Gulfport Harbor Navigation Channel

F I N A L S U P P L E M E N T A L E I S

Prepared for

US Army Corps of Engineers Mobile District

ES082008018ATL

Prepared by

CH2MHILL

August 2009

Final Supplemental Environmental Impact Statement

for Gulfport Harbor Navigation Channel

Gulfport, Mississippi

Lead Agency: U.S. Army Corps of Engineers (USACE)

Cooperating Agencies: U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Minerals Management Service, Mississippi Department of Environmental Quality, Mississippi Department of Marine Resources, Mississippi Secretary of State, Mississippi Museum of Natural Science, Mississippi State Port Authority at Gulfport, Louisiana Department of Environmental Quality, and Louisiana Department of Natural Resources.

Type of Action: Administrative

Abstract: This Final Supplemental Environmental Impact Statement (FSEIS) assesses the potential impacts associated with the construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. This FSEIS assesses conditions not addressed in a Final Environmental Impact Statement (FEIS) published by the USACE in June 1989. The FSEIS evaluates the impacts of widening the channel to its authorized dimensions, performing maintenance dredging on the existing channel, and placing the dredged material in pre-approved disposal areas. The FSEIS identifies the preferred alternative.

Improvements of the Federal Gulfport Harbor Navigation Project were initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (Public Law [PL] 99-88). The Water Resources Development Acts (WRDAs) 1986 (PL 99-662) and 1988 (PL 100-676) further modified the project to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. The only Congressionally authorized channel dimension change for the present project is to widen the channel. The proposed changes were funded under PL 84-99, Flood and Coastal Storm Emergencies (33 U.S.C.701n) (69 Stat. 186).

The purpose of the channel improvements would be to increase the width of the Mississippi Sound Channel from 220 ft to 300 ft for a distance of approximately 11 miles and increase the Gulf Entrance and Bar Channel from 300 ft to 400 ft for a distance of approximately 10 miles. Maintenance and future maintenance dredging would also be performed on the navigation channel.

The USACE determined that changes were required in the existing Federal Gulfport Harbor Navigation Project to provide for safe and unrestricted navigation into and out of Gulfport Harbor. Pre-Hurricane Katrina documentation demonstrates frequent "waiting at anchor" status for many vessels attempting to enter the Port. Likewise, vessels often have to wait in the Port while inbound vessels navigate through the channel. These conditions pose an adverse financial impact to the shippers operating out of Gulfport.

The actions considered in this FSEIS include the No-Action Alternative and widening to the federally authorized dimension. Several disposal options were considered for placement of dredged material, including beach nourishment, island creation, littoral zone disposal, disposal in existing Ocean Dredged Material Disposal Sites (ODMDSs) and open water sites, and possible designation of a new ODMDS for disposal. After considerable analysis, four preferred disposal sites were selected for use depending on the characteristics of the dredged material. Material associated with widening the channel to its authorized dimensions would be placed in the littoral zone southeast of Cat Island between the 14-foot and 18-foot contour and in the littoral zone east of the Chandeleur Islands in water depths greater than 25 feet. Future maintenance material dredged from the navigation channel would be placed in open water sites within Mississippi Sound utilizing thin-layer disposal methods, the littoral zone disposal area, and within the existing ODMDS located on the western side of the navigation project. The USACE believes, after consideration of economic, environmental, technical, and other factors, widening the channel and placing dredged material in the four identified locations would best fulfill its statutory mission and responsibilities.

Copy: The final copy of this report was officially filed with the Director, Office of Federal Activities, U.S. Environmental Protection Agency on February 27, 2009.

Notice: The Notice of Availability for the FSEIS will be published in the Federal Register on February 27, 2009. Agencies and the public will have at least 30 days after the Notice appears to consider the recommendations and the rationale before the USACE signs a Record of Decision (ROD). Our mailing address, fax number and web site are as follows:

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Addendum

Gulfport Harbor Navigation Project
Construction to Authorized Dimensions
Final Supplemental Environmental Impact Statement (FSEIS)

SUBJECT: Placement of Dredged Material as Sediment Source for Restoration of Chandeleur Islands

As a comment to the Draft SEIS, the U.S. Army Corps of Engineers (USACE), Mobile District, received requests from the Louisiana Department of Natural Resources (DNR), dated June 19, 2007, and Mississippi Department of Marine Resources, dated June 29, 2007, and St. Bernard Parish, dated April 2, 2007, to consider the possible placement of new work dredged material beneficially within the vicinity of the Chandeleur Islands and Cat Island from the widening project at Gulfport Harbor, Harrison County, Mississippi.

Based on these discussions, a new alternative has been evaluated in the FSEIS. This alternative is as follows:

Deposition of material dredged during construction of Gulfport Harbor to its authorized dimensions, i.e. widening of the navigation channel, into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on Figure 2-2 in the report.

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Abbreviations and Acronyms

ASA	Abandoned Shipwreck Act
AWOIS	Automated Wreck and Obstruction Information System
°C	Degrees Centigrade (or Celsius)
°F	Degrees Fahrenheit
AFB	Air Force Base
AVS	Acid Volatile Sulfides
CAA	Clean Air Act
CFR	Code of Federal Regulations
CSLC	California State Lands Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibel
DO	Dissolved Oxygen
DSEIS	Draft Supplemental Environmental Impact Statement
EA	EA Engineering, Science, and Technology, Inc.
EFH	Essential Fish Habitat
ELMR	Estuarine Living Marine Resources
EO	Executive Order
ESA	Endangered Species Act
ft	Foot
FCMA	Magnuson-Stevens Fishery Conservation and Management Act
FEIS	Final Environmental Impact Statement
FSEIS	Final Supplemental Environmental Impact Statement
FWCA	Fish and Wildlife Coordination Act
GINC	Gulf Islands National Seashore
GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
HAB	Harmful Algal Bloom
HAPCs	Habitat Areas of Particular Concern
IMMS	Institute for Marine Mammal Studies
Ldn	Average A-weighted Decibel Level Over a 24-hour Period
LPC	Limiting Permissible Concentration
mS/cm	MilliSiemens per Centimeter
m	Meter
µg/kg	Microgram per Kilogram
µm	Micrometer
MDEQ	Mississippi Department of Environmental Quality
MDMR	Mississippi Department of Marine Resources
MDOT	Mississippi Department of Transportation
MDWFP	Mississippi Department of Wildlife, Fisheries and Parks
MMPA	Marine Mammal Protection Act
MMRC	Mississippi Marine Resources Council

MMS	Minerals Management Service
MOA	Memorandum of Agreement
mph	Miles per Hour
MPRSA	Marine Protection, Research, and Sanctuaries Act
MSMNS	Mississippi Museum of Natural Science
MSPA	Mississippi State Port Authority
MSU	Mississippi State University
ng/kg	Nanograms per Kilogram
ng/L	Nanograms per Liter
NAAQS	National Ambient Air Quality Standards
NAWQC	National Ambient Water Quality Criteria
NCA	National Coastal Assessment
NEPA	National Environmental Policy Act
NH_3-N	Ammonia
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPS	National Park Service
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Unit
OCDD	Octa-chlorinated Dioxin
OCRM	Office of Ocean and Coastal Resource Management
ODMDS	Ocean Dredged Material Disposal Site
OSHA	Occupation Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PEL	Probable Effects Level
PIMS	Public Involvement Management Strategy
PL	Public Law
ppm	Parts per Million
ppt	Parts per Thousand
PTS	Permanent Threshold Shift
PWSA	Ports and Waterways Safety Act
RBO	Regional Biological Opinion
Ro-Ro	Roll-on-Roll-off
ROI	Region of Influence
ROW	Right-of-Way
SAV	Submerged Aquatic Vegetation
SEM	Simultaneously Extracted Metals
SFA	Sustainable Fisheries Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
STSSN	Sea Turtle Stranding and Salvage Network
SVOC	Semivolatile Organic Compound

TEL	Threshold Effects Level
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient
TEU	Twenty-foot Equivalent Unit
TKN	Total Kjeldahl Nitrogen
TTS	Temporary Threshold Shift
TOC	Total Organic Carbon
UD	University of Delaware
URI	University of Rhode Island
UR	Uptake Ratio
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCG	U.S. Coast Guard
USDOC	U.S. Department of Commerce
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compound
WRDA	Water Resources Development Act
yd^3	Cubic Yards

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Executive Summary

The U.S. Army Corps of Engineers (USACE), Mobile District, is responsible for conducting Federal dredging and dredged material discharge activities in the Gulfport Federal Navigation Channel. The Mobile District has prepared this Final Supplemental Environmental Impact Statement (FSEIS) to assess the potential impacts associated with the construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. Gulfport Harbor is located in Harrison County (Figure ES-1). The USACE determined that changes were required in the existing Federal Gulfport Harbor Navigation Project to provide for safe and unrestricted navigation into and out of Gulfport Harbor. The proposed changes were funded under Public Law (PL) 84-99, Flood and Coastal Storm Emergencies (33 United States Code [U.S.C.] 701n) (69 Stat. 186).

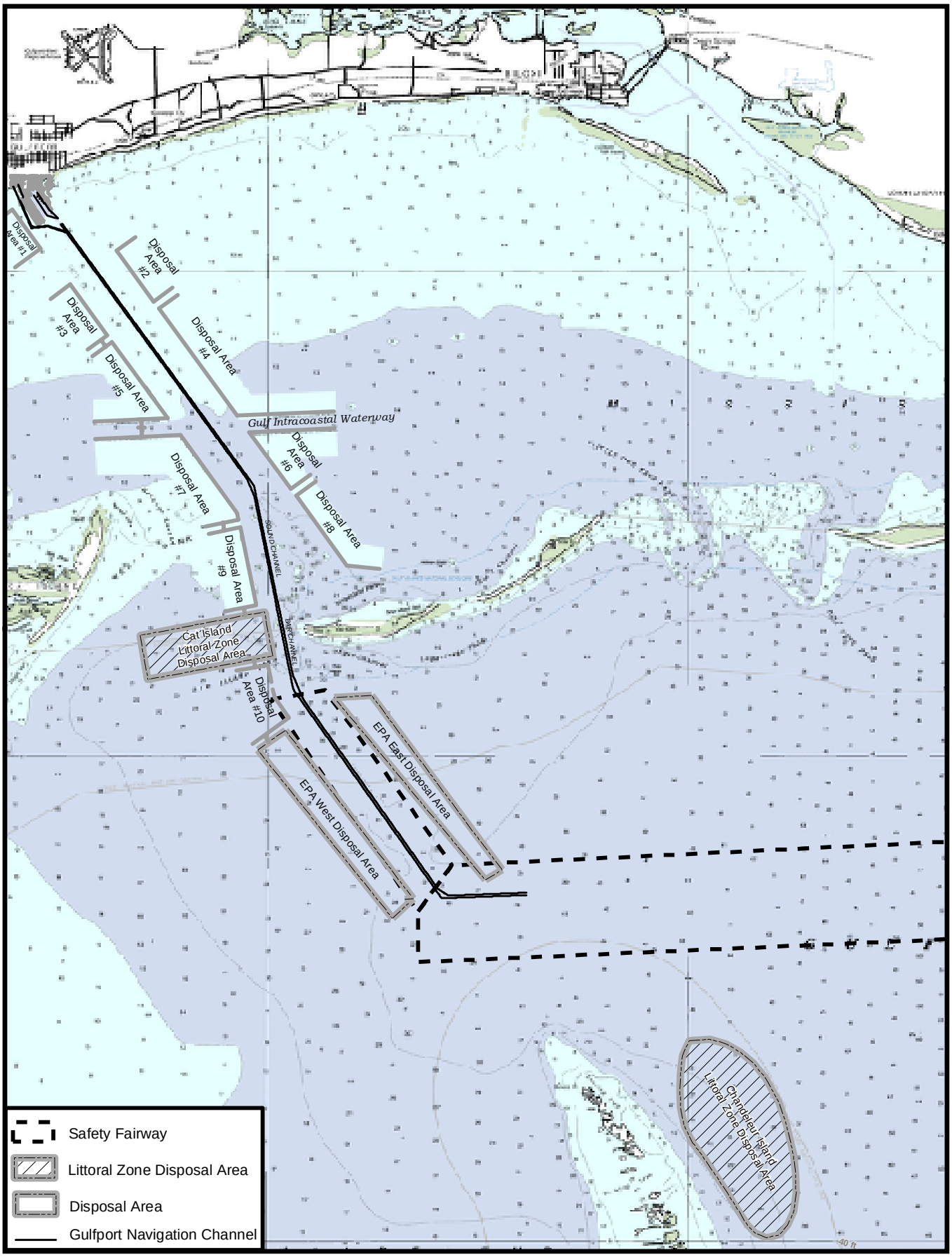
Improvements of the Federal Gulfport Harbor Navigation Project were initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (PL 99-88). The Water Resources Development Acts (WRDAs) of 1986 (PL 99-662) and 1988 (PL 100-676) further modified the project to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. The only Congressionally authorized channel dimension change for the present project is to widen the channel. Notice of Intent (NOI) to prepare the Draft Supplemental Environmental Impact Statement (DSEIS) was published in the March 31, 2006 Federal Register.

The USACE completed a Draft Environmental Impact Statement (DEIS) in 1988. In that DEIS, five alignments were considered for the navigation channel through Ship Island Pass. Dredged material was planned for placement in an Ocean Dredged Material Disposal Site (ODMDS). After extensive review, evaluation, and discussion, USACE published a Final Environmental Impact Statement (FEIS) in June 1989 for deepening and widening Gulfport Harbor with subsequent placement via thin-layer and ocean disposal. In this FSEIS, the original FEIS is reviewed and any new conditions that were not addressed in the 1989 FEIS are evaluated.

Interest in channel deepening and widening for the Federal Gulfport Harbor Navigation Project has been ongoing since the mid-1970s. During that timeframe, many alternatives have been discussed that included alignments, depths, widths, and disposal options. The alternatives identified under previous reports and eliminated from further analysis are not reviewed in this FSEIS. These alternatives included several channel depth options and realignment of the channel near Ship Island Pass and in Mississippi Sound.

The actions considered in this FSEIS include the No-Action Alternative and widening to the federally authorized dimension of 300 ft (ft) in the Mississippi Sound Channel and 400 ft in the Gulf Entrance and Bar Channel. Channel deepening is not considered in this FSEIS. The USACE conducted a public workshop on October 24, 2006 at the 19th Street Community Center in Gulfport, Mississippi. At the public workshop, the participants were briefed on the channel widening project and the proposed designation of a new Gulfport Offshore ODMDS. Several disposal options were discussed with the participants (beach nourishment, island creation, littoral zone disposal, thin-layer disposal, disposal in existing ODMDSs, and possible designation of a new ODMDS for disposal) (Figure ES-2).

Figure ES-1
Project Location and Nearby Counties
Gulfport Harbor Navigation Channel Final Supplemental EIS



Reference:
NOAA Chart Number 11373
Mississippi Sound, Chandeleur Islands, and Surrounding Area

Figure ES-2
Navigation Channels and Potential Disposal Sites
Gulfport Harbor Navigation Channel Final Supplemental EIS

A potential new Gulfport Offshore ODMDS is currently under consideration by the United States Environmental Protection Agency (USEPA). Comments received at the public workshop and in writing during the public comment period were supportive of using the material for beneficial purposes rather than disposal in existing ODMDSs or the proposed new Gulfport Offshore ODMDS. Use of the new ODMDS was considered, but was not adopted for use since it is not yet approved.

The disposal alternatives discussed in this FSEIS include an evaluation of the existing ODMDSs and the placement of sand to support the coastal processes near the barrier islands in Mississippi and Louisiana.

The alternatives considered in the FSEIS are:

Proposed Action

- Dredge Channel to Authorized Dimensions

  Increase the Gulf Entrance and Bar Channel width to 400 ft from the present 300 ft in the Gulf of Mexico for a distance of about 10 miles into Mississippi Sound.

  Increase the channel width through Mississippi Sound to 300 ft from the present 220 ft for a distance of about 11 miles between the inner portion of the Bar portion of the Ship Island Pass Channel and the entrance to the Turning Basin at Gulfport.

  Perform maintenance on existing navigation channel.

- Remove Sediment Using Several Dredging Methods

  Hopper Dredge
  Mechanical Dredge
  Hydraulic Cutter Head Dredge

- Place Dredged Material Using Four Disposal Options:

  Disposal of dredged material associated with constructing Gulfport Harbor to its authorized dimensions (an estimated 925,300 cubic yards [yd^3] of suitable material) and future maintenance material in portions of the littoral disposal area between the 14-foot and 18-foot contour southeast of Cat Island

  Placement of future maintenance material in the existing ODMDS located on the western side of the navigation project

  Disposal of dredged material associated with constructing Gulfport Harbor to its authorized dimensions (approximately 3,926,400 yd^3 of material) in the littoral zone east of the Chandeleur Islands, in water depths greater than 25 feet

  Open-water placement of future maintenance dredged material from ongoing maintenance activities via thin-layer disposal

No-Action Alternative

Under the No-Action Alternative, the USACE would continue to maintain the existing navigation channel with the present dimensions, which include:

- A channel segment about 10 miles long, 38 ft deep, and 300 ft wide that extends from the Gulf of Mexico across the Ship Island Bar into Mississippi Sound.
- A channel segment about 11 miles long, 36 ft deep, and 220 ft wide in Mississippi Sound.
- Dredged material from maintenance activities would be placed in open-water, littoral, and ocean disposal areas.

Impacts from implementation of the Proposed Action and No-Action Alternative are summarized in Table ES-1. A Section 404(b)(1) evaluation report for the dredged material associated with constructing Gulfport Harbor to its authorized dimensions (i.e., widening of the channel) and operation and maintenance dredging is provided in Appendix A.

TABLE ES-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Biological Resources		
Plankton and Algae	No change from existing conditions.	No change from existing conditions.
Benthic Invertebrates	Short-term minor displacement and loss of infauna and epifauna invertebrates during dredging and disposal activities. Community would recover quickly.	No change from existing conditions. Minor displacements and losses associated with maintenance dredging would continue.
Fish	Temporary disruption to the mature fish community. Quick recovery upon completion of dredging operations. Beneficial impact to nearshore habitats through renourishment and protection from erosion with placement of dredged material near Cat Island and the Chandeleur Islands.	No change from existing conditions. Temporary disruptions associated with maintenance dredging would continue.
Mollusks	Temporary and minor displacement of bivalves and other semi-sessile mollusks. Loss of demersal mollusks from dredge or disposal areas. Quick recovery upon completion of dredging operations.	No change from existing conditions. Temporary and minor displacements associated with maintenance dredging would continue.
Crustaceans	Temporary disruption to mature crustaceans. Disruption of movement of juvenile organisms. Minor loss of organisms. Quick recovery upon completion of dredging operations.	No change from existing conditions. Temporary disruptions and minor losses associated with maintenance dredging would continue.
Hard Bottom Habitats	No impacts would occur.	No impacts would occur.

TABLE ES-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Submerged Aquatic Vegetation	No known submerged aquatic vegetation (SAV) beds would be impacted. Possible loss of isolated plants or small unmapped patches within dredging footprint.	No change from existing conditions.
Marine Mammal Communities	Temporary and negligible impacts to foraging behavior and activity patterns of mammals in the vicinity of dredging operations. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Temporary and negligible impacts to foraging behavior and activity in the vicinity of maintenance dredging operations would continue.
Marine and Coastal Birds	Temporary and negligible disruption to birds roosting on the western end of Ship Island during nearby dredging activities. Activity would return to normal following completion of dredging.	No change from existing conditions.
Threatened and Endangered Species	Sea turtles could be present in areas planned for dredging and placement activities. Because these activities would be done in compliance with the 2007 Regional Biological Opinion (RBO), any impacts would be expected to be temporary and minor. Potential temporary localized disruption to foraging behavior of Gulf sturgeon in dredge/disposal areas and potential for entrainment of sturgeon swimming in the dredging areas. Potential temporary disruption of roosting behavior of piping plover at the western end of Ship Island. All impacts would cease with the end of dredging.	Sea turtles and Gulf sturgeon could be present in areas planned for maintenance dredging activities. Because these activities would be done in compliance with the 2007 RBO, any impacts would be expected to be temporary and minor.
Physical Environment		
Geology	No impacts would occur.	No impacts would occur.
Bathymetry	Permanent change in bathymetry at location of channel widening. Short-term change to bathymetry in dredged material disposal areas.	No change from existing conditions.
Meteorology	No impacts would occur.	No impacts would occur.
Physical Oceanography	No change from existing conditions.	No change from existing conditions.
Sediment Characteristics	Short-term localized impacts to sediments at disposal sites. Potential beneficial impacts from disposal as beach nourishment.	No change from existing conditions. Short-term localized impacts to sediments at disposal sites for maintenance material would continue.

TABLE ES-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Water Quality	Temporary localized disruption to in-situ parameters (i.e., dissolved oxygen [DO], turbidity, conductivity, salinity, temperature) during dredging and disposal. Potential for temporary increase in nutrients and permanent increase in bottom salinity.	No change from existing conditions. Temporary localized disruptions to in-situ parameters and potential temporary increases in nutrients associated with maintenance dredging would continue.
Commercial and Recreational Fishing	Temporary disruption of commercial and recreational fishing in immediate vicinity of dredging activities. Coordination with Mississippi State Port Authority (MSPA) would minimize disruptions to commercial operations. Long-term improvement in commercial vessel traffic resulting from increased channel width and improved navigational safety.	No change from existing conditions. Temporary disruptions of commercial and recreational fishing in immediate vicinity of maintenance dredging operations would continue.
Essential Fish and Shellfish Habitats	Temporary adverse effects to Essential Fish Habitat (EFH) in vicinity of dredging activities. Possible minor and localized disruptions to seasonal shrimp migrations in the vicinity of the dredge. Potential minor loss of organisms, which could be mitigated by timing dredging operations to avoid peak migration periods. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Temporary adverse effects to EFH in vicinity of maintenance dredging activities would continue.
Marine Sanctuaries	No impacts would occur.	No impacts would occur.
Cultural Resources	No adverse impacts would occur.	No impacts would occur.
Noise	Potential short-term minor disruption of roosting behavior in birds on the western end of Ship Island and foraging behavior in marine organisms in the vicinity of dredging operations. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Potential short-term minor disruptions of foraging behavior in marine organisms in the vicinity of maintenance dredging operations would continue.
Air Quality	Temporary negligible increase in air pollutants during dredging and disposal.	No change from existing conditions. Temporary negligible increases in air pollutants during maintenance dredging and disposal activities would continue.
Socioeconomics		
Utilities	No impacts would occur.	No impacts would occur.
Economy, Demographics, and Environmental Justice	Long-term economic benefit from increased shipping and jobs creation. No impacts on environmental justice.	No change from existing conditions.

TABLE ES-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Vehicular, Railroad, and Marine Vessel Traffic	Long-term increase in ship, vehicular, and rail traffic in the vicinity of the Port of Gulfport. Channel widening would facilitate vessel traffic and reduce delays by allowing two-way traffic patterns in the channel.	No change from existing conditions.
Land and Water Use	Temporary localized disruption to recreation activities.	No change from existing conditions. Temporary localized disruptions to recreation activities could occur.
Public Safety	No impacts would occur.	No change from existing conditions.
Cumulative Impacts	Expected to aid in regional recovery from impacts of Hurricane Katrina by facilitating the recovery of commercial shipping operations in Gulfport Harbor. Incremental effects difficult to separate from the results of regional recovery from Katrina within the next 25 years.	No positive interaction to aid in recovery from Hurricane Katrina.

1.0 Introduction

The United States Army Corps of Engineers (USACE) published a Notice of Intent (NOI) in the Federal Register Volume 71, Number 62, pages 16294-16296 on Friday, March 31, 2006. The NOI announced the intention of preparing a Draft Supplemental Environmental Impact Statement (DSEIS) to evaluate construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. This Final Supplemental Environmental Impact Statement (FSEIS) updates the EIS published in June 1989 evaluating widening and deepening the existing Gulfport Harbor with subsequent placement of dredged material via thin-layer and ocean disposal (USACE, 1989).

Supporting navigation by maintaining and improving channels was the USACE's earliest Civil Works mission, dating to Federal laws in 1824 authorizing the USACE to improve safety on the Ohio and Mississippi Rivers and several ports. In this context, "maintaining" channels means keeping them at specified depths and widths by dredging and other means. "Improving" means making them deeper or wider.

Today, the USACE maintains more than 12,000 miles (19,200 km) of inland waterways and operates 237 locks. These waterways—a system of rivers, lakes, and coastal bays improved for commercial and recreational transportation—carry about 1/6 of the nation's inter-city freight, at a cost per ton-mile about 1/2 that of rail or 1/10 that of trucks. The USACE also maintain 300 commercial harbors, through which pass 2 billion tons of cargo a year, and more than 600 smaller harbors (USACE, 2009).

The USACE Mobile District has prepared this FSEIS to assess the potential impacts associated with the construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. Gulfport Harbor is located in Harrison County (Figure 1-1). The existing project was adopted by the River and Harbor Act approved on July 3, 1930 (House Document Number 692, 69th Congress, 2nd session) and the River and Harbor Act approved on June 30, 1948 (House Document Number 112, 81st Congress, 1st session).

Construction of the existing Federal project commenced in 1932 and was completed in 1950. Improvements of the Federal Gulfport Harbor Navigation Project were initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (Public Law [PL] 99-88). The Water Resources Development Acts (WRDAs) 1986 (PL 99-662) and 1988 (PL 100-676) further modified the project to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. The only Congressionally authorized channel dimension change for the present project is to widen the channel.

The USACE completed a Draft Environmental Impact Statement (DEIS) in 1988 to address impacts of the project. In that DEIS, five alignments were considered for the navigation channel through Ship Island Pass. Dredged material disposal was planned for ocean disposal (placement in an Ocean Dredged Material Disposal Site [ODMDS]). After extensive review, evaluation, and discussion, USACE published a Final EIS (FEIS) in June 1989 for deepening and widening Gulfport Harbor with subsequent placement via thin-layer and ocean disposal. In the present FSEIS, the original FEIS is reviewed and any new conditions that were not addressed in the 1989 FEIS are evaluated.

Figure 1-1
Project Location and Nearby Counties
Gulfport Harbor Navigation Channel Final Supplemental EIS

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2.0 Purpose and Need for Action

Historically, the Port of Gulfport has offered deep water access for the shipping industry dating back to the early 1900s (Figure 2-1). Currently, the Port has 10 berths ranging from 525 to 750 ft (ft) in length. The berths are multi-use, multi-purpose and include two container berths, two break bulk/frozen, one break bulk refrigerated cargo, and five general cargo, project cargo, and ships gear container operations (Mississippi State Port Authority [MSPA], 2006a). The Port has an ongoing capital improvement program to construct a roll-on roll-off (Ro-Ro) facility and to provide additional services. As operations continue to expand, larger ships are calling at the Port. Deeper draft container ships and Ro-Ro operations have stimulated the need to widen and deepen the channel.

Since the mid-1970s, substantial interest has been expressed for improving the channel characteristics by widening and deepening. Therefore, the USACE prepared a Feasibility Study Report (USACE, 1976) with a primary objective of evaluating the deepening and widening of the ship channels and the deepening of the anchorage basin. That report recommended:

- Enlarging the Gulf Entrance and Bar Channel to 38 ft deep by 400 ft wide from the 38-ft depth contour in the Gulf of Mexico for a distance of 10 miles into Mississippi Sound.
- Enlarging the channel through Mississippi Sound to 36 ft deep by 300 ft wide for a distance of about 11 miles between the inner end of the Gulf Entrance Channel and the Turning Basin at Gulfport.
- Realigning the Bar Channel through Ship Island Pass to a location generally parallel to and about 1,000 ft west of the existing authorized channel.
- Enlarging and adjusting dimensions of the Turning Basin by extending the southern limits of the basin seaward 1,180 ft along the west pier and 2,300 ft along the west side of the Ship Channel, decreasing the width of the basin to 1,120 ft and deepening the basin and channel approach to 36 ft deep.

2.1 Purpose of Proposed Action

The purpose of the Proposed Action is to construct the Congressionally authorized widening improvements to the Federal Gulfport Harbor Navigation Project in Harrison County (Figure 2-2).

2.1.1 Regulatory Authority

Improvements of the Federal Gulfport Harbor Navigation Project were initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (PL 99-88). The Water Resources Development Acts (WRDAs) 1986 (PL 99-662) and 1988 (PL 100-676) further modified the project to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. The only Congressionally authorized channel dimension change for the present project is to widen the channel. The proposed changes were funded under PL 84-99, Flood and Coastal Storm Emergencies (33 U.S.C.701n) (69 Stat. 186).

2.2 Need for Proposed Action

The USACE determined that changes were required in the existing Federal Gulfport Harbor Navigation Project to provide for safe and unrestricted navigation into and out of Gulfport Harbor. The MSPA has pre-Hurricane Katrina documentation demonstrating the frequent "waiting at anchor" status of many vessels attempting to enter the Port (USACE, 2001). Likewise, vessels often have to wait in the Port while inbound vessels navigate through the channel. These conditions pose an adverse financial impact to the shippers operating out of Gulfport.

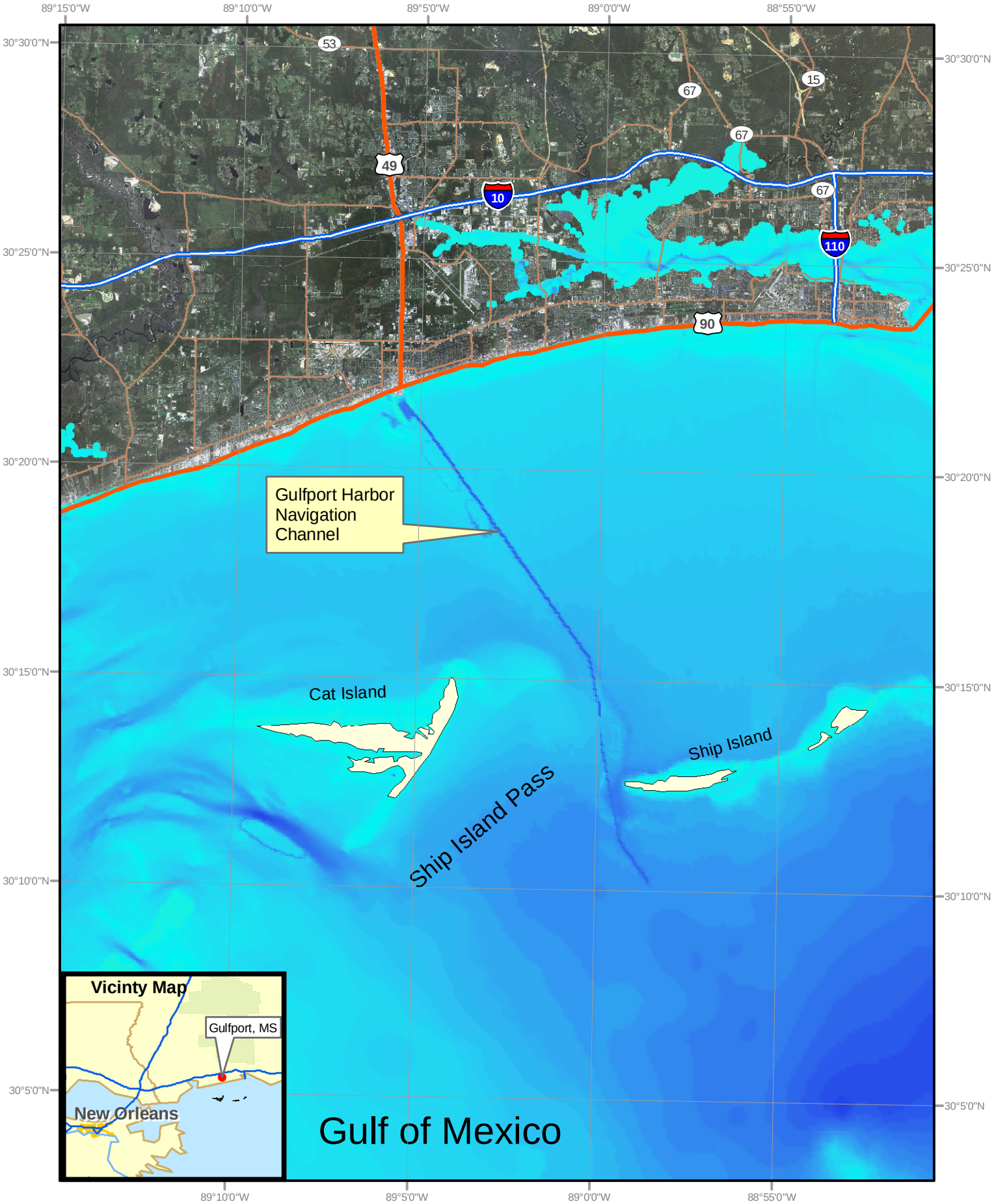

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Figure 2-1
General Location Map
Gulfport Harbor Navigation Channel Final Supplemental EIS

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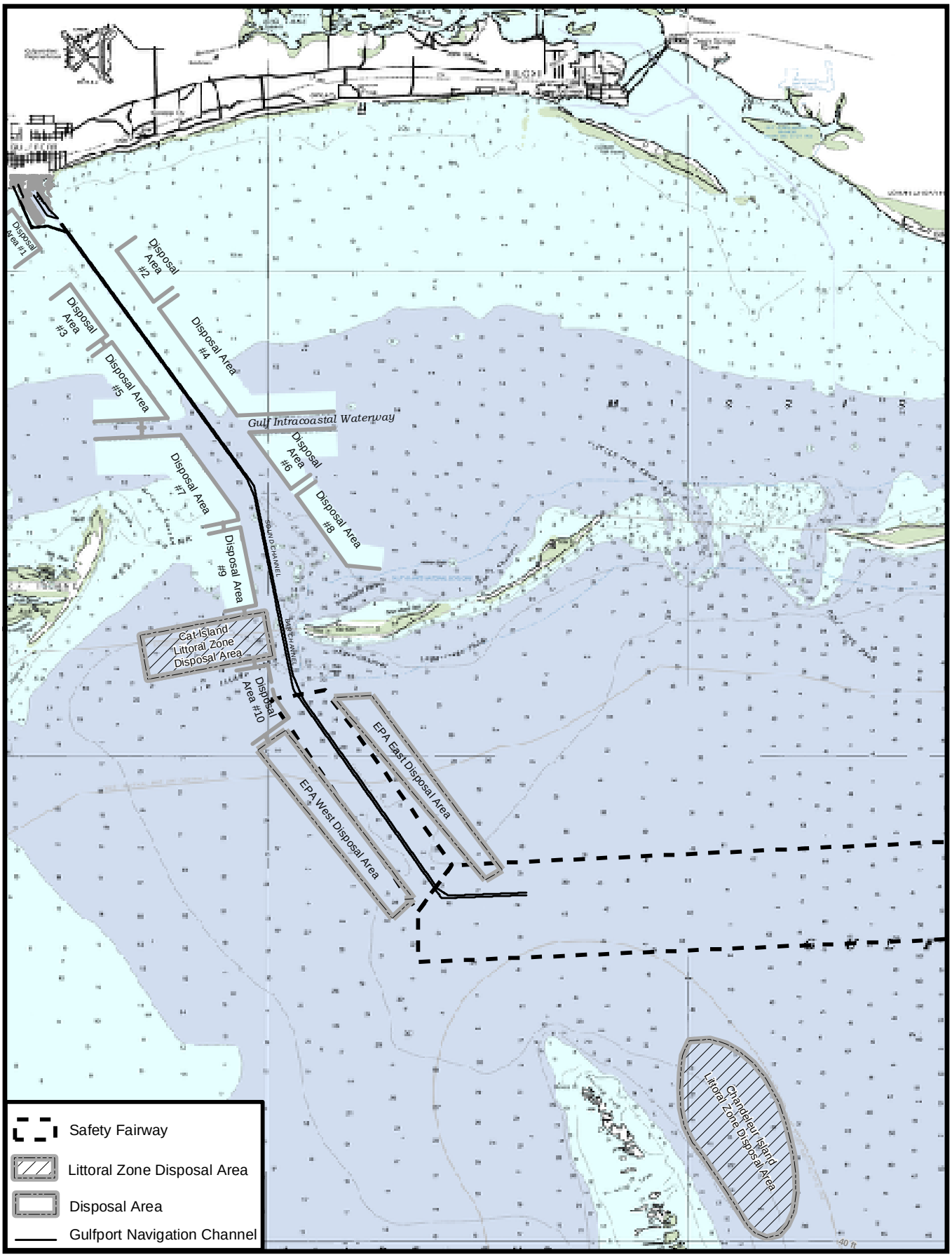

Reference:
NOAA Chart Number 11373
Mississippi Sound, Chandeleur Islands, and Surrounding Area

Figure 2-2
Navigation Channels and Potential Disposal Sites
Gulfport Harbor Navigation Channel Final Supplemental EIS

3.0 Alternatives

As noted in Section 2, interest in channel deepening and widening for the Federal Gulfport Harbor Navigation Project has been ongoing since the 1970s. During that timeframe, many alternatives have been discussed that included alignments, depths, widths, and disposal options. The alternatives identified in previous reports and eliminated from further analysis are not reviewed in this FSEIS. These alternatives included several channel depth options and realignment of the channel near Ship Island Pass and in Mississippi Sound.

Channel improvements addressed in this FSEIS include the Proposed Action of widening to the federally authorized dimensions of 300 ft in the Mississippi Sound Channel segment and 400 ft in the Gulf Entrance and Bar Channel segments (Table 3-1 and Figure 3-1).

TABLE 3-1
Proposed Action
Gulfport Harbor Navigation Channel Final Supplemental EIS

Location	Authorized Dimensions	Existing Dimensions	Proposed Changes
Mississippi Sound Channel	36 ft deep x 300 ft wide	36 ft deep x 220 ft wide	300 ft wide
Bar Channel and Gulf Entrance Channel	38 ft deep x 400 ft wide	38 ft deep x 300 ft wide	400 ft wide

3.1 Statement of Proposed Action

The Proposed Action that is being considered in the FSEIS includes widening the Federal Gulfport Harbor Navigation Project to its federally authorized dimensions of 300 ft in the Mississippi Sound Channel segment and 400 ft in the Gulf Entrance and Bar Channel segments. An additional -2 ft of advance maintenance dredging and -2 ft of overdepth dredging would be conducted to maintain the channel. Depending on the type of dredging equipment used, an additional depth of sediment may be disturbed in the dredging process, but not removed. The Proposed Action includes the removal of material by using hopper, mechanical, and/or hydraulic cutter head dredges, or some combination thereof. It is anticipated that construction of the federally authorized channel would require the use of a hopper dredge to remove material within the Gulf Entrance and Bar Channel segments and a mechanical or hopper dredge for removal of material located within the Mississippi Sound Channel segment. Additionally, it is possible that a hydraulic cutter head dredge would be used for removal of material within the Bar Channel segment. Dredging activities would occur over an 8- to 10-month timeframe, including 1 to 3 months of work near Ship Island.

The dredging activities would generate an estimated 6,617,500 cubic yards (yd^3), including 4,851,700 yd^3 of dredged material associated with constructing Gulfport Harbor to its authorized dimensions and 1,765,800 yd^3 of new maintenance material. Upon completion, the total maintenance material generated for the entire channel would be approximately 4 million yd^3 per dredge cycle.

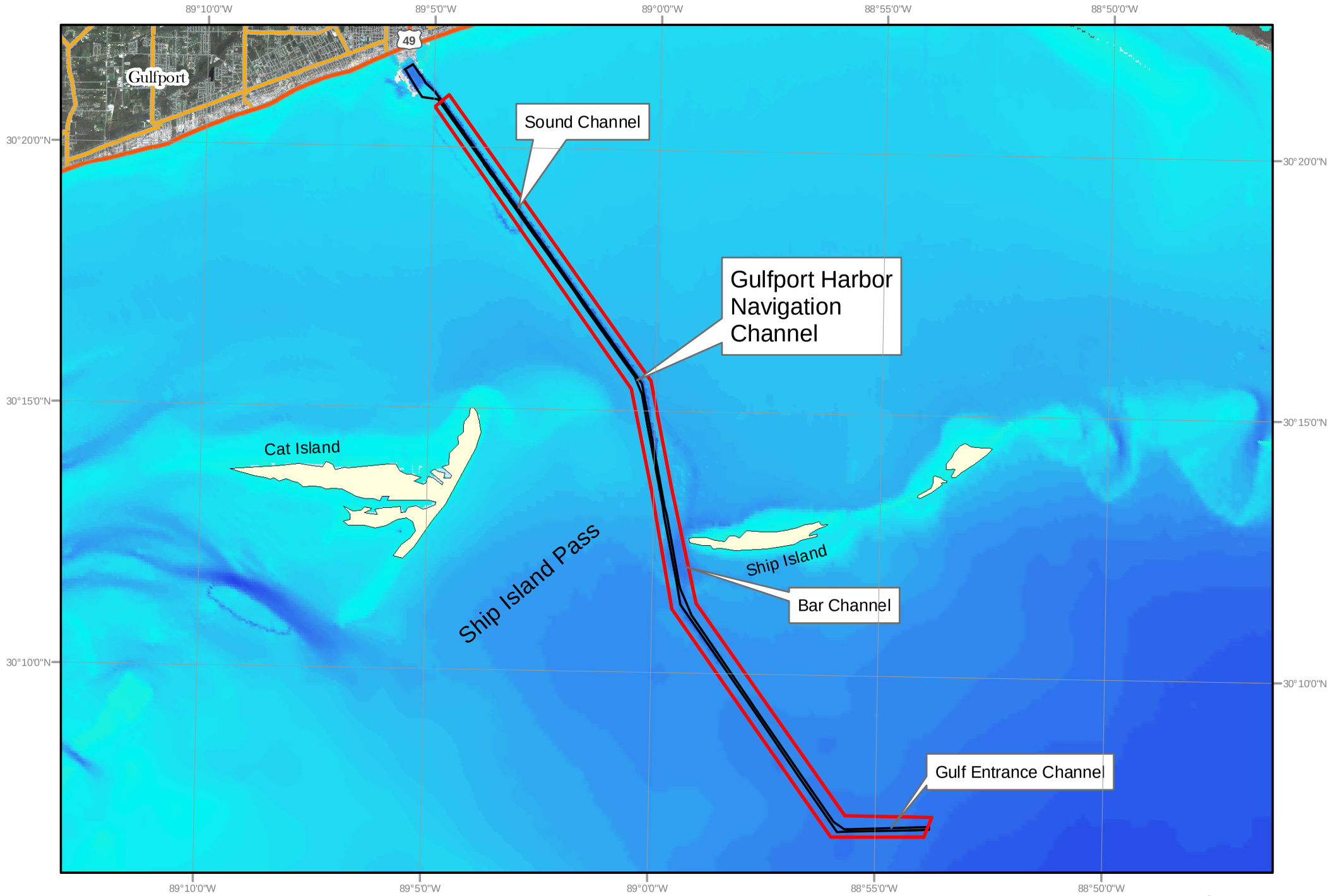

Figure 3-1
Proposed Action
Gulfport Harbor Navigation Channel Final Supplemental EIS

The dredged material associated with constructing Gulfport Harbor to its authorized dimensions (i.e., new work material) would be generated in areas that have not been previously dredged, and maintenance material would be obtained from areas where previous dredging has occurred and sedimentation has affected the approved channel depths. The new work and maintenance materials would have different physical characteristics that would have differing effects on the environment resulting from disposal activities.

Once material has been removed from the dredge areas, it must be disposed of in an approved fashion. The disposal options considered for the dredging activities include beach nourishment, island creation, wetland enhancement or creation, littoral zone placement (east and southeast of Cat Island), littoral zone disposal east of the Chandeleur Islands, open-water placement, disposal in an existing ODMDS, and disposal in a potential new ODMDS. Existing ODMDSs and disposal sites are shown in Figure 3-2. A new open-water disposal site located east of the Chandeleur Islands is identified in Figure 3-3. The USACE and State of Louisiana recently agreed to the use of this area (Louisiana Department of Natural Resources [LDNR], 2007). This area will provide a beneficial placement of dredged material.

Under the Proposed Action, the dredged material associated with constructing Gulfport Harbor to its authorized dimensions (i.e., widening the channel) would be placed in the littoral zone disposal area near Cat Island, or in the littoral zone disposal area near the Chandeleur Islands. Any suitable material removed from the Bar Channel segment would be placed in water between the 14-ft and 18-ft contours at the existing littoral zone disposal site located southeast of Cat Island in order to remain in the littoral system. New work material would be placed in the littoral zone disposal site east of the northern end of the Chandeleur Islands, in water depths greater than 25 ft. Maintenance dredged material would continue to be placed in existing open-water disposal areas. The existing USEPA West ODMDS located on the western side of the navigation project would be used for future maintenance material.

3.1.1 Summary of Sediment Characteristics

Sediment characteristics associated with channel widening are presented in Tables 3-2 and 3-3. Six sediment samples were obtained in Mississippi Sound and at the northern end of the Bar Channel (Table 3-2). Samples were collected outside the existing channel boundaries as deep as 28 ft below the sediment/water interface and represent material that would be removed during new work dredging operations. Samples GH04-05, GH04-07, and GH04-09 were collected north of the Gulf Intracoastal Waterway (GIWW) and samples GH04-11, GH04-13 and GH04-15 were collected south of the GIWW (Figure 3-2). Station GH04-15 was located on the east side of the channel and just northwest of Ship Island.

