

DRAFT
SECTION 404(b)(1) EVALUATION REPORT
MAINTENANCE DREDGING OF THE
GULF INTRACOASTAL WATERWAY (GIWW)
FEDERALLY AUTHORIZED NAVIGATION PROJECT
ESCAMBIA, SANTA ROSA, OKALOOSA, WALTON, BAY, GULF AND FRANKLIN
COUNTIES, FLORIDA

I. PROJECT DESCRIPTION:

A. **Location:** The GIWW within Florida extends from the Alabama-Florida state line through Carrabelle, Florida.

B. **General Description:** The proposed action as described in the Environmental Assessment (EA) consists of the removal of approximately 1.2 million cubic yards of silts, clays, and sand each year on an as needed basis to maintain an elevation of -16 feet mean lower low water (MLLW) (this depth includes 2 feet of advanced maintenance and 2 feet of allowable over depth dredging). Maintenance of a flotation access channel to disposal area 2.1 is also authorized up to 300 feet in length, 100 feet wide and to a depth of -2 MLLW. In addition, six upland disposal sites would require dike construction prior to their continued use: 12A, 17B, 18B, 19B, 20B, and 34B. Dredging would be done via a hydraulic pipeline dredge except during emergencies. The sediment removed would be placed in pre-approved open water, upland and estuarine shoreline disposal areas.

C. **Authority and Purpose:** The authority and purpose of the proposed action is described in Sections 1.1 and 2.0 of the EA to which this evaluation is appended.

D. General Description of Dredged or Fill Material:

(1) **General Characteristics of Material:** The sediments that would be dredged and placed in previously authorized open water, estuarine shoreline, and confined upland disposal areas consists of sand to clays with various mixtures of sand, silt, and clay located throughout the channel.

(2) **Quantity of Material:** The quantity of material dredged per year varies since the frequency of dredging varies by location and is done on an as needed basis. The quantity of material has varied from 358,000 to 869,000 cubic yards since 2009; however these future quantities could be more or less due to shoaling of the navigation channel.

(3) **Source of Material:** Material consists of clays, sands and silts dredged from within the Federal navigation channel.

E. Description of the Proposed Discharge Site:

(1) **Location:** The designated placement areas are located adjacent to the GIWW channel in Florida, (Figures 2-22 of the EA).

(2) **Size:** The sizes of the disposal sites vary from 3 acres to 375 acres.

(3) **Type of Site:** The disposal sites are previously authorized open water, estuarine shoreline, and confined upland placement areas. The open water and estuarine shoreline placement sites are adjacent to the dredging activities and have bottom sediments similar to what is proposed for removal and placement.

(4) **Type of Habitat:** The open water placement sites are unvegetated open water estuarine habitats. The confined upland placement areas are previously used and diked material management areas consisting of some native vegetation. Estuarine shoreline placement areas are flat, open areas adjacent to the shore, usually consisting of grasses.

(5) **Timing and Duration of Discharge:** Maintenance dredging and disposal would be performed on an as needed basis. The frequency of channel dredging at any one site and the associated time between uses of any given disposal area ranges on an average from once every year to once every 25 years. Maintenance dredging cycles typically require 2-3 months to complete.

F. **Description of the Disposal Method:** The disposal method used will be a thin-layer placement in the previously authorized open water sites. The contractor will use a hydraulic pipeline dredge and the dredged material would be pumped via pipeline to the open water and estuarine shoreline disposal areas. The dredged material will be placed in a thin-layer not to exceed 12 inches where practical and feasible. Upland disposal will occur in diked dredge material management areas. These are previously used and certified disposal sites.

II. Factual Determinations (Section 230.11):

A. Physical Substrate Determinations:

(1) **Substrate Elevation and Slope:** The preferred alternative would have no adverse impacts on the existing substrate elevation and slope within the project vicinity. The project would result in the removal of substrate as needed to a depth of 12 feet MLLW with two feet of advanced maintenance and two feet of allowable overdepth within the project area. Thin layer technique for the placement of dredged material in open water sites would be utilized. Dredged material would not significantly exceed present depths at these open water sites. Significant mounding is not expected to occur in the open water sites, as the larger material will flow into deeper areas and seek slopes reflective of existing bottom conditions. The estuarine shoreline placement sites will be raised in elevation due to the placement of sandy material but no adverse impacts are anticipated for that action. The upland disposal sites range in elevation, but a minimum of 2 feet of freeboard is maintained at the top.

