

APPENDIX A

Supplemental Section 404(B)(1) Evaluation Report for the Mississippi Coastal Improvements Program Pascagoula Beach Boulevard Restoration Interim Project *Jackson County, Mississippi*

I. Project Description

A. Location

The proposed action is located in Jackson County, Mississippi on the western half of the Pascagoula Waterfront between Spanish Point and Bayou Casotte on the Mississippi Sound and the river portion of the Federal Pascagoula Harbor Navigation Channel.

B. General Description

The proposed project consists of erosion-control measures implemented on the toe of the beach along the entire length of the project. These include the placement of Class 2 riprap at elevation -1 MLLW (Mean Lower Low Water) to reduce wave energy, allowing establishment of vegetation and for additional protection of the beach and geotubes. The riprap shall be placed first using land-based mechanized methods. Vegetation will be established behind the riprap at elevation -1 to +3 MLLW. Species to be utilized include: *Spartina patens*. Additionally the use of Arbuscular Mycorrhizal Fungi (AMF) may be incorporated into the planting scheme to increase survivability of the vegetation. All work will be performed within the limits of the existing footprint of the project.

The project is addressed in the Supplemental Environmental Assessment (EA) to the current MsCIP Near Term Improvements EA. The Corps will coordinate with Federal and State of Mississippi resource agencies during the required environmental compliance process. This report addresses potential water quality impacts that would potentially result from constructing the additional portion of the Pascagoula Beach Boulevard Restoration project in coastal Mississippi. Further details of the project are in the Supplemental EA to which this Supplemental Section 404(b)(1) Evaluation is appended.

C. Authority and Purpose.

The Pascagoula Beach Boulevard Restoration Project was authorized by Public Law 110-28, *Supplemental Appropriations Bill - Public Law 110-28, U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act, 2007*, as part of the Mississippi Coastal Improvements Program (MsCIP) for Hancock, Harrison, and Jackson Counties, Mississippi.

The purpose of this proposed action is to provide for additional stability and reduce erosion of the restored beach caused by the high wave action of the Mississippi Sound. The purpose of the restored beach is to protect the seawall, roadbed and residential areas landward of the beach. Without this proposed action, the created beach would most likely succumb to the high wave energy of the Mississippi Sound and the geotubes, beach and seawall could be undermined and ultimately fail.

D. General Description of Dredged or Fill Material

(1) General Characteristics of Material. Approximately 290,000 cubic yards of sand from the upper river portions of the Pascagoula Federal navigation channel along 7,700 feet of the Pascagoula waterfront in the Mississippi Sound has already been placed as part of the original project. No additional fill material is proposed for placement outside the existing footprint of the beach restoration project. The current project proposes to place Class 2 riprap at elevation -1 MLLW (Mean Lower Low Water) along the entire length of the project, with breaks for recreational access. Vegetation will be established behind the breakwaters at elevation -1 to +3 MLLW.

(2) Quantity of Material. No additional fill material is proposed for placement outside the existing footprint of the beach restoration project. However, the riprap footprint will be approximately 3' by 7' along the entire length of the project, with breaks for recreational access.

(3) Source of Material. The Class 2 riprap shall be man-made. Vegetation shall be acquired from an approved greenhouse contractor.

E. Description of the Proposed Discharge Site

(1) Location. Approximately 290,000 cubic yards of sand from the upper river portions of the Pascagoula Federal navigation channel along 7,700 feet of the Pascagoula waterfront in the Mississippi Sound has already been placed as part of the original project. No additional fill material is proposed for placement outside the existing footprint of the beach restoration project. The current project proposes to place Class 2 riprap at elevation -1 MLLW along the entire length of the project, with breaks for recreational access.

(2) Size. No additional fill material is proposed for placement outside the existing footprint of the beach restoration project.

(3) Type of Site. The site consists of a restored beach in front of an existing seawall. The additional section of the project is within the footprint of the original project.

(4) Type of Habitat. The habitat consists of a restored beach in front of an existing seawall. The additional section of the project is within the footprint of the original project. Vegetation will be established behind the breakwaters at elevation -1 to +3 MLLW to create emergent tidal marsh.

(5) Timing and Duration of Discharge. Sand pumping for the beach restoration project was completed March 2010.

F. Description of Disposal Method

Sandy material dredged from the Pascagoula Federal navigation channel was used beneficially for the creation of Pascagoula Beach Boulevard Restoration Project with the use of trackhoes, backhoes, and a pipeline dredge. Placement of the riprap shall be accomplished by land-based trackhoes and backhoes.

