

DRAFT
SECTION 404(b)(1) EVALUATION REPORT
FOR THE
FEDERALLY AUTHORIZED BAYOU CODEN NAVIGATION PROJECT
CONTINUED OPERATIONS AND MAINTENANCE

MOBILE COUNTY, ALABAMA

I. Project Description:

- a. Location. Bayou Coden, Mobile County, Alabama and Mississippi Sound (**Figure 1**).
- b. General Description. The proposed action involves the continued maintenance dredging and placement of maintenance material from the federally authorized channel at Bayou Coden, Mobile County, Alabama.
- c. Authority and Purpose. The existing project at Bayou Coden was authorized on 2 June 1969, under the authority of Section 107, River and Harbor Act of 1960 and the River and Harbor Act of 2 March 1945 (H. Doc. 824, 77th Cong., 2nd sess.). The project provides for a channel 8 feet deep and 60 feet wide extending from La Belle Avenue Bridge south about 3,000 feet through the bayou to Portersville Bay, thence 8 feet deep by 100 feet wide extending about 2.3 miles westward across Portersville Bay to connect with the Bayou La Batre channel, and a turning basin 8 feet deep by 60 feet wide by 100 feet long on the west side of the bayou channel about 500 feet south of La Belle Avenue Bridge. Vertical plane of reference is mean lower low water.
- The purpose of the proposed action is to reestablish the authorized depth of the federally authorized Bayou Coden navigation project. The channel is needed to provide for safe navigation by commercial and private vessels into Bayou Coden. The area is also utilized by users of the federally authorized Bayou La Batre navigation channel which the Bayou Coden channel runs perpendicular to. Bayou Coden’s channel location along the central Gulf Coast, and it’s proximity to the major ship channels of the open Gulf, create a natural import/export terminal, particularly for delivery to and from the Caribbean and Central and South America.
- d. General Description of the Dredged Fill Material. The fill material that would be placed in the Mississippi Sound open-water disposal sites consists predominately of silty, organic material deposited since the previous maintenance cycle.
- e. Description of the Proposed Discharge Site(s). Five open-water sites 8, 9, 11, 12, 13 and one upland disposal site, Charlie (70-acres).

1) Location. The open-water sites are located on the west of the Bayou La Batre channel in the Mississippi Sound. Upland disposal site “Charlie” is located south of Hwy. 188.

2) Size. The upland disposal site is 70 acres, separated into a 55-acre cell and a 15-acre cell, and the 5 open-water sites 8, 9, 11, 12, 13, with each of the five open-water site acreages being approximately 160 acres each, located west of the Bayou La Batre Channel in the Mississippi Sound.

3) Type of site. Open-water and upland disposal sites.

4) Type(s) of Habitat. The upland site contains some vegetation and previously dredged materials; the open-water sites are non-vegetated shallow water bottoms composed of inorganic clays with clay-sand mixtures.

5) Timing and duration of Discharge. The project is expected to take 90 to 120 days to complete.

f. Description of disposal Method. The materials described above will be placed within the authorized disposal areas by hydraulic cutterhead/pipeline dredge.

II. Factual Determinations.

a. Physical Substrate Determinations.

1) Substrate elevation and slope. The upland disposal site “Charlie” is diked to an approximate elevation of 15 feet. The inner and outer slopes of the dike are approximately 1-foot vertical and 3 feet horizontal (1V:3H). The open-water disposal sites are approximately -12 feet MLLW for the Mississippi Sound sites.

2) Fill type. Sediment within Mississippi Sound consists of inorganic clays of high plasticity, poorly graded sands, sand-clay mixtures, sand-silt mixtures, and inorganic clays of low to medium plasticity.

3) Dredged/fill material movement. The Mississippi Sound sites are approximately 2,500 feet from the channel. Material is not likely to re-enter the channel and will likely stay in the disposal areas. The upland disposal site contains dikes to restrict sediment movement outside the containment site.