CHANNEL COORDINATES		
A	225150.2	964128.5
B	225000.3	964134.2
C	224850.4	964139.8
D	224781.7	954348.2
E	224602.6	953584.9
F	224450.1	953509.9
G	225591.0	953066.2
H	250646.6	935061.5
I	250585.7	934921.1
J	249302.2	936201.1
K	252402.0	934862.6
L	260905.7	932977.8
M	260875.9	932830.8
N	260935.6	933124.8
O	261864.1	932671.4
P	261886.0	932779.2
Q	261907.9	932887.4
R	274855.9	930031.0
S	276088.7	929895.3
T	276134.3	929998.6
U	276939.0	929145.0
V	307793.4	906539.4
W	307862.3	906488.9
X	307931.4	906438.3
Y	308799.2	905804.5
Z	308570.7	904159.6
AA	308858.4	905895.8
BB	308918.7	905989.2
CC	309577.2	905371.2
DD	309636.9	905463.8
EE	309951.8	904113.6
FF	310601.1	904408.8
GG	308621.3	904165.9
HH	308502.8	902557.9
II	308357.8	902134.8
JJ	308411.3	902165.9
KK	308582.4	902263.6
LL	308798.5	902051.6
MM	311783.0	900639.9
NN	311803.0	900685.8
OO	311823.0	900731.6
PP	308672.1	904171.3
QQ	309027.5	903971.4

DISPOSAL AREAS		
A1	227986.2	961047.3
A2	226751.1	958959.9
A3	221924.3	947352.0
A4	224358.3	949978.7
A5	243030.2	930462.8
A6	245503.2	933931.8
A7	249820.6	944758.1
A8	247045.2	934372.6
A9	249607.9	940018.5
B1	249560.9	932579.1
B2	253671.1	931743.3
B3	254797.4	932313.2
B4	260318.9	931335.7
B5	261132.0	930258.5
B6	270880.7	928288.2
B7	266140.1	941658.1
B8	274835.8	935289.7
B9	271860.6	928089.1
C1	272673.8	927924.0
C2	282443.1	920769.4
C3	275723.3	934639.8
C4	282825.3	929438.6
C5	284527.8	919242.6
C6	294115.0	912221.4
C7	284908.3	927910.4
C8	298298.5	918104.0
C9	294921.8	911630.5
D1	301295.4	906962.8
D2	299186.2	917454.1
D3	305559.7	912786.4
D4	305818.4	903287.6
D5	310659.3	899742.8

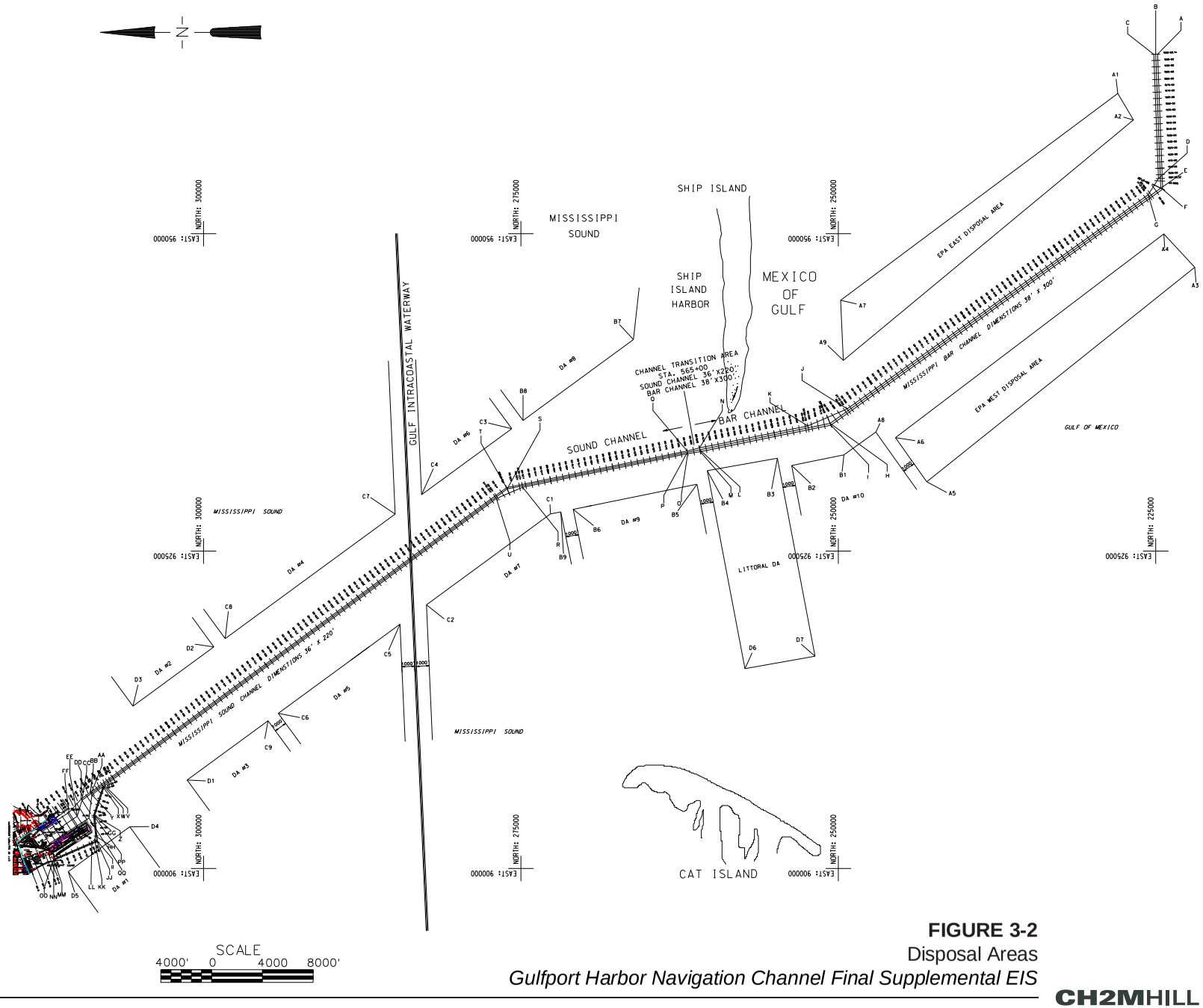

FIGURE 3-2
Disposal Areas
Gulfport Harbor Navigation Channel Final Supplemental EIS

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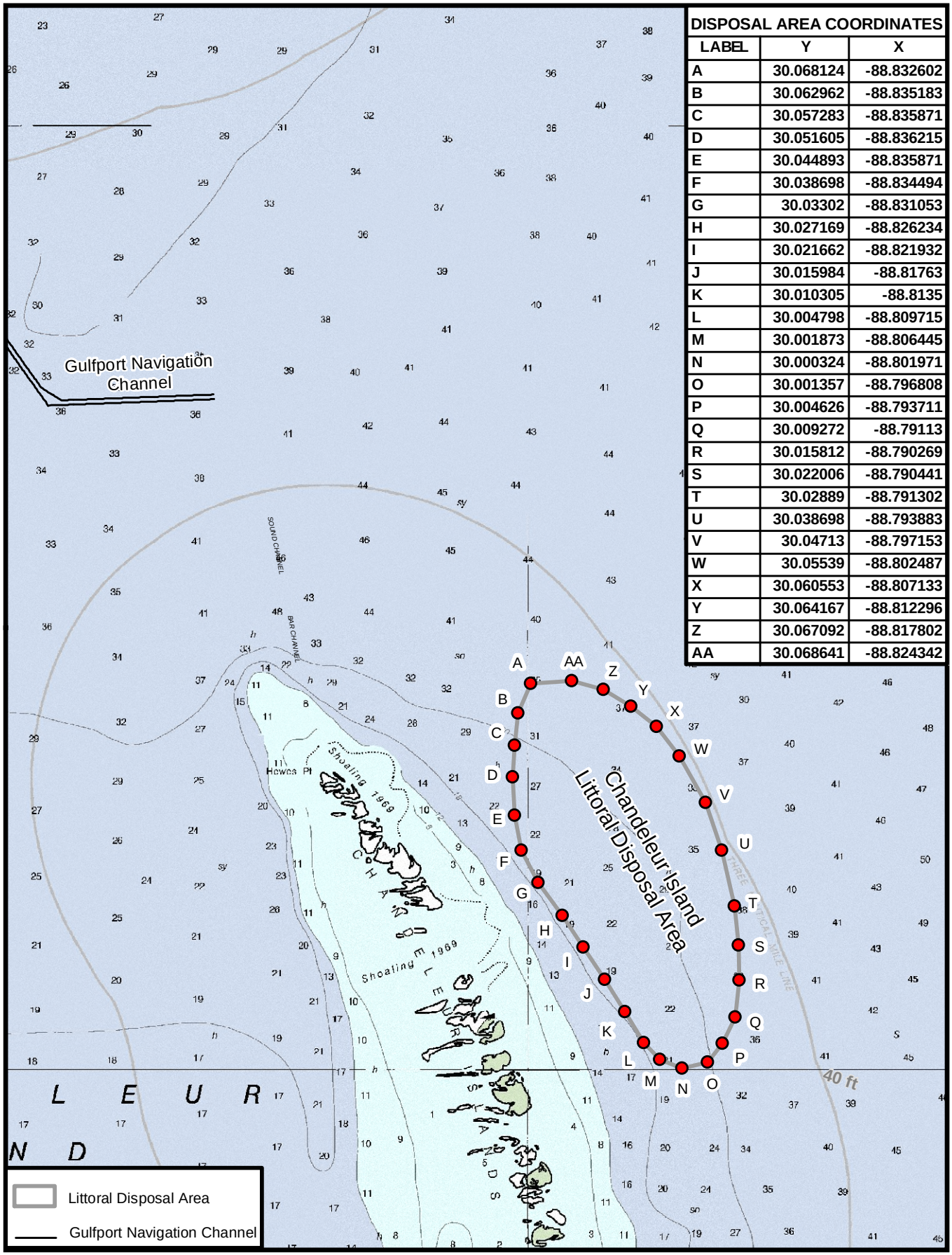

DISPOSAL AREA COORDINATES		
LABEL	Y	X
A	30.068124	-88.832602
B	30.062962	-88.835183
C	30.057283	-88.835871
D	30.051605	-88.836215
E	30.044893	-88.835871
F	30.038698	-88.834494
G	30.03302	-88.831053
H	30.027169	-88.826234
I	30.021662	-88.821932
J	30.015984	-88.81763
K	30.010305	-88.8135
L	30.004798	-88.809715
M	30.001873	-88.806445
N	30.000324	-88.801971
O	30.001357	-88.796808
P	30.004626	-88.793711
Q	30.009272	-88.79113
R	30.015812	-88.790269
S	30.022006	-88.790441
T	30.02889	-88.791302
U	30.038698	-88.793883
V	30.04713	-88.797153
W	30.05539	-88.802487
X	30.060553	-88.807133
Y	30.064167	-88.812296
Z	30.067092	-88.817802
AA	30.068641	-88.824342

Reference:
NOAA Chart Number 11373
Mississippi Sound, Chandeleur Islands, and Surrounding Area

Figure 3-3
Chandeleur Island Littoral Disposal Area
Gulfport Harbor Navigation Channel Final Supplemental EIS

TABLE 3-2
Sediment Core Descriptions
Gulfport Harbor Navigation Channel Final Supplemental EIS

Station (retrieval ft)	Depth Interval (ft)	Composition
GH04-05 (28.3)	0-17.7	Greenish black silt
	17.7	7-inch thick deposit of wood
	17.7-20.7	Black silty sand to fine sand
	20.7-28.8	Fine sand
GH04-07 (28.2)	0-13.2	Greenish black silt
	13.2	4-inch thick clay layer
	13.2-23.7	Greenish black silt
	23.7-26	Greenish gray silty sand
	26-28.2	Greenish gray sand and shell
GH04-09 (28.5)	0-8	Greenish gray silt
	8-9.8	Greenish gray and yellowish brown sand and greenish gray silt
	9.8-13.4	Greenish gray silty sand
	13.4-20.2	Greenish gray sandy silt and some clay
	20.2-23	Greenish gray silty clay
	23-27.4	Greenish gray silty clay and some sand and shell
	27.4-28.5	Greenish gray clay
GH04-11 (25.5)	0-7	Greenish black and greenish gray clay
	7-9.5	Greenish gray silt and some clay
	9.5-14.5	Greenish gray, olive brown, and grayish brown medium sand and some silt
	14.5-17	Greenish gray fine sand
	17-25.5	Greenish gray fine sand and some shell
GH04-13 (27.6)	0-3.5	Greenish black silt
	3.5-10	Greenish black silt
	10-13.8	Greenish black silt and some clay
	13.8-16.3	Greenish gray fine well sorted sand
	16.3-24.5	Greenish gray clayey silt
	24.5-27.6	Greenish black clayey silt and greenish gray fine sand (very thin layer)
GH04-15 (26.8)	0-6	Greenish gray poorly sorted medium grained sand
	7-9.5	Greenish gray clayey silt
	9.5-16	Greenish gray well sorted fine sand
	16-18	Greenish gray clayey silt
	18-21.5	Greenish gray fine grained sand
	21.5-23.5	Greenish black silty clay
	23.5-26.8	Greenish gray clay with silt

Source: USACE, 2006a.

The sediments located throughout Mississippi Sound (GH04-05 to GH04-11) consist predominantly of silts and clays. This was confirmed by particle size analysis that was performed on two composite samples (Table 3-3). The sediments north of the GIWW are predominantly silts and clays. Closer to the barrier islands the sediments contain more sand. The sediments located between Cat and Ship Islands are more closely defined by GH04-15.

TABLE 3-3
Particle Size Fractions
Gulfport Harbor Navigation Channel Final Supplemental EIS

Characteristic	Particle Size (micrometer [µm])	Composite Sample (%) GH04-5,7,9	Composite Sample (%) GH04-11,13,15
Gravel		0	0
Sand	75-2,000	13.2	56
Coarse		0	0
Medium		0.5	2.2
Fine		12.7	53.8
Silt	6.1-75	21.2	12.2
Clay	<6	65.6	31.8

Source: USACE, 2006a

The sediment located in the navigation channel that would be removed during maintenance dredging operations consists primarily of silts and clays (Table 3-4). The combined total of silts and clays is greater than 85.5 percent.

TABLE 3-4
Maintenance Dredging Sediment Characteristics
Gulfport Harbor Navigation Channel Final Supplemental EIS

Characteristic	GH04-02	GH04-04/06/08
Gravel (%)	0	0
Sand (%)	10.2	14.6
Silt (%)	20.9	32.9
Clay (%)	68.9	52.6

Source: USACE, 2006a

3.1.2 Disposal Locations

Under the Proposed Action, existing open-water, littoral zone, and ODMDS disposal areas would be used for placement of dredged material.

3.1.2.1 Littoral Zone Disposal

Littoral zone disposal would entail placement of material in shallow (between the 14-ft and 18-ft contours) nearshore waters along the coast or near barrier islands. Materials would be placed in those areas to supplement the littoral drift system. Disposal of suitable material in the littoral zone southeast of Cat Island (Figure 3-2) is a preferred location for placement of sandy sediment removed in the vicinity of Ship Island. "Suitable material" is defined as sediments with a sand fraction around 50 percent or greater. Suitable material removed from within the Bar Channel segment would be placed within the existing littoral zone disposal area southeast of Cat Island.

Recently the USACE and the state of Louisiana identified a location that will be used for beneficial disposal of dredged material. New work material would be placed in the littoral zone near the Chandeleur Islands (Figure 3-3). Material would be placed in an area east of the northern end of the Chandeleur Islands, in water depths greater than 25 ft, which represents a safe operating depth for disposal from hopper dredges. The Chandeleur Islands were severely damaged by recent hurricane events. Placement of material in the littoral zones would help replenish the coastal habitat. These are preferred placement alternatives under the Proposed Action.

3.1.2.2 Existing ODMDS Disposal Areas

This alternative would entail use of an approved ODMDS. Two ODMDSs (USEPA East and West) are located near the Federal Gulfport Harbor Navigation Project (Figure 3-2). The ODMDS located on the eastern side of the navigation channel is no longer used by the USACE since the dredged material placed in that area tended to drift to the west and settle in the channel. The ODMDS on the western side of channel has limited capacity and would not be able to accommodate all of the dredged material generated by the channel widening. This ODMDS would not be used for new work material, but would continue to be used for placement of future maintenance material.

3.1.2.3 Open-Water Disposal Areas

This alternative would support disposal of materials removed during maintenance dredging operations. There are five approved open-water disposal areas (Areas 3, 5, 7, 9, and 10) in Mississippi Sound that are located on the western side of the navigation channel (Figure 3-2). The areas located on the eastern side of the channel would not be used since experience indicates the materials placed in those areas would be transported into the navigation channel by coastal processes. The areas on the western side of the navigation channel would be used for disposal using the thin-layer disposal method.

Thin-layer techniques for the disposal of the dredged material would result in the placement of dredged sediments over bottom areas in Mississippi Sound. Bottom surfaces in areas selected for disposal would be covered with 6 to 12 inches of dredged material. A drag bar would be used, if necessary, to smooth out any peaks following placement.

3.2 Alternatives Considered

Alternatives to the Proposed Action were considered and include No Action and various disposal options for the Proposed Action. Four disposal options were considered and

include island creation, littoral zone disposal, open-water disposal adjacent to the channel in Mississippi Sound, open-water disposal using thin-layer techniques in Mississippi Sound, and disposal in existing ODMDSs. The alternatives considered in this FSEIS are the Proposed Action and the No-Action Alternative.

3.2.1 Proposed Action

- Dredge Channel to Authorized Dimensions

  Increase the Bar Channel width to 400 ft from the present 300 ft in the Gulf of Mexico for a distance of about 10 miles into Mississippi Sound.

  Increase the channel width through Mississippi Sound to 300 ft from the present 220 ft for a distance of about 11 miles between the inner portion of the Bar portion of the Ship Island Pass Channel and the entrance to the Turning Basin at Gulfport.

  Perform maintenance on existing navigation channel.

- Remove Sediment Using Several Dredging Methods

  Hopper Dredge
  Mechanical Dredge
  Hydraulic Cutter Head Dredge

- Place Dredged Material Using Four Disposal Options:

  Disposal of dredged material associated with constructing Gulfport Harbor to its authorized dimensions (an estimated 925,300 yd^3 of suitable material) and future maintenance material in portions of the littoral disposal area between the 14-foot and 18-foot contour southeast of Cat Island

  Placement of future maintenance material in the existing ODMDS located on the western side of the navigation project

  Disposal of dredged material associated with constructing Gulfport Harbor to its authorized dimensions (approximately 3,926,400 yd^3 of material) in the littoral zone of east of the Chandeleur Islands, in water depths greater than 25 feet

  Open-water placement of future maintenance dredged material from ongoing maintenance activities via thin-layer disposal

3.2.2 No-Action Alternative

Under the No-Action Alternative, the USACE would continue to maintain the existing navigation channel with the present dimensions, which include:

- A channel segment about 10 miles long, 38 ft deep, and 300 ft wide that extends from the Gulf of Mexico across the Ship Island Bar into Mississippi Sound.

- A channel segment about 11 miles long, 36 ft deep, and 220 ft wide across Mississippi Sound.

Placement of maintenance dredging material would continue under the No-Action Alternative. Approximately 1,080,100 yd^3 of material would continue to be removed per

dredging cycle. The dredged material removed from the Mississippi Sound Channel would continue to be placed in open-water disposal areas in Mississippi Sound. Dredged material from the Bar Channel and Gulf Entrance Channel would be placed in the Cat Island littoral disposal area and the existing USEPA West ODMDS.

3.2.3 Alternatives Not Carried Forward

3.2.3.1 New Channel Alignments

Alternatives to the alignment of the channel were previously evaluated as part of the 1989 Final EIS for Gulfport Harbor (USACE, 1989). Therefore, new alignments to the Federal Gulfport Harbor Navigation Project are not considered in this EIS.

3.2.3.2 Thin-Layer Disposal Method for New Work Material

The large-scale use of the thin-layer disposal method was evaluated in the vicinity of the Federal Gulfport Harbor Navigation Project through studies conducted during 1992 and 1993 (USACE, 1999). Since completion of the demonstration project, the USACE has routinely used the open-water disposal sites during maintenance dredging activities. As described in Tables 3-2 and 3-3, the new work material located within the Mississippi Sound segment of the channel consists of packed clays and silts and is not conducive to this type of disposal, as the materials would not spread throughout the open-water sites; therefore, it has been determined to be not feasible to use the open-water sites for new work material. The thin-layer disposal areas will continue to be used for maintenance material. This disposal option will not be further evaluated for placement of new work material.

3.2.3.3 Placement Alternatives

One disposal alternative and three beneficial use alternatives were considered as alternatives for placement of dredged material. In addition, beach nourishment, island creation, and wetland creation/enhancement were evaluated as potential beneficial uses. These disposal options were considered but rejected from further evaluation.

New ODMDS Disposal Area

The USACE identified a location for a potential new Gulfport Offshore ODMDS area south of the Safety Fairway and approximately 3 miles east of the Chandeleur Islands. This area is large and deep enough to accommodate construction and future maintenance dredged materials from the navigation channel. The proposed new ODMDS is currently under consideration by the United States Environmental Protection Agency (USEPA) (USEPA and USACE, 2007; CH2M HILL, 2004). This site is not yet approved and is unavailable for use.

Beneficial Use Alternatives

Beach Nourishment

Beach nourishment is a technique that can be used to restore eroding sections of beach. In this case, it would involve the placement of dredged material, primarily sand, along the shoreline to widen the beach. A portion of the dredged material would be placed above the high tide level and a portion below the high tide level to replenish beaches and establish a slope into the water. Supporting structures could be placed along the shoreline to help stabilize the new beach material or facilitate the creation of dunes. Selected beaches would be replenished to approximate historical beach patterns on the Mississippi coast. Placement

of beach quality sand on the shoreline of western Ship Island would help protect Fort Massachusetts. The fort is a National Register of Historic Places (NRHP) site. Placement of beach-quality sand requires close coordination with the National Park Service (NPS).

Sediment size, color, and environmental suitability are all important characteristics for evaluation of potential sources (Dean, 2002). Harrison County requires that dredged material used for beach nourishment be a minimum of 90 percent sand (by weight) that passes through a No. 40 mesh (420-µm) sieve. The remaining 10 percent material by weight must pass through a No. 200 mesh (75-µm) sieve. The sand fill material must be free of noticeable amounts of shell or other non-sand components. The material must also be tested for oil, grease, and heavy metals (Harrison County, 2007). In a study conducted on Alabama beach sand, the average particle size was defined as 330 µm (Kopaska-Merkel and Rindsberg, 2005). Offshore sand sources in state waters averaged 290 µm and those in federal waters averaged 284 µm. The sand located offshore is darker in color because of mineral content. However, the authors concluded the sand in both locations was suitable for use based on particle size. During a continuation of the study (Rindsberg and Kopaska-Merkel, 2006) the existing beach sand and offshore sources were further evaluated. In the follow-up study, the beach sand was considered as "snow white" and the color was either white or pale brown. This characteristic results from the nearly pure quartz composition. Only a small fraction of the offshore sand resources consist of pure quartz. Most offshore sand contains mud and both stable and unstable minerals.

The new work material located within the Mississippi Sound segment of the channel (Tables 3-2 and 3-3) would consist of packed clays and would not be conducive to this type of reuse.

Beach nourishment is currently being evaluated for beaches throughout the Gulf coast.

Placement of sandy material on the islands close to the project area (e.g. Cat and Ship Islands), has the potential to impact nesting sites for protected species, including sea turtles and the piping plover. In addition, previous analyses of placement on island beaches found that this option was not economically feasible due to sediment properties, the need for erosion control structures, and the water depth (USACE, 1984; USACE, 1989). Sediments in the Mississippi Sound Channel are predominantly plastic clays, poorly graded sands, and silty sands with occasional pockets of clayey sands and silty clays (USACE, 1989).

Wetland Creation

Wetland creation using dredged material would involve one or more techniques. For example, dredged material could be applied in thin layers to bring a selected area up to an intertidal elevation. Dredged materials could also be used to stabilize or nourish eroding natural wetland shorelines or create favorable drainage patterns. Existing wetlands may also be restored or expanded by placing dewatered dredged material as wind and wave barriers or erosion barriers to protect those areas and allow native vegetation to regrow.

Wetland creation and restoration are currently being evaluated across coastal Mississippi. The new work and maintenance material could be used for wetlands creation. However, there is currently no location identified near Gulfport for wetland creation.

Island Creation

Island creation using dredged material would include filling, raising, and protecting an open-water area. The selected area would be converted into an island or islands with gradual or step slopes to the Mississippi Sound bottom. A containment dike or other enclosure would be constructed around the fill area, if necessary, for protection against erosion by waves and currents. Coarse or fine materials could be used for island creation, although material from dredging is usually silt or sand. Finer materials require a long time to drain and consolidate; therefore, the strength achieved from the use of dredged material may be low. Land created using these fine-grained materials may be limited to recreational uses or other uses where no major loads would be imposed (USACE, 2007).

The new work and maintenance material could be used for island creation. However, there is currently no location identified near Gulfport for island creation.

4.0 Affected Environment

4.1 Overview

A general overview of the environmental conditions found in the northern Gulf of Mexico and Mississippi Sound in the vicinity of Gulfport Harbor and Gulfport Federal Navigation Channel is presented in the following section. The discussion includes a review of the biological, physical, and chemical conditions, fishing and shipping activities, and socio-economic conditions in the general vicinity of the Proposed Action. Regional and site-specific information (where available) was compiled to determine the baseline conditions of the potentially affected environment. Information on the characteristics of the affected environment is presented below.

4.2 General Environmental Setting

4.2.1 Location of Affected Environment

Gulfport Harbor is located on the southern shore of Harrison County in western Mississippi. The Gulfport Federal Navigation Channel extends approximately 20 miles (32.2 km) offshore south into the Gulf of Mexico, crossing the GIWW and passing close to the western end of Ship Island. Existing ODMDSs and open-water disposal sites are located adjacent to the navigation channel (Figure 2-2). Littoral placement would occur at sites southeast and east of Cat Island and east of the Chandeleur Islands (Figures 3-2 and 3-3).

4.2.2 Physical Setting of Affected Environment

Environmental characteristics that may be affected by the Proposed Action and other alternatives include geological, chemical, biological, socioeconomic, and commercial and recreational activities. Onshore, the regional environment is characterized as Coastal Lowlands, and the shore area, where not developed, consists typically of gently undulating swampy plains. Beach in the area is manmade and bordered by constructed seawalls. The Gulfport-Biloxi area is developed, however, and beyond the seawalls are extensive commercial and residential developments (USACE, 1989).

The project is located primarily within Mississippi Sound, a shallow coastal lagoon which extends 9 miles offshore and encompasses the area between Mobile Bay, Alabama to the east and Lake Borgne, Louisiana, in the west. The mean low water depth of the Sound is 10 ft (3.1 m), and over 99 percent of the area is less than 20 ft (6.1 m) deep. Dredging has deepened the shipping channel to as deep as 38 ft and enabled Gulfport to become a deepwater port (USACE, 1999).

The continental shelf is topographically diverse and includes slopes, escarpments, knolls, basins, and submarine canyons. Approximately 10-12 mi offshore are Cat Island and Ship Island, part of the barrier islands in this region. These islands typically feature broad, sandy beaches to the north with dunes on the southern Gulf side. These islands have migrated

westward with time, and will continue to do so because of continual erosion on the eastern ends and accretion on the western ends. In the past, the shipping channel has been realigned to the west to minimize impacts to the western end of Ship Island and the national historic site of Fort Massachusetts (USACE, 1989).

To the southwest of the Mississippi barrier islands are the Chandeleur Islands, barrier islands located in the territorial waters of southeast Louisiana. Once composed of sand beaches on the eastern side and marshes and mangroves on the western landward side, the islands have eroded. Storm damage has been severe since 1998, and the islands have been hit by Hurricanes Georges, Lili, and Ivan, Tropical Storm Isadore, and most recently Hurricane Katrina (USGS, 2005). Aerial photographs of the islands since Hurricane Katrina reveal that most of the barrier islands' mass has been reduced by 50 percent and much of the northern islands are submerged land masses (Google Earth, 2007).

Waters in Mississippi Sound are influenced by saline Gulf waters flowing into the Sound between the barrier islands as well as freshwater drainage from 20,000 square mi (51,800 square km) of land area. Main rivers draining into Mississippi Sound are the Pascagoula River, the Pearl River, and the Mobile River. This mix of freshwater and saline conditions has created a dynamic estuarine environment (USACE, 1989). Farther offshore into the Gulf of Mexico, where the shipping channel extends past Ship Island toward the Chandeleur Islands, there is a regional occurrence of hypoxic waters. Productivity in hypoxic waters is much lower than in other regions of the Gulf, with lower than expected levels of shrimp and fish (USACE, 1994). Hypoxia is known to occur in shelf waters off of the Louisiana coast during the summer and (based on reports from fishermen) apparently extends to Gulf waters east of the Mississippi River as well. Hypoxia has not been linked to disposal of dredged material (USACE, 1994). Hypoxia is discussed in more detail later in Section 4.5.5.

The area is characterized by a humid, warm-temperate, sub-tropical climate, and is partially isolated from the Atlantic Ocean. Average annual air temperatures range between 60 and 70 degrees Fahrenheit (ºF) [15.6-21.1 degrees centigrade (ºC)]. The normal annual rainfall is between 55 and 64 inches (140-163 cm), distributed relatively evenly throughout the year. The Gulfport area is subject to hurricanes between June and October, with hurricanes most frequent in September. In 1969, Hurricane Camille devastated the entire Mississippi coast, and in 2005, Hurricanes Katrina and Rita devastated coastal areas from Galveston, Texas through the entire Mississippi coast (USACE, 1989; University of Delaware [UD]; 2006). Hurricane damage to shipping facilities in 2005 reduced shipping traffic of Gulfport Harbor and other regional ports. Shipping traffic rebounded in 2006 (UD, 2006), and the area continues to recover.

4.2.3 Economic Setting of Affected Environment

The nearshore area is used intensively for commercial and recreational shipping, boating, and fisheries. This area is highly productive and extensive fisheries resources are known to exist in the area. High numbers of oil and gas facilities along with several fish havens, artificial reefs, and shipwrecks are located in the area. Areas between the barrier islands and Mississippi Sound are also considered important migration areas for biological resources (USEPA, 1986). Deeper water areas (>30 m) (>98.4 ft) beyond the barrier islands contain important commercial fish and shrimp fisheries, fish havens, shipwrecks, and offshore

banks. Oil and gas activities have expanded in recent years and applications for oil and gas leases in those areas are increasing (Table 4-1).

TABLE 4-1
Gulf of Mexico Oil and Gas Leases
Gulfport Harbor Navigation Channel Final Supplemental EIS

Water Depth (ft[m])	Active Leases	Approved Drilling Applications	Active Platforms
<655 (<200)	3,296	44,175	3,784
>655 (>200)	4,64	4,210	57

Source (http://www.gomr.mms.gov/homepg/fastfacts/WaterDepth/WaterDepth.html, 5/9/2008)

4.2.4 General Marine Ecosystem Conditions of Affected Environment

Circulation patterns of the mid-shelf and deepwater regions are influenced by the Loop Current (USEPA, 1986). The Loop Current is associated with the upwelling and high nutrient levels that result from ocean water flow from the Yucatan Channel and input of freshwater from rivers originating in the USA and Mexico (National Oceanic and Atmospheric Administration [NOAA], 2004a). The region of the Mississippi River outflow contains the highest rates of primary production in the Gulf of Mexico. Climatic events such as hurricanes may also increase phytoplankton biomass and primary production as a result of vertical advection of nutrients to surface waters (NOAA, 2004a). Sediments range from sand to silt and clay. Nearshore benthic and nektonic communities are diverse and seasonally variable; mid-shelf and deepwater communities are typically less diverse with lower biomass (USEPA, 1986).

In general, the Gulf of Mexico marine ecosystem exhibits signs of overall ecosystem stress in bays, estuaries, and coastal regions. Shoreline alteration, pollutant discharge, oil and gas development, and nutrient loading are the primary stress factors within the Gulf area (NOAA, 2004a). Environmental conditions within the Gulf of Mexico (outside of the hypoxic zone) are generally defined by good dissolved oxygen (DO) concentrations; fair water quality; poor coastal wetlands; eutrophic conditions; and poor sediment, benthos, and fish tissue quality (USEPA, 2001). A goal has been established by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force to reduce nitrogen discharges to the Gulf by 30 percent by the year 2015 (Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, 2001). Other goals established include a reduction of the hypoxic zone, increased agricultural efficiency, urban non-point source pollution removal, upgraded sewage treatment facilities, and increased oil pollution control measures (NOAA, 2004a**).**

4.3 Biological Resources

4.3.1 Plankton and Algae

4.3.1.1 Phytoplankton and Filamentous Algae

Diatoms and dinoflagellates are the dominant components of the phytoplankton community in the Gulf of Mexico, and the relative composition depends on nutrient and silica

availability in the water. Over 900 species of diatom and 400 species of dinoflagellates have been reported from the Gulf of Mexico.

Peak plankton abundance occurs from spring through early fall (April-October) in estuaries and coastal areas and during the winter (November-March) in offshore areas. Plankton counts as high as 31,400 cells per liter have been recorded in the northeastern Gulf. Chlorophyll *a* concentrations in the northern Gulf have been measured at concentrations ranging from 0.02 to 13.02 milligrams per cubic meter (mg/m^3) (USEPA, 1991; Minerals Management Service [MMS], 2006).

Within Mississippi Sound, phytoplankton communities are generally quite diverse, with occasional monotypic blooms. Salinity, nutrient concentrations, temperature, and wind conditions influence the distribution of phytoplankton. Population composition, abundance, and diversity also vary by season. Seventy-seven species of marine algae have been identified as part of the summer flora of Mississippi Sound, but there are likely more species present (Eleuterius, 1981).

Phytoplankton densities are greatest where riverine waters override and spread out over the receiving oceanic waters, creating a nutrient-rich euphotic zone ideal for high rates of production (Ortner and Dagg, 2006). The early planktonic forms of many species of fish and invertebrates are dependent upon the neritic zone of the northern Gulf of Mexico (Pattillo et al., 1997). The neritic zone is defined as the oceanic zone extending from the mean low tide level to the edge of the continental shelf. The neritic zone encompasses Mississippi Sound and the barrier islands of Mississippi and eastern Louisiana

Blue-green algae and diatoms are the dominant microflora in marshes and seagrass beds in Mississippi Sound (Stout and de la Cruz, 1981; Daehnick et al., 1992). Red algae are the dominant filamentous algae in those systems and support coverings of epibenthic diatoms. Phytoplankton production in seagrass beds is highest in summer (August) and lowest in winter (January) (Moncreiff et al., 1992). Chlorophyll a concentrations in seagrass beds have been measured in a range of 14 milligrams per square meter (mg/m^2) to 125 mg/m^2, but average 26 to 86 mg/m^2 depending on season and water conditions (Daehnick et al., 1992).

4.3.1.2 Zooplankton

Median zooplankton biomass has been measured on the continental shelf at 10.1 cubic centimeters (cm^3)/100 m^3. Copepods are typically the dominant zooplankton form in this environment. Ichthyoplankton are an important component of the zooplankton community. Ichthyoplankton are addressed in Section 4.3.3.

4.3.1.3 Harmful Algal Blooms

"Harmful algal bloom" (HAB) refers to a phytoplankton bloom producing toxins that cause harmful conditions. A small number of phytoplankton species produce neurotoxins. These toxins can be transferred through the food web where they affect higher forms of life such as zooplankton, shellfish, fish, birds, marine mammals, and humans that feed either directly or indirectly on them.

The source of HABs is not clear. Such blooms have occurred in waters where pollution is not an obvious factor, although an increase in nutrients stimulates algal blooms. The presence of toxic species is a natural occurrence that can be exacerbated by natural currents and

environmental forces (e.g., hurricanes). Recent identification of a higher number of bloom events may reflect better detection methods and more observers. Toxic and nontoxic algal blooms have occurred along the Gulf coast from Louisiana to the Florida Panhandle. Two species of algae (*Alexandrium monilata* and *Karenia breivs*) have caused HABs near the Mississippi coast. *K. breivs* causes neurotoxic shellfish poisoning. Previous blooms have affected scallops, surfclams, oysters, southern quahogs, coquinas, tunicates, commercial and recreational species of fish, sea birds, sea turtles, manatees, and dolphins. *A. monilata* blooms have impacted oysters, coquinas, mussels, gastropods, and fish (Anderson, 2006).

4.3.2 Benthic Invertebrates

The sediment and fine sand bottom present in the project study area provides habitat for multiple species of infaunal and epifaunal invertebrates. Several species of polychaete worms were found to be dominant in parts of the project study area with this type of habitat (USEPA, 1991).

The benthic invertebrate community of the Gulfport Harbor area was characterized by dredged material disposal surveys for the navigation channel conducted in 1993 and 2004. A total of 152 taxa were collected during infauna sampling in 1993, 155 taxa during spring collections, and 82 taxa during fall collections in 2004 (USACE, 1994; CH2M HILL, 2004).

Annelids (specifically polychaetes) dominated the benthic community during both sampling years. The most dominant polychaete species were *Magelona* spp. and *Paraprionospio pinnata*. Vittor reported similar results in a Mississippi Sound comprehensive benthic invertebrate study in 1980, with a single polychaete (*Myriochele oculata*) comprising over 40 percent of all organisms encountered during the survey (over 198,000 specimens) (Vittor, 1981).

In a more recent survey, the ecological structure of the nearshore benthic invertebrate community was addressed during two sampling cruises in 2004 (CH2M HILL, 2004). This survey was conducted in support of an ODMDS siting project. During that assessment, benthic infauna diversity was calculated using the Shannon-Wiener Index (H'), which is a diversity index that can be used to evaluate the composition of the benthic community. For the Shannon-Wiener Index ($\log_2$), a $H' < 1$ usually indicates some degradation, while $H' > 3$ usually indicates relatively unimpacted waters (Brewer, 1994). During the spring of 2004, all of the $\log_2$ H' values at sampling sites were above 3, suggesting that the waters were unimpacted. In the fall, diversity was substantially lower at all stations compared to the spring results, likely because of Hurricane Ivan, a Category 3/4 hurricane, passing through the Gulfport area in mid-September 2004. This storm and Hurricane Katrina caused substantial coastal change along the barrier islands. The storm likely impacted the substrates and affected the composition of benthic communities. Those communities are likely currently in a recovery phase.

The Mississippi Department of Environmental Quality (MDEQ, 2006a) conducted yearly benthic invertebrate surveys in Mississippi Sound from 2000 through 2004. The results of these surveys identified 260 species (8,071 individuals) from 18 major classes (12 phyla) of marine benthic invertebrates taken in the areas close to the navigation channel. These results are presented in Table 4-2.

These results indicate that annelids (specifically polychaetes) constitute the largest percentage of the benthic community in this area. These organisms accounted for over

59 percent of the benthic community for the combined invertebrates sampled over the 5-year period. Bivalves (e.g., oysters, clams, and mussels) represented the next major group of benthic invertebrates, encompassing over 12 percent of the benthic community for the combined sampling period. Other substantial contributions to the community were represented by malacostracans (crabs, shrimp, etc.), brittle stars, and ribbon worms.

TABLE 4-2
Benthic Invertebrates Collected in Mississippi Sound from 2000 to 2004
Gulfport Harbor Navigation Channel Final Supplemental EIS

Phylum	Class	Common Name	Number Collected	Percentage of Total
ANNELIDA			4861	60.23%
Annellida	Polychaeta	Bristle worms	4786	59.30%
Annelida	Oligochaeta	Oligochaetes	75	0.93%
MOLLUSCA			1330	16.48%
Mollusca	Bivalvia	Oysters, clams, mussels	993	12.30%
Mollusca	Gastropoda	Snails, nudibranchs, sea slugs	337	4.18%
ARTHROPODA			505	6.26%
Arthropoda	Malacostraca	Crabs, shrimp, etc.	381	4.72%
Arthropoda	Ostracoda	Seed shrimp	102	1.26%
Arthropoda	Cirripedia	Barnacles	18	0.22%
Arthropoda	Insecta	Insects	4	0.05%
ECHINODERMATA			414	5.13%
Echinodermata	Ophiuroidea	Brittle stars	413	5.12%
Echinodermata	Echinoidea	Sea urchins, sand dollars, sea biscuits	1	0.01%
OTHER INVERTEBRATES			961	11.91%
Nemertea		Ribbon worms	501	6.21%
Cnidaria	Anthozoa	Anemones and coral	259	3.21%
Phoronida		Horseshoe worms	106	1.31%
Sipuncula	Sipunculida	Peanut worms	42	0.52%
Hemichordata	Enteropneusta	Acorn worms	36	0.45%
Platyhelminthes	Turbellaria	Flatworms	13	0.16%
Bryozoa	Gymnolaemata	Moss animals	3	0.04%
Chaetognatha	Sagittoidea	Arrow worms	1	0.01%

Source: MDEQ, 2006a

4.3.3 Fish

The fish community present in the vicinity of the Gulfport Navigation Channel represents a wide array of species from both nearshore and offshore taxa. Christmas and Waller (1973) report that 98 percent of the fishes collected in Mississippi Sound were also present in offshore trawl samples. The majority of the fish species present are estuarine-dependent for part of their life cycle. Typically, these species spawn in the Gulf of Mexico and the larvae are carried inshore to estuaries to mature (USACE, 1989). These small, immature forms (ichthyoplankton) are susceptible to flow regime changes around the barrier islands (Ship, Cat, and the Chandeleur Islands) where the surrounding grassbeds provide nursery grounds. Ichthyoplankton are present in highest numbers during the spring and summer.

The major commercial fisheries of the area, in terms of quantity captured, include Gulf menhaden (*Brevoortia patronus*), striped mullet (*Mugil cephalus*), and Atlantic croaker (*Micropogonias undulatus*) (USACE, 1989; Hoese and Moore, 1998). Gulf menhaden is a commercially important species typically harvested from April to October as they move inshore from offshore wintering grounds on the continental shelf (Pattillo et al., 1997). Larvae can begin migration into estuaries in October and continue through late May, while adults and maturing juveniles migrate from estuaries to open Gulf waters to overwinter and reproduce, with peak movement occurring from October to January (Pattillo et al., 1997).

Striped mullet is another commercially important species, and juveniles enter estuarine areas from November through February. Adults move offshore in Gulf waters to overwinter and spawn from October to March; peak spawning occurs in November and December (Pattillo et al., 1997). The Atlantic croaker is the most important commercial species of bottomfish, and major harvesting areas are located between Mobile Bay, Alabama and Calcasieu Lake, Louisiana (Pattillo et al., 1997). Larvae are carried by longshore currents into nearshore areas from October through May, peaking between November and February (Pattillo et al., 1997). Offshore movement by juveniles and adults begins in late March and continues until November. Spawning occurs from September to May, peaking in October (Pattillo et al., 1997).

Christmas and Waller (1973) reported 138 species of finfish taken from Mississippi Sound. The most abundant species was the bay anchovy (*Anchoa mitchilli*), accounting for more than 70 percent of the reported catch. The USACE (1984) identified Ship Island Pass as an important migratory route between Lake Borgne, western Mississippi Sound, and the Gulf of Mexico for fish. Fish populations were more heavily congregated toward the Lake Borgne/western Mississippi Sound area than in the vicinity of the Gulfport Channel. The MDEQ conducted a fishery trawl survey in Mississippi Sound in 2004. This survey identified 29 species of finfish near the navigation channel (Table 4-3).

4.3.4 Mollusks

Important bivalves in the northern Gulf of Mexico include bay scallop (*Argopecten irradians*), Eastern oyster *(Crassostrea virginica),* and hard clam (*Mercenaria* sp.). These species typically inhabit nearshore coastal areas where they feed on phytoplankton and detritus.

TABLE 4-3
Finfish Collected in Mississippi Sound
Gulfport Harbor Navigation Channel Final Supplemental EIS

Scientific Name	Common Name
Anchoa mitchilli	Bay anchovy
Anchoa hepsetis	Striped anchovy
Arius felis	Hardhead catfish
Bagre marinus	Gafftopsail catfish
Bairdiella chrysoura	Silver perch
Brevoortia patronus	Gulf menhaden
Caranx hippos	Common jack
Chloroscombrus chrysurus	Atlantic bumper
Citharichthys spilopterus	Bay whiff
Cynoscion arenarius	White trout
Dasyatis sabina	Atlantic stingray
Etropus crossotus	Hogchoker
Harengula pensacolae	Scaled sardine
Lagodon rhomboids	Pinfish
Leiostomus xanthurus	Spot
Lutjanus campechanus	Red snapper
Micropogonius undulatus	Atlantic croaker
Opisthonema oglinem	Threadfin herring
Orthopristis chrysoptera	Pigfish
Paralichthys lethostigma	Southern flounder
Peprilus alepidotus	Harvestfish
Peprilus burti	Gulf butterfish
Porichthys porosissimus	Atlantic midshipman
Rhinoptera bonasus	Cownose ray
Selene setapinnis	Atlantic moonfish
Selene vomer	Lookdown
Sphaeroides nephelus	Smooth puffer
Symphurus plagiusa	Blackcheek tonguefish
Synodus foetens	Inshore lizardfish

Source: MDEQ, 2006a.

All life stages of the bay scallop are estuarine and marine in nearshore, subtidal waters. They have been collected in water ranging in depth from 0 to 33 ft (0 to 10 m) down to a maximum of 59 ft (18 m), but are most abundant in waters 1 to 2 ft (0.3 to 0.6 m) deep at low tide. The bay scallop may occur in shallow waters near the Chandeleur Islands (Pattillo et al., 1997).

The Eastern oyster is one of the more valuable shellfish resources of the Mississippi Gulf coast. The oysters inhabit shallow estuarine waters during all life stages. The MDMR manages 17 natural oyster reefs (MDMR, 2006). The areal extent of oyster reefs in Mississippi is estimated at approximately 10,000 to 12,000 acres, of which approximately 7,400 acres are located in western Mississippi Sound (Mississippi Department of Wildlife, Fisheries and Parks [MDWFP], 2005). Approximately 97 percent of the commercially harvested oysters in Mississippi come from the reefs in western Mississippi Sound, primarily from Pass Marianne, Telegraph, and Pass Christian reefs. No actively managed oyster reefs are present in or near the Gulfport Navigation Channel (MDMR, 2006). Habitat at the channel is not suitable for the oyster. There are non-productive oyster seed grounds that overlap the northern tip of the Chandeleur Islands on the western side of the islands; the habitat is not suitable for oysters (LDNR, 2005).

The hard clam is an estuarine and marine species most often found in coastal bays from intertidal zones to 50 ft (15 m). They may be found in open ocean, but prefer shallow waters (<33 ft or 10 m). Juvenile and adult clams occur primarily in soft bottom habitats of sand and mud. Spawning coincides with high concentrations of plankton during spring, fall, and winter (Pattillo et al., 1997).

Other mollusks of abundance in Mississippi Sound include various gastropods (snails, limpets, nudibranchs, and sea slugs) and cephalopods (octopods and squids).

4.3.5 Crustaceans

Three commercially important species of shrimp are found in Mississippi coastal waters: the brown shrimp *(Penaeus aztecus)*, the pink shrimp (*Penaeus duorarum),* and the white shrimp *(Penaeus setiferus).*

The life histories of these species are generally similar, although the time of spawning varies with each species. Mating takes place in shallow offshore waters, while actual spawning takes place in deeper offshore waters. The eggs are released and fertilized externally in the water. Within 24 hours, fertilized eggs hatch into a microscopic larva known as a nauplius. Development to the postlarval stage takes several weeks. All of the developmental stages are found in the offshore plankton. The larvae are capable of little horizontal, directional movement and are unable to swim independently of the water currents. Larvae are phototactic, moving up and down in the water column in response to light conditions. Shrimp migrate via currents from offshore waters to coastal bays during the last planktonic stage and enter estuarine nursery grounds as postlarvae. Postlarvae have well developed swimming capabilities. Once they move into brackish waters, the postlarvae abandon their planktonic way of life and become part of the benthic community.

Postlarval and juvenile shrimp occupy shallow, brackish waters where they feed and grow. Young shrimp remain in the estuary until they approach maturity. Adult shrimp migrate offshore to spawn, and the cycle is repeated.

As noted above, there are seasonal variations in the spawning times of pink, brown, and white shrimp. Brown postlarvae enter Mississippi Sound in large numbers during the spring, with a smaller wave of migration in the fall. White and pink shrimp postlarvae arrive during the summer and fall, with white postlarvae being more abundant. Of the three species, white shrimp spawn closest to inshore waters and brown shrimp the greatest distance from shore (Perry, 2004). Brown shrimp inhabit offshore waters ranging from 45 to 360 ft (14 to 110 m) in depth. Mature pink shrimp inhabit deep offshore waters, and the highest concentrations occur in depths of 33 to 145 ft (9 to 44 m). White shrimp adults are typically found in nearshore waters rarely exceeding 90 ft (27 m) in depth and generally become most abundant at about 45 ft (14 m) in depth (Pattillo et al., 1997).

Typically, approximately 85 percent of Mississippi's harvest is brown shrimp. Brown shrimp are most abundant from June to October and can be found in inshore and offshore waters. White shrimp, found in shallower waters with mud bottoms, are caught mostly during daylight hours during the fall months. Pink shrimp are usually found in higher-salinity waters and are generally caught at night. These shrimp are most abundant in winter and early spring. Water temperatures, salinity, available food, and habitat area affect the size of the shrimp harvest. The most productive times are those when water conditions are warm and brackish, i.e., in the spring (MDMR, 2006).

The blue crab (*Callinectes sapidus*) is another important commercial and recreational crustacean. The blue crab spends most of its life in bays, brackish estuaries, and nearshore areas in the Gulf of Mexico. Spawning occurs near the mouths of estuaries or in open water (Pattillo et al., 1997). Crabs have a long spawning period in Mississippi and egg-bearing crabs may be found in all but the coldest months. Females with eggs are found around barrier islands in large numbers during the summer (MDMR, 2006). Eggs hatch near those areas and planktonic zoeal larvae are carried offshore for up to 1 month. Once metamorphosis to the megalopa stage is complete, they re-enter estuarine waters to develop before molting into the crab stage. Spawning activity is greatest in late spring and late summer. Most adult crabs move to deeper waters during winter (Pattillo et al., 1997).

Other crustacean species in the area were noted during two cruises conducted in the vicinity of the ODMDS siting study in 2004. Eighteen species of crustaceans were collected in the survey. These species represented a variety of amphipods, isopods, shrimps, and crabs (Table 4-4).

4.3.6 Hard Bottom Habitats

Hard bottom habitats serve as important spawning areas for fish species and support unique communities of marine organisms. According to the MMS, "hard" or "live" bottom habitat refers to "those areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, or corals living upon or attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna" (Thompson et al., 1999).

TABLE 4-4
Crustaceans Collected in the Vicinity of Gulfport Federal Navigation Channel
Gulfport Harbor Navigation Channel Final Supplemental EIS

Species	Common Name
Amphipoda (scuds)	
Gammarus sp	Gammarid amphipod
Isopoda (sowbugs)	
Limnoria tripunctata	Southern gribble
Stomatopoda (mantis shrimps)	
Squilla empusa	Common mantis shrimp
Decapoda (shrimps and crabs)	
Lucifer faxoni	Lucifer shrimp
Lysmata wurdemanni	Peppermint shrimp
Penaeus aztecus	Brown shrimp
Penaeus duorarum	Pink shrimp
Penaeus setiferus	White shrimp
Upogebia affinis	Mud shrimp
Clibanarius vittatus	Thinstripe hermit crab
Calappa flammea	Flame box crab
Calappa sulcata	Yellow box crab
Callinectes sapidus	Common blue crab
Pagurus pollicaris	Flatclaw hermit crab
Persephona mediterranea	Mottled purse crab
Porcellana sayana	Spotted porcelain crab
Portunus gibbesii	Iridescent swimming crab
Speocarcinus lobatus	Gulf square back crab

No hard bottom habitats are located within Mississippi Sound. A small portion of the bottom marine habitats approximately 3 miles south of Mississippi's barrier islands is composed of rock outcrops and consolidated features. Most hard bottom habitats lie east of the Mississippi coast, although some calcareous outcrops occur south of Biloxi in 60 ft of water and along most of the continental shelf within the 150- to 300-ft depth. Small, isolated patches of lag deposits composed of shell and rock gravel are found off the south sides of the Mississippi barrier islands (MDWFP, 2005).