II. Factual Determinations (Section 230.11)

A. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The original project resulted in the creation of a restored beach at elevation 0 to +3 MLLW. The proposed project will result in the placement of structural and vegetative erosion control measures placed at -1 to +3 MLLW within the existing footprint of the project; therefore, no changes to existing elevations are anticipated.

(2) Sediment Type. No additional fill material or sediment type is proposed for placement outside the existing footprint of the beach restoration project.

(3) Dredged/Fill Material Movement. Approximately 290,000 cubic yards of sand from the upper river portions of the Pascagoula Federal navigation channel along 7,700 feet of the Pascagoula waterfront in the Mississippi Sound has already been placed, placement of erosion control measures is intended to prevent dredged/fill material movement. However, it is believed that no adverse impacts and only short-term disturbances would occur from movement of materials.

(4) Physical Effects on Benthos. There would be temporary disruption of the aquatic community as a result of the proposed projects being constructed. Non-motile benthic fauna within the project area may be destroyed by the proposed placement of the riprap, but should repopulate within several months after dredging is complete and due to the size of the overall dredging projects, should be discountable. Also habitat will be improved with the creation of emergent tidal marsh from the establishment of vegetation.

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

(6) Actions Taken to Minimize Impacts (Subpart H). Actions will be taken to minimize impacts to all project areas during the construction and maintenance activities. No other actions to minimize impacts to the physical substrate are deemed appropriate for these projects.

B. Water Column Determinations

(1) Salinity. Salinity would not be adversely impacted as a result of the identified projects.

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

(3) Clarity. Minor increases in turbidity may be experienced in the immediate vicinity of the project areas during breakwater placement 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 will likely result from some of the construction operations, but this will only be of a short duration. No long-term effect to the water column is anticipated.

(8) Nutrients. Slight increases in nutrient concentrations may occur from the proposed operations; however, these concentrations would be rapidly dispersed. These described increases would have no significant effect to the water column.

(9) Eutrophication. The additional portion of the proposed project will result in enhanced water circulation, drainage, and tidal exchange which will act to prevent and/or minimize eutrophication effects.

C. Water Circulation, Fluctuation, and Salinity Gradient Determinations

(1) Current Patterns and Circulation.

(a) Current Patterns and Flow. The wave action and flow of the tides is currently unimpeded at the beach restoration project. Placement of breakwaters and establishment of vegetation would slow the high wave energy from the Mississippi Sound, therefore providing further stability of the beach, seawall and improved habitat for emergent tidal marsh. The riprap are proposed to be placed at staggered intervals, to allow for some circulation and access to the water. No adverse impacts are anticipated to occur at the project site.

(b) Velocity. The proposed erosion control measures are intended to slow the velocity of the high wave action from the Mississippi Sound. No adverse impacts are anticipated due to velocity.

(2) Stratification. No effect.

(3) Hydrologic Regime. No effect.

(4) Normal Water Level Fluctuations. The beach restoration project and proposed erosion control measures are designed to prevent regular flooding of the beach boulevard and damage to the existing seawall by storms and extreme rain events. No negative effect.

(5) Salinity Gradient. No effect.

D. Suspended Particulate/Turbidity Determination

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site. No effect.

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

(a) Light Penetration. Light penetration through the water column at the dredging site may be temporarily affected but is anticipated to return to previous conditions upon completion of activities. These increases are considered to be minor and no impact to light penetration is anticipated by the proposed project.

(b) Dissolved Oxygen. No effect.

(c) Toxic Metals and Organics. Site inspections have been conducted by the Corps, Mobile District, Environmental and Hazardous and Toxic Waste and Support Section, adjacent to the proposed project. This assessment was conducted per the requirements of Engineer Regulation (ER) 1165-2-132 entitled, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects, and the American Society of Testing and Materials Standard E 1527.

Inspections were conducted to determine the presence or evidence of landfills, surface areas unable to support vegetation, visible sheens of petroleum product, nearby contaminated industrial facilities, or any type of visible indication that HTRW concerns exist that may impact the proposed project.

Site inspections of adjacent properties, reviews of historic aerial photographs, and on site interviews have been conducted to determine if HTRW concerns impact any of the proposed project area.

Additionally, environmental database record searches were conducted to determine if they reveal any evidence of HTRW concerns within or adjacent to the areas of the proposed project.

Based on the findings of the HTRW site assessment, no specific or unusual environmental concerns were identified that would affect the construction of the proposed project.

(d) Pathogens. No effect.

(e) Esthetics. No effect.

(3) Effects on Biota. The additional project segment will provide improvements in wildlife habitat with the implementation of emergent tidal marsh.