4) Physical effect on benthos. Benthic communities in the open-water sites would not be significantly impacted by the proposed action. After project operations are over, repopulation of the area will occur within 12 to 18 months. Utilization of thin-layer disposal where practicable will further reduce impacts on the benthos.

5) Other effects. Not applicable.

6) Actions taken to minimize impacts. Thin layer disposal methods are employed whenever feasible to minimize impacts to benthic populations. Also, no change in bottom sediment type will occur.

b. Water Circulation/Fluctuation, and Salinity Determination.

1) Water. Ambient conditions in Bayou Coden are generally turbid.

(a) Salinity. No change in salinity will occur as this is maintenance of an existing channel.

(b) Water chemistry. Increases in dissolved and total organic carbon, dissolved ammonia, nitrates and total Kjeldahl nitrogen levels would be associated with open-water disposal and return water from upland disposal, however, these increases are expected to be short-term in nature and no significant impacts are expected to result.

(c) Clarity. Minor increases in turbidity, due to the placement of dredged material, may be experienced in the immediate vicinity of the project during dredging and disposal activities due to turbidity plumes. These increases would be temporary and would return to pre-project conditions shortly after completion of construction.

(d) Color. Color would be affected during disposal with the water appearing darker due to presence of turbidity from the discharge of silt and clay material.

(e) Odor. Odors near upland site “Charlie” will occur due to the release of various inert gases from the dredged material. No significant populations exist near “Charlie”. Therefore, no significant effects will result.

(f) Taste. No significant effect.

(g) Dissolved gases. No significant effect.

(h) Nutrients. No significant effect.

(i) Eutrophication. No significant effect.

2) Current Patterns and Circulation.

(a) Current patterns and flows. Circulation patterns within the area are controlled by astronomical tides, winds, and to a lesser degree, freshwater discharge. The project would have no effect on circulation patterns.

(b) Velocity. No effect.

(c) Stratification. No effect.

(d) Hydrologic effect. No effect.

3) Normal Water Level Fluctuations. There will be no change in normal water level fluctuation as a result of use of the open-water disposal sites or the use of return water from the upland sites.

4) Salinity Gradients. Salinity gradients are not expected to change from either open-water disposal or return water from upland sites.

5) Actions That Will Be Taken To Minimize Impacts. Turbidity will be monitored for compliance with State water quality standards.

c. Suspended Particulate/Turbidity Determinations.

1) Expected changes in suspended particulate and turbidity levels in the vicinity of the disposal sites will be temporary. Turbidity during construction will not violate state water quality standards.

2) Effect on the chemical and physical properties of the water column.

(a) Light penetration. During dredging and disposal activities, the degree of light penetration would be locally reduced temporarily.

(b) Dissolved oxygen. Dissolved oxygen would be locally reduced and temporary.

(c) Toxic metals and organics. No significant effect.

(d) Pathogens. No effect.

(e) Esthetics. Presence of dredge equipment within the existing navigation channel will have no significant impact to the area esthetics. The equipment will

be there for a relatively short period of time. No permanent visible effects to local estuaries will result from this project.

(f) Others as appropriate. None appropriate.

3) Effect on biota. The biota of the open-water disposal sites would not be significantly affected. This area is adapted to periodic increases of suspended material due to storm related events and annual high freshwater inflows from Mobile Bay.

(a) Primary production, photosynthesis. The reduction in light penetration during dredging and disposal activities would temporarily affect phytoplankton in the vicinity.

(b) Suspension/filter feeders. Non-motile and immobile filter feeders would be affected by the amount of suspended materials in the vicinity. No significant effects to these resources are anticipated.

(c) Sight feeders. No significant effect.

4) Actions taken to minimize impacts. The project will be in compliance with the state water quality certification.

d. Contaminant Determination. Previous sediment testing from within the bayou and in Mississippi Sound indicated highly variable concentrations of nutrients, heavy metals, high molecular weight hydrocarbons, and pesticides. Mercury, arsenic, copper, zinc, cadmium, and lead were found to occur in concentrations greater than crustal abundance. Residues of selected chlorinated hydrocarbon pesticides or PCBs were not detected in sediments and animal tissue before or after exposure. Materials with elevated levels of contaminants will be placed in the upland disposal are “Charlie.” All material placed in open-water sites are primarily free of contaminants and are suitable for open-water disposal.

e. Aquatic Ecosystem and Organism Determinations. No significant effects.

