SECTION 404(B)(1) EVALUATION REPORT FOR JACKSON COUNTY COAST-WIDE BEACH AND DUNE ECOSYSTEM RESTORATION, MISSISSIPPI COASTAL IMPROVEMENTS PROGRAM (MsCIP), JACKSON COUNTY, MISSISSIPPI

1.0 Project Description

1.1 Location

The project shoreline areas are located in Jackson County, the eastern-most coastal county in Mississippi, between Pascagoula and Biloxi. The beaches are located on Mississippi Sound about 50 miles west of Mobile, Alabama and about 150 miles east of New Orleans, Louisiana. The project area's shoreline runs alongside Front Beach Drive and East Beach Drive which are protected by a concrete seawall and existing beaches. The project sites are seaward of the existing seawall.

1.2 Description of the Proposed Action

The action area includes two separate reaches within an approximate 2-mile range along the Gulf of America at the existing mainland coast of Jackson County, Mississippi. Approximately 5,300 linear feet at Front Beach and 2,200 linear feet at East Beach will receive sand to create dunes and increase the berm width. Altogether, the project contains approximately 7,500 linear feet of shoreline.

o Front Beach: 30.4097˚N, 88.8399˚W – 30.4030˚N, 88.8248˚W
o East Beach: 30.3979˚N, 88.8151˚W – 30.3943˚N, 88.8097˚W

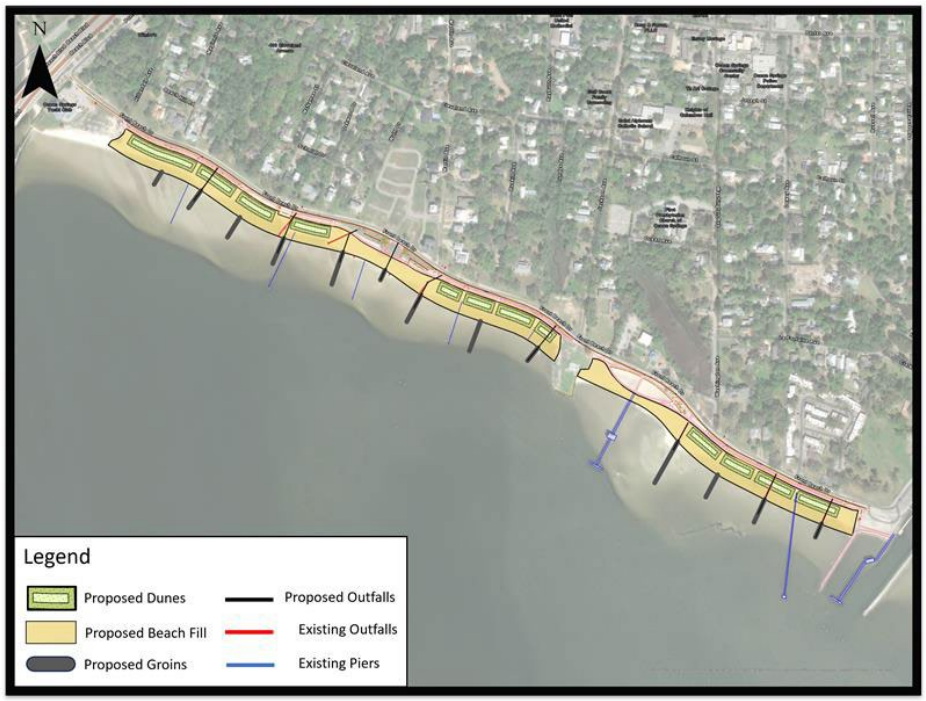

Figure 1: Jackson County Coast-wide Beach and Dune Ecosystem Restoration Front Beach.



Figure 2: Jackson County Coast-wide Beach and Dune Ecosystem Restoration East Beach.

The proposed restoration activities include:

- Constructing a beach berm on Front Beach and East Beach that extends approximately 190 and 170 ft. wide, respectively, using approximately 300,000 cubic yards (cy) of sand. Furthermore, a dune field made up of 3 dune segments on Front Beach and 1 dune segment on East Beach will be constructed to form a 70 ft. wide, 2 ft. tall dune field, positioned 30-50 ft. from the existing seawall (Figures 1 and 2).
- The average water depth in the restoration area is approximately 1 ft. and sand placement will not occur beyond the -2 ft. NAVD88 contour line. The existing littoral zone habitat will be impacted, with about 7 acres at Front Beach and 2 acres at East Beach under mean high water (MHW) expected to be affected.
- Several abandoned piers will be removed from the project area. A marsh buggy will be used to access the old pilings where they will be cut off at the current substrate level and hauled off site.
- The existing drainage outfalls within the template will be modified to discharge out beyond fill placement (Figures 1 and 2) and then covered with Mississippi Department of Transportation (MDOT) Class 3 riprap stone to create groin structures perpendicular to the shoreline to reduce erosion of the beach sand. The stone will be sourced by the contractor

from commercially available vendors nearby the project site and carried by truck over existing roadways.