4.3.7 Submerged Aquatic Vegetation

Mississippi Sound encompasses an area of 4,792 km^2 (1,850 mi^2) and contains 12,140 ha (46.9 mi^2) of submerged aquatic vegetation (SAV) (USEPA, 1999). Seagrasses represent the primary component of submerged aquatic vegetation. Seagrass communities exist around most barrier islands off the coasts of Louisiana, Mississippi, and Alabama, including those nearest Cat Island and the Chandeleur Islands. Approximately 810 ha (3.1 mi^2) of seagrass beds have been identified along coastal Mississippi (MDWFP, 2005). Figure 4-1 shows seagrass distribution in Mississippi Sound near the navigation channel.

Historically, seagrass beds occurred on the western side the Chandeleur Islands, protected from channeling and tidal scour. Tropical storms and hurricanes have greatly impacted the acreage totals of seagrass species at the Chandeleur Islands. As a result of Hurricane Katrina, the island chain was reduced in size by 50 percent to as much as 85 percent, destroying most of the existing seagrass beds, especially those on the northern end of the chain (Louisiana Sea Grant, 2009).

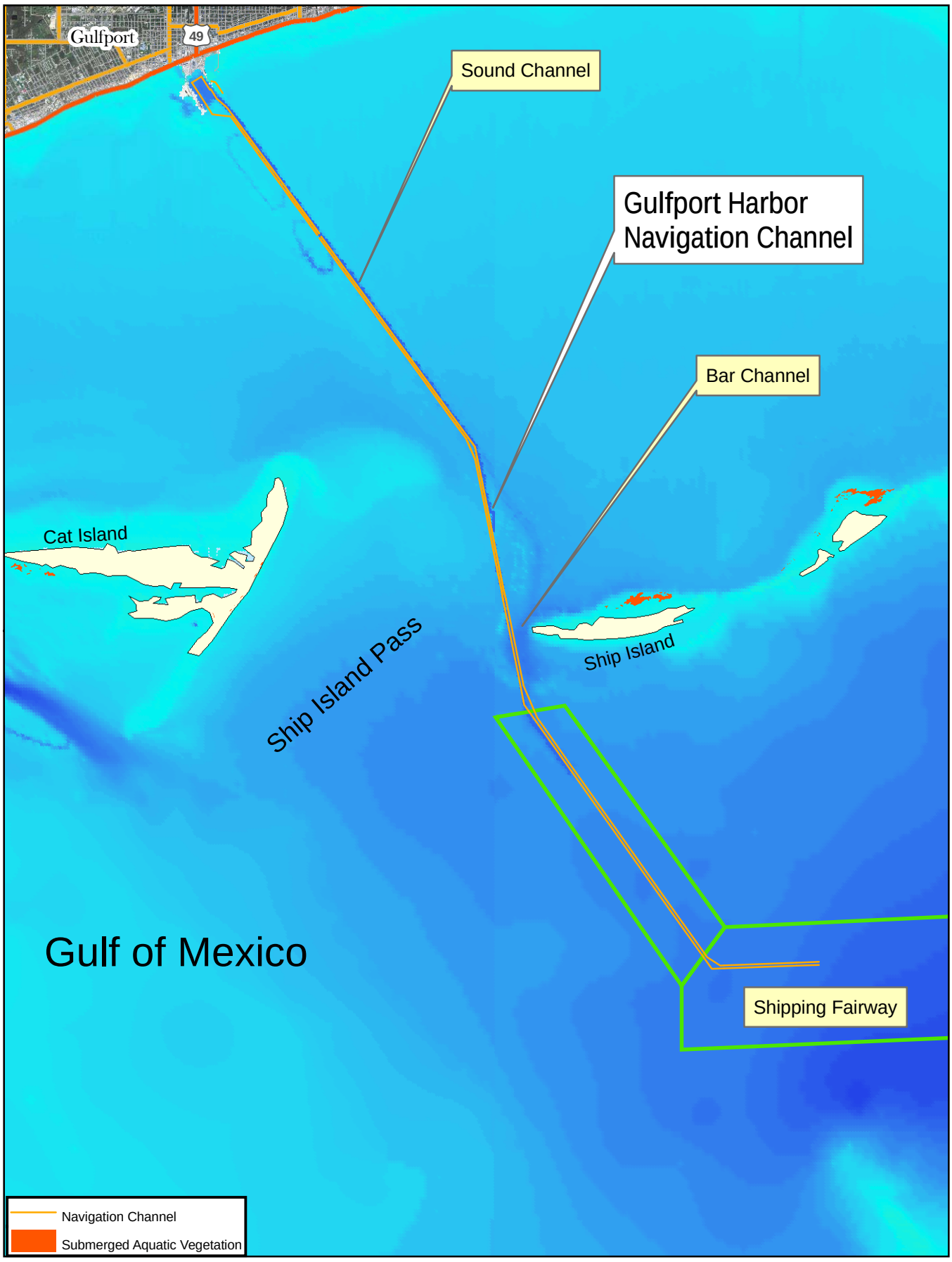

Figure 4-1
Submerged Aquatic Vegetation
Gulfport Harbor Navigation Channel Final Supplemental EIS

CH2MHILL

\\Boomer\H\projects3\Gulfport\mxd\Vegetation.mxd, June 6, 2007, RKENT2

Seven species of seagrasses can be found in the Gulf of Mexico. They include shoal grass (*Halodule wrightii*, also known as *Halodule beaudettei*), clover grass (*Halophila decipiens*, *H. johnsonii*, *H. engelmanni*), manatee grass (*Syringodium filiforme*, also known as *Cymodocea filiformis*), widgeon grass (*Ruppia maritima*), and turtle grass (*Thalassia testudinum*). Most seagrass meadows also include many species of epiphytic and drift algae (Gulf of Mexico Fishery Management Council, 2004).

The primary determinant of seagrass presence and productivity is light availability, which is determined by the interaction of water depth and water clarity. Seagrass presence is also influenced by sediment characteristics, salinity, wave energy, and water depth. Muddy substrates are generally preferred, but both shoalgrass and turtle grass grow in sandy substrates. Clover grass grows in highly polluted areas and nearly liquid mud. Low-energy, shallow water areas with restricted circulation are prime areas for seagrasses. Salinity tolerances vary from nearly freshwater to 45 parts per thousand (ppt) depending on the species (Gulf of Mexico Fishery Management Council, 2004). Turtle and manatee grasses tolerate salinities of 20-36 ppt. Shoal grass is tolerant of harsher conditions (i.e., higher wave energy) than the other species, but prefers lower salinity (10-25 ppt). Widgeon grass prefers fresh and brackish waters (Turner et al., 2005). In most Gulf of Mexico estuaries, turbidity restricts seagrasses to water depths of less than 10 ft (3 m), although in very clear water areas (e.g., the Florida Keys) seagrasses can be found in depths as great as 100 ft (30 m) (Gulf of Mexico Fishery Management Council, 2004).

Mississippi coastal waters contain three submergent bed types: barrier island seagrass, widgeon grass, and American wildcelery (*Vallisneria americana*) beds. Mississippi barrier island seagrass beds originally contained shoal, turtle, and manatee grasses, although some species have become rare. The beds occur in the less turbid, moderately saline habitats on the north side of barrier islands (MDWFP, 2005). Widgeon grass beds occur in shallow, moderate turbidity waters that are low in salinity. These beds occur in bays, along bayous, and in mudflats and barrier island ponds. Size and distribution of widgeon grass beds have varied over time due to damage from hurricanes. American wildcelery prefers freshwater or nearly freshwater and is typically found in the upper reaches of estuarine bayous and streams (MDWFP, 2005). On the Chandeleur Islands, typical species include manatee grass, turtle grass, shoal grass, and widgeon grass (Louisiana State Parks.com accessed March 25, 2008).

Although not technically a seagrass bed, macroscopic algae bed communities historically occurred in coastal Mississippi waters near Cat Island. These beds consist of macrophytic red algae 1 to 2 ft in length attached to benthic shell material. The presence of this community has not been recorded in recent years (MDWFP, 2005).

Seagrass meadows are highly productive and valuable habitats. They serve as important nurseries for numerous fish species, dampen wave action, reduce erosion, and promote water clarity while increasing bottom area and providing a surface upon which epiphytes and epibenthic organisms can live. They also serve as a nursery, refuge, and food source for juvenile invertebrates and fish, as well as prime foraging habitat for adults of many species of fish (Gulf of Mexico Fishery Management Council, 2004).

Fish in seagrass beds include permanent or seasonal residents, temporal migrants, and transients. Permanent residents include relatively sessile species such as gobies, while

seasonal residents include those fish and invertebrates that use the beds as nursery or spawning grounds (e.g., drums, snappers, and grunts). Throughout the Gulf, red drum and penaeid shrimp use seagrass meadows as nursery and foraging habitat. Large offshore or oceanic fish such as mackerels and jacks are also present in seagrass habitats from time to time (Gulf of Mexico Fishery Management Council, 2004).

4.3.8 Marine Mammals

Twenty-seven marine mammal species including the West Indian manatee (*Trichechus manatus*) and 26 dolphin and whale species occur in the Gulf of Mexico (Table 4-5). The more common marine mammals found along the shelf of the northern Gulf include bottlenose dolphins (*Tursiops truncatus)*, Atlantic spotted dolphins (*Stenella frontalis*), and spinner dolphins (*Stenella longirostris*) (Kinsinger, 2006), and these animals are routinely sighted in nearshore areas and along the barrier islands.

TABLE 4-5
Marine Mammals Occurring in the Gulf of Mexico
Gulfport Harbor Navigation Channel Final Supplemental EIS

Scientific Name	Common Name
Balaenoptera acutorostrata	Minke whale
Balaenoprera borealis	Sei whale[a]
Balaenoptera edeni	Bryde's whale
Balaenoptera physalus	Fin whale[a]
Feresa attenuate	Pygmy killer whale
Globicephala macrorhynchus	Short-finned pilot whale
Grampus griseus	Risso's dolphin
Kogia breviceps	Pygmy sperm whale
Kogia simus	Dwarf sperm whale
Lagenodelphis hosei	Fraser's dolphin
Megaptera novaeangliae	Humpback whale[a]
Mesoplodon bidens	Sowerby's beaked whale
Mesoplodon densirostris	Blainville's beaked whale
Mesoplodon europaeus	Gervais' beaked whale
Orcinus orca	Killer whale
Peponocephala electra	Melonheaded whale
Physeter macrocephalus	Sperm whale[a]
Pseudorca crassidens	False killer whale
Stenella attenuate	Pantropical spotted dolphin
Stenella clymene	Clymene dolphin
Stenella coeruleoalba	Striped dolphin
Stenella frontalis	Atlantic spotted dolphin
Stenella longirostris	Spinner dolphin
Steno bredanensis	Rough toothed dolphin
Trichechus manatus	West Indian manatee[a]
Tursiops truncates	Atlantic bottlenose dolphin
Ziphius cavirostris	Cuvier's beaked whale

Data from National Marine Fisheries Service (NMFS), 1999 and Texas Marine Mammal Stranding Network (TMMSN), 1999.
[a] Protected under the Endangered Species Act (ESA) of 1973 as endangered.

In recent years, the West Indian manatee has become a more common transient, frequently migrating from Florida along the coast as far as Louisiana in warmer weather. There have been about 110 reported sightings of the West Indian manatee in Louisiana since 1975, with

numbers increasing in recent years (Louisiana Department of Wildlife and Fisheries, 2007). Other marine mammal species that are inhabitants of the deeper waters off the continental shelf may occasionally be encountered in Mississippi Sound or farther out on the shelf, but these animals would be transients rather than residents. No regular sightings of these species occur near the project study area. Baumgartner et al. (2001) observed that only two species, bottlenose dolphin and pantropical spotted dolphin, regularly occur on the continental shelf. They further determined that Risso's dolphin, pygmy sperm whale, and dwarf sperm whale tend to remain along the upper continental slope in waters deeper than 200 m (656 ft) during the spring and that the sperm whale remained farther out in deeper waters and would not venture onto the continental shelf (Baumgartner et al., 2001).

Several species of marine mammal that occur in the Gulf of Mexico are protected under the ESA of 1973, as amended, or under the Marine Mammal Protection Act of 1972 (NMFS, 1999; TMMSN, 1999). The north Atlantic population of northern bottlenose dolphin is protected under the Marine Mammal Protection Act of 1972, but the Gulf of Mexico population is considered to be at risk and is not so managed (NMFS, 1999).

Mississippi Sound is home to the largest stable population of Atlantic Bottlenose dolphins in the world. This is due in part to its warm, protected waters. Bottlenose dolphins inhabiting different areas of the bays and sounds form distinct communities. Seasonal migration of bottlenose dolphins is indicated by changes in abundance within a population in Mississippi Sound. It is likely that interbreeding can occur between the Mississippi Sound dolphins and those that typically remain in the northern Gulf of Mexico (Institute for Marine Mammal Studies [IMMS], 2006).

4.3.9 Marine and Coastal Birds

The Gulf Islands National Seashore (GINC) includes several diverse ecological communities which attract a variety of bird life. The offshore barrier islands, specifically Cat Island and Ship Island, consist of estuarine habitat near shore and open beaches, pond/pool complex, dunes, marshes, wooded inland, and seagrass beds offshore (Gulf Ecological Management Site [GEMS], 2006; NPS, 1994). More than 280 species of birds have been identified within the GINC boundaries since its establishment in 1971. Twenty-three common, (5-25 individuals per day), permanent resident birds have been identified on and around the Mississippi barrier islands (USGS, 2006a; NPS, 1994).

4.3.9.1 Barrier Island Species

The Chandeleur Islands, part of the Breton National Wildlife Refuge, the second oldest refuge in the country, was established in 1904. The refuge was established to: provide a sanctuary for nesting and wintering seabirds; provide a sandy beach habitat for numerous wildlife species; and preserve the natural wilderness of the islands. Loss of habitat since 1998 has severely reduced the amount of land and area that can be used by coastal birds and marine life (LA State Parks.com, 2008).

The barrier islands near the navigation channel represent the primary marine and coastal bird habitat in the vicinity of the navigation channel. They provide excellent feeding, resting, and wintering habitat for numerous types of resident and migratory bird species, such as the brown pelican, white pelican, and cormorants. This area is also known to be a rookery for the least tern and black skimmer (GEMS, 2006). These islands, Cat and Ship,

have also been designated critical habitat for the wintering piping plover (U.S. Fish and Wildlife Service [USFWS], 50 Code of Federal Regulations [CFR] Part 17).

The brown pelican (*Pelecanus occidentalis*) habitat is near shore and it feeds mostly in shallow estuarine waters. The American white pelican *(Pelecanus erythrorhynchos)* often forages in shallow water and usually nests in open areas, though it may also use dredge spoil or natural islands. The double-crested cormorant (*Phalacrocorax auritus)* habitat includes marine islands, coastal bays, and seacoasts; usually within sight of land (Nature Serve Explorer, 2006).

The least tern (*Sterna antillarum*) requires open sandy coastal beaches, and river sandbars for nesting. It nests in scrapes in sand above ordinary tides. Least terns breed during the summer months, and the largest colony of breeding terns is located at Gulfport (Nature Serve Explorer, 2006).

The black skimmer (*Rynchops niger*) nests primarily near coasts on sandy beaches, coastal and estuary islands, on wrack and drift of salt marshes, and on dredged material sites. They usually nest in association with or near terns (Nature Serve, 2006).

The Mississippi Sandhill Crane National Wildlife Refuge is approximately 30 miles east of Gulfport. This refuge provides protection and allows management of the Mississippi sandhill cranes (*Grus canadensis pulla)* as well as preserving the wet pine savanna communities (USFWS, 1992).

4.3.10 Rare, Threatened, and Endangered Species

Several species of rare, threatened, and endangered marine mammals, turtles, fish, and birds occur in the Gulf of Mexico off the coast of Gulfport. Table 4-6 lists the species and their classification status under the ESA (USFWS, 2006; Mississippi Museum of Natural Science [MSMNS], 2006). In addition, the bald eagle (*Haliaeetus leucocephalus*) is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668).

TABLE 4-6
Threatened and Endangered Species in the Vicinity of the Proposed Action
Gulfport Harbor Navigation Channel Final Supplemental EIS

Scientific Name	Common Name	Federal Classification
Mammals		
Baleaenoptera physalus	Finback whale	Endangered
Megaptera novaeangliae	Humpback whale	Endangered
Trichechus manatus	West Indian manatee	
Birds		
Charadrius melodus	Piping plover	Threatened
Pelecanus occidentalis	Brown pelican	Endangered
Sterna antillarum	Least tern	Endangered
Reptiles		
Caretta caretta	Loggerhead sea turtle	Threatened
Chelonia mydas	Green sea turtle	Threatened

TABLE 4-6
Threatened and Endangered Species in the Vicinity of the Proposed Action
Gulfport Harbor Navigation Channel Final Supplemental EIS

Scientific Name	Common Name	Federal Classification
Dermochelys coriacea	Leatherback sea turtle	Endangered
Eretmochelys imbricate	Hawksbill sea turtle	Endangered
Lepidochelys kempii	Kemp's Ridley sea turtle	Endangered
Pseudemys alabamensis	Alabama red-bellied turtle	Endangered
Fish		
Acipenser oxyrinchus desotoi	Gulf sturgeon	Threatened

Sources: USFWS, 2006; MSMNS, 2006

4.3.10.1 Mammals

Three marine mammals were listed by the NMFS: finback whale, humpback whale, and West Indian manatee. The MSMNS reports that both whales are known to visit the Gulf of Mexico (MSMNS, 2006). The largest numbers of finback whales are found 25 miles or more from shore. The humpback whales prefer pelagic habitats but sometimes frequent inshore areas such as bays. The West Indian manatees prefer rivers and estuaries but also inhabit shallow coastal waters (Nature Serve, 2006).

4.3.10.2 Birds

The ranges of four species of protected birds overlap with the Gulfport shipping channel: piping plover, bald eagle, brown pelican, and least tern. Approximately 35 percent of the piping plover's total breeding population winters on the Gulf coast (Figure 4-2). According to the Federal Register of July 10, 2001, the USFWS has designated Gulfport Harbor, Cat Island, and East and West Ship Island and the Chandeleur Islands as critical habitat for the wintering piping plovers (USFWS, 50 CFR Part 17). Although bald eagles nest close to shore, they avoid areas with nearby human activity (i.e., boat traffic) and development. The brown pelican habitat is near shore and it feeds mostly in shallow estuarine waters. The least tern's habitat is also near shore. Least terns breed during the summer months (May through August), and the largest colony of breeding terns is located at Gulfport (Nature Serve, 2006).

4.3.10.3 Reptiles

Five species of sea turtles listed as threatened or endangered occur in the project study area: loggerhead, green, leatherback, hawksbill, and Kemp's ridley. These species are highly migratory and might be affected by the Proposed Action. Loggerheads have a wide distribution and migrate between nesting beaches and marine waters. More than half of nesting female loggerheads in the U.S. nest along Florida's east coast and migrate to the Gulf of Mexico and West Indies for non-nesting periods (Nature Serve, 2006). The green turtle is distributed worldwide but the principal United States nesting areas are in eastern Florida, with nesting occurring from March through October. Adults of both sexes are presumed to migrate between nesting and foraging habitats along corridors adjacent to coastlines and reefs (NMFS, 2003).

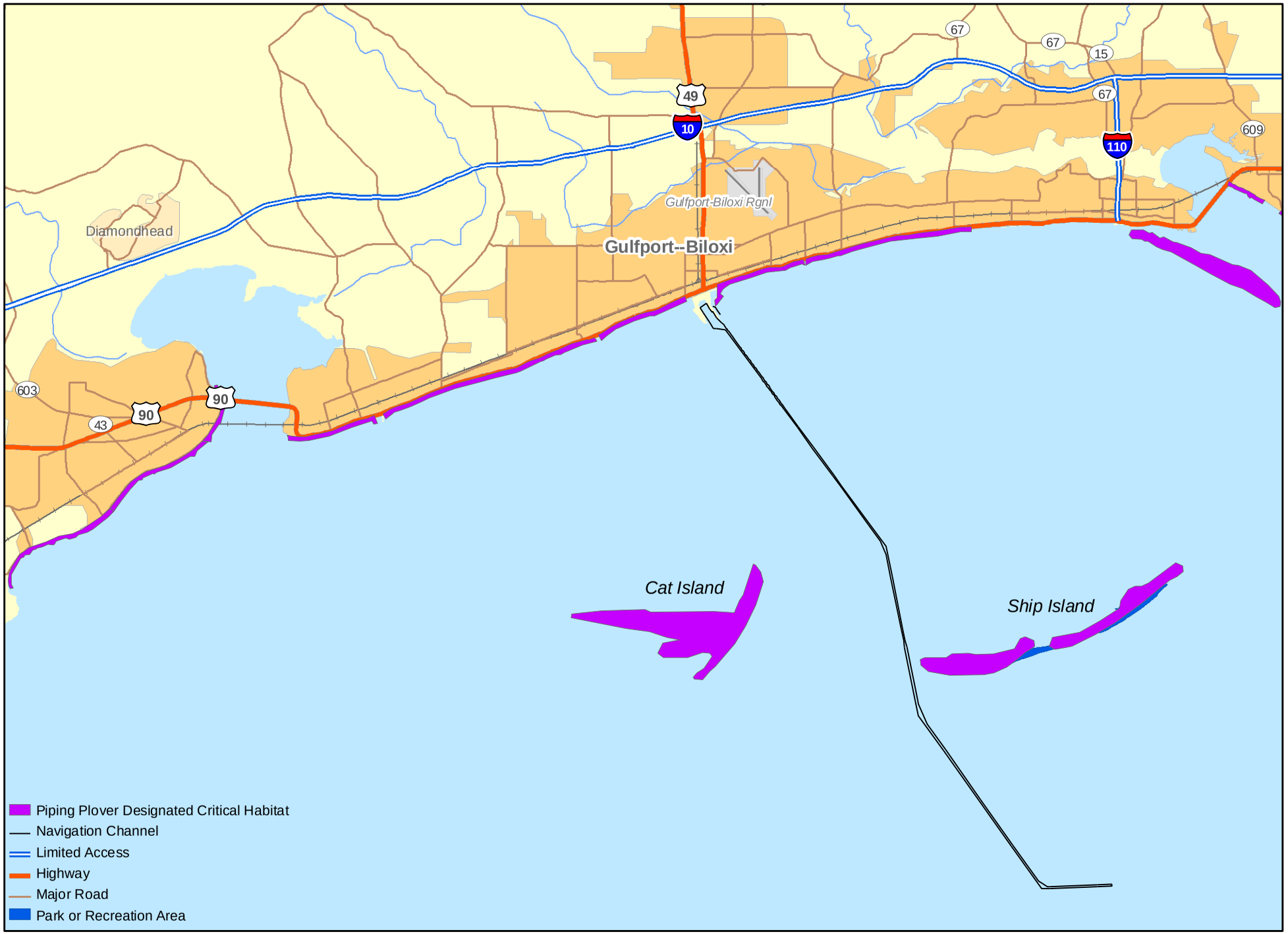

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Figure 4-2
Piping Plover Critical Habitat
Gulfport Harbor Navigation Channel Final Supplemental EIS

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Distribution of leatherback turtles is widespread. They prefer the open ocean, often near the edge of the continental shelf. They seldom approach land except for nesting. Though leatherback nesting is concentrated in the western Caribbean, the turtles also nest along the shores of the Gulf of Mexico. The hawksbill turtle lives in clear shallow coastal waters with rocky bottoms and infrequently travels to shallow coastal systems with soft bottoms and high turbidity. Kemp's ridley is considered the most endangered of all sea turtles because there is only one known major nesting area, which is along the Mexican portion of the Gulf coast. They prefer shallow coastal and estuarine waters, usually over sand or mud bottoms. Most of the adults stay in the Gulf of Mexico, while the juveniles usually inhabit the Gulf and Atlantic coasts (NMFS, 2003).

In 2005, the Sea Turtle Stranding and Salvage Network (STSSN) listed three stranded turtles, one loggerhead and two Kemp's ridley, in the inshore area from eastern Louisiana to western Alabama (STSSN, 2005). Stranded turtles are defined as turtles which wash ashore dead or alive, or are found dead or alive usually in a weakened condition (STSSN, 2005).

The NMFS, in consultation with the USACE (Mobile, New Orleans, Galveston, and Jacksonville Districts), developed a Regional Biological Opinion (RBO) to address incidental take of sea turtles and Gulf sturgeon (*Acipenser oxyrinchus desotoi*) by the USACE during hopper dredging of channels and sand mining areas in the Gulf of Mexico in 2003 (NMFS, 2003). The RBO and resulting management protocols were revised in 2005 and 2007 (NMFS, 2005; NMFS, 2007). In the Gulf of Mexico (U.S.-Mexico border to Key West, Florida), for all channel dredging and sand mining by hopper dredges, the NMFS allows incidental take of a total of 20 Kemp's ridley turtles, 14 green turtles, 4 hawksbill turtles, and 40 loggerhead sea turtles. NMFS anticipated the annual incidental take of three Kemp's ridley, three green, one hawksbill, and five loggerhead sea turtles in the Florida Panhandle coastal area, west of the Aucilla River, in the Alabama coastal area, and in the Mississippi coastal area, as shown in Figure 4-3 (NMFS, 2007). Once a certain level of the incidental take limit of a species has been reached during hopper dredging operations, the RBO requires that USACE implement relocation trawling to remove sea turtles and/or Gulf sturgeon from dredging areas. USACE would begin relocation trawling if 4 of any sea turtle species were taken, if 75 percent of the allowable incidental take limit for a given species were reached, or a single Gulf sturgeon were taken. The current RBO stipulates that the annual incidental non-lethal take in all navigation channel and sand mining areas is less than 300 sea turtles and 8 Gulf sturgeon by relocation trawling (NMFS, 2007).

One species of freshwater/estuarine turtle, the Alabama red-bellied turtle, has the potential to occur in the immediate vicinity of Gulfport Harbor near the Alabama coast. The turtle inhabits the waterways of the lower portion of the Mobile Bay drainage in Baldwin and Mobile Counties, Alabama (USFWS, 1989; Mount, 1975). The turtle prefers habitats with broad, vegetated expanses of shallow water in the backwater areas of bays and rivers (USFWS, 1989). The turtles are most abundant in freshwater and moderately brackish water and are not considered a salt marsh species (Mount, 1975). The turtles prefer areas with snags and dense beds of emergent and submerged aquatic vegetation for cover, food, and thermoregulation by basking (USFWS, 1989).

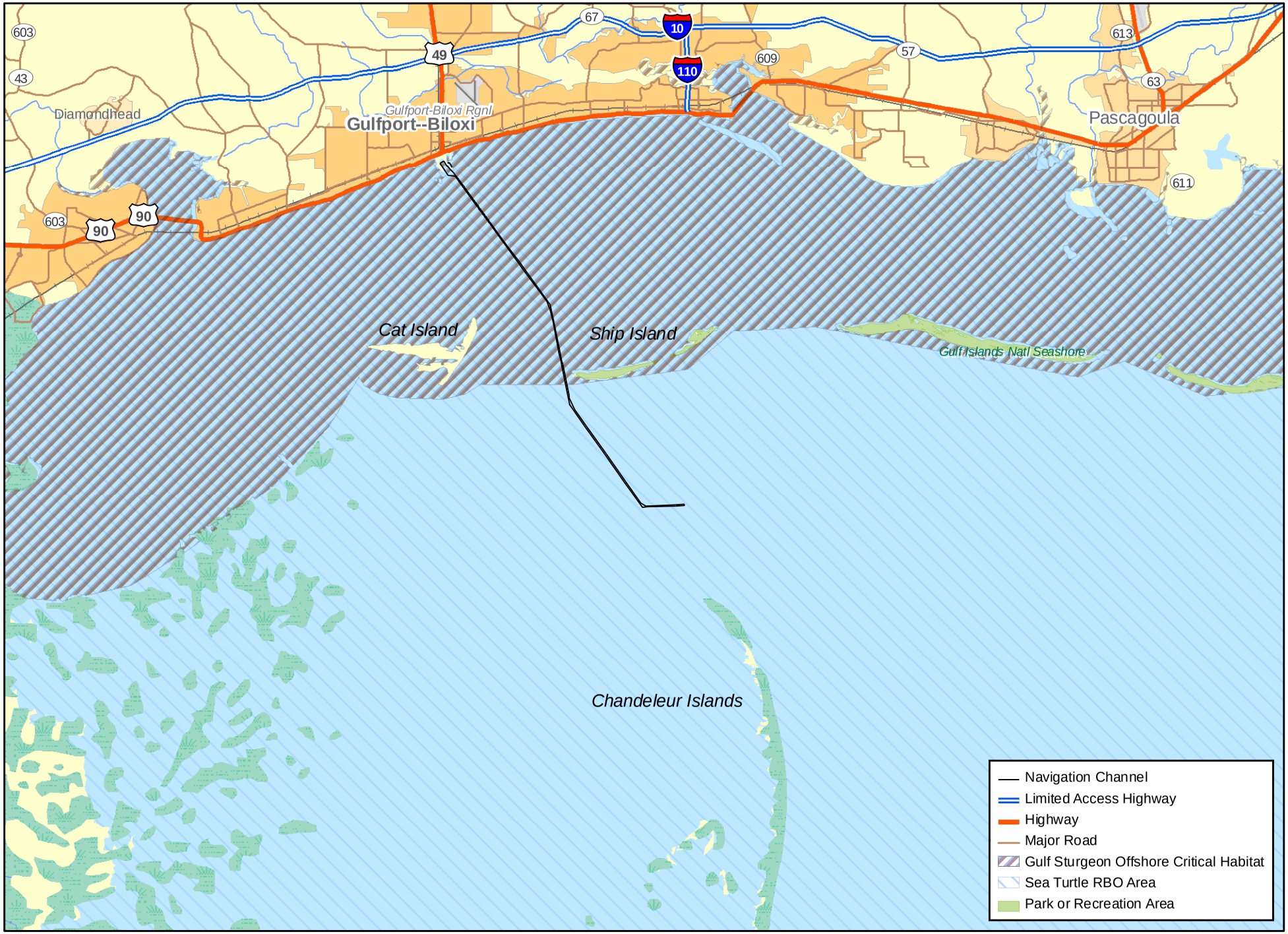

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Figure 4-3
Gulf Sturgeon Critical Habitat and Sea Turtle RBO Area
Gulfport Harbor Navigation Channel Final Supplemental EIS

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4.3.10.4 Fish

The Gulf sturgeon is an anadromous species—inhabiting marine environments, with adults entering rivers in the spring for spawning and moving back out to sea in the fall. Upon reaching sexual maturation (10 to 12 years locally for females and 7 to 9 years locally for males), Gulf sturgeon migrate into freshwater rivers from mid-February through May to spawn (Ross, 2001; Boschung and Mayden, 2004). The majority of spawning movement occurs at water temperatures of 16–25°C (60.8-77°F) and does not seem to be tied to river discharge (Ross, 2001). Spawning habitats preferred by Gulf sturgeon in Mississippi are riffle areas, over hard bottoms such as gravel or cobble. Females typically lay around 400,000 eggs (about 25 percent of body weight) which adhere to the rocky substrate (Ross, 2001; USFWS, 2003; Boschung and Mayden, 2004). After spawning, adults typically remain in the spawning area or move downstream to summer resting areas before ultimately returning to the Gulf in October and November (USFWS, 2003). Females require a minimum of 3 years between spawning cycles and males usually require at least a year (Boschung and Mayden, 2004). In addition, tissue analyses have indicated that the Gulf sturgeon exhibits strong natal river fidelity (USFWS, 2003).

Juvenile Gulf sturgeon may spend as little as 1 year to as many as 6 years in the nursery areas of freshwater habitats before migrating into estuarine and marine waters (Ross, 2001). Migration downstream begins in September and occurs through November, coinciding with higher pulses in river discharges (USFWS, 2003). Adult and sub-adult sturgeon typically spend cooler months (October through April) in nearshore estuaries. The habitat preferred by Gulf sturgeon in the Mississippi Sound barrier islands has a sandy substrate and an average depth of 1.9 to 5.9 m (4.9 to 19.4 ft) (Ross, 2001; USFWS, 2003).

Gulf sturgeon feed by rooting with their sharp snouts along the bottom and sucking prey into the protrusile mouth (Ross, 2001). Typically, marine and estuarine prey have soft bodies and include: lancelets, polychaetes worms, gastropods, shrimp, amphipods, and isopods (Ross, 2001; USFWS, 2003; Boschung and Mayden, 2004). Freshwater prey include benthic macroinvertebrates (i.e., aquatic insects and oligochaetes) and bivalve mollusks (Ross, 2001).

During the annual migrations, the Gulf sturgeon's distribution overlaps the area of the proposed Gulfport Navigation Channel (Figure 4-3). The Gulf sturgeon was listed as federally threatened in 1991 (USFWS, 1991). The USFWS designated critical habitat for this species in 2003 (USFWS, 2003). Unit 8 of the designated critical habitat for the Gulf sturgeon encompasses 62 mi^2 of the Mississippi Sound nearshore area (NMFS, 2003).

Mississippi Sound is separated from the Gulf of Mexico by a chain of barrier islands. Natural depths in this area are 3.7 to 5.5 m (12.1 to 18.0 ft) and several incidental captures and recent studies have confirmed extant populations of the Gulf sturgeon wintering in this area, particularly around the barrier islands and passes (USFWS, 2003). When designating critical habitat for the Gulf sturgeon, the USFWS excluded those areas in the vicinity of the Proposed Action that were major shipping channels (USFWS, 2003). In addition, the area around the Chandeleur Islands is not designated as critical habitat.

The 2003 RBO and its revision in 2007 also address incidental takes of Gulf sturgeon (NMFS, 2003; 2007). The annual documented USACE incidental Mobile District take of Gulf sturgeon by hopper dredge is expected to be two fish. The RBO authorizes the annual non-injurious take limit of eight Gulf sturgeon by relocation trawling (NMFS, 2007).

4.4 Physical Environment

4.4.1 Geologic Setting

The mainland shoreline of Mississippi formed in the Sangamon interglacial period, approximately 110,000 to 130,000 years ago, when sea levels peaked at approximately 5 to 8 m (16.4 ft to 26.2 ft) higher than they are now. The existing shoreline is located on the Gulfport Formation, which overlies the Biloxi Formation. Sea level began to decline again later in the Pleistocene epoch as temperatures cooled, between 15,000 and 70,000 years ago. As sea level declined, river trenches were eroded into the prairie terrace of the Gulf of Mexico farther out to sea than the current location of Mississippi's barrier islands. As temperatures increased from the end of the Wisconsin period to the early Holocene, approximately 15,000 to 12,000 years ago, sea level rose again, and stabilized at the current level by 4,500 years ago. During this era, sediment filled the river trenches and the bays of the Mississippi coast formed. Most of the area now occupied by Mississippi Sound was a marine system, and the nearshore area around Pearl River was brackish (USACE, 1989).

The barrier islands formed in the early Holocene, approximately 4,000 years ago, from the accretion of bottom sediments that eroded from the Alabama mainland. At that time, these islands formed an island-shoal barrier 143 mi (230 km) long between Dauphin Island, Alabama and the current location of metropolitan New Orleans. Between 2,300 and 3,000 years ago, St. Bernard Delta sediments from the Mississippi River migrated into the Gulf of Mexico and settled onto the sea bottom from 2-12.5 mi (3-20 km) south of the current location of Cat, Ship, and Horn Islands. As the river migrated, it created the Chandeleur Islands and the wetlands of St. Bernard Parish. These sediments reduced wave energy from the west and stopped sediment accretion on Cat Island. After the Mississippi River changed course and the St. Bernard Delta sediments no longer flowed into the Gulf, erosion of existing delta sediments led to the erosion of the Mississippi coast marshlands (USACE, 1989).

The barrier islands migrate to the west over time, due to accretion of sediments on the western ends and erosion on the eastern ends. The barrier island facies are typically well-sorted, medium grained, mature quartzose sand with less than 3 percent feldspar and a mineral suite rich in staurolite and kyanite. The facies has an average width of 2.5 mi (4 km) and an average thickness of 40 ft (12 m). The Mississippi barrier islands tend to feature sand beaches with dunes on the south shore and beach or intermittent marsh on the north shore. The Chandeleur Islands have sand beaches on the east shore and beach and intermittent marsh on the west shore. The island interiors are typically broad low sand flats that are 1 to 2 ft (0.3 to 0.6 m) above sea level or vegetated beach ridges 5 to 15 ft (1.5 to 4.6 m) above sea level. Marshes or shallow lakes may also be present in the island interiors (USACE, 1989).

4.4.2 Bathymetry

Mississippi Sound has two different regions with markedly different bathymetric features (Blumberg et al., 2000). The upper and western Mississippi Sound is shallow, with depths ranging from about 3 ft to 9 ft. The remainder of the Sound is deeper, ranging from about 9 ft to over 600 ft in depth, with the deepest areas not separated from the Gulf of Mexico by barrier islands. Where the Gulfport Federal Navigation Channel extends across Mississippi Sound, the northern half of the Sound has natural water depths of about 13 ft or less. Depths

in the southern half of the Sound range from about 13 to 20 ft. South of Ship Island, natural depths range from about 20 to 35 ft in the vicinity of the ship channel (Figure 4-4). The depths within approximately 1 mile immediately around the Chandeleur Islands range from 4 to 9 ft. Water depths then vary between 10 to 35 ft around the islands in all directions. Water depths to the south and east continue to increase and more than approximately 3 miles further in those directions are more uniform, with contours ranging from 45 to 50 ft.

The Gulfport Federal Navigation Channel passes between Cat Island and Ship Island through Ship Island Pass. The islands are separated by about 5 miles of open water, which overlie a fairly shallow sand bottom or bar (USACE, 1976). A naturally scoured channel, more than 30 ft deep, exists off the western edge of Ship Island, near the Gulfport Federal Navigation Channel. The currents around the barrier islands transport sand and tend to extend the western edges of the islands and erode the eastern ends. As the islands move west, the naturally scoured channel also moves west.

The maximum depth of the Gulfport Federal Navigation Channel is 38 ft. This depth is maintained by the USACE in the approximately 10-mile, 300-ft wide segment that extends from the Gulf of Mexico across the Ship Island Bar into Mississippi Sound. The approximately 11-mile, 220-ft wide segment from Ship Island to Gulfport Harbor is maintained at a 36-ft depth. At Gulfport Harbor, there is a Turning Basin and small boat harbor. The Turning Basin is 1,320 ft wide and 2,640 ft long with a maintained depth of 32 to 36 ft. The entrance channel to the small boat harbor, measuring 100 ft wide by 4,300 ft long, is maintained at a depth of 8 ft. Dredged materials are deposited at open-water sites on either side of the ship channel along the majority of its length. The distance from the channel to the beginning edge of these disposal sites is generally no less than 0.5 mile. Shoaling is quite rapid in Mississippi Sound and the Ship Island Pass (USACE, 1975a). As a result, frequent dredging is required.

4.4.3 Meteorology

Gulfport has a mild, humid climate. Table 4-7 summarizes average temperatures and precipitation during each month from 1971 to 2005. Annual average temperature ranges from 51.6ºF (10.9ºC) in the coldest month (January) to an average of 82.1ºF (27.8ºC) in the hottest month (July). Total annual average precipitation is 63.4 inches (161 centimeters [cm]). The highest amount of rainfall occurs in July, 7.33 inches (18.62 cm), and the lowest amount occurs in October, 3 inches (7.62 cm) (Southeast Regional Climate Center, 2006). Throughout the year, average relative humidity in Gulfport ranges from 55 percent to 95 percent (City-Data.com, 2006).

The Gulf coast region experiences two distinct seasonal weather patterns. In the spring weather gradually transitions over several weeks while the fall transition from summer to winter is usually abrupt. During winter, the region experiences a temperate climate. Cyclonic fronts are frequent, occurring every 3 to 5 days. These events are associated with strong changes in local and regional winds and in atmospheric pressure. Winter winds typically blow strongly from the north. Summer weather is dominated by semi-permanent sub-tropical conditions. The mean time between frontal passages is 2 to 3 weeks and fronts

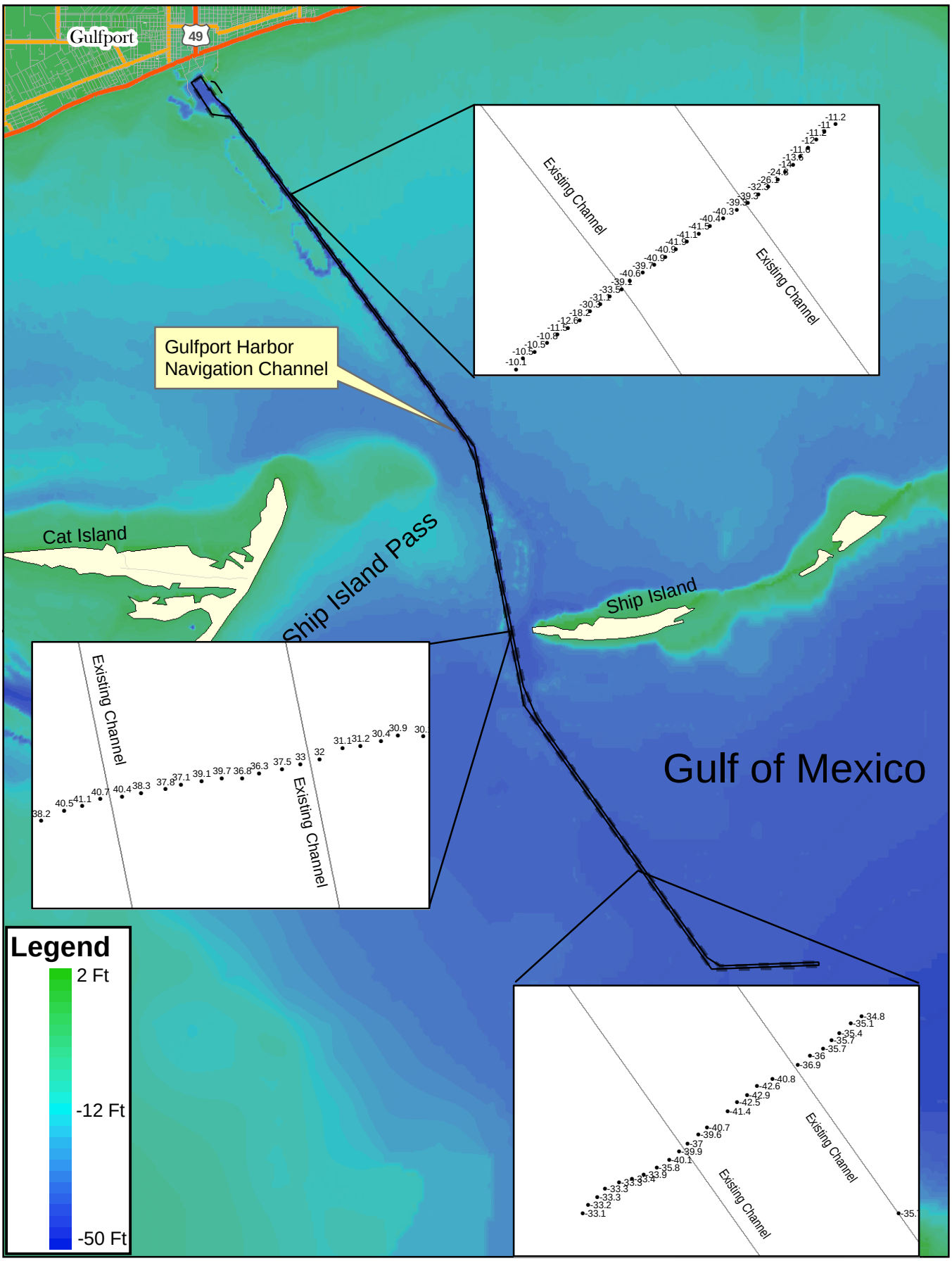

Figure 4-4
Bathymetry
Gulfport Harbor Navigation Channel Final Supplemental EIS

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tend to be less energetic than during winter. Light and variable winds are typically out of the south and southwest (Kjerfve and Sneed, 1984). Prevailing nearshore surface winds along the Gulf coast are usually from the south from March through July, from the east in August and September, and from the north the rest of the year (USEPA, 1986).

TABLE 4-7
Average Temperature and Precipitation in Gulfport
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Temperature	51.6	54.9	60.3	67.6	75.0	80.1	82.0	81.9	78.1	69.3	60.	53.8	68.0
Average Maximum	61.0	64.0	69.6	76.8	83.7	88.7	90.7	90.5	87.1	79.5	70.5	63.1	77.2
Average Minimum	42.4	45.5	51.1	58.6	66.2	71.6	73.6	73.0	69.1	59.0	50.4	44.4	58.8
Average Precipitation	5.46	5.15	5.67	5.23	4.85	5.45	7.33	5.83	6.91	3	4.18	5.06	63.4

Minimum, maximum, and mean temperatures measured in degrees Fahrenheit (^{o}F).
Precipitation measured in inches.
Source: Southeast Regional Climate Center, 2006

From November through April, frontal-related storms occur about every week to 10 days in the Gulf coast region. These storms cause rapid changes in water levels. Preceding passage of a cold front, low barometric pressure generates strong onshore winds that set water up along the coast, flooding open ocean and mainland beaches, and exposing the shores to strong wave attack. As the front passes the coast, strong winds are directed offshore, driving water onto the backbarrier flats and away from the beaches. The frequent oscillation in water levels and waves erodes both sides of barrier islands as well as mainland and bay shores (USGS, 2006b).

Hurricanes are most likely to occur during the summer, with the highest frequency in August and September. About 5 to 10 Atlantic and Gulf coast hurricanes form each year (USGS, 2006b), but most do not strike land and their energy is dissipated over the open ocean rather than at the shore. Hurricanes are characterized by their four most destructive forces: strong winds including tornadoes, high storm surge and washover, large waves, and associated rain (USGS, 2006b).

Hurricanes are sustained by a warm, tropical ocean with light winds and moisture over them. On average, a major hurricane causes dramatic land losses and considerable property damage about once every 10 years along the Gulf coast. From 1900-2000, a total of 10 hurricanes hit Mississippi directly, 6 of which were classified as major hurricanes (Jarrell et al., 2001). Two hurricanes, Ivan and Katrina, recently impacted the Gulfport area. Hurricane Ivan, a Category 3/4 hurricane, passed through on September 15 and 16, 2004. Hurricane Katrina, a Category 3 hurricane, passed through on August 28 and 29, 2005.

Detailed meteorological information was obtained from the Louisiana State University weather station located on land at the Ship Island Pass - Station SIPM6, Ship Island Pass, MS /CSI13. The station records information such as temperature, wind, and wave conditions in the project study area (NOAA, 2006a; Coastal Studies Institute, 2005).

Average sea temperatures from 2000 through 2005 ranged from 11.2ºC (52ºF) in January to 30.1ºC (86.2ºF) in August. Air temperatures were slightly lower than water temperatures, ranging from approximately 10.5ºC (50.9ºF) in January to 28.8ºC (83.8ºF) in July (Coastal Studies Institute, 2005). Average sea surface and air temperatures are shown on Figures 4-5 and 4-6.

Wind speed data were also obtained from the Ship Island Pass weather buoy. The lowest sustained wind speeds occur in July and August and typically average 4.36 to 4.59 meters per second (m/s) (9.75 miles per hour [mph] to 10.27 mph). The wind speed pattern tends to increase slightly during the winter and spring and ranges from 5.84 to 5.94 m/s (13.06 mph to 13.29 mph) between December and May (Coastal Studies Institute, 2005). The highest peaks in wind speeds typically occur in September during hurricane season.

4.4.4 Physical Oceanography

Mississippi Sound is a shallow coastal lagoon bordered by the coastlines of Alabama and Mississippi to the north and a string of barrier islands and interspersed tidal passages to the south. The average depth of the basin is 3 m (9.8 ft), with greater depths on the western sides of barrier islands caused by tides. Three navigation channels from Gulfport, Pascagoula, and Biloxi traverse the Sound. Depths of the channels are 36-38 ft, 42-44 ft, and 12 ft, respectively. Dredged material piles from the maintenance of these channels are typically located adjacent to the channels. The GIWW, with an authorized depth of 12 ft, spans the Sound from east to west (Jarrell, 1981).

Tides are a primary force that drives the circulation of water in Mississippi Sound. Tides break down vertical stratification through mixing action, result in residual circulation through ebb and flood currents, and act to maintain suspension of material in the water. Tides in Mississippi Sound are diurnal, with an average range of 1.41 ft (0.43 m) to a maximum of 1.90 ft (0.58 m). The two principal components of the tide (luni-solar and principal lunar) have periods of 23.93 and 25.84 hours, respectively. Every 14 days the Sound experiences equatorial tides and the diurnal tide is reduced to a mean range of 0.2 ft (0.06 m) (Kjerfve and Sneed, 1984). Tides in the Sound are modified by the bathymetry, geometry of the basin, river discharges, and winds (Jarrell, 1981).