1) Effect on plankton. Disposal into the open-water disposal sites would destroy some phytoplankton and zooplankton, and would reduce light penetration that may tend to affect primary production by the phytoplankton. This condition would be short-term and localized.

2) Effect on benthos. Some benthic organisms would be destroyed during the dredging process. This condition would be short-term and localized. Repopulation would occur in a few months.

3) Effect on nekton. Highly motile nekters in and around the open-water disposal areas would probably vacate the area, at least until conditions become more favorable. Less mobile may be affected but no significant effects would occur.

4) Effect on aquatic food web. No significant effect.

5) Effect on special aquatic sites.

(a) Sanctuaries and refuges. The disposal of dredged material or return water from upland disposal sites would not significantly affect any of the fish and wildlife resources that are designed for preservation or general use in the Coastal Area Management Program of the State of Alabama.

(b) Wetlands. No effect.

(c) Mud Flats. No effect.

(d) Vegetated shallows. No effect.

(e) Coral reefs. Not applicable.

(f) Riffle and pool complexes. Not applicable.

7) Threatened and endangered species. The proposed action will not significantly impact threatened or endangered species or their critical habitat.

8) Other wildlife. No significant effects.

9) Actions to minimize impacts. Compliance with the Water Quality Certification and the utilization of thin-layer disposal would minimize adverse impacts.

f. Proposed Disposal Site Determinations.

1) Mixing zone determinations. The State of Alabama, Department of Environmental Management (ADEM) requested a mixing zone no greater than 400 feet from the dredging or outer limits of the open-water disposal sites. The proposed action will be in compliance with this mixing zone requirement.

2) Determination of compliance with applicable water quality standards. The proposed action will be in compliance with all applicable water quality standards. The use of the proposed sites would not alter constituent concentrations established for this use and would be in compliance with applicable water quality standards.

3) Potential effect on human use characteristics.

(a) Municipal and private water supplies. No effect.

(b) Recreational and commercial fisheries. Minimal impacts on the fish and wildlife resources could occur during dredging and disposal activities.

(c) Water-related recreation. No significant effect.

(d) Esthetics. The esthetic environment would be temporarily impacts primarily as a result of the physical presence of heavy equipment during construction causing a temporary degradation of the esthetics quality.

(e) Parks, national and historic monuments, national seashores wilderness areas, research sites, and similar preserves. No significant effect.

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

h. Determination of Secondary Effect on the Aquatic Ecosystem. The proposed action is not expected to have significant secondary effect on the aquatic ecosystem.

III. FINDING OF COMPLIANCE.

a. No significant adaptations to the Section 404(b)(1) Guidelines were made relative to this evaluation.

b. No practicable alternatives could be identified that would result in less water quality impact than the proposed action.

c. Pursuant to the Clean Water Act (CWA), Section 401, State Water Quality Certification (WQC) and Coastal Zone Consistency (CZM) is expected to be issued by the ADEM.

d. The proposed action has been coordinated under Section 7 of the Endangered Species Act of 1973, as amended. The proposed action will not significantly affect endangered or threatened species or their critical habitats.

e. The proposed action will not result in any significant adverse effect on: 1) human health or welfare, including municipal or private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites; 2) the life stages of aquatic life and other wildlife dependent on aquatic ecosystems; 3) the aquatic ecosystems diversity, productivity and stability; and 4) recreational, aesthetic, and economic values. Appropriate and practicable

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

f. The proposed operations and maintenance of the project is specified as complying to the requirements of the Coastal Zone Management Act of 1972 the maximum extent practicable.

g. No wetlands in the vicinity of the project will be lost due to the project activities.