- The sand material will be sourced from pre-approved locations within the Pascagoula River navigation channel, as outlined in the program's EIS (MSCIP 2009 EIS). The sand will be fine to medium-grained, compatible with existing beach sediments. Transportation will occur via barge through the Gulf Intracoastal Waterway (GIWW), into Biloxi East Pass, and then pumped onto the beach through a pipeline (Figure 3).
- The dune fields will be planted with vegetation consisting of native species that are most widely used for dune restoration and are readily available from local nurseries and suppliers. Dune plant species being considered are sea oats (*Uniola paniculata*), bitter panic grass (*Panicum amarum*), little blue stem (*Schizachyrium scoparium*), and marshhay cordgrass (*Spartina patens*).

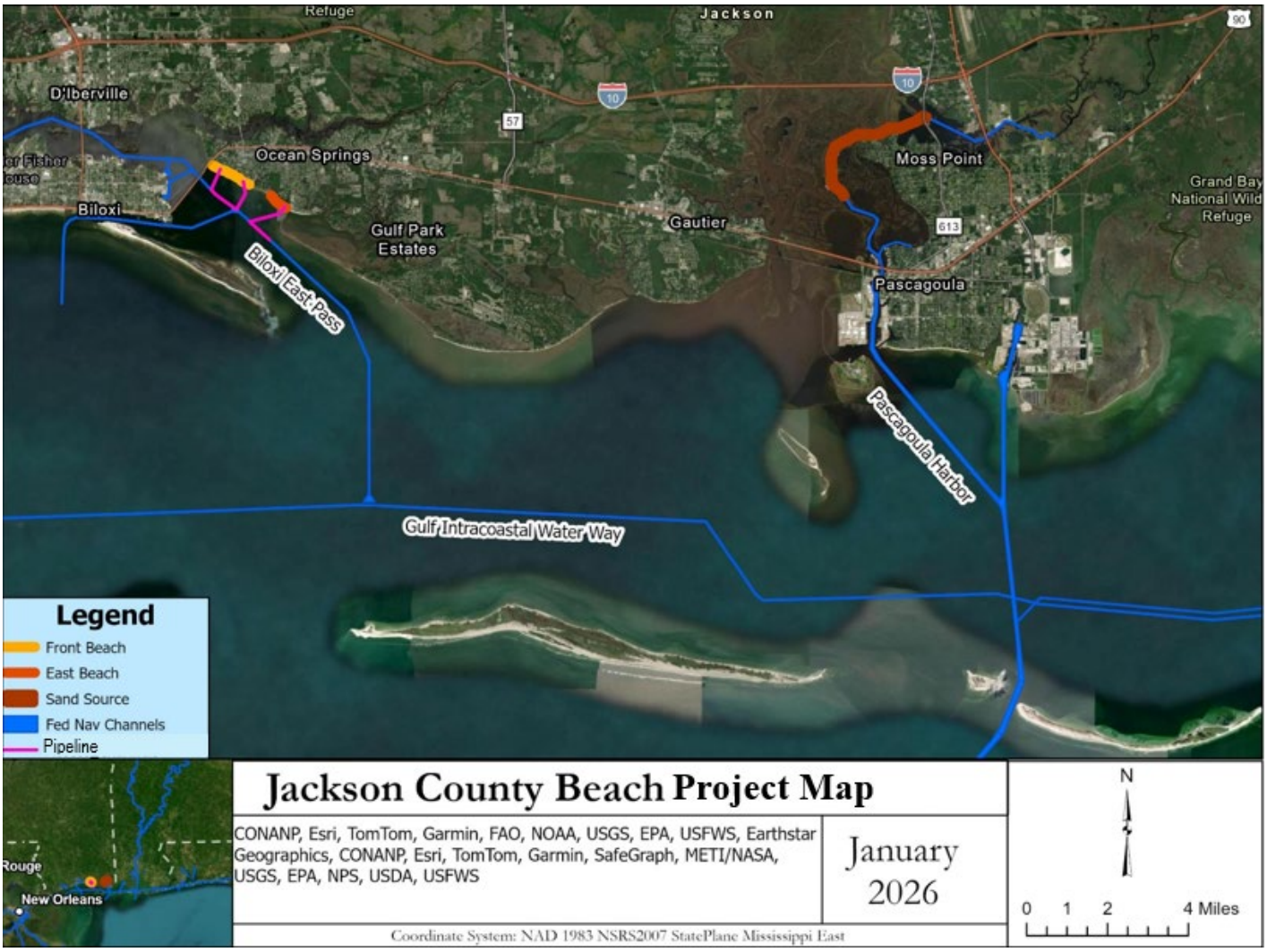

Figure 3: Jackson County Coast-wide Beach and Dune Ecosystem Restoration overview map.

The proposed beach and dune restoration at the Jackson County coast will produce numerous ecological benefits associated with the project. Coastal dunes provide foraging and roosting habitats for various shore and migratory birds including least terns and the federally listed (Threatened) piping plover. The proposed shoreline feature would provide

opportunities for additional resting and wintering areas for these birds. The creation of a dune would allow the establishment of multiple vegetation types associated with local dune habitats. The proposed project would also provide general benefits by creating opportunities for the production of food sources; thus, contributing to the general wellbeing of waterfowl, raptors, nearshore fish and other wildlife associated with the coastal environment. A beach-dune system would be advantageous for increased overall stability of the entire beach ecosystem by providing reserves of sand acting as a buffer to resist erosive events. The increased beach stability would directly contribute to the sustainability of the dune system habitats. The placement of beach compatible sand on the existing beach to create the proposed dunes would have minimal environmental effects.

1.3 General Description of Fill Material