(2) **Sediment Type:** The dredged material proposed for disposal is composed of primarily sand, silts and clays.

(3) **Dredged/Fill Material Movement.** Initially, the thin layer placement (<12 inches) of material would stay within the limits of the designated open water site. However, after placement some material may move under storm events outside the designated area. Some of the sandy material placed at the estuarine shoreline placement sites may migrate along the shoreline while the material placed within the confined upland disposal sites would be retained within the sites.

(4) **Physical Effects on Benthos.** Disruption in the benthic community is expected to be temporary and minimal. Immobile benthic fauna within the proposed project area may be destroyed, but should repopulate within several months of completion. Some of the benthos will be able to migrate up through the thin layer. Other mobile benthic fauna will avoid the disturbed area and return upon project completion. No adverse impacts are anticipated to occur to benthos at the confined upland disposal sites.

(5) **Other effects.** No other effects are anticipated.

(6) **Actions Taken to Minimize Impacts (Subpart H).** The thin-layer dredged material disposal is a minimization technique that will be used to lessen impacts caused by the disposal. No other actions to minimize impacts are deemed appropriate for this project.

B. Water Column Determinations:

(1) **Salinity.** There would be no change in salinity gradients or patterns.

(2) **Water Chemistry (pH, etc.).** No effect.

(3) **Clarity.** Minor increases in turbidity may be experienced in the immediate vicinity of the project during disposal operations. However, these increases will be temporary and would return to pre-project conditions shortly after completion.

(4) **Color.** No effect.

(5) **Odor.** No effect.

(6) **Taste.** No effect.

(7) **Dissolved Gas Levels.** Temporary decreases in dissolved oxygen could likely result from the operations depending on timing of discharge. If decreases occur, they will be of a short duration. No significant effect to the water column is anticipated.

(8) **Nutrients.** Slight increases in nutrient concentrations may occur; however, these would rapidly return to normal. These described increases would have no significant effect to the water column.

(9) **Eutrophication.** No effect.

C. **Water Circulation, Fluctuation, and Salinity Gradient Determinations:**

(1) **Current Patterns and Circulation.**

(a) **Current Patterns and Flow.** Placement of dredged material into the open water disposal site would have no effect on current patterns and flow in the vicinity of the project area. No changes to currents are anticipated at the estuarine or upland sites.

(b) **Velocity.** No effect.

(2) **Stratification.** No effect.

(3) **Hydrologic Regime.** No effect.

(4) **Normal Water Level Fluctuations.** No effect.

(5) **Salinity Gradient.** The salinities in the project vicinity are highly variable due to the inflow of freshwater from surrounding rivers and the tidal influence from the Gulf of Mexico. No effect on the salinity gradient is anticipated.

D. **Suspended Particulate/Turbidity Determination:**

(1) **Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site:** Dredged material consists of fine silt, clays and sandy particles. Impacts from sediment disturbance during dredging operations are expected to be temporary, minimal and similar to conditions experience during past routine operation and maintenance of the GIWW. Suspended particles are expected to settle out within a short time frame (hours to days), with no long-term significant effects on water quality. Turbidity during disposal is not expected to violate State water quality certification conditions. The return water from the confined upland disposal sites would consist of clear water and would not have any impacts.

(2) **Effects on Chemical and Physical Properties of the Water Column:**

(a) **Light Penetration.** No significant effects.

(b) **Dissolved Oxygen.** No significant effects.

(c) **Toxic Metals and Organics.** No effects.

(d) **Pathogens.** No effect.

(e) **Esthetics.** No effect.

(3) **Effects on Biota:**

(a) **Primary Production Photosynthesis.** No significant effects.

(b) **Suspension/Filter Feeders.** No significant effects.