Bathymetry interacts with tides by forcing a slight counterclockwise rotation over a portion of the Sound that includes the location of the Proposed Action. Tidal wavefronts approach the Sound from the south and split into two wavefronts in the vicinity of Petit Bois Island. The western portion of the wave advances to the north-northwest, causing the counterclockwise rotation (Kjerfve and Sneed, 1984).

River discharges of freshwater into Mississippi Sound consist of five primary sources–the Mississippi River, the Lake Pontchartrain basin, the Pearl River, the Pascagoula River, and the Mobile River. On average, 635,664 cubic ft per second (cfs) (18,000 m^3/s) of freshwater and associated suspended sediment load enter the Mississippi Sound region annually. The Mississippi River represents 83 percent of the freshwater flow. The Pascagoula is the largest river entering directly in the Sound. Inflow into the Sound is also supplied by numerous streams and bayous, including the Jordon, Wolf, and Biloxi Rivers. Approximate annual

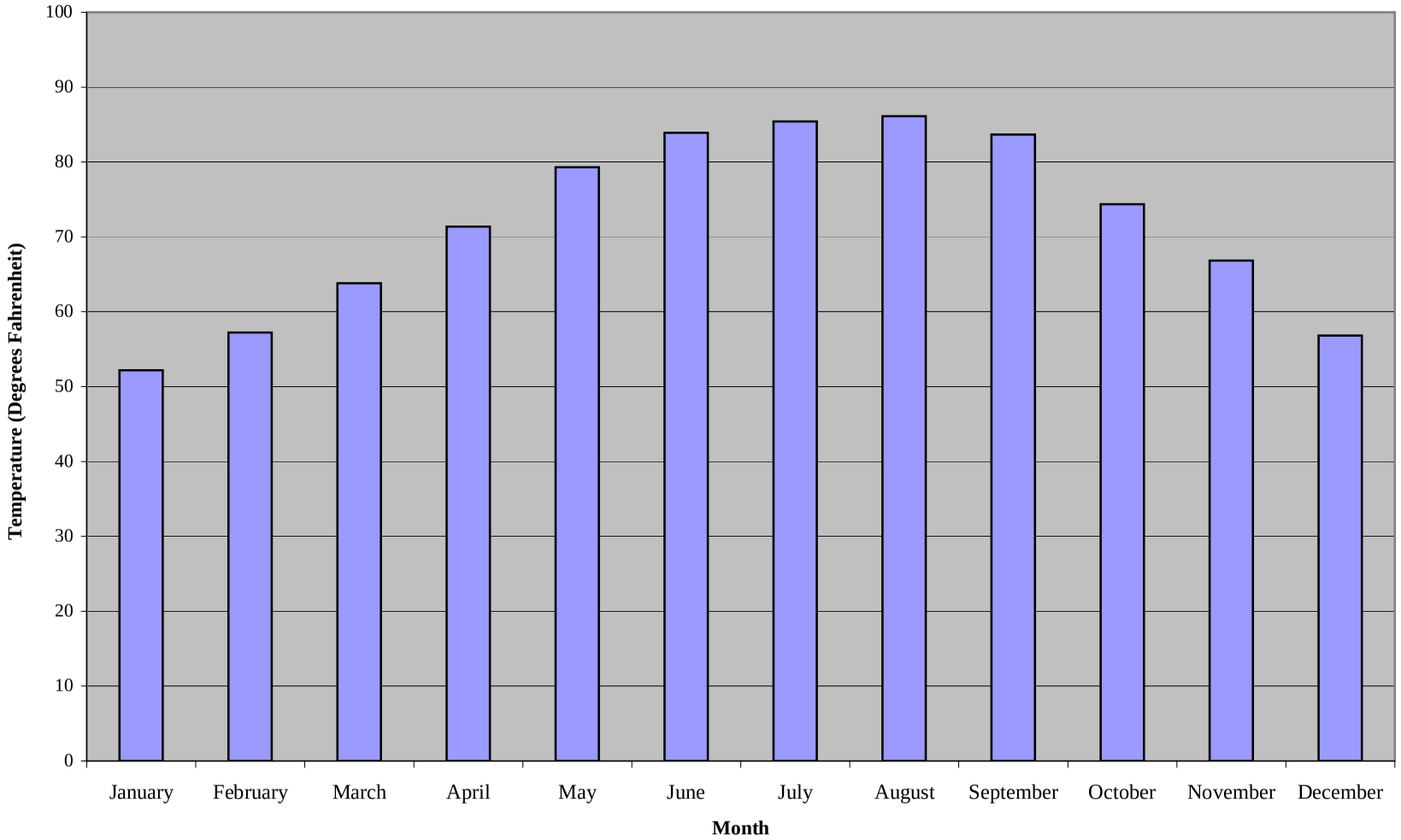


FIGURE 4-5
Average Monthly Sea Surface Temperature at Station SIPM6
Gulfport Harbor Navigation Channel Final Supplemental EIS

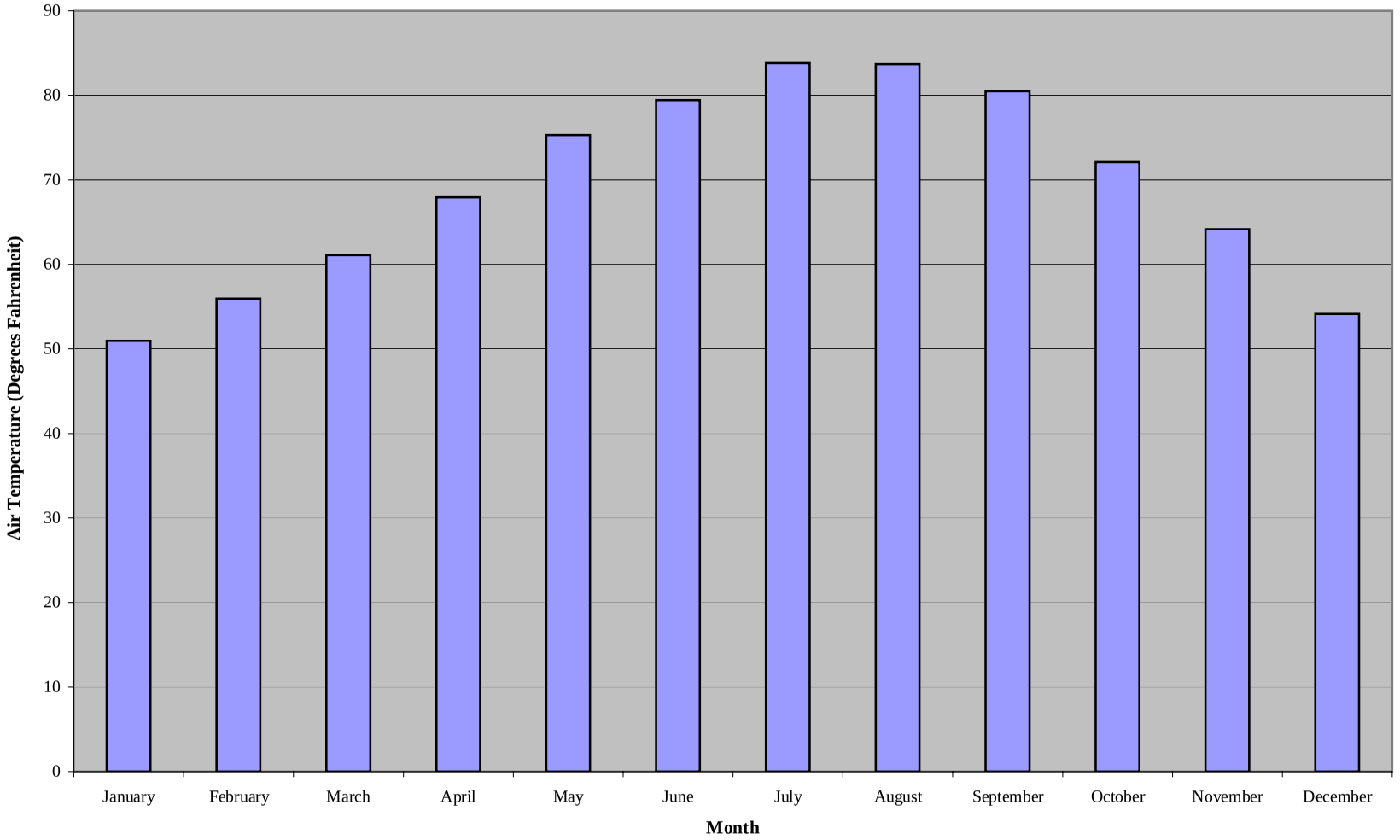


FIGURE 4-6
Average Monthly Air Temperature at Station SIPM6
Gulfport Harbor Navigation Channel Final Supplemental EIS

inflow is 10,771 cfs (305 m^3/s) from the Pearl River, 14,726 cfs (417 m^3/s) from the Pascagoula River, and 61,801 cfs (1,750 m^3/s) from the Mobile River. Mississippi River and Lake Pontchartrain basin inflows are more variable due to the use of floodways on the Mississippi River.

The Lake Pontchartrain basin inflow is typically 6,639 cfs (188 m^3/s), but may increase to 14,136 cfs (4,000 m^3/s) during use of the Bonnet Carré Floodway. When opened, flows from that floodway have historically lasted 13 to 75 days. The plumes and water masses created by these sources act to form density fronts and variable salinity concentrations. For example, flow from the Mississippi results in low-salinity water entering the Sound from the south and southwest. River runoff displays a pronounced seasonal variation (Kjerfve and Sneed, 1984). Flows are typically highest in the spring and lowest in late summer and fall.

Wind-driven currents are the primary non-tidal water motions in the Sound. Wind-driven currents and atmospheric pressure raise and lower local sea levels depending on strength and direction, up to +/- 1 meter (m) along the coast. The Gulf coast region experiences two distinct seasonal weather patterns that influence wind direction and strength. In the winter storms and fronts are frequent. These events are associated with strong changes in local and regional winds and in atmospheric pressure. Winter winds typically blow strongly from the north. Summer weather is dominated by semi-permanent sub-tropical conditions with fronts that are less frequent, occurring every 2 to 3 weeks, and less energetic. Light and variable winds are typically out of the south and southwest (Kjerfve and Sneed, 1984). Sustained south and southeast winds push water into the Sound, while north winds drive the water out (Jarrell, 1981).

Net currents in the Sound are transient in nature and largely driven by wind forcing. The Loop Current, a counterclockwise rotating flow, is the major oceanographic feature affecting offshore circulation. It serves as the feeder current for the Florida Current and Gulf Stream (Kjerfve and Sneed, 1984). Closed rings of clockwise-rotating water often break away from the Loop Current forming eddies or 'gyres' which affect regional current patterns (Thompson et al., 1999). At times, the Loop Current extends onto the continental shelf east of the Mississippi Delta and may influence the flow conditions and water elevation in Mississippi Sound (Kjerfve and Sneed, 1984).

Current meters deployed in the Sound have identified current characteristics that vary with season. During winter, (November – January) mean surface flow direction is toward the west and bottom currents are directed toward the north and west. During spring (March-May) surface currents are generally to the east with bottom currents to the north. During summer, both surface and bottom currents are largely directed toward the west (Kjerfve and Sneed, 1984).

Detailed oceanographic information was obtained from the Louisiana State University weather station located at Ship Island Pass - Station SIPM6, Ship Island Pass, MS /CSI13. The station records information such as temperature, wind, and wave conditions in the project study area (Coastal Studies Institute, 2005).

Wave heights and wave periods are closely correlated with wind speed (see Figures 4-7 through 4-9). Lowest wave heights and periods occur in the summer, notably July and August. The average low wave height is approximately 0.16 m (0.52 ft), while the average low wave period is approximately 2.4 seconds. Wave heights increase slightly in late fall and winter and range from 0.22 m to 0.23 m (0.72 to 0.75 ft) between October and March. Wave heights are highest in early fall, 0.25 m (0.82 ft) in September, and in late spring, 0.25 to 0.27 m (0.82 to 0.88 ft) in April and May. Wave periods slow less variation, increasing in September to an average of 2.5 seconds, decreasing slightly in mid-winter to 2.44 seconds in January and February, then increasing to 2.5 seconds again in March (Coastal Studies Institute, 2005). In September wave heights can be much higher as the result of hurricanes and tropical storms.

4.4.4.1 Salinity

The Pearl and Pascagoula Rivers contribute the greatest portion of freshwater runoff to the Mississippi coastal area (Christmas, 1973). Salinity characteristics of Mississippi Sound are the result of river runoff and the tidal salt wedge. Salinity in Mississippi Sound fluctuates seasonally (Christmas and Eleuterius, 1973). On a seasonal basis, surface salinity near Gulfport Harbor ranges from 14 ppt in the spring to 22+ ppt in the fall. The bottom salinity near the harbor has the same range. In the vicinity of Ship Island, the salinity ranges from a low of 24 ppt in the spring to 32 ppt in the winter. The bottom salinity near Ship Island is higher. Bottom salinities are 26 ppt and 32 ppt in the spring and winter, respectively. In a more recent study, the salinity observations in the Sound typically ranged from 20 and 30 ppt on the surface and 30-35 ppt at the bottom (Kjerfve, B. and J. E. Sneed, 1984). Lower salinity prevails near the Mississippi coast. A longitudinal decrease in salinity occurs in the Sound from east to west. Salinity in the western portion of the Sound also tends to be more uniform (Eleuterius, 1976). In 2004, salinity near the Chandeleur Islands ranged from 26 to 33 ppt from depths of 0 to 40 ft (CH2M HILL, 2004). Like Ship Island, the Chandeleur Islands have higher surface salinity in the fall and lower levels in the spring.

4.4.4.2 Circulation and Salinity Near Gulfport Federal Navigation Channel

Circulation in the central portion of the Sound, which includes the Gulfport Federal Navigation Channel, is attributed to the tidal flux through the Dog Keys and Ship Island Passes. Tidal flow enters primarily along the western end of Horn Island in the Dog Keys and the Gulfport Federal Navigation Channel west of Ship Island. The Gulfport Federal Navigation Channel permits the intrusion of higher-salinity water into and across the Sound. This water tends to spread in a roughly radial manner. Water entering from the Dog Keys tends to spread toward the northwest. Bands of higher-salinity water from these and other passes tend to converge between the "Camille Cut" of Ship Island and the mainland. There are few sources of low-salinity water between Biloxi Bay and Bay St. Louis, allowing higher-salinity waters to occur closer to the coast in this portion of the Sound (Eleuterius, 1976).

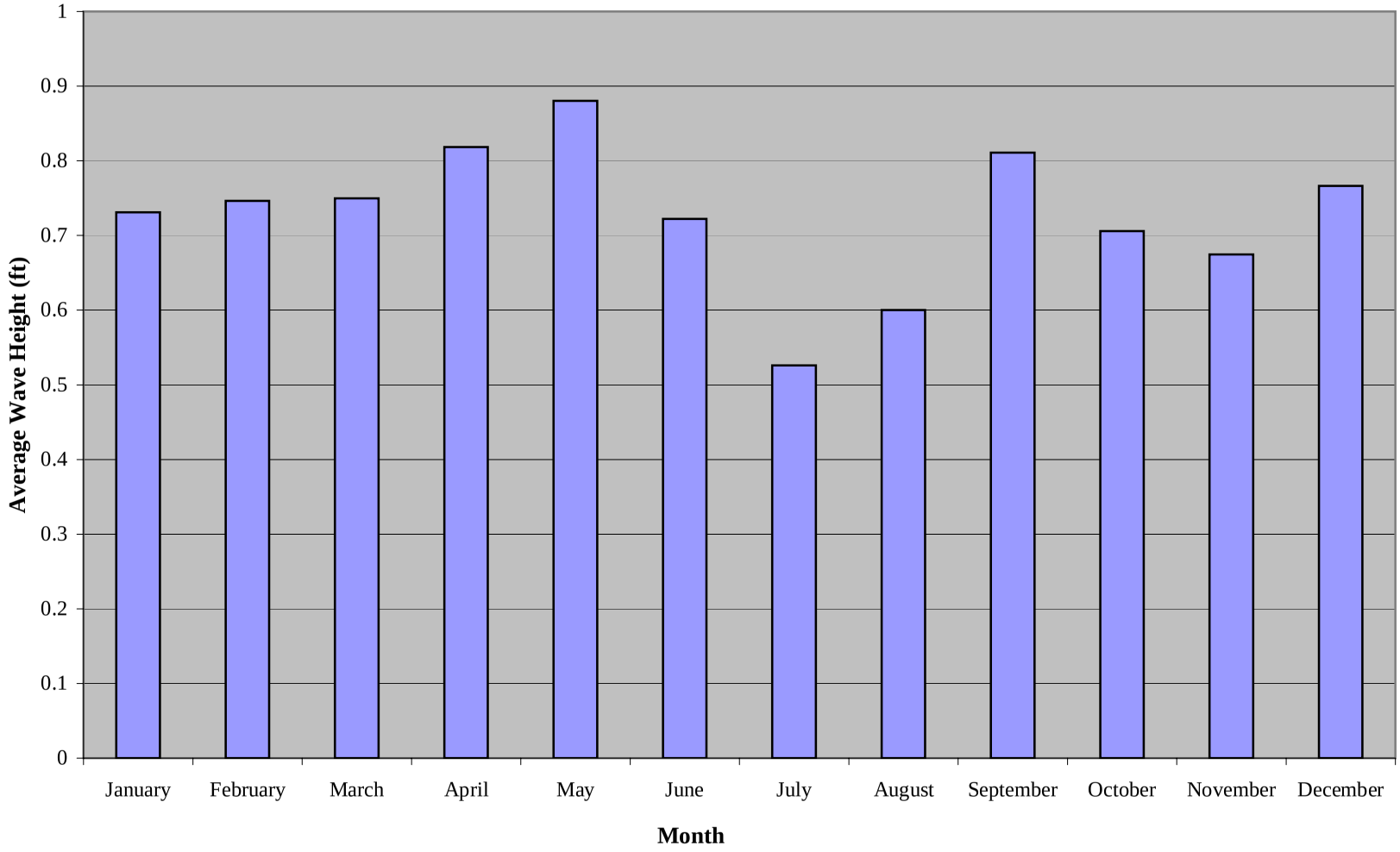


FIGURE 4-7
Average Monthly Wave Height at Station SIPM6
Gulfport Harbor Navigation Channel Final Supplemental EIS

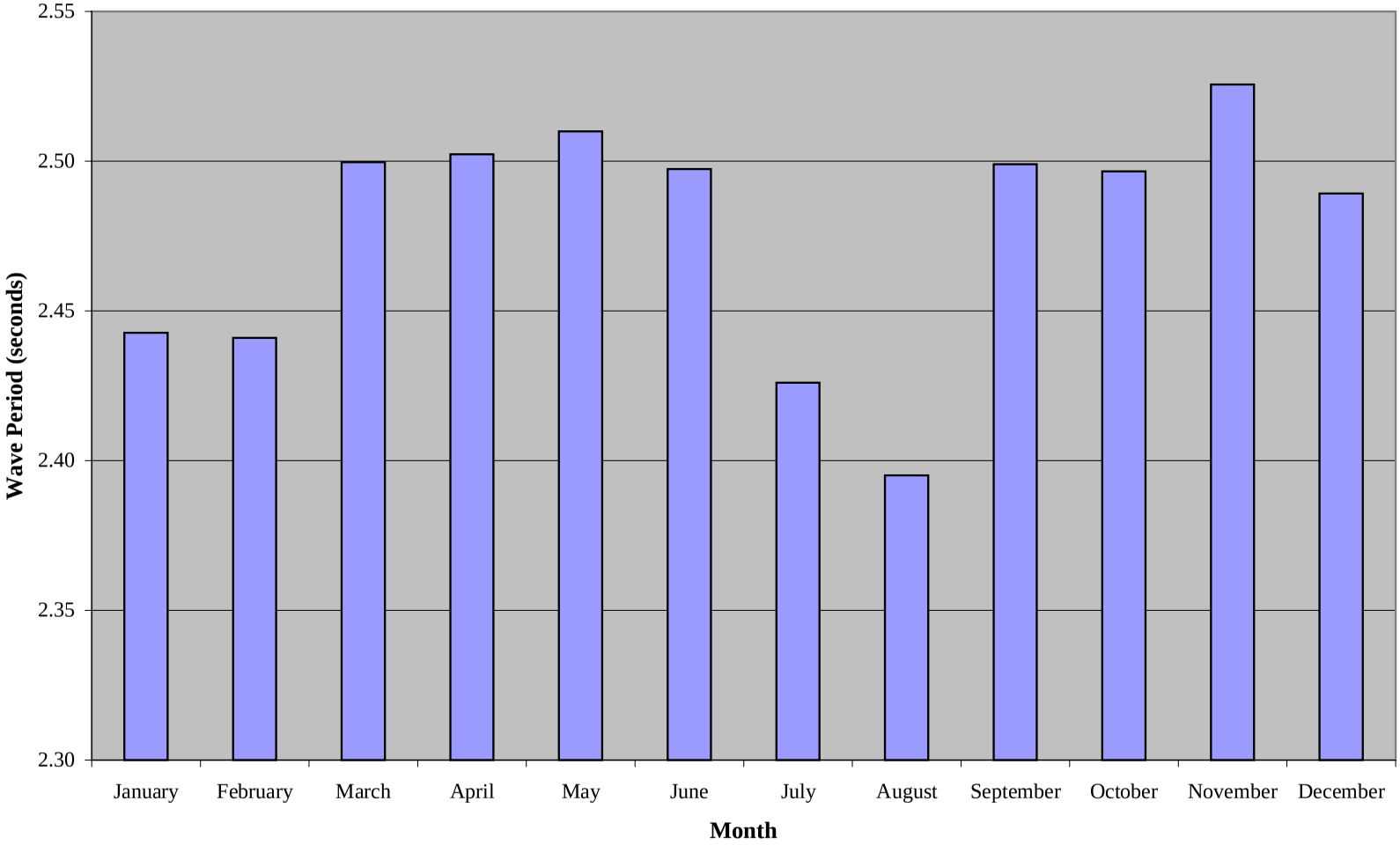


FIGURE 4-8
Average Monthly Wave Period at Station SIPM6
Gulfport Harbor Navigation Channel Final Supplemental EIS

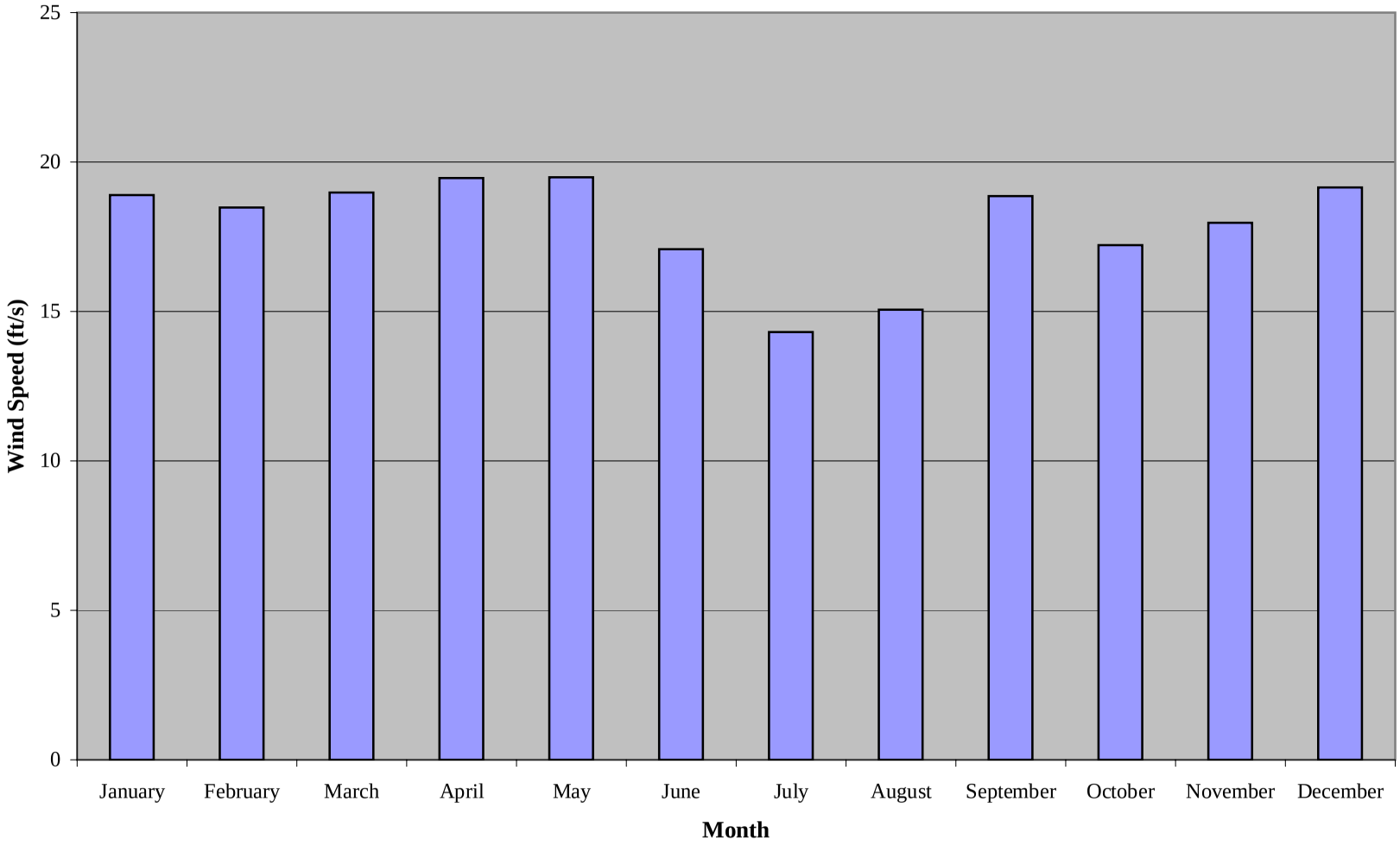


FIGURE 4-9
Average Monthly Wind Speed at Station SIPM6
Gulfport Harbor Navigation Channel Final Supplemental EIS

The primary source of low-salinity water in this area is Biloxi Bay. Other sources include the Pearl River during periods of high flow and the Bonnet Carré Floodway when it is opened to alleviate flood conditions on the Lower Mississippi River. During periods of peak freshwater inflow, salinity is sharply reduced in a west–to-east direction (Eleuterius, 1976).

4.4.5 Sediment Characteristics

Sediments in and near the Gulfport Harbor Navigation Channel were analyzed as part of a 2006 study examining alternatives for widening and deepening the channel (USACE, 2006a). Physical and chemical characteristics were determined for 15 sediment samples collected in and adjacent to the channel. Those stations are identified with a GH04 prefix in Figure 4-10 and summarized below to describe conditions in sediments in and near the channel.

4.4.5.1 Bulk Sediment Chemistry

Physical Characteristics

Fifteen composite sediment samples were collected using a vibracoring system from depths ranging from 5 to 28 ft below the sediment surface for locations within and adjacent to the Gulfport Harbor Navigation Channel to determine physical and chemical characteristics (Figure 4-11). The first four characters in the sediment sample ID name denoted the site location, the 6th and 7th characters (the two characters immediately following the first dash) denoted the dredging operation (D=Channel Deepening Alternative, M= Maintenance Dredging Alternative, DW= Channel Deepening and Widening Alternative, and W=Channel Widening Alternative), and the SED denoted a sediment sample. Seven stations (GH04-3, GH04-5, GH04-7, GH04-9, GH04-11, GH04-13, and GH04-15) were positioned outside of the existing channel alignment to characterize the sediments for channel widening. Locations of the seven stations relative to the existing channel are shown sequentially on Figures 4-12 through 4-18. These seven stations were analyzed as three samples. Station GH04-3 was analyzed separately. Stations GH04-5, GH04-7, and GH04-9 were analyzed as a composite sample. Stations GH04-11, GH04-13, and GH04-15 were analyzed as a composite sample.

Sediments collected within and adjacent to the navigation channel consisted primarily of silt and clay; however, samples collected from the anchorage basin and southern end of the channel consisted predominantly of sand. Sediment collected from a reference location, Grand Bay, Alabama, consisted of approximately 33 percent sand and 67 percent silt-clay. Particle size analysis for the samples is presented in Table 4-8.

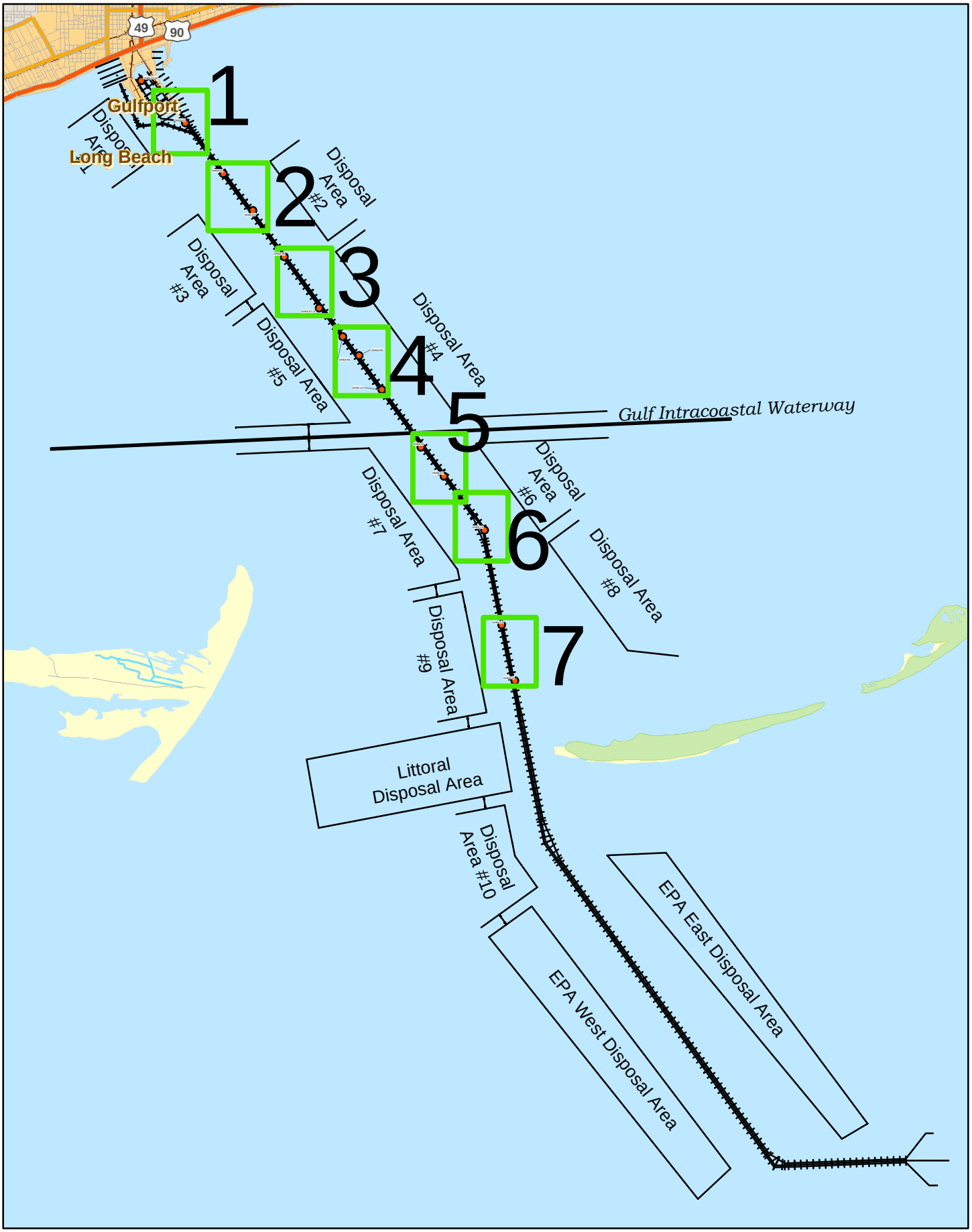
NAC Monitoring Station
USACE Monitoring Station
Navigation Channel

N

CH2MHILL

Figure 4-10
Water Quality Monitoring Stations
(NCA and USACE)
Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\InSituWaterQuality.mxd March 9, 2007 RKENT2



USACE Monitoring Station — Navigation Channel and Stations

N

0 0.5 1

Miles

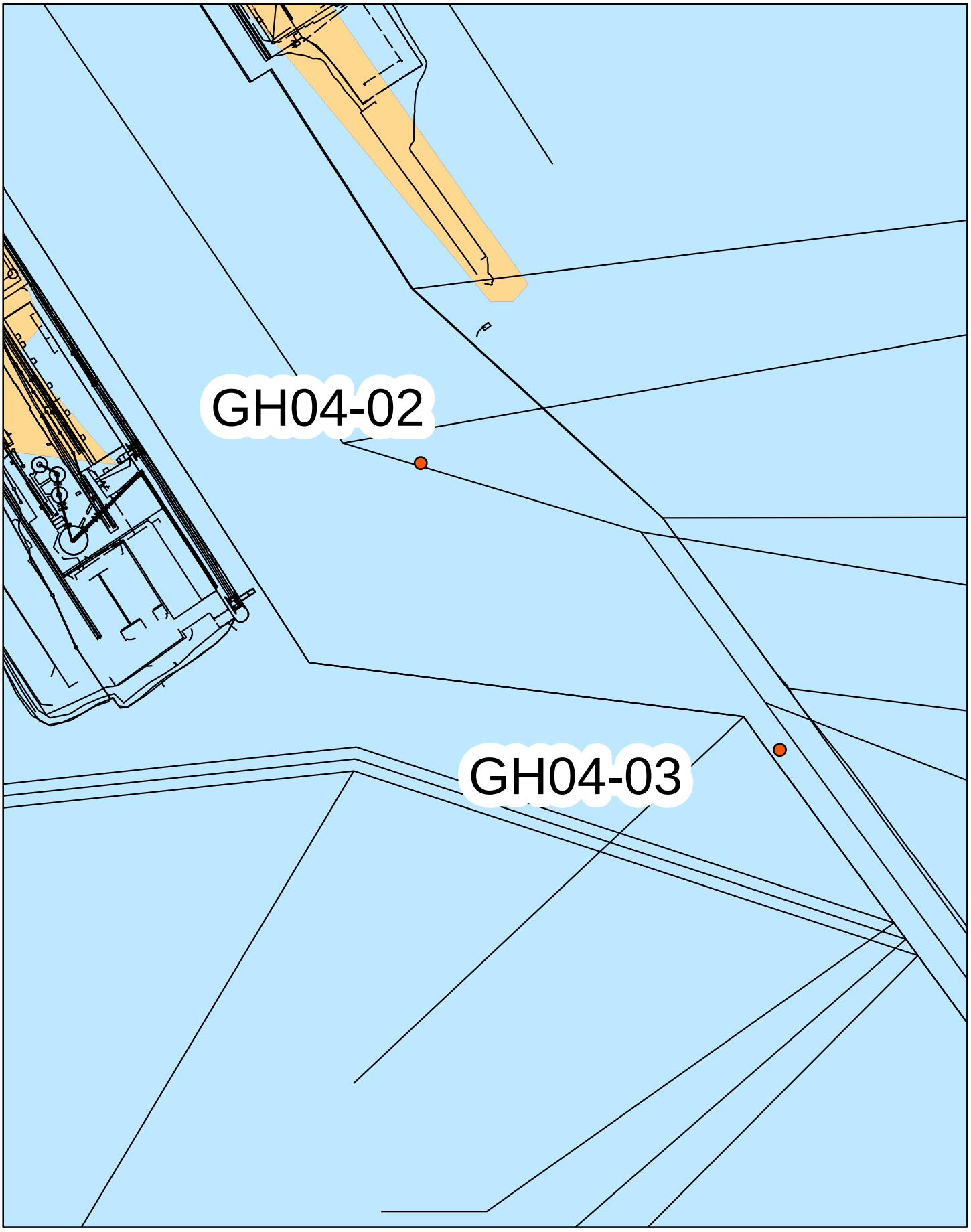
CH2MHILL

Figure 4-11

Sediment Station Segments

Gulfport Harbor Navigation Channel Final Supplemental EIS

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Overview_12_20_2006.mxd, Date: March 9, 2007, User: RKENT2



USACE Monitoring Station
Navigation Channel

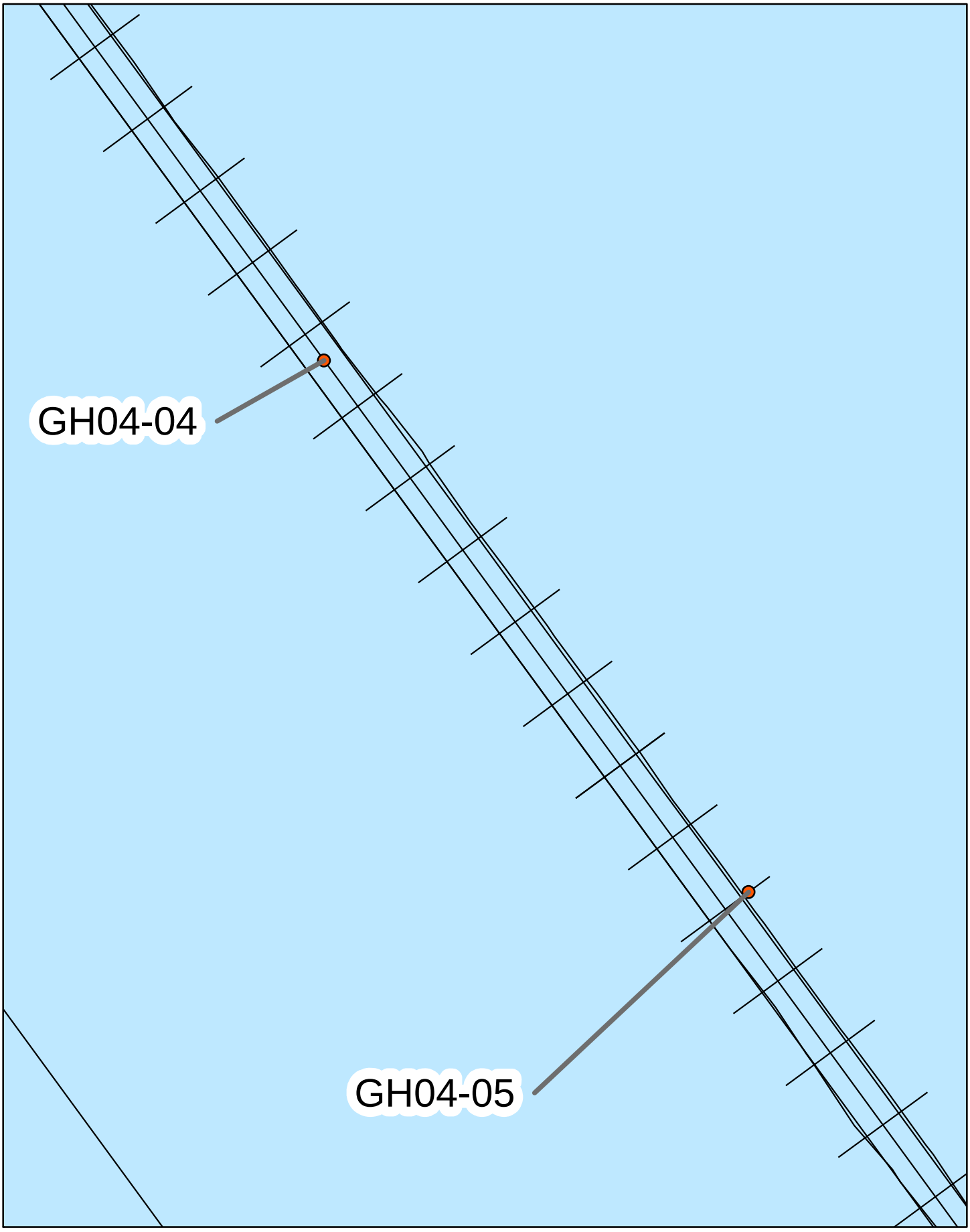
N

0 500 1,000
Feet

CH2MHILL

Figure 4-12
Sediment Stations Segment 1
Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Nav_Channel_Sections_12_20_2006.mxd June 6, 2007 KOCONNO3



USACE Monitoring Station
Navigation Channel

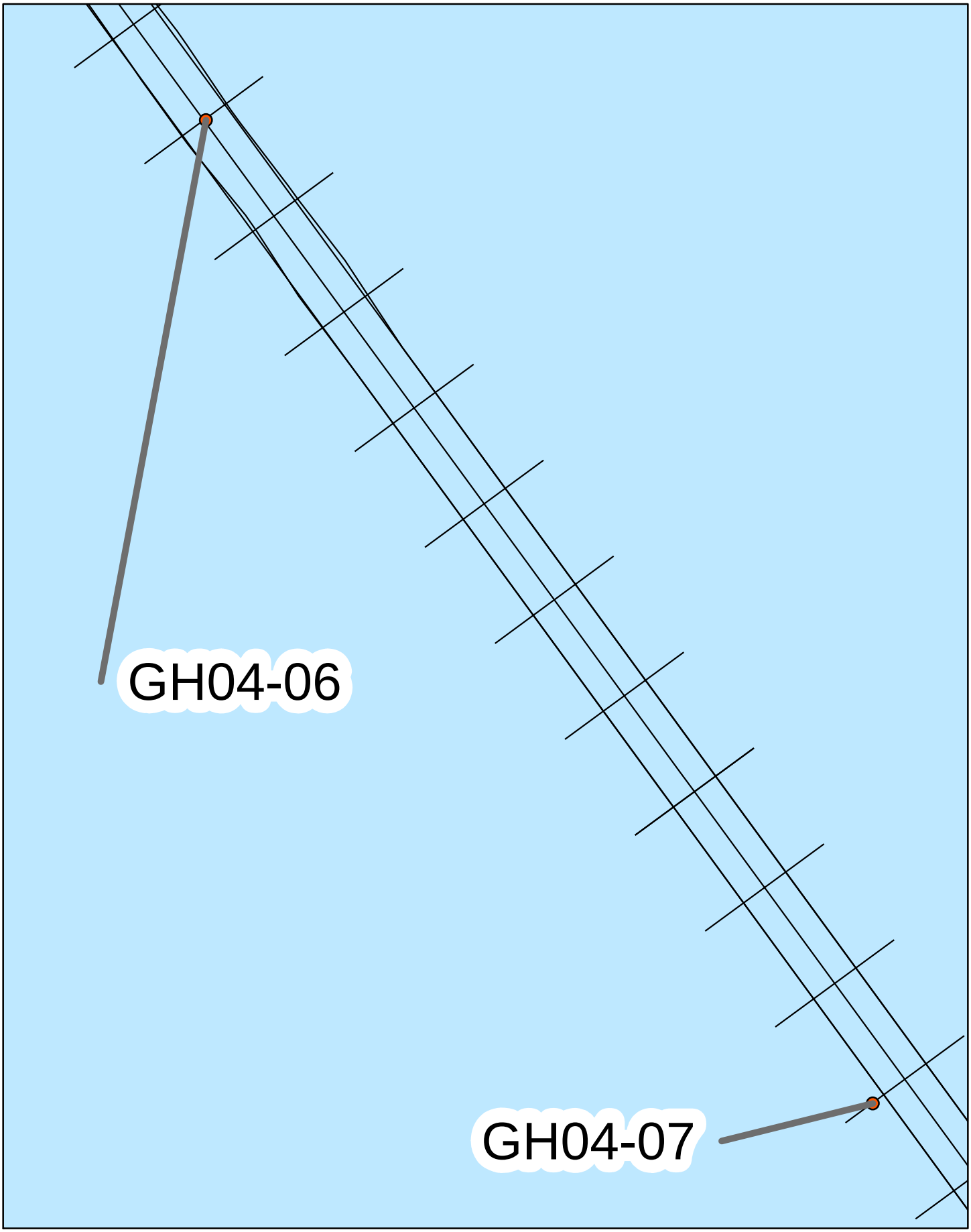
N

0 500 1,000
Feet

CH2MHILL

Figure 4-13
Sediment Stations Segment 2
Gulfport Harbor Navigation Channel Final Supplemental EIS

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Sections_Segment_2.mxd, Date: June 6, 2007, User: KOCONNO3



USACE Monitoring Station
Navigation Channel

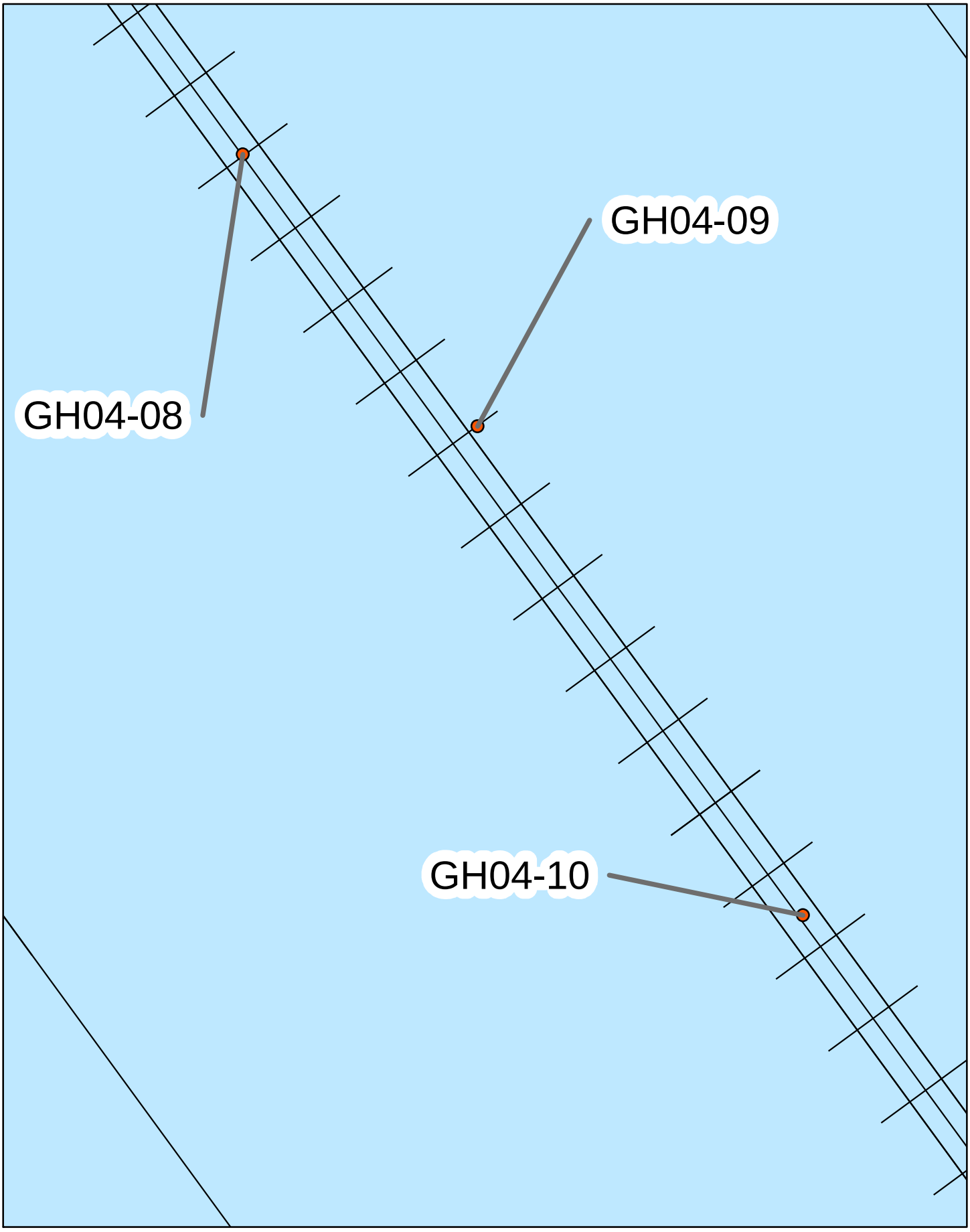
N

0 500 1,000
Feet

CH2MHILL

Figure 4-14
Sediment Stations Segment 3
Gulfport Harbor Navigation Channel Final Supplemental EIS

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Sections_Segment_3.mxd, Date: June 6, 2007, 2007, User: KOCONNO3



USACE Monitoring Station
Navigation Channel

N

0 500 1,000
Feet

CH2MHILL

Figure 4-15
Sediment Stations Segment 4
Gulfport Harbor Navigation Channel Final Supplemental EIS

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Sections_Segment_4.mxd, Date: June 6, 2007, User: KOCONNO3