(1) General Characteristics of Material. Sand material used for the beach restoration actions will consist of fine to medium grained sand that is compatible with existing beach sediments. Based on the Munsell Soil Color Chart, color must be within the range of Hue 2.5 YR, 5 YR, 7.5 YR, 10 YR, 2.5 YR, or 5 y and Chroma 1, 2, or 3. Sand material must be clean and free of unacceptable materials, such as construction debris, asphalt, rocks greater than ¾ inch, clay balls and other organics, oil, pollutants, and any other foreign material. Maximum silt content (passing through # 230 sieve) shall be 10%. Maximum fine gravel content (retained on a # 4 sieve) shall be 5%. Sorting of material shall retain a value of 1.25 Phi or less with a mean grain size from 0.31 millimeters to 0.35 millimeters.

Mississippi Department of Transportation (MDOT) Class 3 riprap stone will be required for groin construction.

(2) Quantity of Material. A total of approximately 300,000 cubic yards of sand will be required for the beach restoration efforts. Approximately 12,510 cubic yards of Class 3 riprap stone will be required for placement around outfalls and groins.

(3) Source of Material. Sand used for the Jackson County Beaches will be obtained from a location within the Pascagoula River navigation channel originally identified in the MSCIP 2009 SEIS. Riprap will be sourced by the contractor from a commercially available vendor nearby the project site.

1.4 Description of the Proposed Discharge Site

(1) Location. The locations of any discharge areas associated with the projects described herein are addressed in Section 1.2 (General Description) of this report.

(2) Size. Front Beach Reach consists of approximately 5,300 linear feet (lf) and East Beach Reach is approximately 2,200 lf.

(3) Type of Site. Site types are typical coastal beaches of the Southeastern U.S.

(4) Type of Habitat. Habitats exhibited in the proposed project areas include coastal beaches and dunes.

(5) Timing and Duration of Discharge. Project construction is expected to begin

early 2027 and be completed by the end of the year.

1.5 Description of Disposal Method

Methods of placement/disposal for these projects will utilize barges to carry material through the GIWW from the Pascagoula River navigation channel to the Biloxi East Pass channel and pumped onto the beach within the project area. Dump trucks, bulldozers, and excavators will then be used to carry and spread material to desired locations on the beach.

2.0 Factual Determinations (Section 230.11)

2.1 Physical Substrate Determinations

Substrate Elevation and Slope. Beach restoration projects are designed to sustain elevations and slopes consistent with similar beaches in the vicinity that have been sustained under the typical energy climate. Dunes will be constructed to a 4-foot elevation and gradually slope down to 3.5 feet then terminate with a 1:10 slope on the foreshore.