(a) Primary Production Photosynthesis. No effect.

(b) Suspension/Filter Feeders. No effect.

(c) Sight Feeders. No adverse impacts are anticipated to occur to sight feeders resulting from the proposed projects.

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

E. Contaminant Determinations

The project is located in the Mississippi Sound on the restored beach near Pascagoula Beach Boulevard, far removed from sources of contamination. The proposed project will not be dredging or disposing of any material that may be contaminated.

F. Aquatic Ecosystem and Organism Determinations

No effect.

(1) Effects on Plankton. No effect.

(2) Effects on Benthos. Benthos within the immediate area of the placement of the riprap may be destroyed. However, it is believed that affected areas are small and would rapidly recover within a couple of months back to pre-project conditions. No seagrasses or oyster beds would be disturbed. Turbidity levels would increase during some of the placement operations; however, the levels of turbidity would subside shortly after the operation is complete. No long-term adverse impacts are anticipated.

(3) Effects on Nekton. Nekton will be able to avoid the construction activities; therefore, no adverse impacts are anticipated.

(4) Effects on Aquatic Food Web. No effect.

(5) Effects on Special Aquatic Sites. Not applicable.

(a) Sanctuaries and Refuges. Not applicable.

(b) Wetlands. No existing wetlands are to be impacted. Emergent tidal marsh is proposed to be created.

(c) Mud Flats. Not applicable.

(d) Vegetated Shallows. Not applicable.

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

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

(6) **Effects on Threatened and Endangered Species.** The Mobile District does not anticipate any adverse impacts to federally protected species. Of the species listed, most are not likely to be found within the project area; however, the potential exists for the occurrence of the Piping Plover, even though the site is not a designated critical habitat area for Piping Plover. Staggering of the riprap and introduction of emergent tidal marsh should serve to improve habitat for this species and other wildlife.

(7) **Effects on Other Wildlife.** Hurricane Katrina and the associated storm surge resulted in numerous adverse impacts to existing wildlife and wildlife habitat. The proposed project should enhance overall wildlife habitats with the creation of emergent tidal marsh. No adverse impacts are anticipated to occur as a result of the proposed projects.

(8) **Actions to Minimize Impacts.** No further action anticipated.

G. Proposed Disposal Site Determinations

(1) **Mixing Zone Determination.** The State of Mississippi will specify a mixing zone not to exceed ambient turbidity by more than 50 nephelometric turbidity units at the outer limits of 750 feet for turbidity compliance. However, no dredging or disposal of dredged materials is proposed for this project. Thus, no mixing violations are expected.

(a) **Depth of water at the disposal site.** No effect.

(b) **Current velocity, direction, and variability at disposal sites.** No effect.

(c) **Degree of turbulence.** No effect.

(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.** No effect.

(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.**

Not applicable

(i) **Number of discharge actions per unit of time.** Not applicable.

(2) **Determination of Compliance with Applicable Water Quality Standards.** The proposed activities are anticipated to be in compliance with water quality standards.

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

(a) **Municipal and Private Water Supply.** Not applicable.

(b) **Recreational and Commercial Fisheries.** Recreational use of the restored beach would be temporarily impacted primarily as a result of the physical presence of heavy equipment during operation activities. However, access would return when the placement of the breakwaters and establishment of the vegetation is complete. Also staggering of the riprap is proposed to allow for access to the water from the beach. Therefore, the impacts are insignificant.

(c) **Water Related Recreation.** No effect.

(d) Esthetics. Esthetics will be temporarily reduced in the immediate vicinity of the proposed project site. There is potential that the residents and visitors within the area may be disturbed by the presence of the heavy equipment during breakwater placement. However, these activities are temporary in nature so the disturbance is anticipated to be minimal. From an environmental viewpoint, the proposed project is anticipated to enhance Coastal Mississippi and its diverse aquatic habitats while providing a reduction in flooding.

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

Other Effects. No effect.

H. Determination of Cumulative Effects on the Aquatic Ecosystem

The proposed actions are not expected to have significant cumulative adverse impacts

I. Determination of Secondary Effects of the Aquatic Ecosystem.

The proposed actions are 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 project represents the least environmentally damaging practicable alternative.
- C. The planned construction activities and placement of breakwater 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 proposed disposal sites will not jeopardize the continued existence of any Federally-listed endangered or threatened species or their critical habitat.
- E. The proposed placement of dredged 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: _____

Byron G. Jorns
Colonel, Corps of Engineers
District Commander

Supplemental Section 404(B)(1) Evaluation Report- Pascagoula Beach Boulevard Restoration Project