DATE _____

Byron G. Jorns
Colonel, Corps of Engineers
District Commander

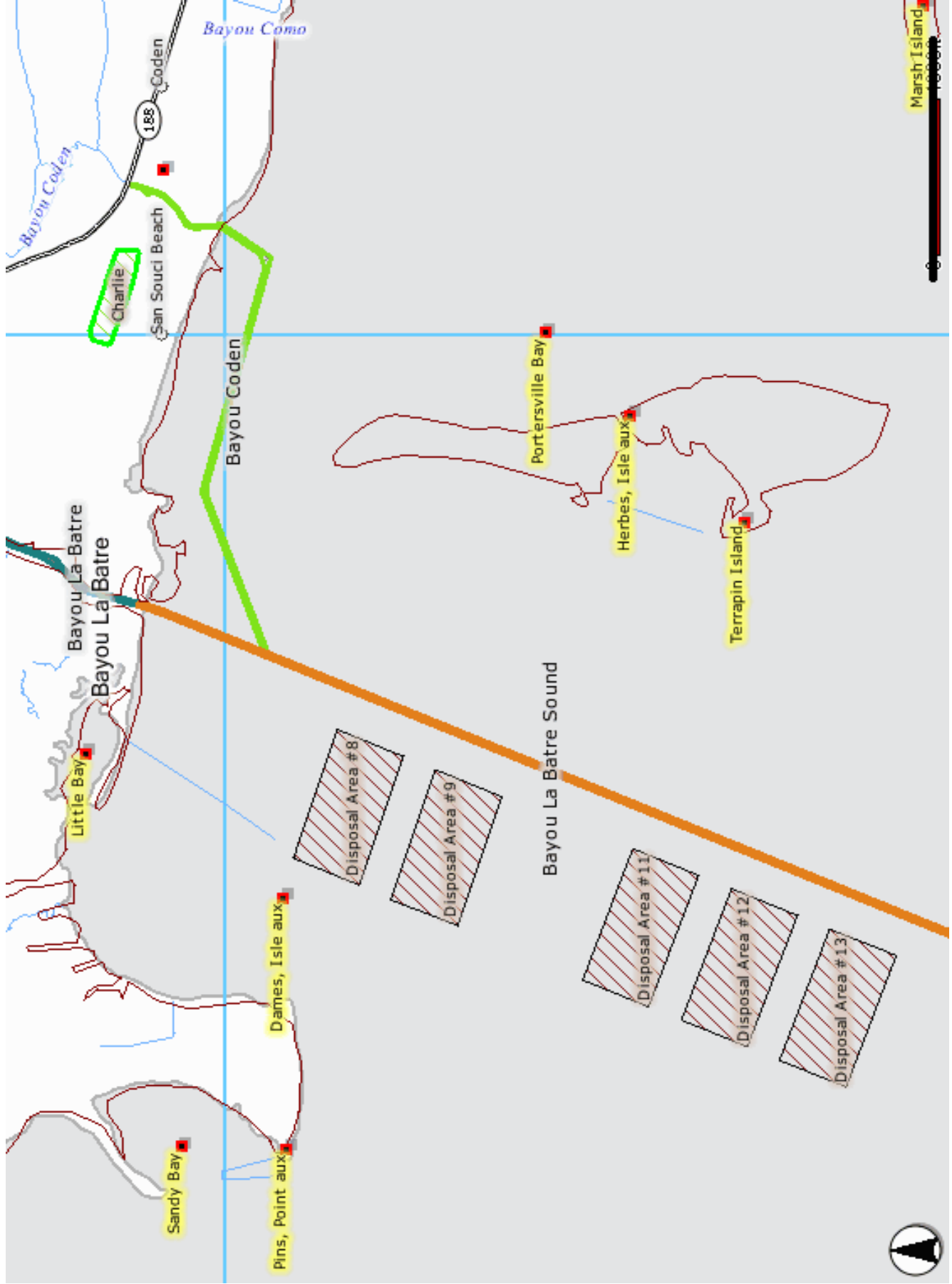


Figure 2 – Disposal Areas