(1) Sediment Type. Sediment type is described previously under General Characteristics of Material.

(2) Dredged/Fill Material Movement. Material movement is described previously under Description of Disposal Method.

(3) Physical Effects on Benthos. There would be temporary disruption of the aquatic community as a result of the proposed project being constructed. Areas where sand and sediments are laid directly upon the bottom open-water habitat to restore beaches may result in destruction of sessile benthic fauna. Non-motile benthic fauna within the project sites would be lost as a result of the organisms not being able to penetrate through the thick layer of material that will be used to construct the beach restoration. This loss of sessile benthic fauna would be minor due to the area encompassing only a small percentage of the entire Mississippi Sound (approximately 7,500 lf). Benthic fauna, such as crabs, are anticipated to re-colonize the area after construction. The inter-tidal zone and sub-tidal zones along the restored beach should provide rapid recovery of and recruitment of benthos. Non-motile benthic fauna within the project area may be destroyed by the proposed operations but should repopulate within several months after the project is complete.

(4) Other Effects. No other effects are anticipated.

Actions Taken to Minimize Impacts (Subpart H). Actions will be taken to minimize impacts to all project areas during the construction activities. Borrow material used in construction will be utilized in such a manner to minimize impacts to surrounding areas. Best Managements Practices (BMPs), such as silt fences, will be implemented to minimize impacts where needed. No other actions to minimize impacts to the physical substrate are deemed appropriate for these projects.

2.2 Water Column Determinations

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

(2) Water Chemistry (pH, etc.). All sediment and material used in the construction of the identified project will be clean materials removed from sources of contamination and considered contaminant free. Such material will have no effect on surrounding water chemistry.

(3) Clarity. Construction of the beaches will reduce water clarity due to elevated suspended sediments in the water column; however, silt curtains will be used, where applicable, to minimize impacts to the project area. Minor increases in turbidity may be experienced in the immediate vicinity of the project areas during construction and 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 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. The construction activities are not anticipated to adversely impact dissolved gas levels.

(8) Nutrients. No effect.

(9) Eutrophication. No effect.

2.3 Water Circulation, Fluctuation, and Salinity Gradient Determinations

(1) Current Patterns and Circulation.

(a) Current Patterns and Flow. No effect.

(b) Velocity. No effect.

(2) Stratification. No effect.

(3) Hydrologic Regime. No effect.

(4) Normal Water Level Fluctuations. No effect.

(5) Salinity Gradient. No effect.

2.4 Suspended Particulate/Turbidity Determination

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site. The placement of sand material at the proposed project location will reduce light penetration through the water column, thereby reducing clarity and surface water temperatures. These conditions could potentially alter visual predator-prey relations in the immediate project vicinity. In addition, sediment adheres to fish gills, resulting in respiratory stresses, and natural movement of eggs and larvae could

be potentially altered as a result of the sediment adherence. These are minor, short-term impacts due to the short duration of construction activities. Changes in substrate are not expected nor will any deleterious materials be added to the sediment during construction activities. Although it is expected an initial high-volume loss of sand from the beach restoration project would occur, it is expected that sand movement would decrease once equilibrium is naturally achieved.

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

(a) Light Penetration. Light penetration may be temporarily impeded in areas immediately adjacent to the beach restoration sites due to an increase in turbidity levels. These increases are considered to be minor and no permanent impact to light penetration is anticipated by the proposed projects.

(b) Dissolved Oxygen. No effect.

(c) Toxic Metals and Organics. The USACE is obligated under Engineer Regulation 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of the proposed action. ER 1165-2132 identifies our HTRW policy to avoid the use of project funds for HTRW removal and remediation activities.

Costs for necessary special handling or remediation of wastes (e.g., Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq. (RCRA)), pollutants and other contaminants, which are not regulated under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA), would be treated as project costs if the requirement is the result of a validly promulgated federal, state, or local regulation.

A record search of the project area was conducted using EPA's EnviroMapper online query system for regulated facilities. A query of EPAs listed facilities for Superfund Sites (National Priorities List sites), RCRA sites, Brownfield sites, and CERCLA sites was performed. Additionally, a second query of EPAs listed facilities that discharge to United States waters under the National Pollutant Discharge Elimination System was also conducted. No sites of any kind were found within a 1-mile radius of the project areas. Based on the record search, previous surveys, and site visits, there is no reason to believe any HTRW concerns will arise during the proposed project.