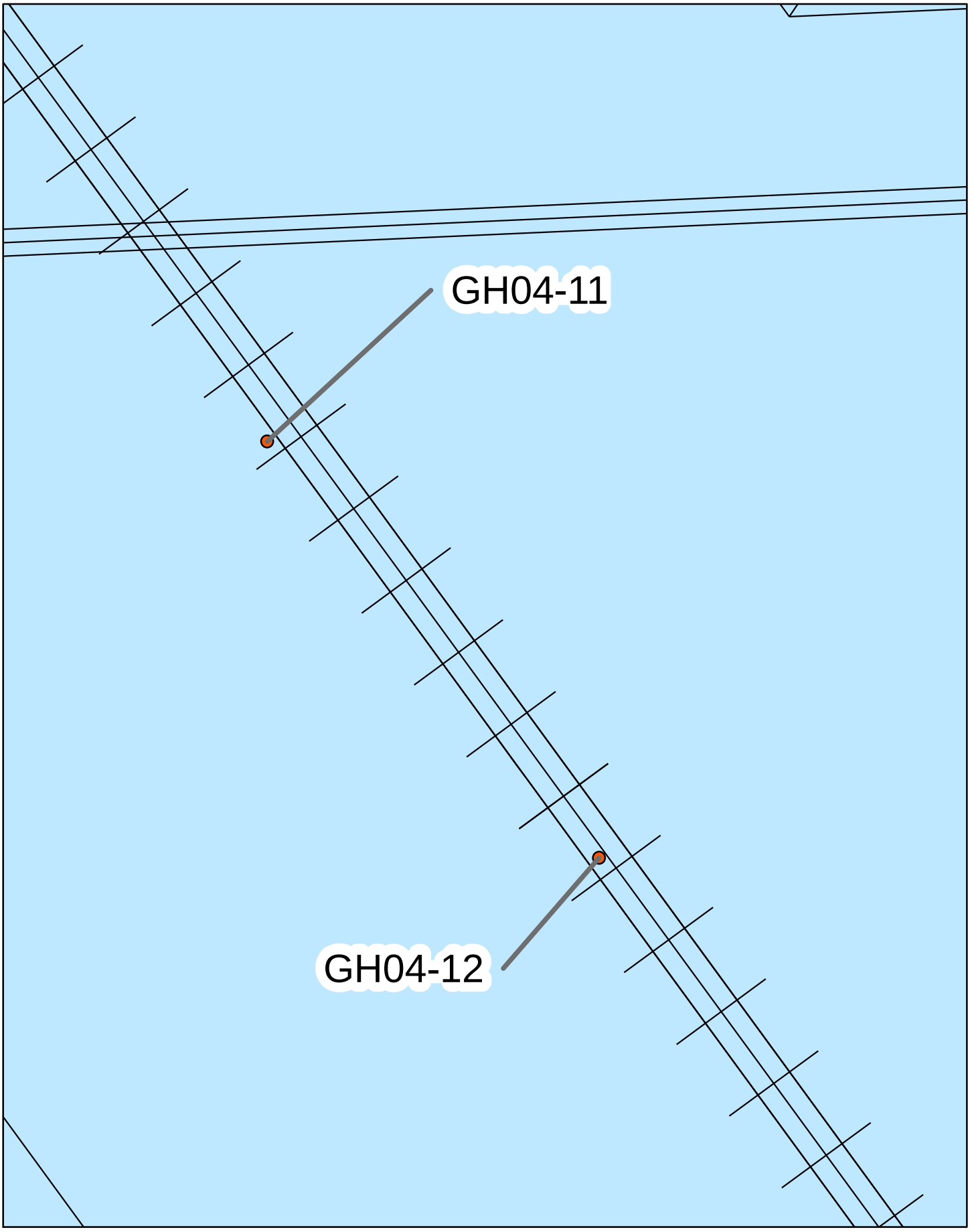


Figure 4-16

Sediment Stations Segment 5

Gulfport Harbor Navigation Channel Final Supplemental EIS

CH2MHILL

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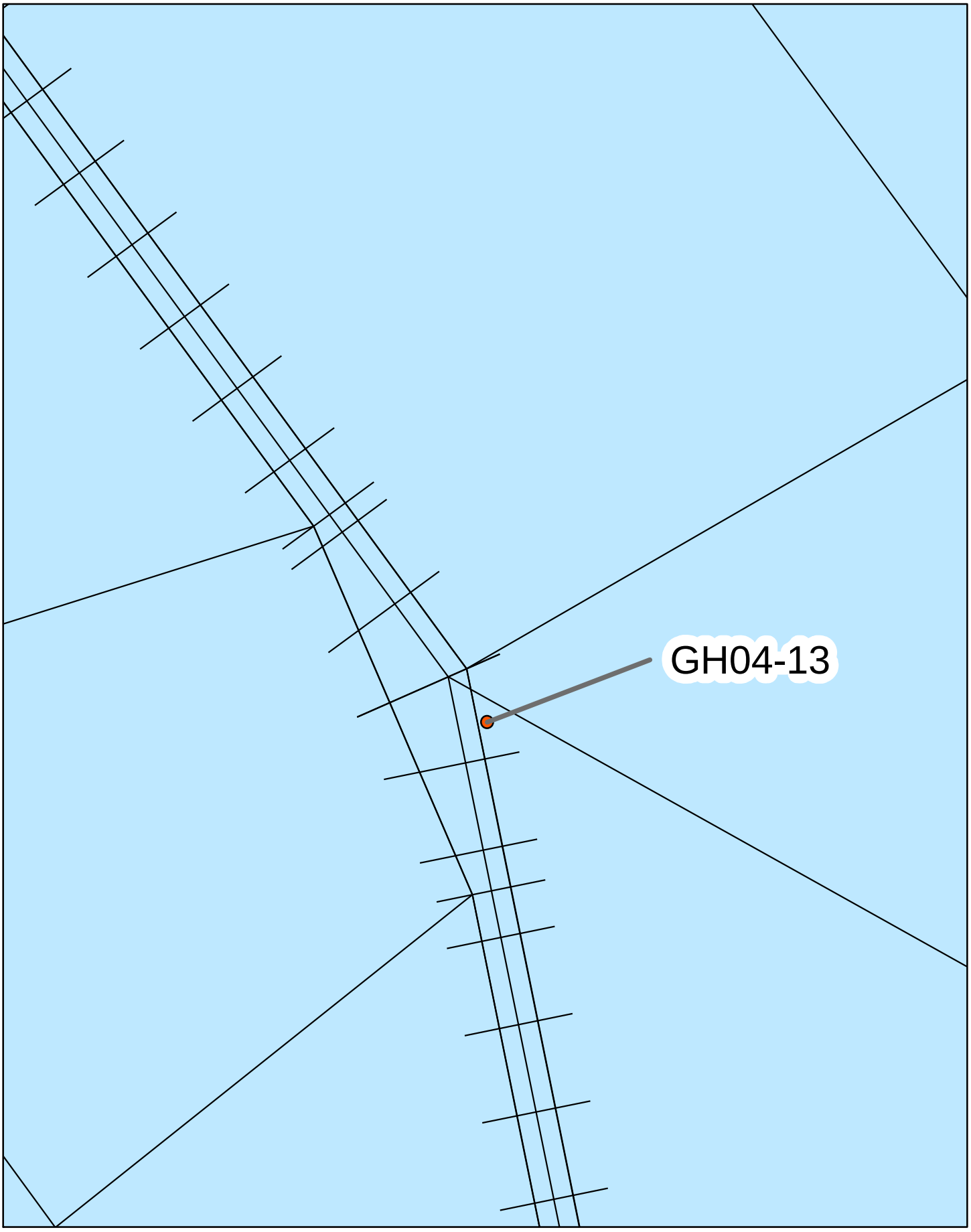

USACE Monitoring Station

Navigation Channel

N

0 500 1,000

Feet

CH2MHILL

Figure 4-17

Sediment Stations Segment 6

Gulfport Harbor Navigation Channel Final Supplemental EIS

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Sections_Segment_6.mxd, Date: June 6, 2007, User: KOCONNO3

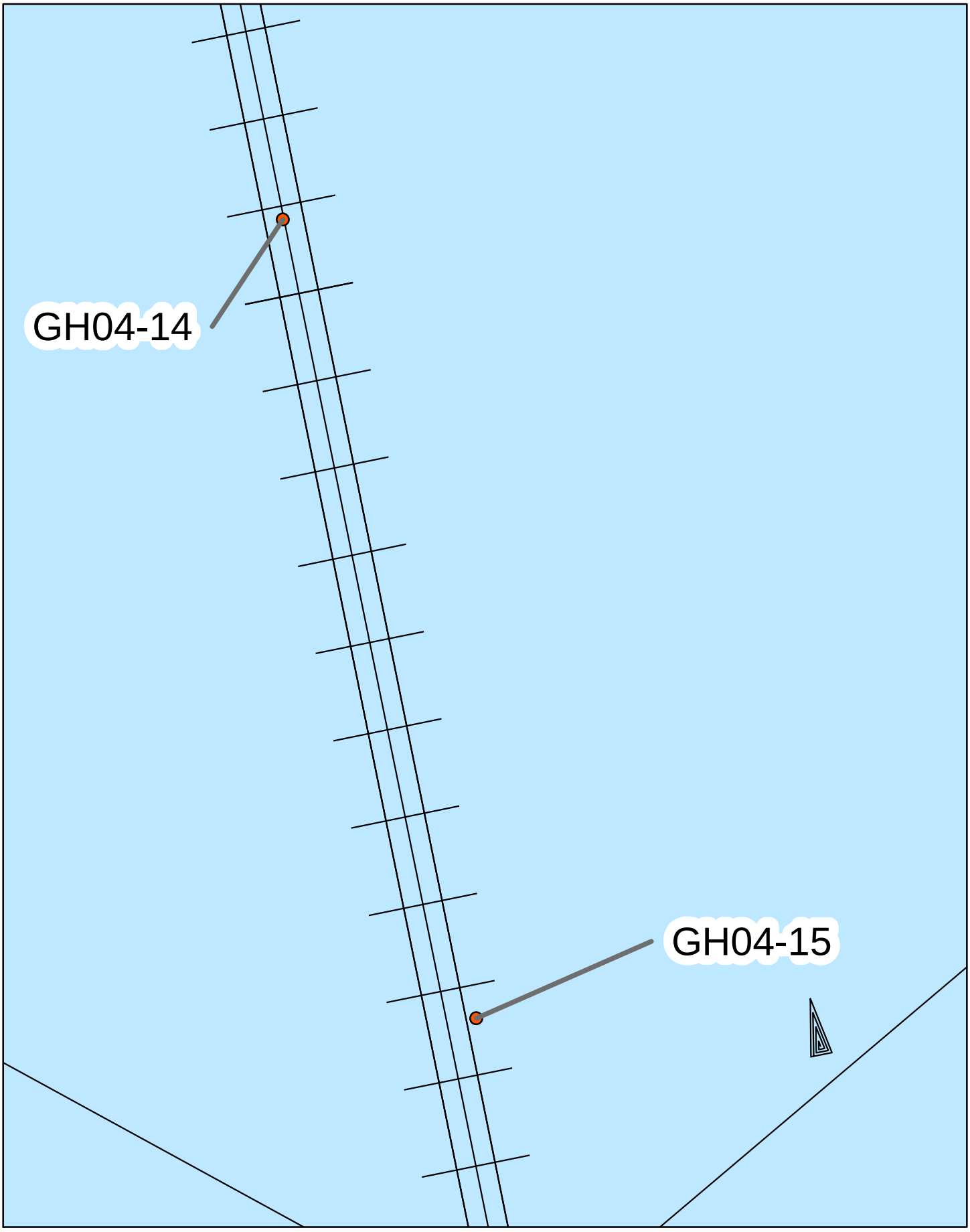

Figure 4-18

Sediment Stations Segment 7

Gulfport Harbor Navigation Channel Final Supplemental EIS

CH2MHILL

File Path: H:\projects3\Gulfport\mxd\Nav_Channel_Sections_Segment_7.mxd, Date: June 6, 2007, User: KOCONNO3

TABLE 4-8
Particle Size of Sediments Collected in and Adjacent to the Gulfport Harbor Navigation Channel
Gulfport Harbor Navigation Channel Final Supplemental EIS

Sample ID	Gravel	Sand	*Coarse Sand*	*Medium Sand*	*Fine Sand*	Silt	Clay
GH04-01/02-D-SED	0	64.1	0.4	7.2	56.4	10.6	25.3
GH04-01/02-M-SED	0	16.8	0	0.5	16.3	18.8	64.4
GH04-01D-SED	0.6	77	0.4	14.4	62.1	8.3	14.1
GH04-01D-SEDREP	0	68.6	0.3	10.2	58.1	12.9	18.5
GH04-01M-SED	0	23.3	0	0.7	22.6	23.1	53.6
GH04-02D-SED	1	45.5	1.1	4.3	40	14.6	38.9
GH04-02M-SED	0	10.2	0	0.8	9.4	20.9	68.9
GH04-03-DW-SED	2.4	43.5	3	14.5	26	17.5	36.5
GH04-03-W-SED	0.1	73.9	0.3	14.9	58.7	4.3	21.8
GH04-04/06/08-D-SED	0	26.8	0.1	3.1	23.6	20.1	53.1
GH04-04/06/08-M-SED	0	14.5	0	0.2	14.4	32.9	52.6
GH04-05/07/09-DW-SED	0	41.5	0	1.6	39.8	12.7	45.8
GH04-05/07/09-W-SED	0	13.2	0	0.5	12.7	21.2	65.6
GH04-05/07/09-WSEDREP	0	14.6	0	0.5	14.1	24.7	60.8
GH04-10/12/14D-SED	0	51.3	0	1.7	49.6	21.2	27.6
GH04-11/13/15-DW-SED	0	53.2	0	1.3	51.9	16.2	30.6
GH04-11/13/15-W-SED	0	56	0	2.2	53.8	12.2	31.8

Source: USACE, 2006a, Attachment C.

General Chemistry Parameters

Sediments sampled as part of the 2006 study were analyzed for the following general parameters:

- Ammonia (NH_3-N)
- Nitrate
- Nitrite
- Cyanide
- Total sulfide
- Total Kjeldahl nitrogen (TKN)
- Total organic carbon (TOC)
- Total phosphorus

Concentrations of these parameters were comparable to reference concentrations, with the exception of ammonia. TOC concentrations within the channel were between 0.29 and 2.08 percent, while the TOC concentration from the reference location was 0.91 percent. Cyanide was not detected in any of the samples. Nitrate was detected at low concentrations in two samples and nitrite was detected in one sample. Ammonia concentrations were 2.9 to 32 times greater than the ammonia concentration measured at the reference site (20.4 milligrams per kilogram [mg/kg]).

Metals

Sediments were analyzed for 14 metals, listed in Table 4-9. Simultaneously extracted metals/acid volatile sulfides (SEM/AVS) ratios were calculated for five metals (cadmium, copper, lead, nickel, and zinc). Metal concentrations were low in sediments collected from the navigation channel and were comparable to sediments from the reference location. Two metals, arsenic and nickel, exceeded the threshold effects level (TEL) values in samples from at least one station; however, none of the metals exceeded the probable effects level (PEL)

values. The SEM/AVS ratio was <1 at each of the sample locations, indicating a high probability that the metals are bound to organic material in the sediments and are not available to aquatic organisms (USACE, 2006a). Available TEL and PEL values for metals analyzed in the sediment samples are listed in Table 4-9.

TABLE 4-9
TEL and PEL Values for Metal Concentrations in Sediments
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL (mg/kg)	PEL (mg/kg)	Maximum Concentration (mg/kg)
Aluminum	-	-	30,300
Antimony	-	-	0.73
Arsenic	7.24	41.6	11.7
Beryllium	-	-	1.8
Cadmium	0.676	4.21	0.57
Chromium	52.3	160.4	38.1
Copper	18.7	108.2	17.6
Lead	30.24	112.18	25.6
Mercury	0.13	0.696	0.056
Nickel	15.9	42.8	22.4
Selenium	-	-	0.53
Silver	0.73	1.77	0.1
Thallium	-	-	0.29
Zinc	124	271	101

Source: NOAA, 2006b. NOAA Sediment Quick Reference Tables, 11/06; USACE 2006a Table 4-8 – Marine Sediment Quality Guidelines (SQGs); MacDonald et al., 1996, Ecotoxicology 5:253-278.

Polynuclear Aromatic Hydrocarbons (PAHs)

PAHs analyzed from samples are listed in Table 4-10. PAH concentrations were low in sediments collected from the navigation channel and did not exceed any TEL or PEL at any of the sample locations. The total PAH concentration for the reference location was 25.6 micrograms per kilogram [µg/kg]. Total PAH concentrations for the samples ranged from 19.7 to 185 µg/kg, well below the TEL value (1,684.06 µg/kg). TEL and PEL values for PAHs in the sediment samples are listed in Table 4-10.

TABLE 4-10
TEL and PEL Values for PAHs in Sediments
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL (µg/kg)	PEL (µg/kg)	Maximum Concentration (µg/kg)
1-Methylnapthalene	-	-	3.3
2-Methylnapthalene	20.21	201.28	3.8
Acenaphthene	6.71	88.9	3.4
Acenaphthylene	5.87	127.87	3.4
Anthracene	46.85	245	22
Benzo(a)pyrene	88.81	763.22	13
Benzo(a)anthracene	74.83	692.53	12
Benzo(b)fluoranthene	-	-	24
Benzo(ghi)perylene	-	-	15
Benzo(k)fluoranthene	-	-	9.9
Chrysene	107.77	845.98	15
Dibenzo(a,h)anthracene	6.22	134.61	2.7
Fluoranthene	112.82	1,493.54	23
Fluorene	21.17	144.35	3.9
Ideno(1,2,3-cd)pyrene	-	-	11

TABLE 4-10
TEL and PEL Values for PAHs in Sediments
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL (µg/kg)	PEL (µg/kg)	Maximum Concentration (µg/kg)
1-Methylnapthalene	-	-	3.3
2-Methylnapthalene	20.21	201.28	3.8
Acenaphthene	6.71	88.9	3.4
Naphthalene	34.57	390.64	3.8
Phenanthrene	86.68	543.53	8.9
Pyrene	152.66	1,397.6	33
Total PAHs (ND=0)	1,684.06	16,770.40	177
Total PAHs (ND=1/2MDL)	1,684.06	16,770.40	185

Source: NOAA, 2006b. NOAA Sediment Quick Reference Tables, 11/06; USACE, 2006a. Table 4-8 – Marine Sediment Quality Guidelines (SQGs); MacDonald et al., 1996, Ecotoxicology 5:253-278.

Polychlorinated Biphenyls (PCBs)

PCB congeners were analyzed in sediment samples. Individual congener concentrations and total PCB concentrations were low in sediments collected from the navigation channel, as shown in Table 4-11. Concentrations were comparable to those in sediments from the reference location, except for two samples. Sample GH04-04-06-08-M (25.18 µg/kg) slightly exceeded the total PCB TEL (21.55 µg/kg), while sample GH04-02-D (121 µg/kg) exceeded the total PCB TEL (21.55 µg/kg) by a factor of 5.6. Total PCB concentrations from the samples ranged from 1.27 to 121 µg/kg. The total PCB concentration at the reference location was 6.18 µg/kg. One PCB congener, BZ#18, was detected in sediment from the reference location. No exceedances of the total PCB PEL (188.79 µg/kg) were detected. Congener concentrations for the sample with the highest concentration, GH04-02-D, are shown in Table 4-11.

TABLE 4-11
TEL and PEL Values for PCBs in Sediment Sample GH04-02-D
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL[a]	PEL[a]	Concentration (µg/kg)
BZ#8	-	-	0.58
BZ#18	-	-	0.69
BZ#28	-	-	0.98
BZ#44	-	-	ND
BZ#49	-	-	ND
BZ#52	-	-	ND
BZ#66	-	-	1.2
BZ#77	-	-	0.48
BZ#87	-	-	3.3
BZ#101	-	-	3.8
BZ#105	-	-	8.2
BZ#118	-	-	10
BZ#126	-	-	ND
BZ#128	-	-	4.9
BZ#138	-	-	14
BZ#153	-	-	8.3
BZ#156	-	-	3
BZ#169	-	-	ND
BZ#170	-	-	2.6
BZ#180	-	-	3.2
BZ#183	-	-	0.55

TABLE 4-11
TEL and PEL Values for PCBs in Sediment Sample GH04-02-D
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL[a]	PEL[a]	Concentration (µg/kg)
BZ#184	-	-	0.35
BZ#187	-	-	0.85
BZ#195	-	-	ND
BZ#206	-	-	ND
BZ#209	-	-	ND
Total PCBs (ND=0)	21.55	188.79	119.56
Total PCBs (ND=1/2 MDL)	21.55	188.79	120.61

[a] TELs and PELs are not provided for individual congeners
Source: USACE, 2006a.

Chlorinated Pesticides

Pesticides analyzed in sediment samples are listed in Table 4-12. Chlorinated pesticides were not detected frequently in any samples. Those that were detected were found in low concentrations both in the samples taken from the navigation channel and the reference location. Of the 25 chlorinated pesticides analyzed for in the channel samples and reference location samples, only 5 were detected: 2,4'-DDD, 2,4'-DDT, alpha-BHC, endrin, and heptachlor epoxide. Available TEL and PEL values for chlorinated pesticides analyzed for in sediments are listed in Table 4-12.

TABLE 4-12
TEL and PEL Values for Chlorinated Pesticides in Sediments
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEL (µg/kg)	PEL (µg/kg)	Maximum Concentration (µg/kg)
2,4'-DDD	-	-	0.41
2,4'-DDE	-	-	ND
2,4'-DDT	-	-	6.8
aldrin	-	-	ND
alpha-BHC	-	-	0.45
beta-BHC	-	-	ND
delta-BHC	-	-	ND
gamma-BHC (Lindane)	0.32	0.99	ND
chlorbenside	-	-	ND
chlordane (technical)	2.26	4.79	ND
DCPA	-	-	ND
4,4'-DDD	1.22	7.81	ND
4,4'-DDE	2.07	374.17	ND
4,4'-DDT	1.19	4.77	ND
dieldrin	0.715	4.3	ND
endosulfan I	-	-	ND
endosulfan II	-	-	ND
endosulfan sulfate	-	-	ND
endrin	-	-	1.8
endrin aldehyde	-	-	ND
heptachlor	-	-	ND
heptachlor epoxide	-	-	0.48
mirex	-	-	ND
methoxychlor	-	-	ND
toxaphene	-	-	ND

Source: USACE, 2006a. Table 4-17 – Chlorinated Pesticide Concentrations (µg/kg) in Sediments, Maintenance Dredging Alternative, Gulfport Harbor Navigation Channel, Mississippi (July/August 2004); NOAA, 2006b. NOAA Sediment Quick Reference Tables, 11/06; MacDonald et al., 1996, Ecotoxicology 5:253-278.

Semivolatile Organic Compounds (SVOCs)

Forty-four SVOCs were analyzed for in sediment samples. SVOCs were detected infrequently in the samples and, when detected, were in low concentrations in both the samples taken from the navigation channel and the reference location. Di-n-butyl phthalate, dimethyl phthalate, and phenol were detected in the navigation sediment samples and the reference location. Phthalates are common laboratory contaminants, which may explain their presence in samples. TEL and PEL values are available only for bis(2-ethylhexyl)phthalate, which was not detected.

Dioxin and Furan Congeners

Dioxin was detected in every sample. Dioxin toxicity equivalence quotients (TEQs) ranged from 6.88 to 15.3 nanograms per kilogram (ng/kg) in sediment samples collected from the navigation channel, while the dioxin TEQ for the reference sediment sample was 9.74 ng/kg. There are no TEL or PEL values for dioxin and furan congeners. Each congener value was multiplied by a toxicity equivalence factor (TEF), and the resulting values were then summed to calculate a TEQ. Dioxin and furan congeners are listed in Table 4-13.

TABLE 4-13
Dioxin and Furan Congeners Analyzed for in Sediments
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	TEF	Maximum Concentration (ng/kg)
2,3,7,8-TCDD	1	ND (1)
1,2,3,7,8-PeCDD	1	ND (5)
1,2,3,4,7,8-HxCDD	0.1	5.76
1,2,3,6,7,8-HxCDD	0.1	11
1,2,3,7,8,9-HxCDD	0.1	22.8
1,2,3,4,6,7,8-HpCDD	0.01	465
OCDD	0.0001	10,200
2,3,7,8-TCDF	0.1	1.14
1,2,3,7,8-PeCDF	0.05	ND (5)
2,3,4,7,8-PeCDF	0.5	ND (5)
1,2,3,4,7,8-HxCDF	0.1	ND (5)
1,2,3,6,7,8-HxCDF	0.1	ND (5)
2,3,4,6,7,8-HxCDF	0.1	ND (5)
1,2,3,7,8,9-HxCDF	0.1	ND (5)
1,2,3,4,6,7,8-HpCDF	0.01	12
1,2,3,4,7,8,9-HpCDF	0.01	ND (5)
OCDF	0.0001	16.4
Dioxin TEQ (ND=0)	-	9.86
Dioxin TEQ (ND=1/2RL)	-	15.3

ND = Compound was analyzed for but not detected; reporting limit is shown in parentheses.
Source: USACE, 2006a.

4.4.5.2 Site Water and Elutriate Chemistry

Chemical analyses were conducted for 10 standard elutriate samples collected in the Gulfport Harbor Navigation Channel. Standard elutriates were prepared from sediment composite samples from multiple sample locations and from site water collected from one location to simulate the potential release of dissolved chemical constituents during open-water placement.

Chemical constituents detected in the site water samples and the full-strength standard elutriates were compared to USEPA saltwater acute (1-hr average exposure concentration) and saltwater chronic (4-day average exposure concentration) aquatic life water quality criteria. NH_3-N toxicity was calculated based on a salinity of 28 ppt, a temperature of 28.9°C (84°F), and a pH of 8.0. Standard elutriate sample results, including detections, are summarized below.

General Chemistry Parameters

Elutriate samples were analyzed for constituents listed in Table 4-14. In the navigation channel samples, ammonia, TKN, TOC, and total phosphorus were detected. NH_3-N concentrations ranged from 12.1 to 37.1 milligrams per liter (mg/L), which exceeded the USEPA chronic criterion (0.466 mg/L) by factors ranging from 26 to 80, and exceeded the USEPA acute criterion (3.10 mg/L) by factors from 3.9 to 12. Nitrate, nitrite, and total sulfide were not detected in any of the samples. Cyanide was detected in one sample (GH04-03), which exceeded the USEPA saltwater acute and chronic criteria for aquatic life (1 µg/L). NH_3-N concentrations in the elutriate preparation water were well below the acute and chronic criterion. USEPA saltwater acute and chronic criteria values for the general chemistry parameters were used for comparison and are listed in Table 4-14.

TABLE 4-14
General Chemistry Parameters and Criteria in Elutriate Samples
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	USEPA Acute Criteria	USEPA Chronic Criteria	Maximum Concentration in Elutriate
Ammonia (NH3), as Nitrogen[a] (mg/L)	3.10	0.466	37.1
Cyanide, Total (µg/L)	1.0	1.0	8
Nitrate and Nitrite as Nitrogen (mg/L)	-	-	0.27
Total Kjeldahl Nitrogen (TKN) (mg/L)	-	-	32.8
Total Organic Carbon (TOC) (mg/L)	-	-	1.8
Total Phosphorus (mg/L)	-	-	0.72
Total Sulfide (mg/L)	-	-	0.1

[a]Ammonia criteria based on average salinity (28 ppt), water temperature = (28.9°C/84°F), and pH (8.0) measured at the mid-depth of water column at time of site water collection.

Source: USACE, 2006a. Table 5-4 – General Chemistry Concentrations in Standard Elutriates.

Metals

Of the 14 metals included in the analytical suite, aluminum, antimony, arsenic, chromium, lead, nickel, selenium, thallium, and zinc were detected in the navigation channel elutriate samples. Most of the concentrations were low; however, the selenium concentration in one sample (8.8 µg/L) slightly exceeded the USEPA saltwater chronic screening criterion (8.2 µg/L) for aquatic life. USEPA saltwater acute and chronic criteria values for the general chemistry parameters are listed in Table 4-15.

TABLE 4-15
Analyzed Metals and Criteria in Elutriate Samples
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	USEPA Acute Criteria (µg/L)	USEPA Chronic Criteria (µg/L)	Maximum Concentration (µg/L)
Aluminum	-	-	14,500
Antimony	-	-	2.6
Arsenic	69	36	16.8
Beryllium	-	-	0.54
Cadmium	40	8.8	0.68
Chromium	1,100	50	22.6
Copper	4.8	3.1	5
Lead	210	8.1	4.2
Mercury	1.8	0.94	0.071
Nickel	74	8.2	8.8
Selenium	290	71	52.2
Silver	1.9	-	0.51
Thallium	-	-	1.4
Zinc	90	81	39

Source: USACE, 2006a. Table 5-5 – Metal Concentrations (µg/L) in Standard Elutriates; USEPA, 2004, National Recommended Water Quality Criteria.

PAHs

Of the PAHs analyzed for, only one (pyrene) was detected in the navigation channel elutriate samples and was detected at a low concentration. There are no USEPA saltwater acute or chronic screening criteria for PAHs.

PCB Congeners

Elutriate water PCB congener concentrations ranged from 8 to 17 ng/L, and were comparable to the total PCB concentration in the site water (9 ng/L). None exceeded the saltwater chronic screening criterion of 30 ng/L.

Chlorinated Pesticides

The navigation channel elutriate samples were analyzed for 25 chlorinated pesticides, which are listed in Table 4-16. Pesticides detected included 2,4'-DDT, 4,4'-DDT, 4,4'-DDD, dieldrin, endosulfan II, and endrin. None of the detected pesticides exceeded USEPA saltwater acute criteria for aquatic life. The dieldrin concentration exceeded the USEPA saltwater chronic screening criterion in four samples, with concentrations ranging from 0.003 to 0.0081 µg/L. The endrin concentration exceeded the USEPA saltwater chronic screening criterion in two samples by factors ranging from 1.4 to 4. The concentration of 4,4'-DDT exceeded the USEPA saltwater chronic screening criterion in one sample by a factor of approximately 10. None of the pesticide concentrations that exceeded the USEPA screening values in elutriates were detected in sediment from these sample locations. Chlorinated pesticides were not detected in the site water. USEPA saltwater acute and chronic criteria for chlorinated pesticides are listed in Table 4-16.

TABLE 4-16
Analyzed Chlorinated Pesticides and Criteria in Elutriate Samples
Gulfport Harbor Navigation Channel Final Supplemental EIS

Parameter	USEPA Acute Criteria (µg/L)	USEPA Chronic Criteria (µg/L)	Maximum Concentration (µg/L)
2,4'-DDD	-	-	0.0083
2,4'-DDE	-	-	0.0023
2,4'-DDT	-	-	0.0035
aldrin	1.3	-	0.0028
alpha-BHC	-	-	0.0028
beta-BHC	-	-	0.0032
delta-BHC	-	-	0.0032
gamma-BHC (Lindane)	0.16	-	0.0029
chlorobenside	-	-	0.0063
chlordane (technical)	-	-	0.035
DCPA	-	-	0.0063
4,4'-DDD	-	-	0.005
4,4'-DDE	-	-	0.0031
4,4'-DDT	0.13	0.001	0.01
dieldrin	0.71	0.0019	0.0081
endosulfan I	0.034	0.0087	0.0031
endosulfan II	0.034	0.0087	0.0059
endosulfan sulfate	-	-	0.0034
endrin	0.037	0.0023	0.01
endrin aldehyde	-	-	0.0032
heptachlor	0.053	0.0036	0.0028
heptachlor epoxide	0.053	0.0036	0.0031
mirex	-	0.001	0.0034
methoxychlor	-	0.03	0.0063
toxaphene	0.21	0.0002	0.014

Source: USACE, 2006a. Table 5-8 – Chlorinated Pesticides Concentrations (µg/L) in Standard Elutriates; USEPA, 2004, National Recommended Water Quality Criteria.

SVOCs

In the navigation channel samples, one SVOC (bis(2-ethylhexyl)phthalate) was detected. There are no USEPA saltwater acute or chronic screening criteria for bis(2-ethylhexyl)phthalate.

4.4.5.3 Toxicity Testing

Toxicity tests were conducted on 11 sediment samples collected from the Gulfport Harbor Navigation Channel. The toxicity testing included acute water column bioassays with *Arbacia punctulata* (purple sea urchin), *Americamysis bahia* (opossum shrimp), and *Cyprinodon variegatus* (sheepshead minnow), and a 10-day whole sediment toxicity testing with *Neanthes arenaceodentata* (polychaete) and *Leptocheirus plumulosus* (amphipod). The bioassays evaluated the effects of exposure to the sediment elutriates and whole sediment on the survival of the test organisms. The evaluation of the whole sediment bioassays is based on the limiting permissible concentration (LPC). The LPC is that concentration which will not

cause unreasonable acute or chronic toxicity or sublethal adverse effects based on bioassay results using appropriate sensitive marine organisms. Dredged material proposed for placement does not meet the LPC if the test organism's mortality is statistically greater than the mortality in the reference sediment, and exceeds the reference sediment mortality by at least 10 percent or 20 percent for amphipod tests.

Water Column Tests

Larval development tests were conducted with *Arbacia punctulata*, and survival rates were conducted with *Americamysis bahia* and *C. variegatus*. *A. punctulata* was the most sensitive to the elutriates. Embryo development was abnormal in 7 of the 11 samples from the navigation channel. Four samples were acutely toxic with 48-hour Effects Concentration 50 percent (EC50) values ranging from 66.1 to 90.4 percent elutriate. Three samples had EC50 values greater than 100 percent elutriate. Full-strength elutriates prepared from four samples exhibited normal embryo development and had EC50 values greater than 100 percent elutriate. Dilution required for 0.01 of the EC50 during dredged material placement ranged from 100- to 151-fold for *A. punctulata*.

Results from the *Americamysis bahia* and *Cyprinodon variegatus* tests were based on organism survival. Three of the 11 navigation channel elutriates yielded survival rates significantly lower than the control for *A. bahia*. The lowest survival with a 96-hour LC 50 of 85.6 percent elutriate was reported for sample GH04-04/06/08-M for *A. bahia*. Dilution required for 0.01 of the Lethal Concentration 50 percent (LC50) ranged from 104- to 117-fold for *A. bahia*.

Survival rates for *C. variegatus* in 4 of the 11 elutriates yielded survival rates significantly lower than the control. In the *C. variegatus*, the 96-hour LC50 values for two samples were 71.2 and 98.2 percent elutriate. The LC50 was greater than 100 percent for 2 samples, though survival in the 100 percent elutriate was statistically lower than the laboratory control. Dilution required to achieve 0.01 of the LC50 ranged from 100- to 140-fold for *C. variegatus*.

Acute toxicity in the sediment samples for *A. punctulata*, *A. bahia*, and *C. variegatus* was observed. Dilution of full-strength elutriate required to meet the limiting permissible concentration (LPC) for ocean placement would likely occur quickly within the water column after placement. Dilution of approximately 151-fold would be required to achieve the LPC for the lowest EC50/LC50 value (66.1 percent elutriate) for 1 of the samples taken.

Whole-Sediment Tests

Sediment toxicity tests were conducted on the marine polychaete, *Neanthes arenaceodentata,* and the estuarine amphipod, *Leptocheirus plumulosus.* None of the sediments tested were acutely toxic to *N. arenaceodentata*. *N. arenaceodentata* survival ranged from 60 to 88 percent in the test sediment, 72 percent in the reference sediment, and 92 percent in the control sediment. Four samples yielded significantly lower survival (ranging from 84 to 87 percent) than the reference sediment (95 percent survival) with respect to whole-sediment tests with *L. plumulosus*. Each of the test sediments from the navigation channel meets the LPC for the whole-sediment bioassays. Results indicated that the sediment samples were not acutely toxic to *Neanthes arenaceodentata* or *Leptocheirus plumulosus*.

Although survival was significantly lower in the sediment samples than the reference sediment, survival was not more than 20 percent lower for either location; therefore, the sediment samples meet the LPC for the whole-sediment bioassays.

4.4.5.4 Bioaccumulation Studies

Bioaccumulation tests are designed to evaluate survival rates of benthic organisms and the potential for bioaccumulation of contaminants of concern within the organism's tissue. Eleven sediment samples from the navigation channel were evaluated in 28-day bioaccumulation studies with *Nereis virens* (sand worm) and *Macoma nasuta* (blunt-nose clam). The two organisms were chosen because they ingest sediments and survive well in dredged, reference and control sediments. Tissue samples from the organisms were tested for metals, PCB congeners, dioxin and furan congeners, lipids, and moisture content.

Chemical concentrations within the sediments were compared to TEL/PEL values for all constituents that have established TEL/PEL values. TEL/PEL values are used to assess marine/estuarine sediment quality relative to the potential adverse effects on benthic organisms.

Nereis virens

Bioaccumulation results for *Nereis virens* indicate that the reference sediment had 94 percent survival, the control had 95 percent survival, and the sediment samples from the navigation channel had a survival ranging from 83 to 98 percent. Survival results indicated that after 28 days of exposure, none of the sediment samples had significantly (p=0.05) lower survival rates than the reference sediment.

Nereis virens tissue taken from organisms exposed to navigation channel sediments statistically exceeded the reference tissue concentrations for five metals (selenium, zinc, manganese, mercury, and silver). None of the PCB congeners or dioxin and furan congeners in the *Nereis virens* tissue from organisms exposed to navigation channel sediments statistically exceeded the reference site tissue concentrations. Uptake ratios (URs) exceeded 1 for selenium and zinc concentrations and statistically exceeded the reference concentration in worm tissue.

Selenium binds strongly to humic and fulvic acids in sediments and is not readily bioavailable. Zinc does not have a tendency to bioaccumulate or biomagnify in aquatic organisms. URs for manganese, mercury, and silver were <1 and statistically exceeded the reference concentration in worm tissue. When the UR is <1, concentrations for the tissues tested were lower than the concentrations in the non-exposed tissues. When the UR is <1, the exceedances could represent natural or analytical variability within the tissue sample rather than contaminant uptake. None of the sediment samples exhibited survival values for *Nereis virens* that were statistically different from the reference sediment.

Macoma nasuta

Bioaccumulation results for *Macoma nasuta* indicate that the reference sediment had 98 percent survival, the control had 96 percent survival, and the sediment samples from the navigation channel had survival ranging from 86 to 98 percent. Survival results indicated that after 28 days of exposure, none of the sediment samples had significantly (p=0.05) lower survival rates than the reference sediment. *Macoma nasuta* tissue taken from organisms exposed to navigation channel sediments statistically exceeded the reference tissue concentrations for five metals (lead, aluminum, iron, manganese, and cadmium). None of the PCB congeners or dioxin and furan congeners in the *Macoma nasuta* tissue from

organisms exposed to navigation channel sediments statistically exceeded the reference site tissue concentrations. URs exceeded 1 for all detected metals, except lead, in the *Macoma nasuta* tissue and statistically exceeded the reference concentration in worm tissue. The UR for lead was <1 and also exceeded the reference concentration. Aluminum, iron, and manganese do not have a tendency to bioaccumulate or biomagnify in aquatic organism tissue. In cases where the UR <1, the exceedances could represent natural or analytical variability within the tissue sample rather than contaminant uptake. None of the sediment samples exhibited survival values for *Macoma nasuta* that were statistically different from the reference sediment.

The effects of the Gulfport Harbor Navigation Channel sediments on test organism survival and chemical accumulation in tissues were evaluated by statistical comparison to tests with the reference sediment. Survival results from the bioaccumulation tests with *N. virens* and *M. nasuta* indicated that after 28 days of exposure, none of the test sediments had significantly (p=0.05) lower survival than the reference sediment, which indicates that the sample sediments did not adversely affect the *N. virens* and *M. nasuta* survival.

4.5 Water Quality

Water quality within Mississippi Sound is influenced by several factors, including the discharge of freshwater from rivers, seasonal climate changes, and variations in tide and currents. The primary driver of water quality is the rivers that feed into the Sound. Freshwater inputs from 69,700 ha (172,160 ac) of watersheds provide nutrients and sediments that serve to maintain productivity both in the Sound and in the extensive salt marsh habitats bordering the estuaries of the Sound. The salt marsh habitats act to regulate the discharge of nutrients to coastal waters and serve as a sink for pollutants. Suspended sediments enter the Sound from freshwater sources, but are hydraulically restricted due to the barrier islands. The barrier islands, combined with the Sound's shallow depth and mixing from wind, tides, and currents, promote re-suspension of sediments. These suspended sediments give Mississippi Sound a characteristic brownish color (MDEQ, 2006b).

Dynamic features such as the Loop Current, eddies, and river plumes create variations in temperature, salinity, and water density. Temperature and salinity strongly influence chemical, biological, and ecological patterns and processes. Differences in water density affect vertical ocean currents and may also concentrate buoyant material such as detritus and plankton. Greatest stratification in the water column occurs in summer (Thompson et al., 1999).

The State of Mississippi classifies the Gulf of Mexico as an estuary within Mississippi waters to the state boundary located 3 miles south of the barrier islands. In conjunction with USEPA, the MDEQ conducted sampling in this estuary during the summer in the Gulf of Mexico from 2000 through 2005 as part of the National Coastal Assessment (NCA) program (MDEQ, 2006b). Data from the NCA program collected from the vicinity of the Gulfport Federal Navigation Channel are summarized below. The locations of the sampling stations are shown in Figure 4-10. Data were collected from stations with water depths ranging from 2.6 ft (0.8 m) to 27.9 ft (8.5 m), with an average depth of 13.5 ft (4.1 m) at each station. Based on an assessment of DO, pH, and temperature collected by the NCA program,

approximately 98 percent of all Mississippi coastal waters fully support designated uses for those parameters (MDEQ, 2006b).

EA Engineering, Science, and Technology, Inc. (EA) conducted a sediment quality characterization for dredging associated with the Proposed Action (USACE, 2006a). As part of this study, water from the channel was analyzed. *In situ* measurements of temperature, salinity, DO, turbidity, and pH were recorded at 16 locations along the navigation channel (Figure 4-10). Depths at these locations ranged from 24 to 42 ft (7.3 to 12.8 m). In addition, samples were collected from one site in the channel with a depth of 24 ft (7.3 m) and submitted for laboratory analysis for the presence and concentrations of potential contaminants.

4.5.1 Salinity

Within the navigation channel, the general trend is for increasing salinity with depth (Figures 4-19 and 4-20). This results from the combination of (1) denser water from outside the Sound moving along the channel toward shore and (2) less dense freshwater overrunning at the surface.

Surface salinities ranged from 19.9 to 29.2 parts per thousand (ppt). Bottom salinities ranged from 26.3 to 33.1 ppt, with most values between 27 and 29 ppt. Eight sample locations along the channel had increases in salinity of more than 4.5 ppt between the surface and the bottom, 2 stations had increases of less than 0.3 ppt, and the remaining stations showed increases from 1 to 3 ppt (USACE, 2006a).

In the Sound, salinity at the surface ranged from 2.7 to 29.9 ppt. Surface salinities ranged from 28 to 30 ppt at 5 stations, 25 to 28 ppt at 3 stations, 20 to 25 ppt at 20 stations, and 18 to 20 ppt at 4 stations; at one station, the value was 2.7 ppt (MDEQ, 2006b).

Bottom salinities in the Sound are more complex because of the range of depths among the sites: 0.8 m to 8.5 m (2.6 ft to 27.9 ft). Station MS00-0004 showed the greatest incase in salinity with depth, with a total increase of 13.8 ppt from the surface to the bottom, which was at 16.4 ft (5 m). The greatest decrease occurred between 3.3 and 6.6 ft (1 to 2 m), where salinity decreased by 7.5 ppt. This station appeared to be located at a freshwater/saltwater interface. Eight other stations had increases in salinity of more than 3.5 ppt from the top to the bottom of the water column; these areas also may be influenced by freshwater inputs (MDEQ, 2006b).

Seven stations in the Sound had negligible increases or decreases in salinity with depth, with bottom salinities within ±0.1 ppt of surface salinities. Seventeen of 33 stations showed minor to moderate increases in salinity, with bottom salinities between 0.2 and 2.3 ppt (MDEQ, 2006b).

In 1994, the USACE surveyed at the ODMDS sites in Gulfport Harbor and found that salinities ranged from 29.2 to 34.0 ppt. The typical salinity gradient between the surface and bottom was 1.9 ppt. The USACE found bottom salinities lowest between Cat and Ship Islands, suggesting the influence of freshwater from Biloxi Bay. Surface salinities were low there and west of the disposal site, toward the Chandeleur Islands (USACE, 1994).

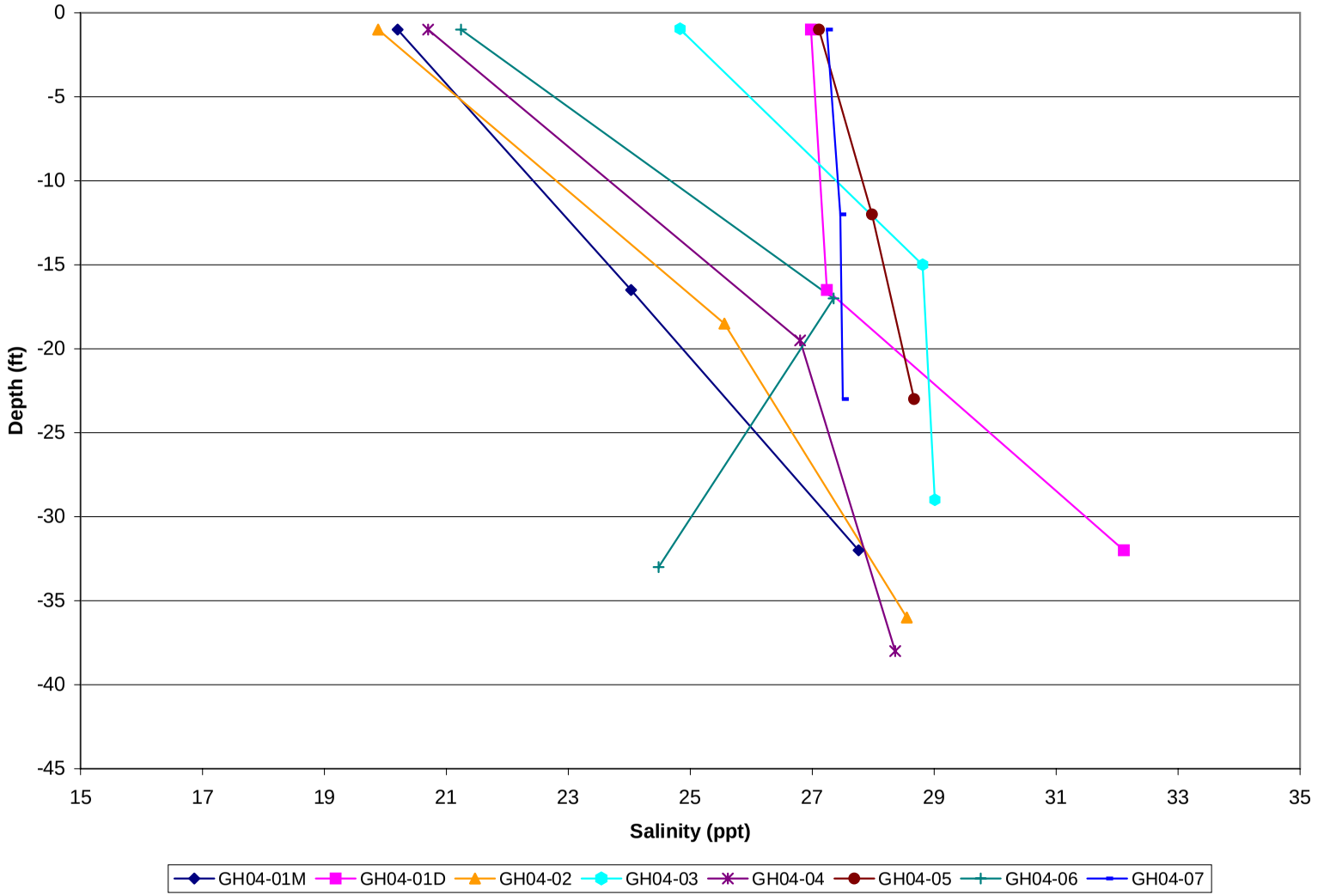

FIGURE 4-19
Salinity at Gulfport Navigation Channel Stations 1-7; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

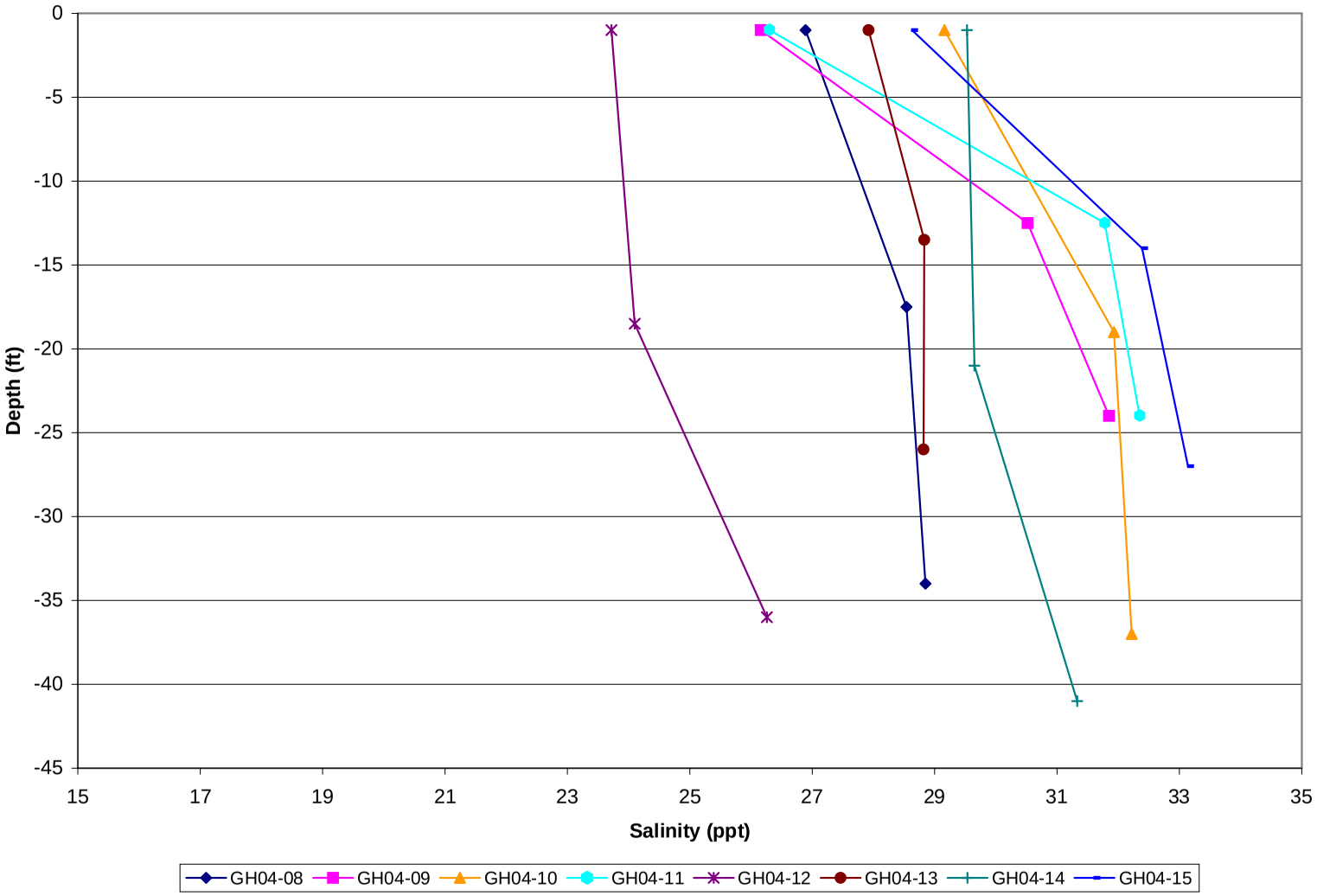

FIGURE 4-20
Salinity at Gulfport Navigation Channel Stations 8-15; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

Chemical stratification appeared to occur at some stations, but it was not correlated with temperature stratification. Nine stations showed substantial increases in salinity (more than 3.5 ppt) with increasing depth, and distinct discontinuities were evident at some stations (MDEQ, 2006b).