(c) **Sight Feeders.** Shorebirds tend to be attracted to associated placement activities due to the presence of food items in the sediment.

(4) **Actions Taken to Minimize Impacts (Subpart H).** No further actions are deemed appropriate.

E. **Contaminant Determinations.** The Corps of Engineers (USACE) Mobile District and other organizations have collected a significant number of sediment samples for contaminant analysis in and around the GIWW from 1984 to 2010. The historical data suggests that these areas are removed from any significant sources of contamination and relatively free of contaminants. The land cut areas utilize upland disposal with the embayments typically utilizing open water and estuarine shoreline disposal. The areas that utilize open water disposal traverse bays are excluded from testing under Section 404(b)(1) guidelines based on three criteria: sediments are far removed from potential sources of contamination, are adjacent to the dredging sites, and consists primarily of sand. The only exceptions where grain size consists of finer grain material is at Apalachicola Bay and a small segment of Choctawhatchee Bay near the land cut. However, recent sampling by EPA in 2010, following the Deepwater Horizon Spill, demonstrated the sediment was not contaminated by oil or oil related metals. The USFWS reported the lowest detectable levels of dioxin and dioxin-like contaminants in the Apalachicola Bay across the Florida Panhandle.

F. **Aquatic Ecosystem and Organism Determinations:**

(1) **Effects on Plankton.** No significant effects.

(2) **Effects on Benthos.** No significant long-term effects would occur to the benthos.

(3) **Effects on Nekton.** No significant effects.

(4) **Effects on Aquatic Food Web.** No significant effects.

(5) **Effects on Special Aquatic Sites.** No effect.

(a) **Sanctuaries and Refuges.** No effect.

(b) **Wetlands.** No significant effects

(c) **Mud Flats.** Not applicable.

(d) **Vegetated Shallows.** No significant impacts to the submerged aquatic vegetation (SAV) were identified in this evaluation. The EA, Sec 7.2 9.1.3 provides a

description of all known SAVs sites within the vicinity of the project area. Prior to any dredging or placement activities within these areas, proper coordination with all appropriate agencies will be made, and suitable disposal plans will be determined to avoid adverse impacts.

(e) **Coral Reefs.** Not applicable.

(f) **Riffle and Pool Complexes.** Not applicable.

(6) **Effects on Threatened and Endangered Species.** The Corps, Mobile District determined that no federally-protected species or designated critical habitat were likely to be adversely affected as a result of the proposed project. By letters dated October 4, 2007 and October 23, 2007, both USFWS and NMFS agencies concurred with the USACE's determination that no adverse impacts to any federally-listed endangered or threatened species would occur nor is the project likely to destroy or adversely modify critical habitat for piping plover, Gulf sturgeon and beach mice. No adverse effects are anticipated to occur to turtles or gulf sturgeons with the use of a hydraulic cutter-head dredge, as they are not known to impact sea turtles and Gulf sturgeon as determined by the NMFS in 2003 in the Gulf Regional Biological Opinion. To reduce the likelihood of impacts to gulf sturgeons during migration periods, dredging activities would not occur during peak migration periods of March thru April, and October thru November.

(7) **Effects on Other Wildlife.** No significant effects.

(8) **Actions to Minimize Impacts.** No other actions to minimize impacts on the aquatic ecosystem are deemed appropriate.

G. Proposed Disposal Site Determinations:

(1) **Mixing Zone Determination.** The project lies within the following special resource areas: the Gulf Island National Seashore, Fort Pickens Aquatic Preserve, Point Washington CARL Project Macrosite, Apalachicola National Estuarine Research Reserve and the Apalachicola Bay Aquatic Preserve. In addition, the project lies within Class II waters designated for shellfish propagation within Santa Rosa Sound, Choctawhatchee Bay, West Bay, East Bay and Apalachicola Bay.