It should be noted that all surficial environmental evaluations made during the above described site visits are limited due to the fact that subsurface conditions were not field investigated as part of the HTRW assessment and may differ from the conditions implied by the surficial observations.

These proposed project areas have been severely impacted by hurricane driven storm water and winds. The potential for contamination resulting from the deposition of chemicals or petroleum products from hurricane damaged area businesses and industrial operations exist. Any such chemicals or petroleum products would likely have found their way to area canals, creeks, rivers and drainage ways.

(d) Pathogens. No effect.

(e) Esthetics. No effect.

(3) Effects on Biota. The proposed ecosystem restoration project is designed to enhance the ecosystems. These actions will increase valuable habitat resulting in an overall improvement and continued health of the local wildlife.

(a) Primary Production Photosynthesis. Primary producers could be slightly impeded during construction due to the increase in turbidity, however, these effects are temporary and minor. Any losses in production would quickly recover after construction.

(b) Suspension/Filter Feeders. Filter feeders could be slightly impeded during construction due to the increase in turbidity, however, these effects are temporary and minor. Any inhibition caused to these organisms in would quickly cease after construction.

(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.

2.5 Contaminant Determinations

The material used in the construction of the proposed project consists of sand and sediments removed from the Pascagoula River and commercially obtained riprap stone. The commercially sourced material will be free of any contaminants and, testing was done during a previous project in 2024 (Deer Island Ecosystem Restoration) of the river sourced sand and was found to be free of contaminants.

2.6 Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton. Plankton in the project area will be temporary dispersed and inhibited by the turbidity caused by dredging and the placement of sand in the water column. These effects would have no lasting impact on these organisms.

(2) Effects on Benthos. There would be temporary disruption of the aquatic community as a result of the proposed project's construction. Areas where sand and sediments are laid directly upon the bottom open-water habitat to restore beaches may result in destruction of sessile benthic fauna. Non-motile benthic fauna within the project sites would be lost as a result of the organisms not being able to penetrate through the thick layer of material that will be used to construct the beach restoration. This loss of sessile benthic fauna would be minor due to the area encompassing only a small percentage of the entire Mississippi Sound (approximately 7,500 lf). Motile benthic fauna, such as crabs, are anticipated to re-colonize the area after construction. The inter-tidal zone and sub-tidal zones along the restored beach should provide rapid

recovery of and recruitment of benthos. Non-motile benthic fauna within the project area may be destroyed by the proposed operations but should repopulate within several months after the project is complete.

(3) Effects on Nekton. Nekton will be able to avoid the construction and sand placement 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.** Not applicable.
- **(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. Federally protected species under purview of the U.S. Fish and Wildlife (USFWS) are the tricolored bat (*Perimyotis subflavus*), West Indian manatee (*Trichechus manatus*), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), Mississippi Sandhill Crane (*Antigone canadensis* pulla), piping plover (*Charadrius melodus*), Rufa red knot (*Calidris canutus rufa*), Alabama red-bellied turtle (*Pseudemys alabamensis*), alligator snapping turtle (*Macrochelys temminckii*), gopher tortoise (*Gopherus polyphemus*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), Gulf sturgeon (*Acipenser oxyrhynchus desotoi*), monarch butterfly (*Danaus plexippus*), and the Louisiana quillwort (*Isoetes louisianensis*). Critical Habitat (CH) listed by the USFWS in the area is that for the Gulf sturgeon and the piping plover.

Additionally, the Endangered Species Act (ESA) Section 7, requires consultation with the National Marine Fisheries Service (NMFS) Protected Resources Division (PRD) for the Gulf sturgeon and sea turtles listed above as well as the giant manta ray (*Manta birostris*), and NMFS Habitat Conservation Division (HCD) requires Section 7 consultation for Essential Fish Habitat (EFH) in the project area.

The tricolored bat, eastern black rail, Mississippi sandhill crane, alligator snapping turtle, Alabama red-bellied turtle, gopher tortoise, giant manta ray, monarch butterfly, and Louisiana quillwort do not utilize the habitat type that is located in the project area and, therefore, would not be affected by the proposed project. Any Rufa red knots that could be overwintering in the area would also relocate during construction, thus, avoiding any negative effects during the project activities.