Previous studies of the Mississippi-Alabama shelf found that bottom salinity was relatively constant year-round (36 ppt) and surface salinity, measured at 36 ft (10.9 m), ranged from 33 to 36 ppt. Surface salinity is influenced by the discharge of freshwater from large rivers and is reduced during periods of higher flow in late spring and early summer (Thompson et al., 1999).

4.5.2 Temperature

Within the Gulfport Federal Navigation Channel, water temperature tends to decrease with depth. Across all sampling stations, temperature decreased by approximately 2ºC (3.6°F) between the surface and the bottom. Twelve of 16 sample stations were observed to have temperature decreases of 1.9ºC (3.42°F) or more from the surface to the bottom, while three stations showed temperature decreases of less than 0.2ºC (0.36°F) and 1 station had an increase of 0.04ºC (0.07°F) (USACE, 2006a). Seven of the 12 stations with temperature decreases greater than 1.9ºC (3.42°F) showed continuous temperature decreases from the surface through the middle of the water column to the bottom. The other five stations had a distinct temperature drop (thermocline) between the surface and the middle of the water column and temperature remained relatively constant from the middle to the bottom. There was no correlation between depth at the sampling station and the formation of a thermocline, indicating that whether a thermocline develops may be dependent on internal currents and localized mixing in the Sound (Figures 4-21 and 4-22).

Data collected by MDEQ indicated a range of temperature in the Sound from 26ºC to 32.5ºC (78.8 to 90.4°F) throughout the water column at all stations. There was one anomalous temperature reading of 37.5ºC (99.5°F) at a depth of 3.3 ft (1 m) at Station MS01-0036. This was approximately 6 ºC (10°F) higher than the values from the same station collected from 1.6 ft (0.5 m) above and below, and is likely the result of an error rather than a true recording of the temperature at that depth (MDEQ, 2006b).

Surface temperatures ranged from 26ºC to 32.5ºC (78.8 to 90.4°F), with lower temperatures probably indicative of freshwater inputs. The average surface temperature was 30.2ºC (86.3°F). Temperatures at 13.1 ft (4 m), the closest depth to the average bottom depth for all stations, was 29.6ºC (85.2°F).

Even at the greatest depth, the temperature was 28.8ºC (83.8°F), less than 2ºC (3.6°F) below the surface average temperature. The relatively shallow water at the sampling stations may have contributed to the lack of development of a thermocline. Solar radiation could have also heated the bottom, which would have contributed heat back to the lower portion of the water column (MDEQ, 2006b).

One station had no temperature change with depth. Nine of 33 stations displayed temperatures increasing with depth, possibly indicative of a freshwater/saltwater interface, with the cooler freshwater discharge from rivers overriding the warmer saltwater from the Sound. The maximum increase in temperature with depth was 3.0ºC (5.3°F) at Station

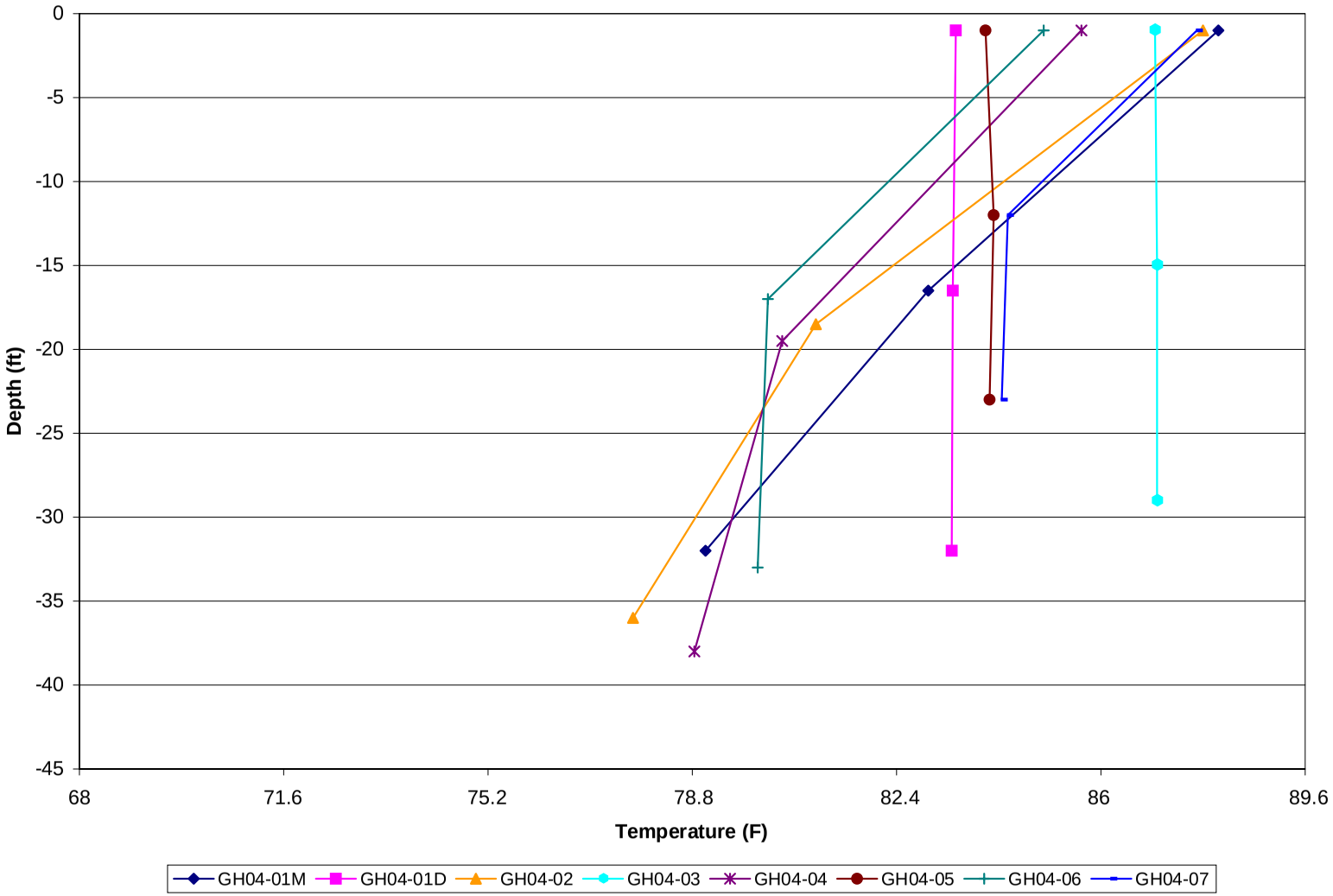

FIGURE 4-21
Temperature at Gulfport Navigation Channel Stations 1-7; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

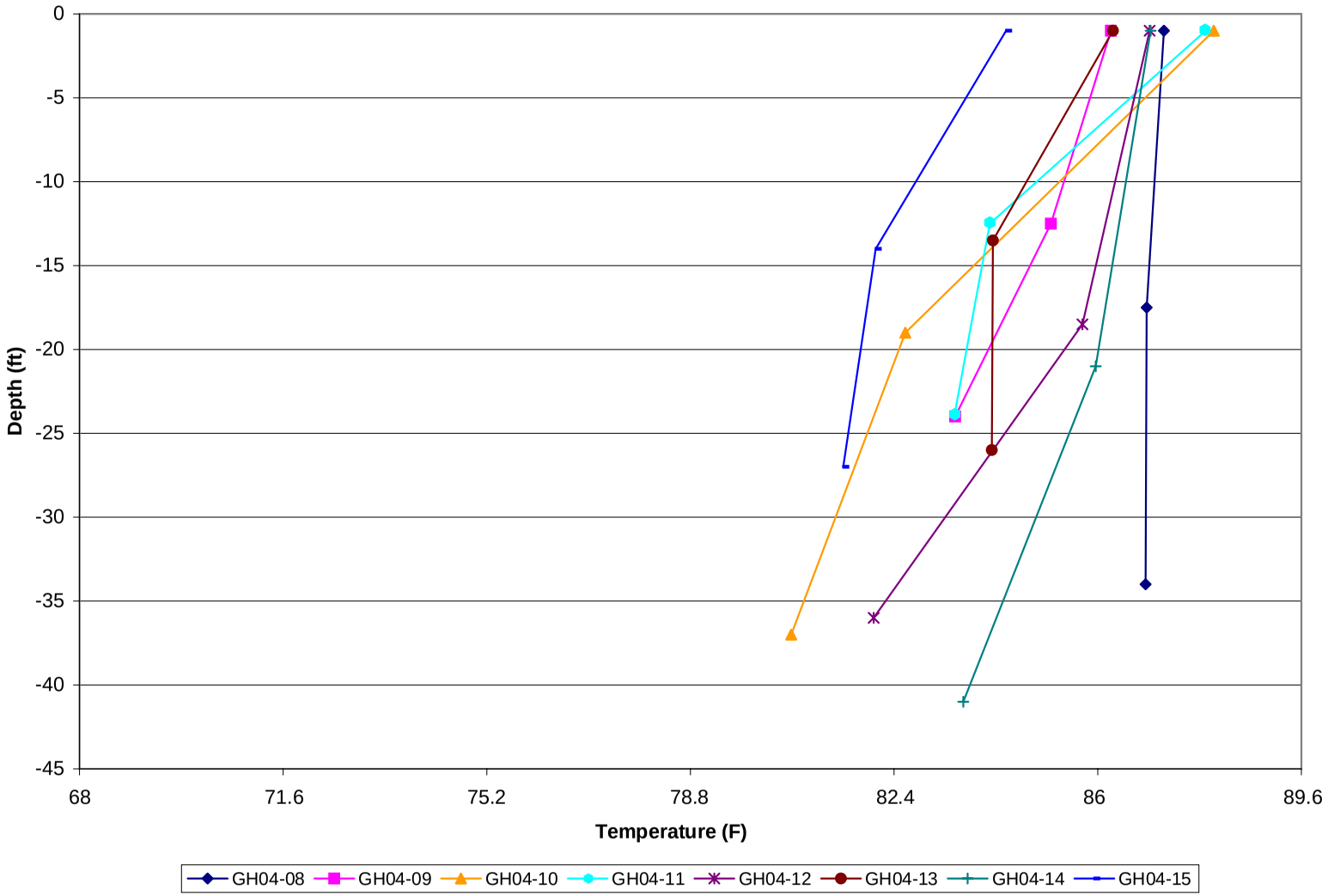

FIGURE 4-22
Temperature at Gulfport Navigation Channel Stations 8-15; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

MS00-0004, with the other 8 stations showing temperature decreases of 0.25°C (0.45°F) or less. Twenty-three stations had decreasing temperature with depth, but the maximum decrease was 2.5°C (4.5°F) (MDEQ, 2006b).

Near the Gulfport Navigation Channel, temperature was fairly uniform among most stations. Most stations showed no evidence of a strong thermocline, with little temperature variation noted with depth. Most stations displayed gradual decreases in temperature with no discontinuities indicative of a thermocline.

Previous studies have identified the annual range in temperature for the Mississippi-Alabama shelf as 62.6 to 71.6°F (17 to 22°C). Temperatures in both deep and shallow water correspond to seasonal variations in air temperature, with higher temperatures in summer months and lower temperatures in cooler months (Thompson et al., 1999).

4.5.3 Water Column Turbidity

A layer of turbid water known as the "nepheloid layer" is commonly found near the bottom in the north-central and northwestern Gulf of Mexico. Turbidity increases when the turbulence is high enough to prevent sediments from settling or to resuspend deposited sediments. Nepheloid layers are therefore usually high in silt and clay particles, because only the most energetic flows can maintain a sand suspension (Gulf of Mexico Fishery Management Council, 2003).

Sampling conducted along the Gulfport Federal Navigation Channel indicated that turbidity at the surface ranged from 0.0 to 9.9 Nephelometric turbidity units (NTUs) and turbidity generally increased with depth (Figures 4-23 and 4-24). Turbidity at the bottom of the channel ranged from 3.1 to 29.3 NTUs. Only one station (GH04-01-D) did not follow the pattern of increasing turbidity with depth; there, turbidity decreased with depth. The lowest turbidity was on the bottom and the highest was at the surface (USACE, 2006a). The level of turbidity at a given station may be influenced by local internal currents, surface inputs, and recent ship and boat activity.

4.5.4 Dissolved Oxygen

Nearshore and open Gulf waters are normally at or near oxygen saturation. However, high organic loading, high bacterial activity related to decomposition of organic material, and restricted circulation due to stratification of the water column during summer can cause near-bottom waters to be depleted of oxygen. Severe anoxic events are generally observed in waters west of the Mississippi Delta, but oxygen depletion problems do occur infrequently over the Mississippi inner shelf. Oxygen problems have also been reported on parts of the Alabama inner shelf (Thompson et al., 1999).

DO conditions in Gulf coast estuaries are generally good, except in a few highly eutrophic regions. USEPA estimates for Gulf of Mexico estuaries show that about 4 percent of the bottom waters in the Gulf estuaries have hypoxic conditions or low DO (<2 parts per million [ppm]) on a continuing basis in late summer. These areas are largely associated with Chandeleur and Breton Sounds in Louisiana, some shoreline regions of Lake Pontchartrain, northern Florida Bay, and small estuaries associated with Galveston Bay, Mobile Bay, Mississippi Sound, and the Florida Panhandle (USEPA, 2001).

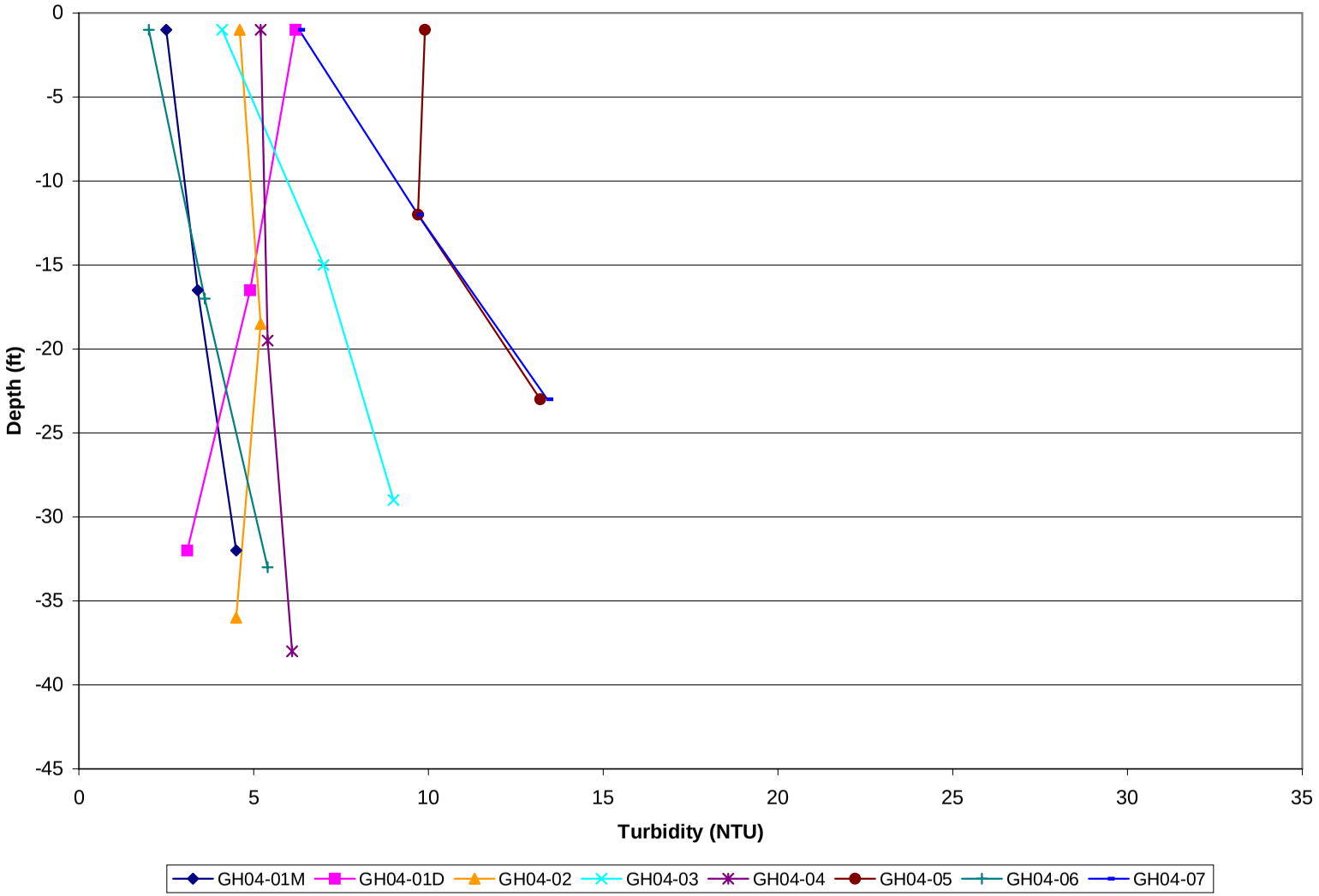

FIGURE 4-23
Turbidity at Gulfport Navigation Channel Stations 1-7; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

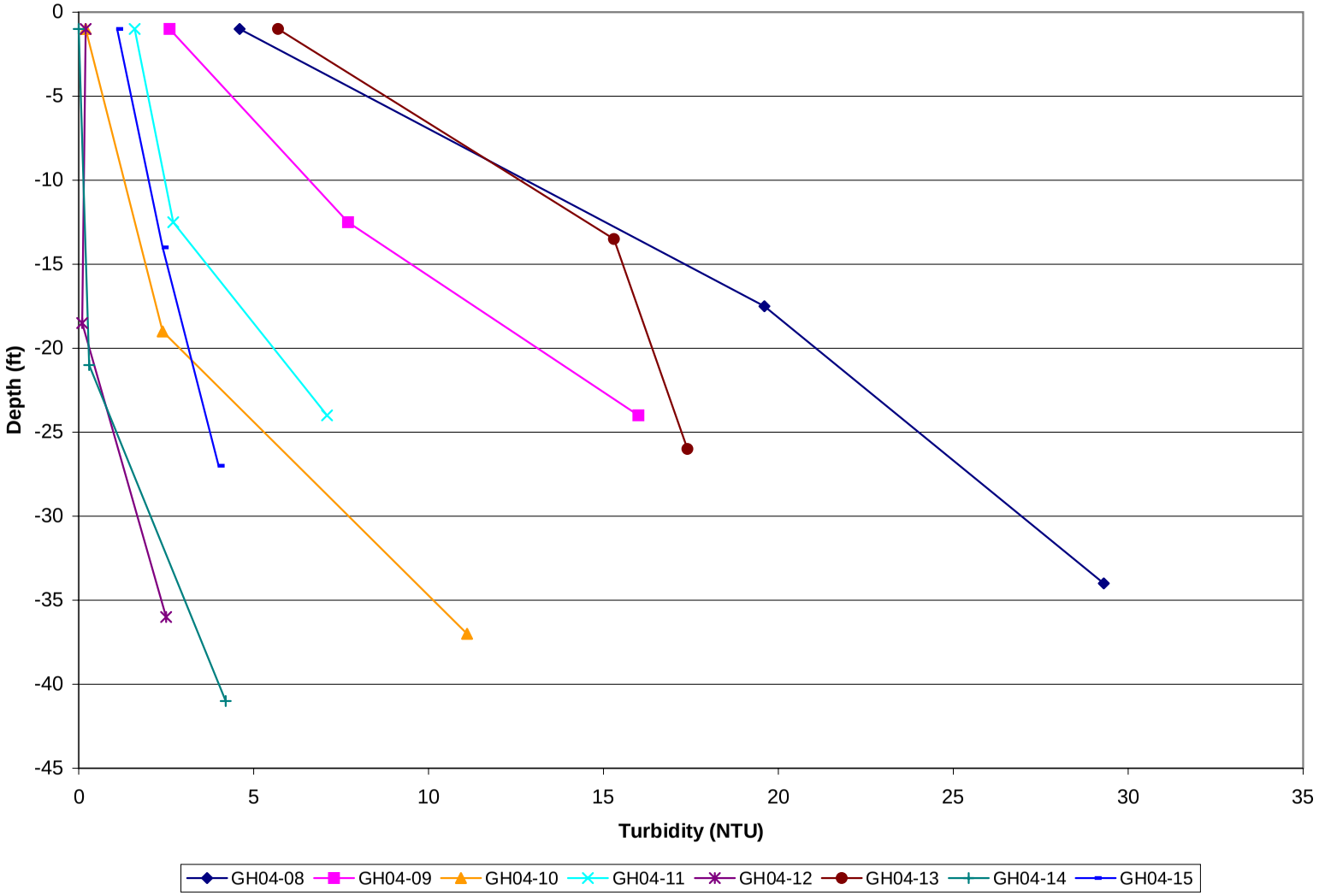

FIGURE 4-24
Turbidity at Gulfport Navigation Channel Stations 8-15; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

Along the Gulfport Federal Navigation Channel, DO levels measured in July and August ranged from 6.17 to 10.29 mg/L at the surface (Figures 4-25 and 4-26). DO typically decreased with depth and bottom DO levels ranged from 0.31 to 6.42 mg/L. At 8 of 16 stations, stratification was evident, usually with a sharp drop in DO concentration. At 6 of these stations, the drop occurred between the surface and the middle of the water column. At the other two stations, the drop occurred between the middle of the water column and the bottom. Four stations showed a continuous decrease in DO levels from top to bottom with no sudden drop. Four stations showed very little difference in DO concentrations with depth. The variability along the channel is probably related to phytoplankton concentration, freshwater inputs, and internal mixing in the waters of the Sound.

DO was also measured in the vicinity of the Gulfport Federal Navigation Channel as part of the NCA program (Figure 4-10). Summer DO concentrations averaged 7.79 mg/L at the surface (ranging from 5.61 to 10.07 mg/L), 6.73 mg/L in the middle of the water column (ranging from 0.56 to 8.99 mg/L), and 5.11 mg/L at the bottom (ranging from 0.35 to 8.57 mg/L). These ranges are somewhat misleading for the middle of the water column, as Station MS00-0004 was the only station with a mid-column DO concentration below 5 mg/L (MDEQ, 2006b). These values are consistent with findings of the 1994 USACE survey at the ODMDS sites in Gulfport Harbor (USACE, 1994), i.e., that DO concentrations were higher in surface and mid-depth water, and typically higher concentrations were found in inshore areas.

4.5.5 Hypoxia

Conditions are said to be "hypoxic" when the DO concentration is less than 2 mg/L. Such conditions occur annually during summer months in large portions of continental shelf waters. Hypoxic zones are created when the water column is sharply stratified by temperature and salinity, thus limiting exchange between bottom waters, surface waters, and the atmosphere (USACE, 1994). High concentrations of nutrients also influence DO concentrations in stratified waters. Elevated nitrogen concentrations promote algal and attendant zooplankton growth. The associated organic matter sinks to the bottom where it decomposes, consuming available oxygen (NOAA, 2004b).

Hypoxic zones have been identified in deeper waters (>12 ft) in Mississippi Sound (USACE, 1994) and an estimated 19 percent of the Sound is affected by hypoxia (USEPA, 1999). Hypoxia can cause fish to leave the area and can cause stress or death among bottom-dwelling organisms (NOAA, 2004b). In 1994, the USACE surveyed at the ODMDS sites in Gulfport Harbor (6 disposal and 7 reference sites) and found that hypoxia was occurring in bottom waters at 50 percent of disposal sites and 71 percent of reference sites (USACE, 1994).

Hypoxic conditions were relatively common at the bottom along the Gulfport Federal Navigation Channel, observed at 8 of 15 sampling stations. At two stations, hypoxic conditions extended up to the middle of the water column. The development of hypoxic conditions was not strictly correlated with depth at the sampling site. The site with the deepest water (42 ft/12.8 m) was not hypoxic and had a DO concentration of 4.05 mg/L at the bottom.

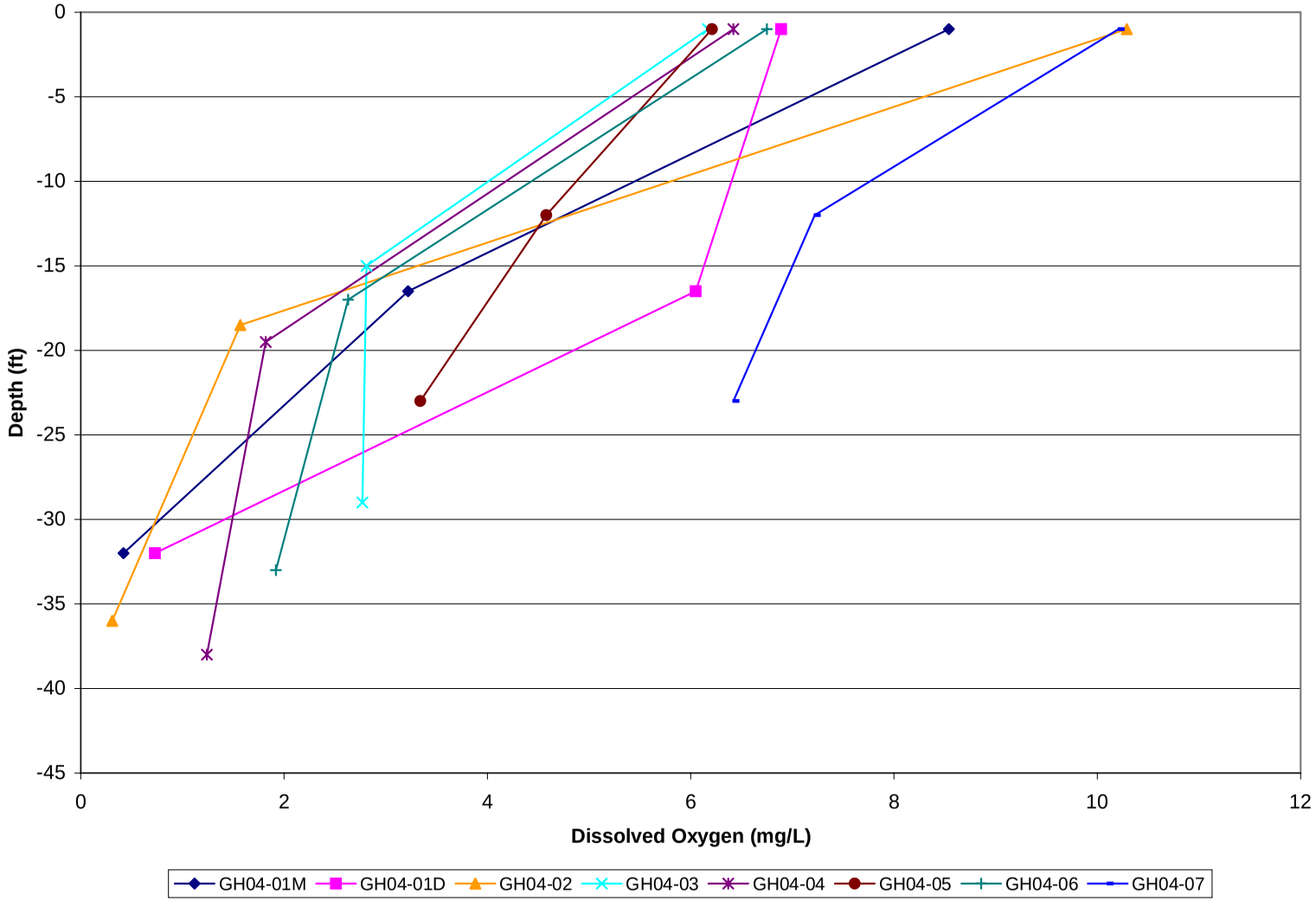

FIGURE 4-25
Dissolved Oxygen at Gulfport Navigation Channel Stations 1-7; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

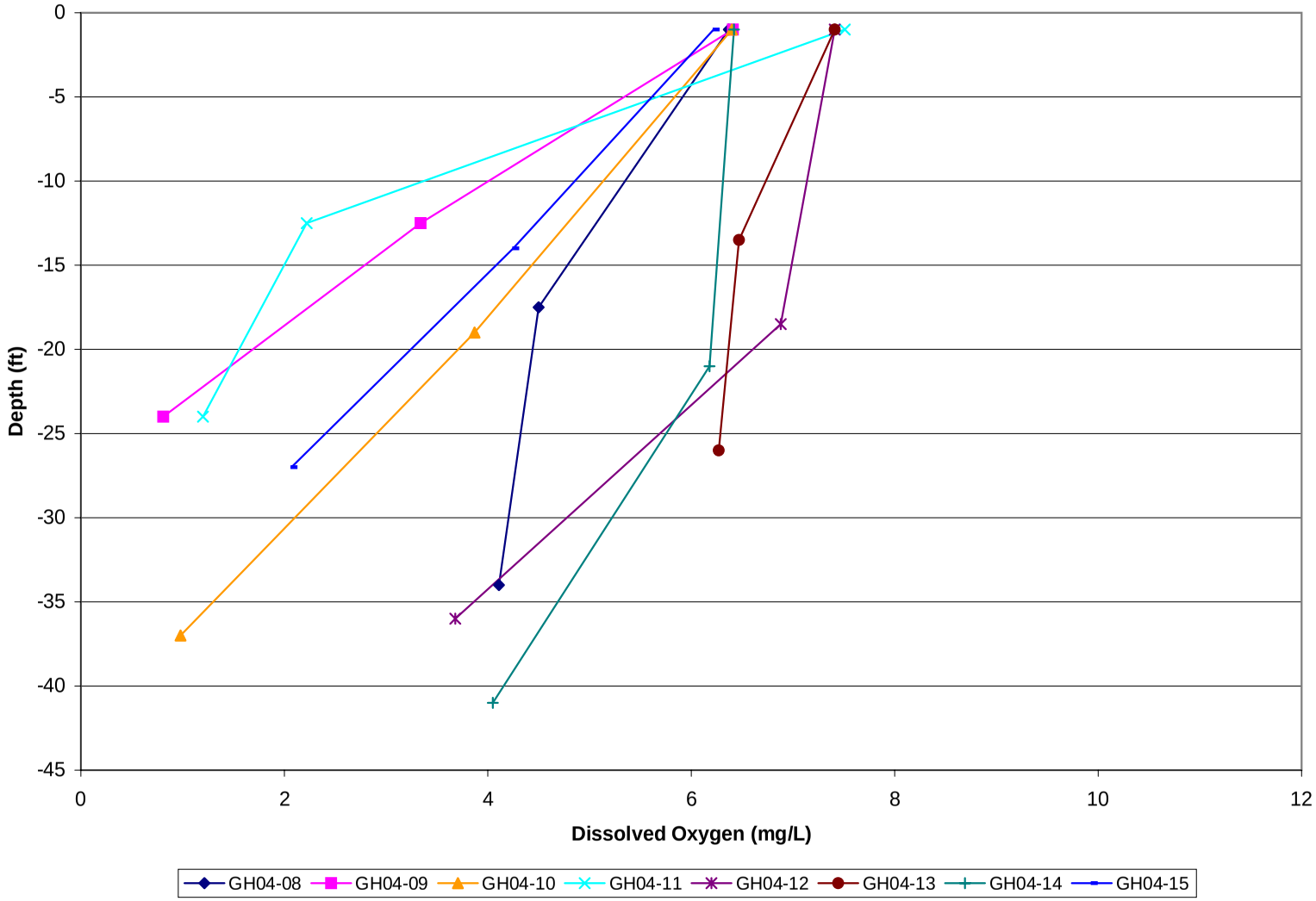

FIGURE 4-26
Dissolved Oxygen at Gulfport Navigation Channel Stations 8-15; 7/28 — 8/12/04
Gulfport Harbor Navigation Channel Final Supplemental EIS

Source: USACE, 2006b

Hypoxic conditions were observed at four of the sampling stations in the Sound. Depths to reach hypoxic conditions ranged from 2 m (6.6 ft) to 8 m (26.3 ft). The station that reached hypoxic condition at 2 m (6.6 ft) was MS00-0004, which appeared to have a freshwater wedge overrunning saltwater on the bottom, with hypoxic conditions extending from 2 m (6.6 ft) to the bottom at 5 m (16.4 ft). The hypoxic zone was restricted to the bottom 1 to 1.5 m at the other 3 stations (MDEQ, 2006b).

4.5.6 Nutrients

Previous studies found mean winter nitrate concentrations in surface waters between 0.29 mg/L and 0.57 mg/L for all waters. During summer, nitrate concentrations were lower (overall mean of 0.07 mg/L), with little variation across the Alabama-Mississippi shelf. Variations are probably due to increased inputs from riverine sources during winter and spring and increased biological activity during summer (Thompson et al., 1999).

Phosphate concentrations in the Sound were uniformly low year-round. Overall mean concentrations ranged from 0.14 mg/L to 0.16 mg/L between seasons. The low phosphate concentrations are likely due to chemical and biological activity. Phosphates are strongly adsorbed on clay particles and readily assimilated by phytoplankton (Thompson et al., 1999). MDEQ data from the vicinity of the Gulfport Federal Navigation Channel indicated that total phosphorus and orthophosphate concentrations were comparable to or below those values previously reported as typical for the northern portion of the Gulf of Mexico. Total phosphorus concentrations averaged 0.06 mg/L at the surface and in the middle of the water column. Bottom concentration was double that or higher in the water column (0.12 mg/L). Orthophosphate concentrations mirrored those of total phosphorus in the water column (0.06 mg/L) and were slightly lower at the bottom (0.10 mg/L) (MDEQ, 2006b). Within the Gulfport Federal Navigation Channel, concentrations of total phosphorus were below the reporting limit and estimated to be 0.056 mg/L (USACE, 2006a).

Ammonia concentration recorded in the middle of the water column in the channel at a depth of approximately 12 ft (3.7 m) was 0.28 mg/L (USACE, 2006a). MDEQ found ammonia concentrations typically below detection limits at most of its sampling locations and an average concentration of 0.08 mg/L in the middle of the water column, approximately one-third the concentration found in water in the channel (MDEQ, 2006b).

MDEQ data from the vicinity of the Gulfport Federal Navigation Channel indicated that concentrations of nitrite and nitrate were frequently below the reporting limits. Nitrites increased slightly with depth while nitrates decreased slightly with depth. Average concentrations of total Kjeldahl nitrogen (TKN) were generally constant throughout the water column, with a slight increase at the bottom. Average concentrations at the surface, in the middle of the water column, and on the bottom were 0.74 mg/L, 0.73 mg/L, and 0.77 mg/L, respectively (MDEQ, 2006b).

4.5.7 Contaminants

Studies of pollutant transport suggest that the primary source of water quality contaminants near Gulfport Federal Navigation Channel is Biloxi Bay or river sources farther to the east. Marine sources also influence the transport of contamination near Ship Island Pass and

West Ship Island (Lytle and Lytle, 1985). Contaminants can be transported either dissolved in the water column or bound to suspended sediments.

A sediment quality characterization for dredging associated with the Proposed Action was completed (USACE, 2006a). As part of this study, water from the channel was analyzed. Eleven of the 133 tested constituents were detected in water sampled. Ammonia, phosphorus, aluminum, arsenic, chromium, nickel, zinc, two PCB congeners, and one dioxin congener (octa-chlorinated dioxin [OCDD], the least toxic and most common dioxin congener) were detected at low concentrations in the Gulfport Federal Navigation Channel. PAHs were below the detection limit. The concentrations of these analytes in the Gulfport Federal Navigation Channel are presented in Table 4-17. No chlorinated pesticides or SVOCs were detected in the water column.

TABLE 4-17
Concentrations of Analytes Detected in Water from Gulfport Federal Navigation Channel
Gulfport Harbor Navigation Channel Final Supplemental EIS

Analyte	Units	Concentration	USEPA Acute Screening Criteria for Aquatic Life [a]	USEPA Chronic Screening Criteria for Aquatic Life
Ammonia	mg/L	0.28	3.10	0.466 [a]
Aluminum	µg/L	592	none	none
Arsenic	µg/L	10.7	69	36
Chromium	µg/L	7.5 [b]	1100	50
Nickel	µg/L	2.1 [b]	74	8.2
Selenium	µg/L	41.2 [b]	290	71
Zinc	µg/L	7.2 [b]	90	81
Total PAHs	µg/L	0.4515 [c]	none	none
PCB Congener BZ#8	ng/L	0.44 [b]	none	none
PCB Congener BZ#118	ng/L	0.8 [b]	none	none
Total PCBs	ng/L	8.75	none	30
Dioxin Congener OCDD	ng/L	0.18	none	none
Total Dioxin	ng/L	0.063	none	none

Source: USACE, 2006a.
[a] Total ammonia as nitrogen; based on salinity = 28 ppt, water temperature = 28.9ºC (84°F), and pH = 8.0
[b] Compound detected but below the reporting limits, concentration is an estimate
[c] Below detection limit and assumed concentration of ½ detection limit
mg/L = milligrams per liter
µg/L = micrograms per liter
ng/L = nanograms per liter

Ammonia was detected in the middle of the channel water column (depth of approximately 12 ft [3.7 m]) at a concentration of 0.28 mg/L, below the calculated USEPA chronic (0.466 mg/L) and acute (3.10 mg/L) criteria for aquatic life (USACE, 2006a). The arsenic concentration in the channel water was 10.7 µg/L, below both the USEPA saltwater chronic (36 µg/L) and acute (69 µg/L) screening criteria for aquatic life (USACE, 2006a). Total PCBs (8.75 ng/L) were well below the chronic screening criterion for aquatic life of 30 ng/L.

Results from a USEPA and MDEQ joint survey of coastal Mississippi following Hurricanes Katrina and Rita showed few detectable priority pollutant compounds. In general, the concentrations in surface waters were low in compared to USEPA's National Ambient Water Quality Criteria (NAWQC) for priority toxic pollutants. Only two surface water stations had DO concentrations below the minimum water quality criteria adopted by the State of Mississippi. Bacteriological densities at the study locations were less than USEPA

standards for coastal waters. Overall, the data collected by USEPA show that few water quality criteria were exceeded with the exception of high algal growth in the Back Bay of Biloxi and Bayou Casotte (USEPA, 2005).

Typically, the shelf of the Gulf of Mexico has low levels of contaminants such as hydrocarbons and metals. Concentrations of contaminants tend to increase toward the Mississippi Delta and toward deeper water where silt and clay contents are higher (Thompson et al., 1999).

4.6 Commercial and Recreational Fishing

The Gulf of Mexico fisheries are some of the most productive in the world. The Gulf produces approximately 40 percent of the total U.S. fisheries landings (Lynch et al., 2003). In 2004, the commercial fish and shellfish harvest from the five U.S. Gulf states was estimated to be 1.48 billion pounds (approximately 670 million kg). In the same year, commercial catches in the Gulf were valued at over $669 million. The State of Mississippi accounted for nearly 184 million pounds (approximately 83 million kg) of commercial fisheries in 2004, exceeded only by Louisiana among the Gulf States (NMFS, 2006a). Of the Mississippi commercial fisheries landings, 16.3 million pounds (approximately 7.4 million kg) were attributed to the Gulfport-Biloxi port area in 2004 (NMFS, 2006b). Table 4-18 summarizes the quantity and value of the commercial catch for Gulfport-Biloxi, the State of Mississippi, and the four other Gulf States during 2004.

TABLE 4-18
2004 Value of Finfish and Shellfish in the Gulf States, Mississippi, and Gulfport-Biloxi
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Pounds	Dollars
Finfish		
Mississippi	161,669,410	$10,484,909
Alabama	6,247,827	$3,904,668
Florida (west coast)	41,135,896	$52,333,298
Louisiana	895,336,329	$66,073,623
Texas	5,852,270	$10,684,031
Shellfish		
Mississippi	22,092,452	$33,305,645
Alabama	20,310,877	$33,130,603
Florida (west coast)	43,178,048	$95,032,285
Louisiana	201,184,023	$208,718,515
Texas	79,704,784	$155,524,197
Total Commercial Fisheries		
Gulf of Mexico	1,476,711,916	$669,191,774
State of Mississippi	183,761,862	$43,790,554
Port of Gulfport-Biloxi	16,300,000	$26,200,000

Sources: NMFS, 2006a; 2006b

4.6.1 Fish

The Gulf of Mexico leads the U.S. in terms of recreational fishing effort. Lynch et al. (2003) reported 264,718 marine recreational anglers representing over 1 million angling trips in 2002 in the State of Mississippi. In 1999, Mississippi boat registration totaled 65,538 in the coastal counties; of those, 29,564 were registered for marine use (Burrage et al., 1999). The Gulf States Marine Fisheries Commission reported 73,568 marine licenses sold in 2004

generating revenue of $719,457 for the State (Gulf States Marine Fisheries Commission, 2004). In addition, the Commission reports approximately 70 charter fishing boats operating out of the Gulfport/Biloxi area (Gulf States Marine Fisheries Commission, 2005).

The NMFS tracks the economic impact of commercial and recreational fishing in the Gulf of Mexico. The major fisheries species that are regulated by NMFS and the Gulf of Mexico Fishery Management Council for the Mississippi Gulf coast are listed in Table 4-19 along with the 2004 landing statistics.

TABLE 4-19
2004 Commercial Fish Landing Statistics for Mississippi
Gulfport Harbor Navigation Channel Final Supplemental EIS

Common Name	Species Name	Pounds	Dollars
Finfish			
Black drum	*Pogonias cromis*	12,503	$5,502
Red drum	*Sciaenops ocellatus*	18,457	$24,938
Flatfish (flounders)	*Bothidae species*	18,186	$31,545
King whiting	*Menticirrhus sp.*	20,604	$14,088
Menhaden	*Brevoortia patronus*	159,392,329	$9,563,684
Striped mullet	*Mugil cephalus*	127,800	$53,899
Sand seatrout	*Cynoscion arenarius*	34,805	$11,389
Spotted seatrout	*Cynoscion nebulosus*	30,469	$61,033
Sharks	*Chondrichthyes species*	139,230	$34,817
Sheepshead	*Archosargus probatocephalus*	66,613	$29,433
Red snapper	*Lutjanus campechanus*	34,761	$71,355
Shellfish			
Blue crab	*Callinectes sapidus*	811,498	$657,734
Eastern oyster	*Crassostrea virginica*	3,029,391	$6,073,242
Brown shrimp	*Penaeus aztecus*	13,247,064	$15,307,739
Pink shrimp	*Penaeus duorarum*	51,097	$75,055
White shrimp	*Penaeus setiferus*	4,888,430	$11,133,297

Source: NMFS, 2006a

Fish Tissue Contaminants

Mercury contamination is an issue with some species of fish in the Gulf of Mexico. Three species (king mackerel larger than 39 inches [99 cm], bluefish, and blacktip shark) have a Gulf-wide mean mercury concentration between 0.81 and 1.0 ppm. Fish consumption advisories are issued at different levels in each state, but generally a mercury level of 1.0 ppm triggers an advisory for the general public to limit consumption. Special populations, such as children and pregnant women, may be advised to limit consumption when mercury levels reach 0.5 ppm. Other species with mercury levels greater than 0.5 ppm include Spanish mackerel, jack crevalle, and sand seatrout (Gulf of Mexico Program, 2004).

The MDEQ published a consumption advisory concerning mercury for the Gulf of Mexico in 1998. Specifically, the advisory is for king mackerel and suggests that people limit the amount of 33- to 39-inch (84- to 99-cm) king mackerel (no more than one meal every 2 months) and avoid eating all king mackerel longer than 39 inches (99 cm) (MDEQ, 2006c).

4.6.2 Shellfish

The common commercial and recreational shellfish of the Mississippi coastal region are listed on Table 4-20. MDMR regulates shellfish in the generic categories of crab, oyster, and shrimp fisheries through recreational and commercial licenses and establishment of seasons for those species (MDMR, 2006).

TABLE 4-20
Common Mississippi Shellfish Fisheries
Gulfport Harbor Navigation Channel Final Supplemental EIS

Species Name	Common Name
Callinectes sapidus	Blue crab
Crassostrea virginica	Eastern oyster
Penaeus aztecus	Brown shrimp
Penaeus duorarum	Pink shrimp
Penaeus setiferus	White shrimp

Source: MDMR, 2006.

4.6.2.1 Shrimp

Brown, white, and pink shrimp are the three major species of shrimp harvested on the Mississippi coast. In 2004, 73 percent of the harvest was brown shrimp (NMFS, 2006a). Mississippi's commercial shrimp landings for 2004 were approximately 18.2 million pounds (8.25 million kg). The dockside value of this harvest, according to NMFS statistics for 2004, was approximately $26.5 million. In recent years, a rise in the amount of foreign shrimp being imported into the U.S. has caused the dockside price to decrease (MDMR, 2006).

The Commission on Marine Resources establishes season opening and closing dates for shrimp fisheries and regulates the size and number of trawls pulled by boats. The MDMR takes shrimp samples to aid in determining the time to open shrimp season (MDMR, 2006).

4.6.2.2 Crabs

The blue crab is the most important commercial crab species in the Gulf of Mexico. In Mississippi, 811,498 pounds (368,089 kg) of blue crab landings valued at $657,734 were reported in 2004 (NMFS, 2006a).

4.6.2.3 Oysters

The Eastern oyster *(Crassostrea virginica)* is one of the more valuable resources of the Mississippi Gulf coast. A total of over 3 million pounds (1.37 million kg) of oysters worth approximately $6 million were collected in 2004 (NMFS, 2006a). Oysters are typically located in shallow waters that rapidly change in temperature and salinity. The MDMR manages 17 natural oyster reefs. Approximately 97 percent of the commercially harvested oysters in Mississippi come from the reefs in western Mississippi Sound, primarily from Pass Marianne, Telegraph, and Pass Christian reefs (MDMR, 2006).