A variance has been requested from the state from rules 62-312.080(7), 62-4.242(2)(a)2.b., 62-302.700(1) and 62-312.080(3) of the Florida Administration Code, to allow fill within Class II waters (designated for Shellfish Harvesting) at the open-water disposal areas and to allow a turbidity level above background at the edge of the 150 meter mixing zone for disposal areas within Outstanding Florida Waters (OFW). The variance requested includes 29 nephelometric turbidity units (NTUs) above background at the edge of a 150 meter mixing zone for disposal areas within OFWs; except Disposal Area 45, which has requested up to 5 NTUs above background and to allow a turbidity level of 20 NTUs above background at the edge of the 150 meter mixing zone for dredge areas within OFW except NM 254 to 259, which the Corps has requested 29 NTUs above background. The State of Florida's specified a mixing zone for turbidity compliance along all other reaches of the project is 29 NTUs above background at the

edge of 150 meter mixing zone. The Corps will comply with all turbidity standards specified by the states WQC.

(a) **Depth of water at the disposal sites.** Elevations within openwater placement sites in Apalachicola Bay range from approximately -4 to -11 feet MLLW (Disposal Areas 1 and 2). Elevations within estuarine shoreline placement sites 3.1 and 3.2b within Apalachicola River are from above MHHW to approximately -6 feet MLLW. Elevations within estuarine shoreline placement 10.1 in St. Joseph Bay range from above MHHW to approximately -6 feet MLLW. Elevations within estuarine shoreline placement site 39.5 in Choctawhatchee Bay are from above MHHW to approximately -3 feet MLLW. Elevations within estuarine shoreline placement sites 46 and 46.1 are from above MHHW to approximately -3 MLLW. Elevations within open water placement site 14A are approximately -4 to -9 feet MLLW.

(b) **Current velocity, direction, and variability at the disposal site.** Not significant.

(c) **Degree of turbulence.** Not significant.

(d) **Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site.** No effect.

(e) **Discharge vessel speed and direction, if appropriate.** No effect.

(f) **Rate of discharge.** Rate of discharge will vary according to the particular type of dredge disposing of the material.

(g) **Ambient concentrations of constituents of interest.** Not applicable.

(h) **Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities.** The proposed action would involve maintenance dredging and disposal operations for the GIWW in the State of Florida. The quantity of material would vary depending on the size of the areas dredged. In the period of 2009-2011, the amount of material dredged ranged from 358,000 to 869,000 cubic yards. The type of material removed would consist of clay, silt and sand. Settling of particles is anticipated.

(i) **Number of discharge actions per unit of time.** The number of discharge actions per unit of time will vary depending upon the particular disposal activity.

(2) **Determination of Compliance with Applicable Water Quality Standards.** The proposed activity is in compliance with all applicable water quality standards.

(3) **Potential Effects on Human Use Characteristics.**

(a) **Municipal and Private Water Supply.** No effect.

(b) **Recreational and Commercial Fisheries.** Recreational and commercial fishing would be temporarily impacted primarily as a result of the physical presence of heavy equipment during operation activities.

(c) **Water Related Recreation.** No significant effects.

(d) **Aesthetics.** No significant effects.

(e) **Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.** No effect.

(f) **Other Effects.** No effect.

H. **Determination of Cumulative Effects on the Aquatic Ecosystem.** The proposed action is not expected to have significant cumulative adverse impacts.

I. **Determination of Secondary Effects of the Aquatic Ecosystem.** The proposed action is not expected to have any significant secondary adverse effects on the aquatic ecosystem.

III. **Finding of Compliance with the Restrictions on Discharge:**

A. No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

B. The proposed discharge represents the least environmentally damaging practicable alternative.

C. The planned placement of dredged materials would not violate any applicable State water quality standards; nor will it violate the Toxic Effluent Standard of Section 307 of the Clean Water Act (CWA).

D. Use of the previously authorized open water and confined upland disposal sites will not jeopardize the continued existence of any federally-listed endangered or threatened species or their critical habitat provided the specified conditions in this document are implemented during maintenance dredging and disposal operations.

E. The proposed placement of fill material will not contribute to significant degradation of waters of the United States, nor will it result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing; life stages of organisms dependent upon the aquatic ecosystem; ecosystem diversity, productivity and stability; or recreational, aesthetic or economic values.

F. Appropriate and practicable steps will be taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

DATE _____

Steven J. Roemhildt
Colonel, Corps of Engineers
District Commander