This project has a component that impacts the freshwater of the Pascagoula River. Federal Regulation 50 C.F.R. Part 226 states that the USFWS holds jurisdictional responsibility when impacts to Gulf sturgeon occur in riverine and estuarine habitats. Furthermore, this project will adhere to the avoidance measures stipulated in the 2003 Gulf of Mexico Regional Biological Opinion, as amended, to minimize impacts on swimming turtles. As these actions are consistent with this biological opinion, consultation with the NMFS-PRD is not required, and the agency would be notified of the project during the Public Review Period of this project's Environmental Assessment.

Daily monitoring during turtle and shorebird nesting seasons would be performed and any nests would be properly marked and avoided, therefore, the USACE does not anticipate any adverse impacts to occur to sea turtles and/or piping plover.

Any manatees swimming nearby would likely avoid the area during construction, thus, would not be adversely impacted. Although piping plover and potential Gulf sturgeon CH and EFH would be impacted during construction, conditions are expected to return to preconstruction settings shortly after the work is completed.

Therefore, the USACE has determined that the project may affect but is not likely to adversely affect the West Indian manatee, piping plover, sea turtles, Gulf sturgeon, Gulf sturgeon CH, piping plover CH, and EFH located in the project area. Coordination is ongoing with the appropriate agencies and concurrence with our determinations is expected. The USACE will ensure compliance with all regulations and laws pertinent to this undertaking before construction begins.

(7) Effects on Other Wildlife. The proposed project should enhance overall wildlife and associated habitats. Construction activities may result in temporary impacts to existing fauna in the immediate areas; however, it is expected all impacts would be short term and minor, and in some cases discountable. No adverse impacts are anticipated to occur as a result of the proposed projects.

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

2.7 Proposed Disposal Site Determinations

(1) Mixing Zone Determination. The State of Mississippi has specified that the turbidity measured outside of the mixing zone, a 750 ft radius from the discharge point and dredge area, is not to exceed ambient turbidity by more than 50 nephelometric turbidity units. Material placed in the water is anticipated to quickly settle out of the water column, thus, turbidity is not expected to exceed the proposed water quality criteria issued. Therefore, no mixing violations are expected.

(a) Depth of water at the disposal site. Placement of material associated with beach restorations will be along the shoreline or nearshore waters. Maximum depth of water in the project placement area is 2 ft. The depth of the water along the new coastline is expected to remain the same as pre-project conditions.

(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. Not applicable.

(f) Rate of discharge. Not applicable.

(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. Coordination will be conducted with the appropriate regulating agencies for the action to be in compliance with all applicable water quality standards. A Water Quality Certificate will be requested from the Mississippi Department of Environmental Quality immediately following review of this document.

(3) Potential Effects on Human Use Characteristics.

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

(b) Recreational and Commercial Fisheries. Recreational and commercial fishing could be temporarily impacted primarily as a result of the increased turbidity during operation activities. Navigation in this area is restricted primarily to recreational boaters. When comparing this small limitation to all other accessible areas within Mississippi Sound, the impacts are insignificant.

(c) Water Related Recreation. Swimming and other water related recreation would be affected during construction as pedestrians would need to be kept clear of the beach and any equipment. These effects are temporary and minor in nature.

(d) Esthetics. Esthetics will be temporarily reduced in the immediate vicinity of the proposed project sites. Many recreational vessels utilize Mississippi Sound within the project vicinities and it is believed some residents and visitors may be disturbed by the presence of the heavy equipment during construction. However, construction activities are temporary in nature, so the disturbance is anticipated to be minimal. Furthermore, upon project completion, the efforts should provide residents and visitors with a more esthetically pleasing view. From an environmental viewpoint, the proposed project is anticipated to enhance Coastal Mississippi and its diverse aquatic habitats while providing a moderate degree of protection.

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

(4) Other Effects. No effect.

2.8 Determination of Cumulative Effects on the Aquatic Ecosystem

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

2.9 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.

3.0 Finding of Compliance with the Restrictions on Discharge

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

3.2 The proposed project represents the least environmentally damaging practicable alternative by providing flood risk reduction.

3.3 The planned construction activities 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). The sourced materials being used for this project would comply with all applicable laws and standards and is expected to cause no negative impacts on the environment.

3.4 Use of the source material will not jeopardize the continued existence of any federally listed Endangered or Threatened Species or their Critical Habitats.

3.5 The proposed placement of fill 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.

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

DATE_____

Kelcey R. Shaw, P.E., PMP
Colonel, U.S. Army
District Commander