objects will be coordinated with Tribes.

River and Harbor and Flood Control Act of 1970, Sections 209 and 216 (PL 91-611; see generally 33 U.S.C. § 701 et. seq.)

Since Congressional authorization for the O&M of the AIWW exists, benefits related to the current project were already analyzed and previously approved.

Sunken Military Craft Act of 2004 (10 U.S.C. §§ 113 et.seq.)

There are no known sunken military craft that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered.

5.2 Executive Orders

Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971.

There are no known cultural resources that may be impacted by the proposed action. Any inadvertent discoveries would be handled according to all applicable cultural resources laws and regulations as they are discovered.

Executive Order 11988, Floodplain Management, May 24, 1977 amended by Executive Order 12148,July 20, 1979..

The Corps is in compliance with the EO 11988 and has determined that the 8-Step Decision Making Process is unnecessary as the purpose of the 8-step process is to evaluate alternatives to avoid adverse effects; this project will have no adverse effects on the floodplain. The project does not affect land use, does not encourage growth in a floodplain, and does not involve construction within a floodplain. Furthermore, this project will restore and preserve the natural and beneficial values of the floodplain. Therefore, as this project would have a beneficial impact to floodplains and floodplain functions, this action is in compliance with the EO and completion of the 8-step process is not necessary.

Executive Order 11990, Protection of Wetlands, May 24, 1977.

The Corps anticipates no impacts to wetlands from the proposed action.

Executive Order 12898, Environmental Justice, February 11,1994 amended by Executive Order 12948, January 30, 1995.

In accordance with this EO, the Corps accessed census data through the EPA Environmental Justice (EJ) Screening and Mapping Tool and the Council on Environmental Quality Climate and Economic Justice Screening Tool and found that there were communities in the area eligible for EJ consideration under this EO.The risks to these communities included flooding and climate change; however, the proposed action will have no negative effect on these risks. Therefore, the Corps has determined that no

group of people would bear a disproportionately high share of adverse environmental consequences resulting from the proposed project.

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, April 23, 1997.

The project would not create a disproportionate environmental health or safety risk for children.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000.

Federal or Tribal lands are not involved. There are no known Indian Sacred Sites that may be impacted by the proposed action. Any inadvertent discoveries will be coordinated with tribes. Tribes will be kept apprised of project updates.

Executive Order 13751 Safeguarding the Nation from the Impacts of Invasive Species , December 6, 2016.

The project will not introduce, establish, or spread invasive species to the project area and is therefore compliant with the EO.

Executive Order 13186, Protection of Migratory Birds, January 10, 2001.

Migratory Bird Treaty Act and Migratory Bird Conservation Act Measures will be taken to protect migratory birds. Compliance with these acts demonstrates compliance with the EO.

6 Public Involvement and Coordination

6.1 Summary of Public Outreach

The draft EA was issued for public comment for a period of 30 days, beginning on January 11 2022. The draft EA and FONSI, including appendices were placed on the Savannah District's external website, and a public notice inviting public comments was issued. Additionally, the Corps sent notification letters to the following:

- Tribes as listed in section 6.2
- Federal Agencies
    - Environmental Protection Agency
    - National Marine Fisheries Services- Protected Resources Division
    - National Marine Fisheries Services-- Habitat Conservation Division
    - U.S. Fish and Wildlife Service
    - National Park Service
    - US Navy, Kings Bay
- State Agencies

    - GA Department of Community Affairs - Historic Preservation Division
    - GADNR-CRD
    - GADNR-EPD
    - GADNR-WRD
- Stakeholder Groups
    - Georgia Sentinel Landscape
    - Georgia Conservancy
    - One Hundred Miles
    - Satilla and St. Mary's Riverkeeper
    - AIWA
    - The Nature Conservancy
    - Skidaway Institute of Oceanography
    - Manomet

All correspondence received during the public comment period and our response to these comments are found in Appendix C. Four comment letters were received regarding the draft EA/FONSI. Comments and the Corps' responses are found in Appendix C. Comments were received from the EPA, NMFS, USFWS, 100 Miles, and the Cabin Bluff Retreat Center. The comments from 100 Miles and the EPA related to general resource analysis and impacts. The comments from the Cabin Bluff Retreat Center related to impacts to local landowners. The USFWS and NMFS provided comments in support of the project, specifically related to the beneficial use of the sediment.

Correspondence related specifically to environmental compliance (NMFS MSA and USFWS ESA) are included in both Appendix C and the appendix related to the appropriate environmental law.

6.2 List of Agencies and Persons Consulted

6.2.1 Tribes

Tribal consultation was initiated in March 2012 with 15 federally recognized tribes, including the Seminole Nation of Oklahoma, Kialegee Tribal Town, Absentee Shawnee Tribe of Oklahoma, Muscogee (Creek) Nation of Oklahoma, Cherokee Nation of Oklahoma, Seminole Tribe of Florida, Poarch Bank of Creek Indians of Alabama, Chickasaw Nation, Alabama-Quassarte Tribal Town, Eastern Shawnee Tribe of Oklahoma, Thlopthlocco Tribal Town, Shawnee Tribe, United Keetoowah Bank of Cherokee Indians in Oklahoma, Catawba Indian Nation, and Tuscarora Nation of New York (Appendix B). No tribes requested to participate in the 2013 PA.

The draft EA and FONSI were sent to all tribes listed above, and only one tribal response was received. The Eastern Shawnee Tribe of Oklahoma provided concurrence on the no adverse effect determination (EST Reference Number: 5402). Any project scope changes and/or inadvertent discoveries would require future consultation.

6.2.2 Federal Agencies

The Savannah District consulted with the National Park Service (NPS) at the Cumberland Island National Park located in Camden County for the unconfined upland placement of dredged material to be used by NPS for future BU projects on the island. Consultation occurred in October 2022; however, this alternative was screened out due to feasibility.

The Corps coordinated with USFWS, NMFS, and EPA on the proposed project. Coordination began early in the project development and will continue until project completion.

Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Corps recommended execution of a PA as a way to fulfill its Section 106 compliance requirements. The PA was executed in May 2013 between the Corps, GA SHPO, SC SHPO, and ACHP. Surveys of all AIWW reaches were performed in order to complete the stipulations of the PA, with the intention that the PA will be closed out in May 2023 rather than renewed.

6.2.3 State Agencies

The Savannah District has consulted with the GADNR-CRD, GADNR-EPD, and GADNR-WRD on all BU sites in June 2022 and September 2022. GADNR biologists assisted Corps biologists with choosing a habitat location that would be beneficial for bird foraging and nesting. The placement template and description were finalized in December 2022.

Per the stipulations outlined in the PA, the required surveys were performed in the project area and coordinated with the GA SHPO (HP-121015-001, Appendix B). No historic properties or other resources of potential cultural significance were identified. The results of the 2012 surveys performed in Chatham, Bryan, Liberty, McIntosh, Glynn, and Camden Counties, Georgia, were coordinated with the GA SHPO in October 2012, and no further investigations were recommended for this APE. Section 106 consultation is now complete for this undertaking within the Cumberland Dividings APE. The draft EA and FONSI were provided to the GA SHPO, and they had no concerns.

7 List of Preparers

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Robin Armetta	USACE Planning	Biologist/Co-Author
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