4.6.3 Other

Other commercial species of importance in the Gulf of Mexico include sponges, squids, conchs, sand dollars, and sea biscuits. Commercial sponge harvesting is generally limited to the eastern Gulf of Mexico along the Florida coast. The squid industry in the Gulf of Mexico is part of the seafood industry and typically squid collected for consumption are bycatch from fishing trawls. The conchs, sand dollars, and sea biscuits taken along the Gulf of Mexico are generally used for souvenirs in the tourism industry.

4.7 Essential Fish and Shellfish Habitats

The Magnuson Fisheries Conservation and Management Act of 1976 (the Act) was passed to promote sustainable fish conservation and management. Under the Act, the NMFS was granted legislative authority for fisheries regulation in the U.S. within a jurisdictional area located between 3 miles and 200 miles offshore, known as the Exclusive Economic Zone depending on geographic location. The NMFS was also granted legislative authority to establish eight regional fishery management councils responsible for the proper management and harvest of fish and shellfish resources within these waters. Measures to ensure the proper management and harvest of fish and shellfish resources within these waters are outlined in Fisheries Management Plans prepared by the eight councils for their respective geographic regions. The Mississippi Sound system and nearshore Gulf of Mexico is within the management jurisdiction of the Gulf of Mexico Fisheries Management Council (GMFMC).

NMFS recognized that many marine fisheries are dependent on nearshore and estuarine environments for at least part of their life cycles. The Act was reauthorized and changed extensively via amendments in 1996 (PL 104-297), which aimed to stress the importance of habitat protection to healthy fisheries. The authority of the NMFS and its councils was strengthened by the reauthorization to promote more effective habitat management and protection of marine fisheries. Specific marine environments important to marine fisheries are referred to as Essential Fish Habitat (EFH) in the Act and are defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. § 1802 (10)). The EFH regulations (at 50 C.F.R. 600 Subpart J) provide additional interpretation of the definition of EFH: "*Waters* include aquatic areas and their associated physical, chemical, and biological properties that are used by fishes and may include areas historically used by fishes. *Substrate* includes sediment, hardbottom, structures underlying the waters, and any associated biological communities. *Necessary* means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem. *Spawning, breeding, feeding, or growth to maturity* covers all habitat types used by a species throughout its life cycle."

Twelve species of fish have EFH designations that overlap the Federal Gulfport Harbor Navigation Project (Table 4-21).

TABLE 4-21
Species with EFH in Project Study Area
Gulfport Harbor Navigation Channel Final Supplemental EIS

Common Name	Scientific Name	EFH Concern
Little tunny tuna	*Euthynnus alletteratus*	Adult Area
Red snapper	*Lutjanus campechanus*	Nursery Area
Gray snapper	*Lutjanus griseus*	Nursery Area, Adult Area
Lane snapper	*Lutjanus synagris*	Nursery Area
Gag	*Mycteroperca microlepis*	Range
Scamp	*Mycteroperca phenax*	Range
Cobia	*Rachycentron canadum*	Nursery Area, Adult Area
Red drum	*Sciaenops ocellatus*	Spawning Area, Adult Area
King mackerel	*Scomberomorus cavalla*	Adult Area
Spanish mackerel	*Scomberomorus maculatus*	Adult Area
Greater amberjack	*Seriola dumerili*	Adult Area
Lesser amberjack	*Seriola fasciata*	Range

Source: NOAA, 2006c.

Little tunny tuna, gag, scamp, king mackerel, Spanish mackerel, greater amberjack, and lesser amberjack all have the potential to occur in the project study area, including the barrier islands of Mississippi and the Chandeleur Islands (Appendix B). These species all have adult life stage habitats and ranges that may overlap with the Gulfport Federal Navigation Channel.

Red snapper, gray snapper, lane snapper, and cobia are all listed by NOAA as having EFH in the nearshore area of the channel as nursing ground (Appendix B). These juveniles would likely use the Mississippi barrier islands in the vicinity of the navigation channel as rearing grounds. Adult stages are known to occur in these areas as well.

Red drum is a euryhaline (tolerant of a wide range of salinities) species that may use the nearshore area of the channel as spawning grounds (Appendix B). Spawning typically occurs in nearshore coastal waters on the Gulf side of the Mississippi barrier islands, usually in or near passes and channels where currents can carry the eggs to shallower waters (Pattillo et al., 1997). Spawning usually begins in September and ends in early January, with peaks occurring from mid-September through October (Pattillo et al., 1997). This area is also listed as an EFH for the adult stages of red drum.

NOAA has designated EFH for four shellfish fisheries in the Gulf of Mexico (Table 4-22).

TABLE 4-22
Shellfish Species with EFH in Project Study Area
Gulfport Harbor Navigation Channel Final Supplemental EIS

Common Name	Scientific Name	EFH Concern
Brown shrimp	*Penaeus aztecus*	Major Nursery Area, Major Adult Area
White shrimp	*Penaeus setiferus*	Nursery Area, Major Adult Concentration
Pink shrimp	*Penaeus duorarum*	Nursery Area, Adult Area
Stone crab	*Menippe mercenaria*	Nursery Area, Adult Area

Source: NOAA, 2006c

Brown, white, and pink shrimp, along with stone crabs, have the potential to occur at the Gulfport Federal Navigation Channel. The inshore coastal estuaries of Mississippi Sound have been identified as EFH for all four shellfish (Appendix B). A description of the life histories of the three shrimp species and seasonal movements is presented in Section 4.3.5.

During a 2004 ODMDS survey for the Gulfport Navigation Channel, white shrimp were collected throughout the nearshore zone (CH2M HILL, 2004).

4.7.1 Habitat Areas of Particular Concern

The GMFMC recently refined the extent of the EFH and established locations known as habitat areas of particular concern (HAPCs) (GMFMC, 2005). The EFH consists of areas of higher species density, based on the NOAA Atlas and functional relationships analysis of the fishery management plans (NOAA, 2007). The revision reduces the extent of the EFH originally covered in the 1998 Generic Amendment. The EFH is now restricted to waters shallower than 100 fathoms (600 ft).

The HAPCs are identified as the Florida Middle Grounds, Madison-Swanson Marine Reserve, Tortugas North and South Ecological Reserves, Pulley Ridge, and the individual reefs and banks of the northwestern Gulf of Mexico: East and West Flower Garden Banks, Stetson Bank, Sonnier Bank, MacNeil, 29 Fathom Bank, Tanking Bright Bank, Geyer Bank, McGrail Bank, Bouma Bank, Alderice Bank, and Jakkula Bank.

HAPCs were identified on the basis of the following criteria:

- Importance of ecological function provided by the habitat
- Extent to which the area or habitat is sensitive to human-induced degradation
- Whether and to what extent development activities are stressing the habitat
- Rarity of the habitat type

Federal actions that may adversely affect the EFH will trigger consultation and/or conservation recommendations under Sections 305(b) (2)-(4) of the Act.
The Chandeleur Islands contain a habitat of mangrove considered a "rarity;" however, the habitat was not ultimately listed as a HAPC (GMFMC, 2006). According to GMFMC criteria, "The rarity of a habitat parcel was mapped in terms of the habitat type multiplied by the distance to the nearest neighboring ecosystem" (GMFMC, 2003)). The map of HAPC illustrated mangroves located within the Chandeleur Islands, including the northern islands of the Chandeleurs, but these were destroyed during Hurricane Katrina. The only mangroves existing are those in the central and southern areas of the chain.

4.7.2 Species Accounts

The 1998 and 2005 *Generic Amendments for addressing EFH requirements in the Fisheries Management Plans (FMPs) for shrimp, red drum, reef fish, coastal migratory pelagic resources, stone crab, spiny lobster, and coral and coral reefs; the 2004 Environmental Impact Statement for shrimp, red drum, reef fish, coastal migratory pelagic resources, stone crab, spiny lobster, and coral and coral reefs*; and the *2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan* were used as resources to describe the life history and preferred habitat of managed species with EFH designated within the area of the Proposed Action. Relative abundance information was obtained from Estuarine Living Marine Resources (ELMR) and the National Coastal Data Development Center Coastal Ecosystem Gulf of Mexico data (National Coastal Data Development Center, 2008).

Red Drum Fishery

Red drum: Red drum occur throughout the Gulf of Mexico in a variety of habitats, ranging from depths of about 40 m (130 ft) offshore to very shallow estuarine waters. They commonly occur in most Gulf estuaries where they are found over a variety of substrates including seagrass, sand, mud, and oyster reefs. Spawning occurs in deeper water near the mouths of bays and inlets, and on the Gulf side of the barrier islands (Pearson, 1929; Simmons and Breuer, 1962; Perret et al., 1980), from about September through November. Red drum are known to spawn in depths ranging from a minimum of 40 m to a maximum of 70 m (130 to 230 ft) (NMFS, 2004b). The eggs hatch mainly in the Gulf, and larvae are transported into the estuary where the fish mature before moving back to the Gulf (Perret et al., 1980; Pattillo et al., 1997). Known nursery areas in the western Gulf of Mexico are Lake Pontchartrain and Mobile Bay (NCDDC, 2008). Estuarine wetlands are especially important to larval, juvenile and subadult red drum. An abundance of juvenile red drum has been reported around the perimeter of marshes in estuaries (Perret et al., 1980). Young fish were found in quiet, shallow, protected waters with grassy or slightly muddy bottoms (Simmons and Breuer, 1962). Shallow bay bottoms or oyster reef substrates were especially preferred by subadult and adult red drum (Miles, 1950). Adult red drum use estuaries but tend to spend more time offshore as they age.

Larval red drum feed almost exclusively on mysids, amphipods, and shrimp, whereas larger juveniles feed more on crabs and fish (Peters and McMichael, 1987). Overall, crustaceans (crabs and shrimp) and fishes are most important in the diet of red drum; primary food items are blue crabs, striped mullet, spot, pinfish, and pigfish.

In Mississippi Sound, juvenile red drums are relatively common year-round and adults are relatively common from February to October.

Juvenile and adult red drum are highly mobile and would likely avoid the area during dredging. Dredging and dredge material placement would occur outside of primary nursery areas and at depths shallower than those known to support spawning. Therefore, potential direct impacts to populations of younger life stages of red drum are not expected to be significant.

Shrimp Fishery

Brown, white, and pink shrimp have the potential to occur in the vicinity of the Proposed Action. A description of the life histories of the three shrimp species and their seasonal movements is presented in Section 4.3.5.

Postlarvae, juvenile and adult shrimps have well developed swimming capabilities and would likely avoid the area during dredging. Dredging and dredge material placement would occur at depths generally shallower than those known to support spawning; therefore, significant direct impacts to spawning shrimp populations or their demersal eggs would be unlikely. The greatest potential for direct impacts would occur as shrimp migrate from offshore through the tidal passes to their nursery grounds during their last planktonic stage. This is not expected to be significant, however, since: (1) the currents are relatively strong in the tidal passes (1.63 to 3.3 ft/s and 5.9 to 11.5 ft/s on flood and ebb tides), limiting the time of potential impact, and (2) the shrimp are likely to be found in the mid- to upper water column away from the greatest disturbance at the bottom.

Stone Crab Fishery

Gulf stone crab: Florida stone crab, *Menippe mercenaria*, and gulf stone crab, *M. adina,* comprise the stone crab fishery in the Gulf of Mexico. The Gulf stone crab is typically smaller than *M. mercenaria* and replaces the Florida stone crab in the northern and western Gulf of Mexico (northwest Florida to Tamaulipas, Mexico). Adult stone crabs are benthic organisms and can be found from the shoreline out to depths of 61 m. They occupy a variety of habitats including burrows under rock ledges, coral heads, dead shell, and seagrass patches. Adults also inhabit oyster bars and rock jetties and are commonly found on artificial reefs where adequate refugia are present. Stone crabs spawn principally from April through September.

Juveniles are also benthic dwellers but do not burrow; they use readily available refugia in close proximity to food items. Juveniles can be found on shell bottom, sponges, and *Sargassum* mats as well as in channels and deep grass flats. After reaching a width of about 0.5 inch, the crabs live within oyster beds and rocks in shallow parts of estuaries. There are numerous reports of large juveniles to small adults being abundant on oyster reefs (FMRI, 2001). Adults and juveniles appear to be hardy and can tolerate most environmental extremes within their distribution range and are capable of surviving salinities considerably higher or lower than 33 ppt. Stone crab larvae are planktonic and require warm water (30° C [86° F]) and high salinity (30-35 ppt) for most rapid growth.

The stone crab is a high trophic level predator and is primarily carnivorous at all life stages. Juveniles feed on small mollusks, polychaetes, and crustaceans. Adults consume several species of mollusks, including oysters and mussels, and also consume carrion and vegetable matter such as seagrass (Lindberg and Marshall, 1984).

Adults and juveniles are relatively common in most of Mississippi Sound year-round.

Life stages of this species occur primarily outside of the habitat supported within the channel and disposal areas and are therefore unlikely to be directly impacted by the Proposed Action.

Reef Fishery

Gray snapper: Gray snapper occur in estuaries and shelf waters of the Gulf and are particularly abundant off south and southwest Florida. Considered to be one of the more abundant snappers inshore, the gray snapper inhabits waters to depths of about 180 m (590 ft). Adults are demersal and mid-water dwellers, occurring in marine, estuarine, and riverine habitats. They occur up to 32 kilometers (20 miles) offshore and inshore as far as coastal plain freshwater creeks and rivers. They are found among mangroves, sandy grassbeds, and coral reefs and over sandy, muddy, and rocky bottoms. Spawning occurs offshore around reefs and shoals from June to August. Eggs are pelagic and are present from June through September after the summer spawn, occurring in offshore shelf waters and near coral reefs. Larvae are planktonic, occurring in peak abundance from June through August in offshore shelf waters and near coral reefs from Florida through Texas. Postlarvae move into estuarine habitat and are found especially over dense grass beds of *Halodule* and *Syringodium*. Juveniles are marine, estuarine, and riverine dwellers, often found in estuaries, channels, bayous, ponds, grassbeds, marshes, mangrove swamps, and freshwater creeks. They appear to prefer *Thalassia* grass flats, marl bottoms, seagrass meadows, and mangrove roots. Juveniles utilize the estuarine bays as nursery grounds from May through September.

The juvenile and adult stages of this species are highly mobile and would likely avoid the area during dredging operations. Furthermore, postlarvae stages of gray snapper are most likely to be located in habitat that is not supported within the channel and disposal areas (i.e., dense seagrass beds). Therefore, potential direct impacts to populations of grey snapper are not expected to be significant.

Gray triggerfish: Gray triggerfish are found throughout the Gulf of Mexico. Eggs are deposited in late spring and summer in nests prepared in sand near natural and artificial reefs. Larvae and postlarvae are pelagic, occurring in the upper water column, usually associated with *Sargassum* and other flotsam. Early and late juveniles also are associated with *Sargassum* and other flotsam, and may be found in mangrove estuaries. Triggerfish leave the surface *Sargassum* habitat in the fall, when juvenile fish (5 to 7 inches) move to reef habitat on the bottom. Adults are found offshore in waters greater than 10 m where they are associated with natural and artificial reefs. Triggerfish may move away from the reef structure in order to feed. Spawning adults occur in late spring and summer, also around natural and artificial reefs in water depths greater than 10 m.

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of gray triggerfish are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

Lane snapper: Lane snapper occur throughout the shelf area of the Gulf in depths ranging from 0 to 130 m (0 to 426 ft). The species is demersal, occurring over all bottom types, but is most common in coral reef areas and sandy bottoms. Spawning occurs in offshore waters from March through September. Nursery areas include the mangrove and grassy estuarine areas in southern Texas and Florida and shallow areas with sandy and muddy bottoms off all Gulf states. Early and late juveniles appear to favor grass flats, reefs, and soft bottom areas to offshore depths of 20 m (65.6 ft) (NOAA, 1985). Adults occur offshore at depths of 4 to 132 m (13.1 ft to 433.1 ft) on sand bottom, natural channels, banks, and man-made reefs and structures.

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of the gray triggerfish are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

Red snapper: Red snapper occur throughout the Gulf of Mexico shelf. They are particularly abundant on the Campeche Banks and in the northern Gulf. The species is demersal and is found over sandy and rocky bottoms, around reefs, and around underwater objects from shallow water to 200 m (656 ft). Adults favor deeper water in the northern Gulf. Spawning occurs in offshore waters from May to October at depths of 18 to 37 m (59 to 121 ft) over fine sand bottom away from reefs. Eggs are found offshore in summer and fall. Larvae, postlarvae, and early juveniles are found from July through November in shelf waters ranging in depth of 17 to 183 m (55 to 600 ft). Early and late juveniles are often associated with structures, objects, or small burrows, but also are abundant over barren sand and mud bottom. Late juveniles are taken year-round at depths of 20 to 46 m (65 to 130 ft).

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of the red snapper are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

Coastal Pelagic Fishery

Cobia: In the Gulf of Mexico, cobia are found in coastal and offshore waters (from bays and inlets to the continental shelf) from depths of 1 to 70 m (3.3 ft to 230 ft). Adults feed on fishes and crustaceans, including crabs. Spawning occurs in coastal waters from April through September at temperatures ranging from 23-28°C (73.4°F to 82.4°F). These fish perform a seasonal migration, commonly seen among other species in the family. Eggs are found in the top meter of the water column, drifting with the currents. Larvae are typically found in offshore waters of the northern Gulf of Mexico, where they likely feed on zooplankton. Juveniles occur in coastal and offshore waters feeding on small fishes, squid, and shrimp.

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of the cobia are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

King mackerel: King mackerel occur in the Gulf of Mexico, with centers of distribution in south Florida and Louisiana. Adults are found over reefs and in coastal waters, although they rarely enter estuaries. Migrations to the northern Gulf in the spring are believed to be temperature dependent, and the species is found in waters greater than 20° C (68°F). While adults can be found at the shelf edge in depths to 200 m (656.2 ft), they generally occur in less than 80 m (262.5 ft), at oceanic salinities from 32-36 ppt. Adults feed mostly on fishes, and less often on crustaceans and mollusks with a diet that includes jacks, snappers, grunts, halfbeaks, penaeid shrimp, and squid. Adults spawn over the outer continental shelf from May to October, with the northwestern and northeastern Gulf of Mexico considered important spawning areas. The pelagic eggs are found offshore over depths of 35-180 m (114.8 ft to 591 ft) in spring and summer. Larvae occur over the middle and outer continental shelf, principally in the north-central and northwestern Gulf, where they consume larval fishes such as carangids, clupeids, and engraulids. Juveniles are found from inshore to the middle shelf, where they feed on engraulid and clupeid fishes and some squid.

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of the king mackerel are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

Spanish mackerel: Spanish mackerel occur in the Gulf of Mexico, with their center of distribution off Florida. Adults are found in inshore coastal waters, and may enter estuaries in pursuit of baitfish. Migrations to the northern Gulf in the spring are believed to be temperature-dependent, and the species is found in waters greater than 20°C (68°F) and out to depths of 75 m (246.1 ft) at oceanic salinities. Adults feed mostly on fishes, and less often on crustaceans and mollusks with a diet that includes clupeids, engraulids, carangids, and squid. Adults spawn over the inner continental shelf from May to September, with the north-central and northeastern Gulf of Mexico considered important spawning areas. The pelagic eggs are found over the inner continental shelf at depths less than 50 m (164 ft) in

spring and summer. Larvae occur over the inner continental shelf, principally in the northern Gulf, where they consume larval fishes such as carangids, clupeids, and engraulids. Juveniles occur in estuarine and coastal waters, where they feed on engraulid and clupeid fishes, gastropods, and some squid. Juveniles are relatively common in Mississippi Sound from spring through fall.

Sensitive life stages of this species primarily occur outside of the habitat supported within the channel and disposal areas. Furthermore, the juvenile/adult life stages of the Spanish mackerel are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that this species would be directly impacted by the Proposed Action.

Highly Migratory Species

Sharks: Mississippi Sound and adjacent waters have been identified as important nursery areas for nine shark species, primarily Atlantic sharpnose, blacktip, finetooth, and bull sharks. Other less common species are the spinner, blacknose, sandbar, bonnethead, and scalloped hammerhead. EFH has been identified in this area for the blacknose, Atlantic sharpnose, bonnethead, tiger, spinner, bull shark, blacktip, and scalloped hammerhead sharks.

Typically sharks migrate inshore in the early spring around March and April, remain inshore during the summer months, and then migrate offshore during the late fall (around October). Most shark species in the Mississippi waters give birth during late spring and early summer, with young sharks spending just a few months of their lives in shallow coastal waters.

Most shark species are abundant around barrier islands, with adult sharks commonly located south of the barrier islands. Younger sharks, which can tolerate lower salinities, have been found as far inshore as Round and Deer Island.

The four most common inshore shark species feed primarily on fish including menhaden, spot, croaker, speckled, trout, and hardhead catfish. In addition, researchers have found crabs in the stomachs of bonnethead shark and stingrays and smaller sharks in the stomachs of blacktip and bull sharks.

The life stages of these species are highly mobile and would likely avoid the area during dredging operations. It is therefore unlikely that these species would be directly impacted by the Proposed Action.

4.8 Marine Sanctuaries

Two national marine sanctuaries are located in the Gulf of Mexico but neither is in the vicinity of the potential dredge and disposal areas. The Flower Gardens Bank is located in the western Gulf approximately 110 miles (176 km) off the coasts of Texas and Louisiana. The Florida Keys form an archipelago off the southern tip of Florida (NOAA, 2006d).

4.9 Cultural Resources

Cultural resources were evaluated via a literature review focused on marine archaeological resources (shipwrecks). The following sources were consulted to locate records of previously identified historical and archaeological resources within the project study area:

- USACE, Mobile District
- NPS
- NRHP
- Mississippi State Historic Preservation Office (MS SHPO)
- Louisiana State Historic Preservation Office (LA SHPO)
- Automated Wreck and Obstruction Information System (AWOIS) database

The information gathered from these sources was used to characterize and assess the potential effects of the Proposed Action. The team identified and evaluated literature about historic wrecks and vessels, collected existing data, including archival records and maps, and used this information to assess potential impacts. Existing studies were reviewed to determine whether any recorded or listed historical and/or archaeological resources are located in the project study area.

Shipwrecks in the Gulf of Mexico could include those from the earliest periods of exploration of the southern United States through the Civil War, World Wars I and II, and commercial and recreational fishing. In searching for historic shipwrecks, current survey methods using side-scan radar and magnetometers indicate an anomaly but they cannot distinguish between a historic shipwreck and a modern-day shrimp trawl (USACE, 2004a).

According to recent studies, few shipwrecks occurred in the Gulf of Mexico before 1750, and the number of wrecks does not substantially rise until after 1850. Shipwrecks in the nearshore areas occurred near major ports of the central and western Gulf (Pearson et al., 2003). Shipwrecks in the nearshore waters increased again after 1950. This increase can be correlated with the increase in recreational boating, fishing, the offshore oil and gas industry, and commercial fishing (primarily shrimping).

A literature search revealed that although many shipwrecks are present in the northern Gulf of Mexico from Florida to Texas, no designated sites are within the project study area. There is one site, an Eighteenth-Century Ballast Pile, off the shore of the northern Chandeleur Islands (Garrison et al., 1989). The site was investigated in 1989 and determined not to be a shipwreck; it was a collection of ballast, pottery shards, six iron cannons, a lead patch, and lead bilge pump tube. The survey did not recover the remains of a hull; it was assumed that a ship was grounded and in an effort to free itself, discarded items that would lighten the ship's load. Although the site was surveyed, it was never officially designated as eligible for the NRHP.

Archaeological sites near the project area include a site in the Biloxi Back Bay and another in the Bay St. Louis area; these are the only known sites in Mississippi. They are not within the project study area. An underwater survey of the project study area was conducted in 1988 for the initial deepening and widening EIS for the Gulfport Navigation Channel. No historic properties were identified as a result of the investigation (Irion, 1989).

In a recent study, sites of potential historic shipwrecks and known shipwrecks were compiled and plotted (Pearson and Forsyth, 2006). This research study revealed the location of five shipwrecks within the project study area. Two of these sites are within 170 ft of the current boundaries of the Mississippi Sound segment of the channel, but their exact location is not certain (Figure 4-27). None of the wrecks have been evaluated for their historic significance, nor is it certain that they are actually at the location indicated in the research sources. For the two sites immediately adjacent to the channel, their exact location and date of sinking are not known, so it is not certain if these are historic or more recent wrecks. Regular maintenance dredging has occurred in the Navigation Channel for more than a decade and no shipwrecks within the channel have been discovered.

4.9.1 Ship Island

Ship Island is a barrier island located approximately 12 miles from Gulfport. The island is part of the NPS Gulf Island National Seashore. Ship Island was so named because of its large, naturally deep harbor on the north side of the island where large vessels could anchor (NPS, 2006). The island served as a primary port for explorers and colonists along the Gulf coast for decades.

The island was named a military reservation in 1847 and construction of a fort, now known as Fort Massachusetts, began 9 years later. Work on the fort was completed in 1866. The fort is the only surviving historic structure on the island. It was listed in the NRHP in 1971 and is open year-round to visitors.

A lighthouse was constructed on Ship Island in 1853 and was destroyed during the Civil War. That lighthouse was replaced in 1862. In 1947, the lighthouse was automated and in 1959, the structure was altered for a recreational use with the addition of new quarters for men and women, a kitchen, and bathrooms. Hurricane Camille hit the island in 1969, damaging the lighthouse and cutting the island in two. In 1999, the historic lighthouse was rebuilt on the historic foundation. Hurricane Katrina destroyed that structure in 2005 (Lighthousefriends.com, 2006).

West Ship Island, with the fort and the site of the former lighthouse, is primarily a public recreation area. A ferry from Gulfport provides easy access for swimming, sight-seeing and fishing.

4.10 Noise

The project study area is located at the Gulfport Federal Navigation Channel and extends offshore from the port into the Gulf of Mexico, as shown in Figure 2-2. The project study area is surrounded by industrial activities nearshore and open water offshore. Current sources of noise include existing industrial and shipping activities that are active year-round. The shipping channel is bounded onshore by the west pier of the City of Gulfport, the east pier of the Illinois Central Railroad Company, and the City Wharf. There is also a small craft harbor and a yacht basin in the vicinity (USACE, 1989).

In 2004, under pre-Hurricane Katrina shipping conditions, Gulfport was ranked the 10th busiest port in the region, receiving approximately 2,375,000 short tons of cargo per year, 0.1 percent of the total U.S. cargo (UD, 2006; USACE, 2004b). In 2004, Gulfport received

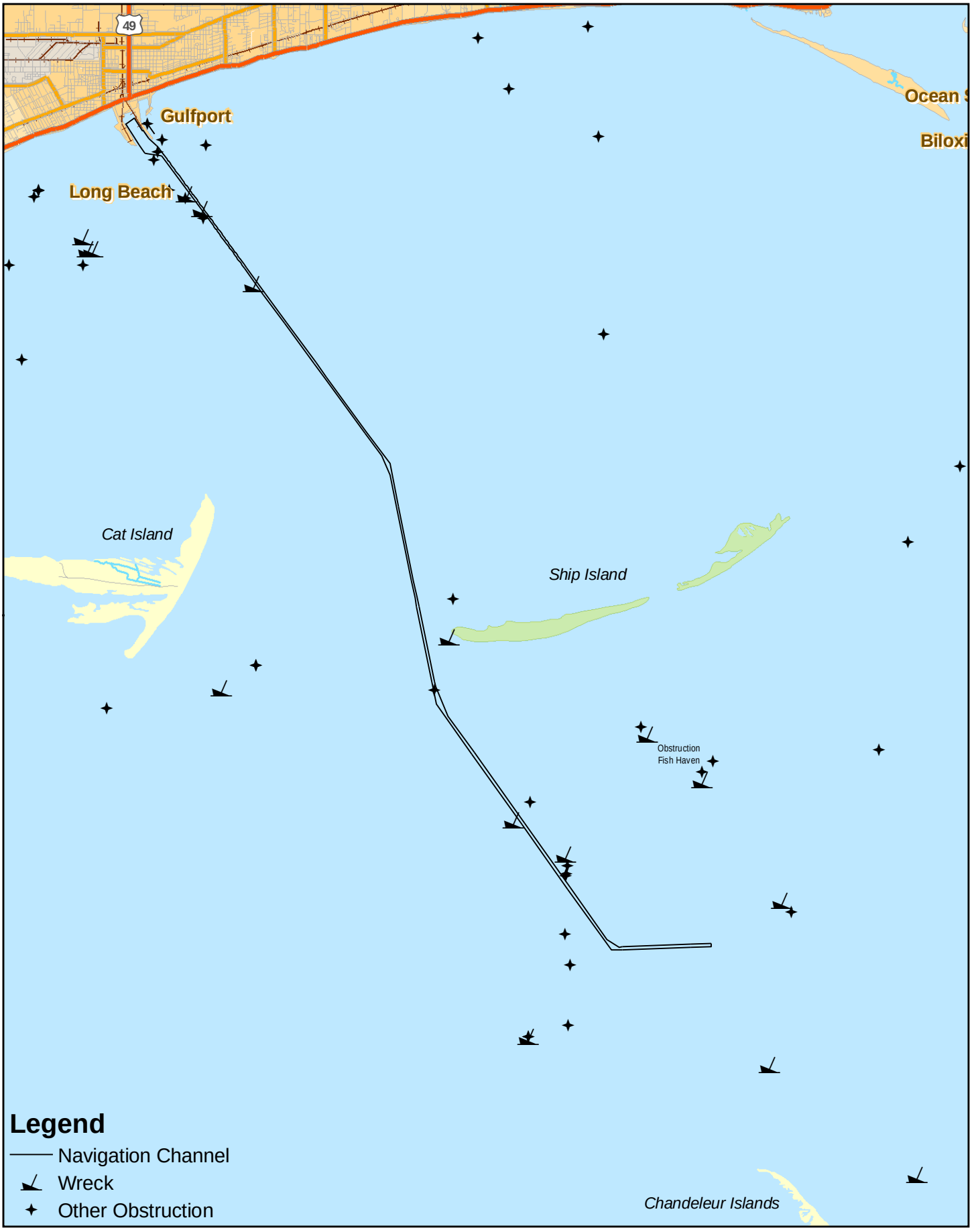

Figure 4-27
Sunken Vessels and Other Obstructions to Navigation
Gulfport Harbor Navigation Channel Final Supplemental EIS

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2,492 total vessel trips to the port (USACE, 2004b). These shipping and industrial operations generate background noise at the port. Noise studies at other ports have identified an ambient noise level of 55 to 70 decibels (dBA) depending on location relative to port activities. Peak noises louder than 100 dBA occur periodically in association with use of heavy equipment at other port operations (Port of Los Angeles, 2006). For comparison, sound levels typically average 40 dB in rural areas and 50 dB to 60 dB in business and commercial areas (The Engineering Toolbox, 2007).

None of the industrial operations surrounding the shipping channel could be considered sensitive to noise. Tourist boats and small personal craft operate out of Gulfport. However, these are also not considered noise-sensitive receptors. Residential areas are located approximately 1 km (0.6 mi) from the port. The nearest school is St. John's Catholic Elementary School, approximately 1.1 km (0.7 mi) from the project study area. No other schools are within 1.6 km (1 mi) of the project study area (Google Maps, 2006).

Marine shipping activities also produce underwater shipping noise, typically low-frequency sound in the range of 20-500 hertz (Hz) (University of Rhode Island [URI], 2003). Shipping to the ports of Louisiana and Mississippi includes approximately 8,000 to 9,000 foreign cargo vessel trips per year (UD, 2006), and shipping traffic throughout the GIWW exceeds 700,000 vessel trips per year (USACE, 2004b). Low-frequency sound travels farther underwater than higher-frequency sound, so underwater shipping noise from this traffic extends beyond the immediate vicinity of the Gulfport Navigation Channel.

4.11 Air Quality

Existing air quality near the project study area in Gulfport was assessed in terms of types of sources contributing to emissions that are regulated by National Ambient Air Quality Standards (NAAQS). NAAQS have been developed for oxides of nitrogen, hydrocarbons, particulate matter, carbon monoxide, sulfur dioxide, lead, VOCs, and other hazardous air pollutants.

Harrison County, which includes Gulfport, is in attainment for all NAAQS (MDEQ, 2004, MDEQ, 2007). Existing air quality conditions near the project study area reflect the ongoing industrial and commercial operations in the immediate vicinity, as well as surrounding traffic and residential outputs.

4.11.1 Significant Stationary Sources

Major stationary sources, or point source, of air pollution are required to obtain a Title V operating permit, which establishes all air requirements applicable to the source and specifies the methodology for the emitting source to demonstrate compliance. There are three permitted major sources in Gulfport: Hartson Kennedy Cabinet Top Company, Inc., Northrop Grumman Ship Systems, Inc., and Trinity Yachts, LLC.

4.11.2 Mobile Sources

Shipping traffic and vehicular land traffic contribute to mobile sources in and around the project study area. Major traffic areas in the project study area include the GIWW, U.S. 90, and U.S. 49. After vessel unloading, cargo is moved by rail and highway, and these mobile

sources contribute air emissions. In 2004, Gulfport received a total of 2,492 shipping vessel trips. That cargo is moved by rail and truck from the port. Except for the trucks, ground vehicle use in the area is mostly pass-through traffic and contributes only minimally to air pollution. Most of the mobile air pollution in the vicinity is a result of highway traffic. The estimated 2005 annual average daily traffic on I-90 in the vicinity of the project study area was 47,000 vehicles, and on I-49 was 22,000 vehicles (MDOT, 2005).

4.12 Socioeconomics

This section describes the social and economic environment and community resources in and surrounding the project study area. Specific information provided in this section includes demographics, environmental justice, socioeconomic resources, land and water use, utilities, public safety, and navigation and ports.

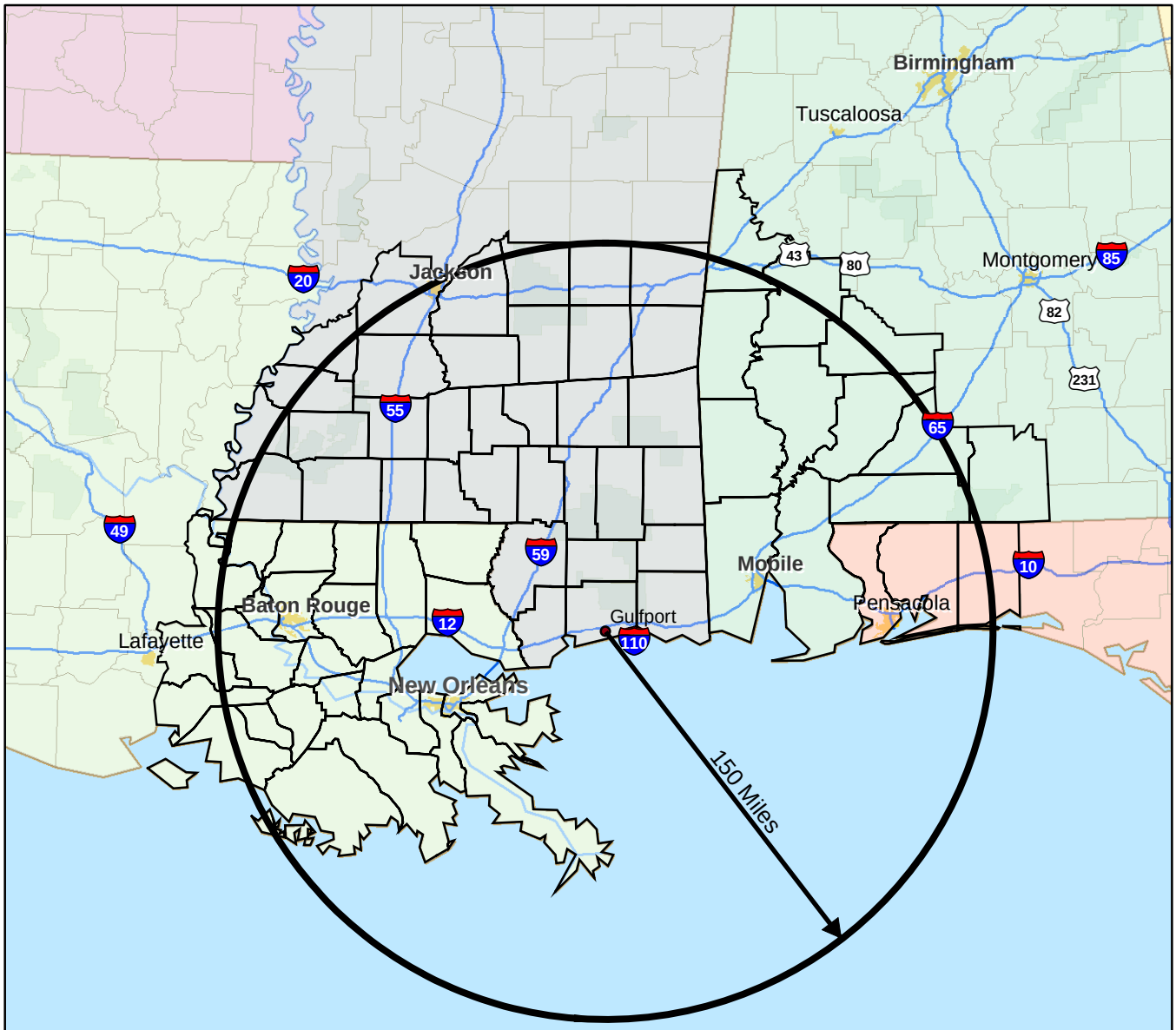
The Region of Influence (ROI) for this project is approximately 150 miles from Gulfport Harbor, as shown in Figure 4-28. This ROI includes areas within 25 Louisiana parishes, 35 Mississippi counties, 12 Alabama counties, and 3 Florida counties. Figure 4-29 shows the major cities within the ROI and the surrounding counties. These major cities include Gulfport, Biloxi, Pascagoula, Baton Rouge, New Orleans, and Mobile.

Hurricane Katrina struck the Gulf of Mexico coast in August 2005. This hurricane coupled with Hurricanes Rita and Wilma impacted the socioeconomic situation in the ROI. Because the recovery process is still underway, it is difficult to accurately capture current socio-economic data. Therefore, pre-Katrina information is provided as a baseline and augmented by new data, where available, which reflect the post-Katrina recovery efforts.

4.12.1 Demographics

4.12.1.1 Population

Table 4-23 summarizes population trends in the ROI and within 25-mile and 150-mile radii of the ROI from 1990 to 2000 and between 2000 and 2003 or 2000 and 2005 depending on available data. According to the U.S. Census, the ROI experienced a population increase from 1990 through 2003; however, some areas were experiencing a minor decrease in population prior to the hurricanes of 2005.



Alabama	Florida	Louisiana		Mississippi		
Sumter	Okaloosa	Pointe Coupee	Ascension	Scott	Jones	Amite
Marengo	Santa Rosa	Washington	St. John the Baptist	Rankin	Covington	Pike
Choctaw	Escambia	Tangipahoa	St. James	Lauderdale	Jefferson Da	Walthall
Wilcox		St. Helena	Orleans	Newton	Lawrence	Pearl River
Clarke		East Feliciana	St. Charles	Hinds	Adams	George
Monroe		West Feliciana	Assumption	Jasper	Lincoln	Stone
Conecuh		East Baton Rouge	St. Bernard	Clarke	Franklin	Jackson
Washington		St. Tammany	St. Mary	Smith	Marion	Harrison
Covington		West Baton Rouge	LaFourche	Claiborne	Lamar	Hancock
Baldwin		Livingston	Plaquemines	Simpson	Forrest	
Escambia		St. Martin	Iberia	Copiah	Perry	
Mobile		Iberville	Terrebonne	Wayne	Greene	
			Jefferson	Jefferson	Wilkinson	

N W E S

0 25 50 100

Miles

Figure 4-28

Region of Influence

Gulfport Harbor Navigation Channel Final Supplemental EIS

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Figure 4-29
Project Location and Nearby Counties
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TABLE 4-23
U.S. Census Bureau Statistics for Population Changes for Cities, Parishes, Counties, and States within 25 and 150 Miles of Gulfport Federal Navigation Channel
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	Percent Population Change between 1990 and 2000[a]	Percent Population Change between April 1, 2000 and July 1, 2003[a]	Percent Population Change between April 1, 2000 and July 1, 2005[a]
Within 25 miles			
Gulfport	9.9%	1.0%	N/A[b]
Biloxi	9.3%	-3.3%	N/A
Pascagoula	0.4%	-1.3%	N/A
Harrison County	14.7%	N/A	2.7%
Hancock County	35.3%	N/A	8.7%
Stone County	26.7%	N/A	9.1%
Jackson County	14.0%	N/A	3.4%
Within 150 miles			
Baton Rouge	2.5%	-1.5%	N/A
New Orleans	-2.5%	-3.2%	N/A
Mobile	0.3%	-2.9%	N/A
East Baton Rouge Parish	8.6%	N/A	-0.3%
Orleans Parish	-2.5%	N/A	-6.2%
Mobile County	5.6%	N/A	0.4%
Louisiana	5.9%	0.6%	1.2%
Mississippi	10.5%	1.3%	2.7%
Alabama	10.1%	1.2%	2.5%
United States	13.1%	N/A	5.3%

[a] Source: U.S. Census Bureau. 2006a. http://quickfacts.census.gov/qfd/index.html, web site accessed on September 15, 2006.
[b] N/A = Not Available.

Hurricane Katrina had a significant impact on the population of Gulfport and the population along the Gulf coast. Because significant portions of some cities were destroyed, other cities which remained unscathed from the hurricane such as Baton Rouge became home to new populations of people seeking to start over as their homes and businesses were destroyed. Others who were temporarily displaced by the hurricane have returned and are beginning the rebuilding process. In some areas, populations have drastically increased and decreased as these populations have shifted. Population estimates before and after Hurricane Katrina for cities, parishes, counties, and states within 150 miles of the Gulfport Federal Navigation Channel are included in Table 4-24.

TABLE 4-24
Population Estimates Before and After Hurricane Katrina
Gulfport Harbor Navigation Channel Final Supplemental EIS

		Estimated June/July 2005 Population[c, d]		Estimated January 1, 2006, Population[b, c]		
	2000 Population[a]	(Pre-Hurricane Katrina)	Population Change 2000-2005	(Post-Hurricane Katrina)	Post-Katrina Population Change	Percent Change
Baton Rouge	227,818	222,064	-5,754	N/A[e]	N/A	N/A
New Orleans	484,674	454,863	-29,811	N/A	N/A	N/A
Gulfport	71,127	72,464	1,337	N/A	N/A	N/A
Biloxi	50,644	50,209	-435	N/A	N/A	N/A
Pascagoula	26,200	25,173	-1,027	N/A	N/A	N/A
Mobile	198,915	191,544	-7,371	N/A	N/A	N/A

TABLE 4-24
Population Estimates Before and After Hurricane Katrina
Gulfport Harbor Navigation Channel Final Supplemental EIS

		Estimated June/July 2005 Population[c, d]		Estimated January 1, 2006, Population[b, c]		
	2000 Population[a]	(Pre-Hurricane Katrina)	Population Change 2000-2005	(Post-Hurricane Katrina)	Post-Katrina Population Change	Percent Change
East Baton Rouge Parish	412,852	396,735	-16,117	413,700	16,965	4.3%
Orleans Parish	484,674	437,186	-47,488	158,353	-278,833	-63.8%
Harrison County	189,601	186,530	-3,071	155,817	-30,713	-16.5%
Hancock County	42,967	46,240	3,273	35,129	-11,111	-24.0%
Stone County	13,622	13,904	282	14,211	307	2.2%
Jackson County	131,420	134,249	2,829	126,311	-7,938	-5.9%
Mobile County	399,843	393,585	-6,258	391,251	-2,334	-0.6%
Louisiana	4,468,976	4,523,628	54,652	N/A	N/A	N/A
Mississippi	2,844,658	2,921,088	76,430	N/A	N/A	N/A
Alabama	4,447,100	4,557,808	110,708	N/A	N/A	N/A
United States	281,421,906	296,410,404	14,988,498	N/A	N/A	N/A

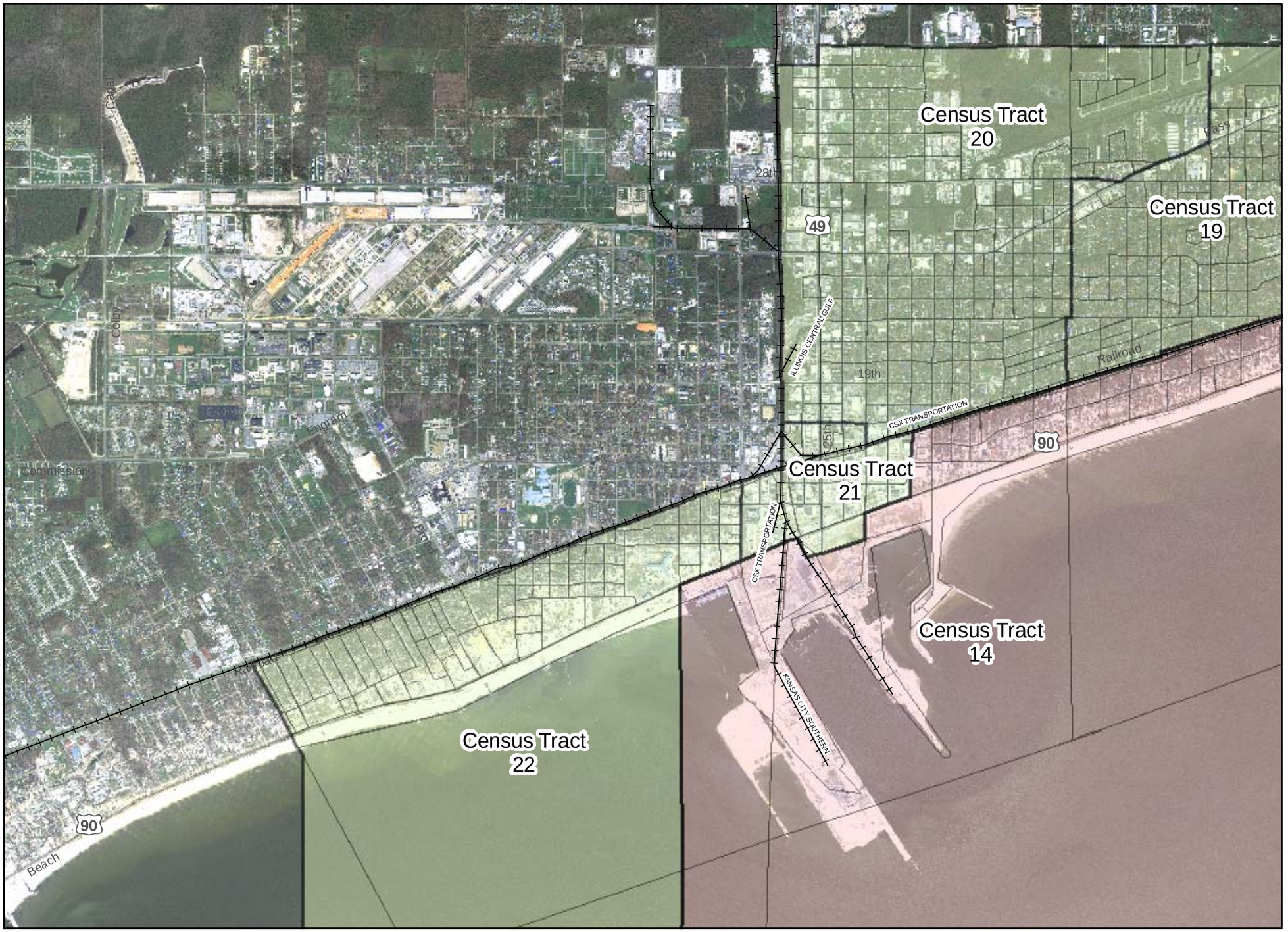
Sources:
[a]U.S. Census Bureau. 2006a. http://quickfacts.census.gov/qfd/index.html, web site accessed on September 15, 2006.
[b]City-data.com. 2006. http://www.city-data.com, web site accessed in September 2006.
[c]U.S. Census Bureau. 2006b. Special Population Estimates for Impacted Counties in the Gulf Coast Area, http://www.census.gov/Press-Release/www/emergencies/impacted_gulf_estimates.html, web site accessed on September 5, 2006.
[d]Estimate is for June/July 2005.
[e]N/A = Not Available

4.12.2 Environmental Justice

4.12.2.1 Environmental Justice

In 1994, an "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (Executive Order [EO] 12898, 59 Federal Register 7629) was issued which was designed to focus on environmental and human health conditions in minority and low-income communities. The EO is intended to promote nondiscrimination in Federal programs substantially affecting human health and the environment and to provide for information access and public participation in such manners. Under this EO, Federal agencies must identify and address disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations. EO 13045 addresses adverse exposure of children and is discussed below.

The ROI for environmental justice is considered the census tracts immediately adjacent to the Port of Gulfport, which includes Census Tract 14, 21, and 22 (Figure 4-30). Table 4-25 shows the 2000 population and racial make up of these census tracts, the City of Gulfport, and the State of Mississippi for comparison.



Port of Gulfport Census Tract
Adjacent Census Tracts
Census Blocks
Railroad

CH2MHILL

N

0 1,000 2,000 4,000 Feet

Figure 4-30
Port of Gulfport - Census Tract Boundaries
Gulfport Harbor Navigation Channel Final Supplemental EIS

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The most recent U.S. Census information for this area is from 2000. However, these figures do not reflect the significant changes in population since Hurricane Katrina. It should be noted that a large portion of the housing in the area south of the CSX railroad sustained damage from the hurricane. Although efforts are underway to repair and rebuild these structures, specific data about actual occupancy rates are not currently available. As of March 2006, it was estimated that the majority of damaged apartments and multi-family structures had become habitable, but most single-family houses remained under repair. Nearly all habitable structures were occupied with high demand for available rental properties (U.S. Department of Housing and Urban Development, 2006).

TABLE 4-25
Race and Ethnicity Data for the ROI and Harrison County
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Census Tract 14	Census Tract 21	Census Tract 22	Gulfport	Harrison County	Mississippi
White alone	3,640	32	1,784	44,101	138,395	1,745,353
Black or African American alone	356	0	203	24,049	39,679	1,033,437
American Indian and Alaska Native alone	13	3	32	360	948	11,836
Asian alone	79	0	44	706	4,976	17,709
Native Hawaiian and Other Pacific Islander alone	1	0	1	45	167	677
Some other race alone	48	0	19	395	1,447	13,696
Two or more races	78	0	33	1,330	3,989	21,950
Total Population	4,215	35	2,116	70,986	189,604	2,844,658
Hispanic*	128	0	66	1,645	4,820	37,790

Source: U.S. Census Bureau, 2000.

Hispanic: The 2000 Census included a category for Hispanic or Latino. This category is for individuals who classify themselves in one of the specific Hispanic or Latino categories such as “Mexican,” Puerto Rican,” or “Cuban,“ as well as those who indicate that they are “other Spanish, Hispanic, or Latino.” Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person’s parents or ancestors before arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.

The minority populations in Census Tracts 14, 21, and 22 are 13.6 percent, 9.3 percent, and 15.7 percent, respectively. These figures are below the 37.9 percent average for the City of Gulfport, the 27 percent average for Harrison County, and the 38.6 percent average for the State of Mississippi. The Hispanic populations account for 3.0 percent, 0.0 percent, and 1.6 percent of the populations in Census Tracts 14, 21, and 22, respectively. These figures can be compared to 2.3 percent of the population in Gulfport, 2.5 percent of the population in Harrison County, and 1.3 percent in the State of Mississippi.

Table 4-26 identifies poverty levels within the ROI by age group. For example, within Census Tract 21, there were only 11 people identified as living in this area. All were over 75 years of age and living below the poverty level.

TABLE 4-26
Poverty Levels for the ROI for 1999
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Census Tract 14	Census Tract 21	Census Tract 22	Gulfport	Harrison County
Under 5 years	11	0	19	1,328	3,035
5 years	10	0	0	280	695
6 to 11 years	30	0	20	1,652	3,493
12 to 17 years	8	0	0	1,432	3,025
18 to 64 years	455	0	217	6,226	14,068
65 to 74 years	68	0	6	535	1,173
75 years and over	43	11	18	570	1,108
Subtotal:	625	11	280	12,023	26,597
Income below poverty level:					
Total in CT:	4,215	35	2,116	70,986	189,604
Percent of population below poverty	15.2%	31.4%	13.6%	16.9%	14.0%

Source: U.S. Census Bureau, 2000.

The U.S. Census Bureau bases the poverty status of families and individuals on 48 threshold variables, including income, family size, number of family members under the age of 18 and over the age of 65, and amount spent on food. The State of Mississippi, the City of Gulfport, and all four adjacent counties have a higher percentage of families living in poverty than the percentage in the United States (Table 4-27).

Poverty levels for the ROI indicate that within Census Tract 14, 15.2% were living below the poverty level, and 31.4% and 13.6% were living below the poverty level in Census Tracts 21 and 22, respectively. In comparison, the percentage of the population living below the poverty level is 9.2 nationwide.

TABLE 4-27
Poverty Status for Gulfport, Nearby Counties, Mississippi, and the U.S.[a,b]
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Census Tract 14	Census Tract 21	Census Tract 22	City of Gulfport	Harrison County	Mississippi	United States
Families Living in Poverty	15.2%	31.4%	13.6%	17.7%	14.6%	16.0%	9.2%

Source:
[a] U.S. Census Bureau, 2000.
[b] Harrison County Development Commission. 2006. "2006 Population Demographics for South Mississippi Counties." http://www.mscoast.org/regionalprofile.htm, web site accessed on September 5, 2006.

4.12.2.2 Protection of Children

On April 21, 1997, President Clinton issued EO 13045 ("Protection of Children from Environmental Health Risks and Safety Risks). This EO directs each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. These risks arise because:

- Children's neurological, immunological, digestive, and other bodily systems are still developing.
- Children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults.
- Children's size and weight might diminish their protection from standard safety features.
- Children's behavior patterns make them more susceptible to accidents because they are less able to protect themselves.

Therefore, to the extent permitted by law and appropriate, and consistent with each agency's mission, the President directed each Federal agency to:

- Make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children.
- Ensure that the agency's policies, programs, and standards address disproportionate health risks to children that result from environmental health risks or safety risks.

Statistics on children 17 years and younger for the census tracts in Gulfport and Harrison County indicate that a higher number of children reside in Census Tracts 14 and 22 (Table 4-28). There are no children in Census Tract 21, as it is primarily commercial land use. Overall, the percentage of children in these census tracts is below the average for Gulfport, Harrison County, and the state of Mississippi.

TABLE 4-28
Children 17 Years and Younger in Project Study Area
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Census Tract 14	Census Tract 21	Census Tract 22	Gulfport	Harrison County	Mississippi
Male	349	0	138	8,914	23698	374,480
Female	255	0	141	8,554	22862	359,490
Subtotal	604	0	279	17,468	46,560	733,970
total population	4,215	35	2,114	70,986	189,604	2,844,658
percent children	14.3	0	13.1	24.6	24.6	25.8

Source: U.S. Census Bureau, 2000.

Examples of risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants that children might ingest or otherwise contact. Based on aerial photographs, the closest residential area is located one block north of the Port and northwest of the intersection of 11th Street and 31st Avenue. Of the 12 schools located within Gulfport, none are located immediately adjacent to the Port of Gulfport (Gulfport School District, 2006). Actions or alternatives indicating potentially disproportionate risks to children are identified and addressed in Section 5.

4.12.3 Socioeconomic Resources

The geographic area of the ROI was determined by the physical location of the project study area where the predominant social and economic impacts of the Proposed Action are likely to occur.

4.12.3.1 Regional Economic Activity

The Gulf of Mexico is a major socioeconomic asset in terms of fisheries, tourism, agriculture, oil, infrastructure, trade, and shipping (Cato and Adams, 1999; MSU, 2004). The Gulf region contains one-fourth of the nation's seafood processing and wholesale establishments and provides jobs and recreational activities such as sport-fishing. The NMFS reported that the Gulf states produced approximately 1.7 billion pounds (approximately 772 million kg) of fish and shellfish valued at more than $705 million annually (NMFS, 2004a).

In addition, economic conditions and trends in the Gulf coast region are closely associated with land and water transportation (MDOT, 2004). The area has transitioned in recent years from an industrial/manufacturing economy to a service-based economy. The service sector growth has resulted in new transportation demands and expectations (MDOT, 2004).

Coastal tourism and recreation accounts for approximately one-third of the total state tourism expenditures. Dockside gaming development and casinos have displaced other waterfront-dependent industries in some locations. Demand for coastal housing has also increased, with new residents employed in the gaming industry. In addition, real estate prices have increased approximately 20 percent in Harrison County in recent years. Re-zoning and dockside casino accommodations have also resulted in a shortage of mooring facilities for small commercial and recreational craft, and waiting lists have developed for dock spaces (MSU, 2004).

Annual sales volumes for marinas approximate $22 million in Mississippi (Lynch et al., 2003). The Mississippi Sound area includes numerous public access marinas. Harrison County is listed as one of the counties with the greatest need for additional recreational boating access development (Burrage et al., 1999). Gulfport Harbor was also identified as requiring additional capacity for expansion of casino and other marina commercial operations. The Gulf accounts for 30 percent of the U.S. offshore oil production and approximately 23 percent of the U.S. gasoline production. The infrastructure for oil and gas production in the Gulf area is concentrated in coastal Louisiana and east Texas. Approximately 55,000 workers are employed in the Gulf petroleum-related offshore industry.

4.12.3.2 Gulfport and the Port of Gulfport

The Port of Gulfport is the primary economic engine for the City of Gulfport. Today the Port contributes millions of dollars in annual sales and tax revenue for the State of Mississippi. The economy is also supported by tourism, as tourists are attracted to the white sandy beaches, water sport areas, and casinos. Industries providing employment in the City of Gulfport include the arts, entertainment, recreation, accommodation, and food services (20.9 percent), educational, health, and social services (19.5 percent), and retail trade industries (12.9 percent) (City-data.com, 2006). In December 1993, the City annexed 33 square miles north of Gulfport, making it the second largest city in Mississippi with a land area of 62.37 square miles and a population in excess of 70,000 (City of Gulfport, 2008.)

The Port of Gulfport is operated by the MSPA. All piers are public, though most facilities are operated through leases, operating agreements, or space assignment agreements with private operators or users. Facilities at the port have historically been leased to maritime industries, commercial fishing firms, and shipping companies with land leases operated by the gaming industry. Cargo moving through the port has typically included tropical fruit, frozen poultry, ilmenite ore, livestock, aluminum, steel, paper, forest products, and heavy lift cargos (MSPA, 2006b).

In 1999, exports from the Port of Gulfport totaled $924.8 million and included woven apparel, meat, paper goods, fabrics, machinery, plastic goods, electrical machinery, rubber, explosives, and other products (Couvillion and Allen, 2001). Imports into the port in 1999 totaled approximately $948 million and included woven and knit apparel, fruits and nuts, wood, aluminum, ores, twine and rope, spices, coffee, tea, leather art, electrical machinery, and seafood products.

Historic import market statistics for the port show that the tonnage for "All Commodities," including bulk, containerized, and breakbulk commodities, increased by 47 percent from 1992 (929,744) to 1995 (1,368,590). After another slight increase in 1997, tonnage declined over the next 4 years, with 1,116,666 tons recorded in 2001 (JWD Group, March 2003). From 2002, import tonnage increased by 23.8 percent from 1,212,458 to 1,500,899 in 2005, but then declined sharply (41.7 percent) in 2006 to 875,729 tons as a result of hurricane-related damage to the port (MSPA, 2006c).

Historic export market statistics indicated a steady increase in tonnage for all commodities between 1992 (205,036) and 1997 (910,388), followed by a decrease in 1998 and then fluctuations over the next 3 years before leveling off in 2001 (907,753) (JWD Group, March 2003). Export tonnage grew from 2002 (921,028) to 2005 (1,036,062) and again decreased sharply (44.3 percent) in 2006 to 577,010 tons (MSPA, 2006c).

4.12.3.3 Biloxi, Mississippi

The Biloxi economy is based on gaming and tourism, the seafood industry, and military and Federal government installations, including Keesler Air Force Base (Keesler AFB), and the John C. Stennis Space Center. The top two employers in 2004 were Keesler AFB (15,674) and Grand Casino/Park Place Entertainment (5,460) (City-data.com, 2006).

In 2003, the gaming industry exceeded $879 million and is Biloxi's single greatest source of revenue. Eleven seafood processing plants are located in Biloxi and 27 more plants are located along the Gulf coast. Keesler AFB represents almost one-quarter of all employment in Biloxi. In 2007, the estimated contribution to the Mississippi coastal economy from Keesler AFB was approximately $1.1 billion (Keesler Air Force Base, 2007). Biloxi is served by the Gulfport-Biloxi International Airport and local railroads (CSX Corporation and Kansas City Southern Rail Line).

4.12.3.4 Pascagoula, Mississippi

Pascagoula is heavily dependent on the maritime industry and is also home of the state's largest employer, Northrop Grumman (ship builder) (City of Pascagoula, 2006). In 2004, 226 workers were employed with the local government, and approximately 10,000 workers were employed with Ingalls Shipbuilding, which employs more individuals than any other

private employer in Mississippi (City-data.com, 2006). Other employers include Chevron refinery, Signal International, First Chemical Corporation, Mississippi Phosphates, BP/Amoco, and Naval Station Pascagoula. Naval Station Pascagoula is homeport to Navy warships and a large U.S. Coast Guard (USCG) contingent (City of Pascagoula, 2006).

4.12.3.5 Mobile, Alabama

Business sectors for Mobile's economy include medicine and research, aerospace, retail trade, services, construction, and manufacturing. The fastest-growing jobs, however, are in tourism and services (City-data.com, 2006). The major industries in Mobile include education, health, and social services (25.4 percent), retail trade (12.6 percent), and manufacturing (11.4 percent) (City-data.com, 2006). The Port of Mobile supports more than 130 steamship lines with shipping capabilities for 376 inland dock facilities. More than 300 private firms, including 2 large ship repair businesses and numerous barge repair companies, support the Mobile maritime industry. The Brookley Complex is a 1,700-acre trade and industrial complex operated by the Mobile Airport Authority, which provides connections to air, rail, waterway, and interstate transportation and supports Mobile's status as a distribution hub.

4.12.3.6 New Orleans, Louisiana

The New Orleans economy is dominated by oil- and gas-related activities, tourism, the Port and shipbuilding, and aerospace manufacturing. The top two employers in New Orleans in 2003 were Schwegmann Brothers Giant Supermarket and Hibernia Corporation (bank) (City-data.com, 2006). Imports to and exports from the Port of New Orleans include products in the iron and steel, manufacturing, agricultural, and petrochemical industries. The Port-related activities support shipbuilding and repair, grain elevators, coal terminals, warehouses, distribution facilities, steamship agencies, importers and exporters, international banks, transportation services, and foreign consular or trade offices, as well as the travel and tourism industry through riverboat and paddlewheel cruises.

4.12.3.7 Baton Rouge, Louisiana

The top two employers in Baton Rouge in 2003 were the Louisiana Department of State Civil Service with 24,985 employees, and The Shaw Group, Inc. (engineering, construction, fabrication, environmental, and industrial services organization) with 12,500 employees. The travel industry also adds to the Baton Rouge economy (City-data.com, 2006). The Port of Greater Baton Rouge is approximately 83 miles in length and is equipped to accommodate ocean-going vessels and river barges. Forest and agricultural products, steel and pipe, ores, coal, and petroleum products are some of the most common cargo shipping through the port. In 2004, the Port of Greater Baton Rouge handled more than 6.1 million tons of cargo (City-data.com, 2006).

Hurricane Katrina Recovery in Mississippi

Based on the findings from the Mississippi Governor's Office of Recovery and Renewal, 98 percent of the pre-Katrina population currently resides in the six coastal counties (Pearl River, Stone, George, Hancock, Harrison, and Jackson). Unemployment rates decreased in three counties along the Mississippi coast (Hancock, Harrison, and Jackson) between March 2006 and July 2006 (Table 4-29). Harrison County has the highest unemployment rate (11.8 percent) of the three counties (Mississippi Governor's Office of Recovery and Renewal, 2006; Mississippi Gulf Coast, 2008).

TABLE 4-29
Unemployment Rates for Hancock, Harrison, and Jackson Counties, Mississippi from January 2006 to January 2008
Gulfport Harbor Navigation Channel Final Supplemental EIS

	January 2006	July 2006	January 2007	July 2007	January 2008
Hancock County (Bay St. Louis area)	16.8%	9.9%	6.2%	6.2%	5.3%
Harrison County (Gulfport/Biloxi area)	18.5%	11.8%	6.9%	6.3%	5.3%
Jackson County (Ocean Springs/Pascagoula area)	14.4%	9.0%	6.4%	6.5%	5.8%

Source: Mississippi Governor's Office of Recovery and Renewal. 2006. Mississippi Recovery Fact Sheet, http://www.governorbarbour.com/recovery/documents/RecoveryFactSheet8-25-06.pdf, web site accessed on September 20, 2006; Mississippi Gulf Coast. 2008. http://www.gulfcoast.org/static/index.cfm?contentID=328, web site accessed on May 5, 2008.

Housing Units

Housing along the Gulf coast was heavily affected by Hurricane Katrina. The total number of housing units destroyed or damaged from Hurricane Katrina for the Mississippi Gulf coast area was 234,284 (Mississippi Gulf Coast, 2008). Harrison County had the highest number of building permits for single-family new construction in June and July 2006 compared to nearby Hancock and Jackson Counties (Table 4-29). The total number of permits for single-family new construction was 1,639. The total number of permits decreased between June 2006 and July 2006, suggesting that economic growth is slowing in terms of new residential construction (Mississippi Governor's Office of Recovery and Renewal, 2006).

Gaming and Tourism

The casino gambling and gaming industry is slowly recovering from Hurricane Katrina. Prior to the hurricane, this industry attracted large numbers of tourists and tourist dollars to the Gulf coast. Since February 2006, monthly gross gaming revenues have increased from more than $58 million to more than $65 million; however, the revenues are only about 54 percent to 61 percent of gaming revenues prior to Hurricane Katrina. Table 4-30 provides partial gross gaming revenues in 2005 and 2006.

TABLE 4-30
Gross Gaming Revenues in 2005 and 2006
Gulfport Harbor Navigation Channel Final Supplemental EIS

	2005	2006	2007
February	$107,484,265	$58,863,432	$109,604,292
March	$117,781,093	$63,504,018	$118,363,845
April	$101,673,142	$74,362,392	$107,209,635
May	$100,918,858	$59,562,681	$104,265,352
June	$113,062,093	$62,925,302	$107,796,592
July	$107,484,265	$65,109,052	$122,391,496

Source: Mississippi Governor's Office of Recovery and Renewal. 2008. Mississippi Recovery Fact Sheet, http://www.governorbarbour.com/recovery/documents/RFSMar08.pdf, web site accessed on May 9, 2008.

Hurricane Recovery in Louisiana

The State of Louisiana was significantly impacted by Hurricane Katrina. Approximately 77 percent of the City of New Orleans was affected through flooding. It is estimated that 44,000 owner-occupied homes and 78,810 rental units were destroyed or severely damaged.

The City of New Orleans is gradually recovering from the effects of Hurricane Katrina. As of March 2006, approximately 16,000 building permits have been issued by City Hall. However, the loss of housing and jobs has forced many to relocate to other areas. The Port of New Orleans was also damaged in the storm, resulting in a reduction of port activity. The number of vessels stopping at the Port decreased from 1,189 in August 2005 to 178 in November 2005, resulting in a tonnage decline from 19 million to 3 million (Louisiana Speaks, 2006). Recent recovery efforts at the Port have been successful and the tonnage levels have slightly surpassed pre-Katrina levels. The Port of New Orleans announced that from January 2006 through May 2006, the tonnage level (4.1 million short tons) is 4 percent more than the overall tonnage average for the Port for the same period over the previous 4 years (Logistics Management, 2006).

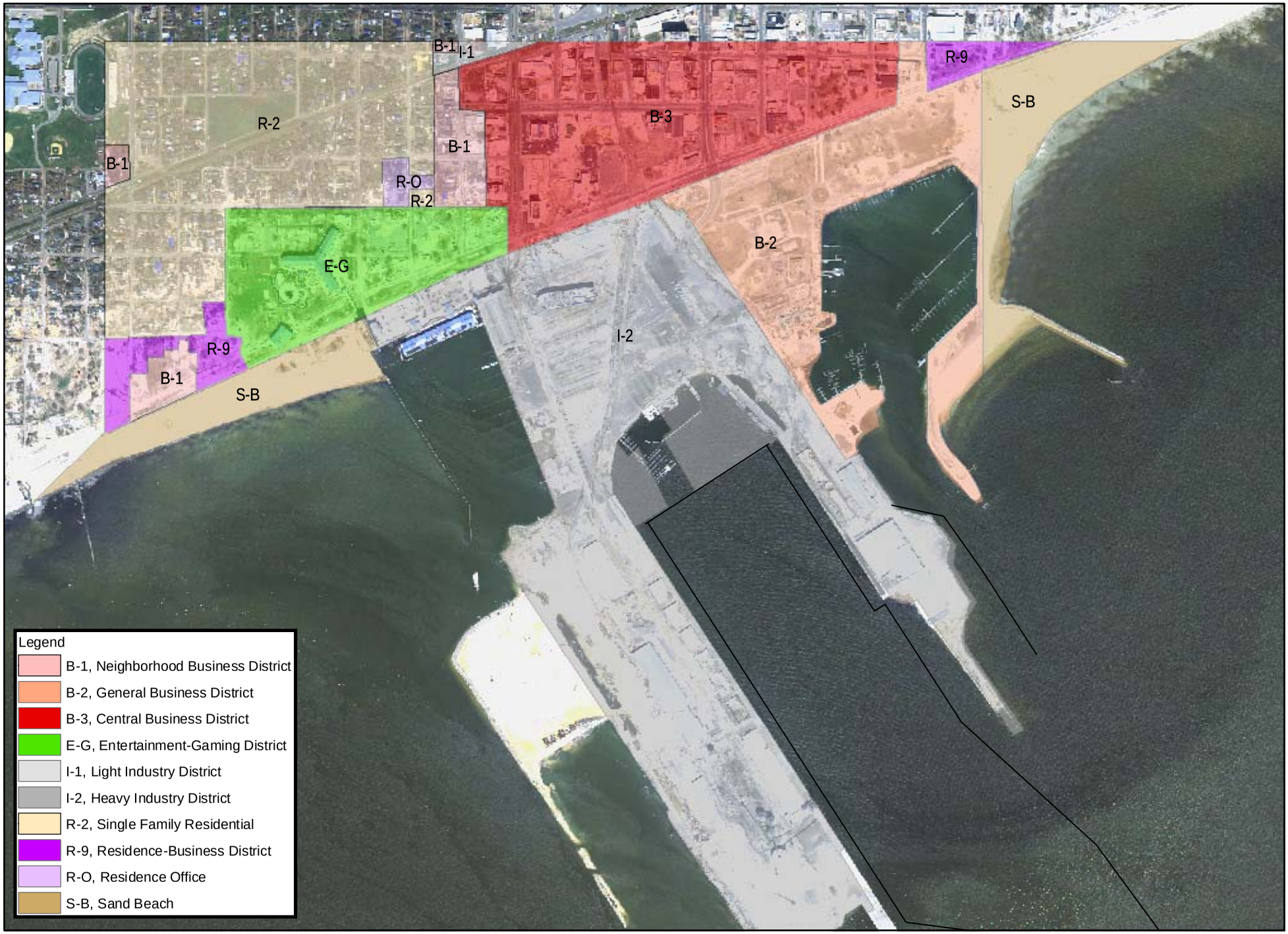
4.12.4 Land and Water Use

4.12.4.1 Project Study Area Current Land Use

The Port of Gulfport, located directly on the Gulf of Mexico, encompasses approximately 184 acres and is located within 5 miles of the GIWW and approximately 7 miles south of Interstate 10 (MSPA, 2006a; 2006b). The Port is bounded to the north by Highway 90, the east by 27th Avenue (East Pier Road), and the west by 30th Avenue (West Pier Road). The Port opens to the Gulf of Mexico to the south. The Port is zoned I-2-Heavy Industrial (Figure 4-31). Railroad tracks operated by Illinois Central Corporation cross the property from the north to the southwest and run adjacent to Copa Boulevard along the western boundary. A north-to-southeast railroad runs adjacent to East Pier Road along the eastern property boundary.

The multi-purpose Pier 7 is a rail–served, 1,000 pounds-per–square-foot capable, heavy lift pier designed to handle the heaviest of cargoes. Pier 7 was completed in January 2003. Cargo operations currently operating out of the Port include Dole Ocean Liner Express, Crowley Maritime, and Great White Fleet Chiquita.

Conceptual redesigns for Port property are being considered. Plans include a network of parks and green space, increased recreational and retail opportunities, and larger piers. The area currently being used as a parking lot for cargo containers may become the future site for six new casinos. Plans indicate a small grid of streets in this area that would also provide access to proposed retail and housing projects (Mississippi Renewal Forum, 2006). Strategic actions recommended for the Port include the following: redesigning Jones Park; relocating the CSX railway tracks to the north of Highway 90; redesigning I-90, redesigning the former CSX railway ROW as an urban boulevard that includes the potential for future transit; regaining ownership of the eastern portion of the Port facilities from the State; and redeveloping the Port into a combined facility that would include enhanced connectivity to industry, tourism, recreation, cultural, and commercial activities near the Port property (Mississippi Renewal Forum, 2006; MSPA, 2008a).



Data Source: Division of GIS, City of Gulfport

CH2MHILL

0 500 1,000 2,000
Feet

N

Figure 4-31
City of Gulfport Zoning Categories
Gulfport Harbor Navigation Channel Final Supplemental EIS

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4.12.4.2 Surrounding Current Land Use

Based on zoning maps provided by the City of Gulfport's Geographic Information Systems (GIS) Department, multiple zoning districts exist immediately adjacent to this area (Figure 4-31). Jones Park, managed by the City of Gulfport, is adjacent to the eastern property boundary and contains the Bert Jones Yacht Basin. The park is zoned B-2, General Business District, and land use is limited to recreational structures at this site. A commercialized area, zoned B-3, Central Business District, and E-G, Entertainment-Gaming District, is located immediately north of the Port along Highway 90, and Sand Beach, a public beach maintained by Harrison County, is adjacent to the northwestern property boundary of the Port. Based on aerial photographs, it appears that a residential area is located about one block north of the Port and northwest of the intersection of 11th Street and 31st Avenue. Land and water areas for the ROI are listed in Table 4-31.

TABLE 4-31
Land and Water Area by the Port of Gulfport, City, Parish, and State
Gulfport Harbor Navigation Channel Final Supplemental EIS

	Land Area[a] (square miles)	**Sound and/or Inland Water or Water Area (square miles)**
Port of Gulfport	0.29[b]	N/A[c]
Gulfport	56.9	9.02[d]
Harrison County	581.0	395.2
Biloxi	38.0	N/A
Pascagoula	15.2	N/A
Wiggins	10.8	N/A
Baton Rouge	76.8	N/A
New Orleans	180.6	N/A
Mobile	117.9	N/A
Pensacola	22.7	N/A
Jackson County	726.9	316.4
Stone County	445.4	2.7
Hancock County	476.9	75.6
Mississippi	47,233	456
Louisiana	44,521	3,230
Alabama	50,767	938
Florida	54,153	4,511

Sources:
[a] City-data.com. 2006.
[b] MSPA, 2006a.
[c] Not Available.
[d] Lusteck, Joseph A. & Associates, Inc. Real Estate and Planning Consultants. 2003. City of Gulfport Comprehensive Plan, http://www.ci.gulfport.ms.us/URBANDEV/DRAFT GulfportCompPlan.pdf, web site accessed on September 5, 2006.

The Mississippi Marine Resources Council (MMRC, 1977) identified permissible land uses along the Mississippi Gulf coast, including:

- Residential
- Commercial, such as dockside, waterside retail, waterfront marinas and boating services, and waterfront restaurants
- Processing and manufacturing, such as boat and other vessel construction, commercial fishing fleets, seafood processing, and petroleum refining
- Energy, such as oil and gas extraction, mining and dredging operations, and energy production
- Transportation, including coastal cargo and berthing services
- Recreation, such as public beaches, piers, shoreline parks, sand nourishment, and fishing camps
- Institutional, such as schools and state and Federal installations

Water-oriented facilities and services in the area are classified as land support facilities and services, navigable water access (which includes channels that require periodic dredging), and waterfront development (including berthing areas and ports that require periodic dredging) (MMRC, 1977).

Existing land uses include residential, tourism, commercial, mining and extraction, transportation, and recreation (MSU, 2004; MMRC, 1977). Coastal activities are considered to be of local, regional, and national importance. The dredging of channels and placement of dredged material are considered coastal management concerns with regard to water quality and the economic viability of the area.

4.12.5 Utilities

The City of Gulfport is serviced by Coast Electric Power Association and Mississippi Power Company for electricity, Center Point Energy for natural gas, Gulfport Water and Sewer Department and Orange Grove Utilities for water and sewer service, and BellSouth for telephone service. Utility services for areas surrounding Gulfport, including Hancock, Harrison, Jackson, and Stone Counties, are summarized in Table 4-32 (Sunherald, 2006).

According to The Mississippi Press, Singing River Electric Power Association provided electric service for 46,104 customers in Jackson County prior to Hurricane Katrina and 46,321 customers thereafter. Post-Hurricane Katrina electricity information for Harrison, Hancock, and Stone Counties was not available (Mississippi Press, 2006).

TABLE 4-32
Utility Services for the Mississippi Counties of Hancock, Harrison, Jackson, and Stone
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County Name	Electricity	Natural Gas	Water and/or Sewer	Telephone
Hancock	Coast Electric Power Association, and Mississippi Power Company	Bay St. Louis Utilities Department, and Waveland Gas and Water Department	Bay St. Louis Utilities Department, Diamondhead Water and Sewer, Kiln Water District, and Waveland Gas and Water Department	BellSouth
Harrison	Coast Electric Power Association, and Mississippi Power Company	Center Point Energy	Eco Resources, Westwick Utilities, City of D'Iberville Water and Sewer Department, Long Beach Water Department, and Pass Christian Utilities Department	BellSouth
Jackson	Mississippi Power Company, and the Singing River Electric Power Association	Center Point Energy, and Pascagoula Utilities Department	Ocean Springs Water and Sewage Department, Coast Water Works, Magnolia Utilities, Gulf Park Water, Gautier Utility District, Pascagoula Utilities Department	BellSouth
Stone	Mississippi Power Company, and Pearl River Valley Electric Power Association	Center Point Energy	City of Wiggins	BellSouth

Source:
http://www.sunherald.com/mld/sunherald/living/special_packages/guide_to_gulf_coast_living/15103322.htm, web site accessed on September 6, 2006.

4.12.6 Public Safety

Fire protection, emergency, and law enforcement services in Gulfport (Harrison County) and the surrounding counties, Hancock, Jackson, and Stone are summarized below.

4.12.6.1 Gulfport/Harrison County

The Harrison County Fire Service protects the cities of D'Iberville, Biloxi, Gulfport, Long Beach, and Pass Christian from Hancock County to Jackson County, and up to Stone County, a total area of approximately 408 square miles with a population of 43,931. The Harrison County Fire Service employs 8 full-time paid fire personnel, 1 clerical person, 6 part-time paid personnel, and 140 volunteers (Harrison County, 2006). Harrison County has nine fire departments, including the Gulfport Fire Department and Biloxi Fire Department (Firedepartments.net, 2006). The Harrison County Sheriff's Department has various divisions, including Aviation, Chaplain, Criminal Investigation, Communications, Community Relations, Criminal Records, Operations, Adult Detention Facility, Marine Patrol, Motor Carrier, and Professional Standards and Reserves (Harrison County Sheriff's Department, 2006).

The Gulfport Fire Department has 12 fire stations and employs 174 fire protection and rescue service workers. The department responds to a variety of calls, such as structure fires, aircraft emergencies, hazardous material spills, emergency medical calls, and marine emergencies (Gulfport Fire Department, 2006). The Gulfport Police Department employs

292 personnel, 201 of whom are sworn personnel, and serves a community population of 80,000 and a daily service population of 144,000 (Gulfport Police Department, 2006).

Biloxi is located approximately 13 miles east of Gulfport. The Biloxi Fire Department has 9 fire stations and employs 180 line firefighters and staff members. They have 9 engine companies, 3 ladder companies, 3 tankers, 2 command vehicles, 1 heavy rescue vehicle, 1 fire boat, 1 air/light vehicle, 1 support service vehicle, 2 reserve engines, 1 fire investigations unit, and numerous staff vehicles. The department protects more than 50,000 citizens in an area of about 61 square miles (City of Biloxi, 2006a). The Biloxi Police Department, as of 2001, employed 132 sworn officers and had more than 170 vehicles. The Lopez-Quave Public Safety Center, located in East Biloxi, houses the police, fire, and municipal court personnel. The Public Safety Communications Center, located in North Biloxi, houses the City's 911 emergency dispatchers (City of Biloxi, 2006b).

4.12.6.2 Hancock County

Hancock County has five fire departments, including the Bay St. Louis Fire Department (Firedepartments.net, 2006). The Hancock County Sheriff's Office Enforcement/Patrol section employs 29 sworn deputies, and an additional 7 sworn deputies in the Transport/ Warrant Division, and serves approximately 534 square miles. The department has 24 patrol vehicles, 9 vehicles for transport/warrant, and 5 vehicles for detective use. The Hancock County Sheriff's Office Communications Center employs seven full-time dispatchers (Hancock County Sheriff's Office, 2006).

Bay St. Louis is located approximately 16 miles west of Gulfport. The Bay St. Louis Fire Department employs 23 personnel and has 3 pumpers, 1 rescue unit, and 1 Special Operations Unit (Bay St. Louis Fire Department, 2006). The Bay St. Louis Police Department employs over 30 officers who serve the 6 square miles of Bay St. Louis (Bay St. Louis Police Department, 2006).

4.12.6.3 Jackson County

Jackson County has 10 fire departments, including the Pascagoula Fire Department (Firedepartments.net, 2006). The Jackson County Sheriff's Department has two facilities: the main office in Pascagoula and a substation in Ocean Springs. (Jackson County, 2006).

Pascagoula is located approximately 34 miles east of Gulfport. The Pascagoula Fire Department has 58 full-time employees and has 3 front line units, 2 standby units, 1 aerial 50-ft ladder truck, 1 rescue truck, and 1 standby rescue unit (City of Pascagoula, 2006). The Pascagoula Police Department has 107 employees, which includes 57 sworn officers. The department has four Patrol Divisions, a Criminal Investigation Division, a Court Division, a Street and School Patrol Division, a Traffic Division, an Identification Division, an Administration Division, a Training Division, and a Public Relations Division (City of Pascagoula, 2006).

4.12.6.4 Stone County

Stone County has four fire departments, including the Wiggins Fire Department (Firedepartments.net, 2006). The Stone County Police Department employs two Narcotics Investigators, six full-time Road Deputies, two School Resource Officers, four part-time

Deputies, and two Inmate Work Supervisors in addition to the Sheriff, Chief Deputy, Warden, and Criminal Investigator (USACops, 2006).

Wiggins is located approximately 35 miles north of Gulfport. The Wiggins Fire Department consists of 3 fulltime firefighter/EMT-Basics personnel and 19 volunteers, including 1 paramedic, 7 EMT-Basics, and 6 First Responders. The department has 1 station that serves 5,000 people within 20 square miles, and also supports 7 volunteer fire departments within the rural areas of Stone County (Wiggins Fire Department, 2006). In 2004, the Wiggins Police Department employed 14 individuals, 10 of whom were officers (City-data.com, 2006).

4.12.7 Navigation and Ports

The Port of Gulfport is operated by the MSPA. Established in 1902, the port has developed gradually over a long period of time. All piers are public, though most facilities are operated through leases, operating agreements, or space assignment agreements with private operators or users. Facilities at the port have historically been leased to maritime industries, commercial fishing firms, and shipping companies with land leases operated by the gaming industry. Cargo moving through the port has typically included tropical fruit, frozen poultry, ilmenite ore, livestock, aluminum, steel, paper, forest products, and heavy lift cargos (MSPA, 2006b).

Access to the port is provided by a shipping channel which extends northward from vessel anchorage just south of Ship Island. The port's channel is currently 220 ft wide and is maintained to a depth of 36 ft. The port's North harbor is maintained to a depth of 32 ft, while the South harbor and Turning Basin, which is approximately 1,320 ft wide, are maintained to a depth of 36 ft. Water depths at the port's 10 berths range from 32 to 36 ft, berth lengths range from 525 to 750 ft, and are all designed as multi-use, multi-purpose berths (gulfshipper.com, 2004).

Current conditions at the port reflect the industry's status in a post-disaster rebuild mode. At the end of 2006, the port was operating at only 40 percent of the volume managed in 2005. Approximately 700,000 square ft of warehouse space, including freezer storage, was destroyed due to hurricane-related structural damage. Total open storage at the Port of Gulfport consists of approximately 55 acres, not including container yards leased to private operators. The majority of cleanup and debris removal has been completed. Numerous repair design projects are ongoing on the property, including restoring the freezer storage, installing security fencing, and demolishing a ramp damaged by the storm. An estimated $300-$400 million is required to rebuild the port to pre-storm status. Longer-term restoration projects include elevating and expanding the west pier and north harbor, constructing a new elevated east pier, moving the CSX rail line north, constructing a detour for I-90, adding an access for the small craft harbor, renovating existing buildings, and constructing a canal north of the east and west piers (MSPA, 2008b).

Three container carriers, Dole, Crowley, and Chiquita, operate at the Port (Table 4-33) (MSPA, 2006a). DuPont also has a short-term lease agreement to use port facilities for titanium ore unloading (DuPont, 2006). Enhancements planned for the port are expected to allow for an increase from the current 220,000 Twenty-foot Equivalent Unit (TEUs) running annually to 500,000 TEUs annually (MSPA, 2006a).

TABLE 4-33
Port of Gulfport Container Carriers: Shipments, Cargo Type, and Service Area
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Current Shipping Companies	Frequency of Shipments	Cargo Type	Service Area
Dole Ocean Liner Express	Weekly	Containerized	Guatemala, Honduras, El Salvador, and Nicaragua
Crowley Maritime	4 Vessels Weekly	Containerized Ro/Ro	Cuba, Mexico, Guatemala, Honduras, Nicaragua, Panama, and El Salvador
Great White Fleet Chiquita	Weekly	Containerized	Guatemala, Honduras, Nicaragua, El Salvador, and Costa Rica

The port's capital improvement program is expected to continue to make significant strides. A new 60-acre site would be used to expand and enhance container handling capabilities. Additionally, the Port continues to coordinate with the Mississippi Department of Transportation on the design and construction of a new major highway linking the Port with Interstate 10. Gulfport is currently ranked as the 3rd busiest container port on the Gulf of Mexico and 17th busiest in the United States (MSPA, 2006a).

The MSPA Master Plan Update, (JWD Group, 2003) states that the "expansion of gaming activities on the Port of Gulfport must not interfere with the Port Authority's overall maritime mission." However, revenues from the gaming industry account for approximately 50 percent of MSPA revenues. MSPA recognizes the importance of coexisting with non-maritime uses and continues to address key land use issues (JWD Group, 2003). The vision plan developed for the Port shows a combined facility that would include enhanced connectivity to industry, tourism, recreation, cultural, and commercial activities near the Port property (MSPA, 2008a).

5.0 Environmental Effects

5.1 Introduction

This section describes the environmental effects of the Proposed Action and No-Action Alternative. The discussion includes potential impacts to biological, physical, and chemical conditions, fishing and shipping activities, and socioeconomic conditions in the general vicinity of the Proposed Action.

5.2 Biological Resources

Biological systems can be affected by anthropogenic (dredging) impacts with changes in one or more of the following areas (USEPA, 2000):

- Health of populations: changes in biomass
- Community structure and composition: changes in the number and kinds of species
- Trophic structure: changes in proportion of different trophic levels and functional feeding groups
- System function: changes in the productivity and material cycling

The following sections evaluate the biological effects associated with dredging and disposal activities for the Federal Gulfport Harbor Navigation Project.

5.2.1 Plankton and Algae

5.2.1.1 Proposed Action

Elevated turbidity levels and decreased light transmission caused by suspended material during dredging and placement activities could result in a temporary localized reduction in phytoplankton and zooplankton. Turbidity and suspended solids were measured as part of a 1975 USACE study of dredging and disposal activities. The study included an evaluation of water quality and plankton in dredge and disposal areas over a 40-square-mile grid centered on the Gulfport Shipping Channel in Mississippi Sound. That study found that plumes were small and localized and that solids tended to settle rapidly. Levels of turbidity and suspended solids returned to background levels at disposal sites within 2 to 3 hours. Samples were collected before and after dredging activities. No observable effects on the resident plankton community were observed in terms of stimulatory effects, species composition, or community structure (USACE, 1975a).

The release of nutrients from sediments during the dredging process could support a localized temporary increase in phytoplankton following the completion of dredging. The results of the elutriate analyses and water column bioassays indicate mortality levels were acceptable and no adverse effects from dredging and disposing of material associated with the Federal Gulfport Harbor Navigation Project were observed.

Planktonic organisms would be carried into and out of the project study area via currents during and after dredging. Impacts would be restricted to localized patches of plankton. Any impacts would be less than significant. As a result, there would be no potential adverse change in the health of populations, community structure and composition, trophic structure, or system function.

5.2.1.2 No-Action Alternative

No change in existing conditions would occur under the No-Action Alternative. Plankton and algal communities would be unchanged.

5.2.2 Benthic Invertebrates

5.2.2.1 Proposed Action

Dredging to widen the Gulfport Federal Navigation Channel and subsequent placement of the dredged material would cause a temporary disruption to the benthic community located in and along the channel, and in adjacent areas planned for channel expansion. Both infauna and epifauna invertebrates would be displaced during dredging activities; however, recolonization of the channel substrate would commence immediately after operations cease. There would likely be some incidental loss of individuals (especially infauna invertebrates) during dredging operations.

Studies on recolonization of the channel substrate vary depending upon the nature of the substrate (Chessa et al., 2007, Newell et al., 2004, and Bemvenuti et al., 2005). Each of these studies evaluated the changes in the benthic community associated with dredging activities. All studies agree there is an initial reduction in the species biomass, composition, and abundance. However, depending upon the habitat conditions, all studies report a recovery of species abundance, diversity, and biomass. Recovery of species abundance and diversity is more readily accomplished than recovery of biomass. Recovery of 86 percent of species diversity can occur within 20 days and full recovery within 80 days (Newell et al., 2004). However, recovery of biomass can take in excess of 18 months. The authors also indicate there is little evidence of impact on the community structure outside of the immediate dredging boundaries. In another study evaluating dredging on soft bottom sediments, 7 months after dredging, the benthic communities were largely re-established (Chessa et al., 2007).

The benthic community also would experience impacts from disposal of dredged material. Recovery of the community could range from a few months to several years (Bolam and Rees, 2003; USACE, 1999)

The ecological effects of maintenance dredging along the Gulfport Shipping Channel were investigated as part of a 1975 USACE study. The study included an evaluation of benthic invertebrates in dredge and disposal areas over a 40-square-mile grid centered on the Gulfport Shipping Channel. Samples were collected before and after dredging activities. An increase in the benthic community density and diversity above pre-dredge levels was observed at all stations in the 4 to 6 months following dredging. However, the increase was attributed to seasonal variation which masked any minor effects of the dredging activities. No significant or lasting effects were observed in samples taken before or after dredging and placement of dredged material (USACE, 1975b).

USACE disposal sites in the northeastern United States have been monitored since 1977 as part of the DAMOS program (Disposal Area Monitoring System). Disposal mounds analyzed in that program showed rapid recovery of species diversity and density within 3 to 6 months following placement of material (USACE, 1978; USACE, 1983; USACE, 1993). However, the composition of the benthic community shifted initially to more opportunistic species. Within 2 to 5 years, the benthic communities at disposal mounds were typically similar to those in undisturbed areas (USACE, 1993). In an evaluation of recolonization studies conducted in the eastern United States, the marine benthos was observed to experience a decrease in the number of species, densities, and biomass with a subsequent rapid recovery (Bolam and Rees, 2003). Therefore, although an initial localized change in the health of populations, community structure and composition, trophic structure, or system function may occur, these impacts are temporary and typically the recovery time, in most cases, ranges from a few months to slightly more than 1 year.

Any impacts on the benthic community would be less than significant.

5.2.2.2 No-Action Alternative

Maintaining the Gulfport Federal Navigation Channel at the current width and depth would not change the existing conditions in the benthic invertebrate communities in Mississippi Sound around the Gulfport area.

5.2.3 Fish

5.2.3.1 Proposed Action

Dredging the Gulfport Channel and subsequent placement of dredged material would result in temporary disruption to the mature fish community in the vicinity of the Proposed Action. Fish have good avoidance abilities and would leave the dredging and disposal areas. These fish would return after operations cease. Therefore, direct impacts would be minimal. Indirect impacts to the food web may occur as a result of the dredging operations. In a recent study, changes in the benthic community were assessed to determine the effects a change in community structure would have on bottom-dwelling or demersal species. The review indicated that, based on benthic and fish diet information, the altered benthic community (dominated by small surface-dwelling taxa representative of the early recolonizers) offers an enhanced trophic structure for the fish community (Bolam and Rees, 2003).

Ichthyoplankton are not free-swimming and rely on currents to carry them in-shore to estuarine nurseries. Some incidental loss of ichthyoplankton could occur during dredging and placement operations; however, these would represent a very limited portion of the population, and have no long-term adverse effects on the fish community. Results of elutriate testing of sediment samples indicated low concentrations or non-detection of 133 tested constituents. Concentrations were similar to those of tested site water for all constituents but ammonia (USACE, 2006a). However, ammonia would be expected to be quickly diluted in the water column. Any impacts would be less than significant.

5.2.3.2 No-Action Alternative

The fish community in Mississippi Sound in the vicinity of the Gulfport Federal Navigation Channel would not be affected by the No-Action Alternative. There would be no change to

the current habitat available to the fish community and the community structure would remain the same.

5.2.4 Mollusks

5.2.4.1 Proposed Action

Dredging to widen the Gulfport Federal Navigation Channel and placement of dredged material would result in temporary disruption to the mollusk community. Motile mollusks would likely leave the area during dredging activities and return after operations cease. Bivalves and other semi-sessile mollusks could be displaced by operations. However, bivalves (through larval recruitment) would recolonize the area and in past studies, the benthic assemblage was similar to pre-dredging conditions within 9 months (Bolam and Rees, 2003).

There would likely be some incidental loss of semi-sessile mollusks during dredging operations; however, these would represent an insignificant portion of the population, which would ultimately repopulate the new substrata. Recolonization of the disposal site would occur from those individuals located at the boundary of the disposal site or through larval recruitment. The channel and nearby areas have not been identified as habitat for oysters; therefore, the Proposed Action would have no impact on these sessile organisms. Any impacts to mollusks would be temporary and minor.

5.2.4.2 No-Action Alternative

There would be no change in the mollusk community in the vicinity of the Gulfport Federal Navigation Channel by implementing the No-Action Alternative. Maintaining the channel at existing dimensions would not disrupt habitat or alter the mollusks community structure in the area.

5.2.5 Crustaceans

5.2.5.1 Proposed Action

Dredging the Gulfport Channel and subsequent placement of dredged material would cause a temporary disruption to the mature crustaceans in the vicinity of the Proposed Action. The primary crustaceans found in the area are shrimp, crabs, and amphipods. The crabs and shrimp are fairly mobile and during dredging or disposal operations could avoid impact, although there would be some mortality and displacement. Most of these organisms would likely leave the area during dredging and placement activities and return after operations cease. Juvenile crustaceans (such as shrimp) are not free-swimming and rely on currents to carry them in-shore to estuarine nurseries. There would likely be some incidental loss of juvenile crustaceans during dredging and placement operations; however, these would represent a very limited portion of the population, and not have long-term adverse effects on the crustacean community. Amphipods are infauna and live in the bottom sediments. These species would experience mortality from both dredging and placement of sediments. As reported by Bolam and Rees (2003), the total abundance and community structure had decreased. However, recovery for both the dredging and placement sites was well underway within 3 months. Results of elutriate testing indicated low concentrations or non-detection of 133 tested constituents. Ammonia concentrations in elutriate samples exceeded

the site water concentration. However, ammonia would be expected to be quickly diluted in the water column. Results of toxicity testing indicated that placed sediments would not cause unreasonable acute or chronic toxicity or sublethal adverse effects to aquatic organisms (USACE, 2006a). Any impacts would be less than significant.

5.2.5.2 No-Action Alternative

The crustaceans in Mississippi Sound in the vicinity of the Gulfport Federal Navigation Channel would not be affected by the No-Action Alternative. There would be no change to the current habitat available to the crustaceans and the community structure would remain the same.

5.2.6 Hard Bottom Habitats

The significance criterion for hard bottom habitats would be the permanent loss of hard bottom habitat.

5.2.6.1 Proposed Action

No hard bottom habitat is known from the location of the Proposed Action. The Proposed Action would not cause impacts to such habitat.

5.2.6.2 No-Action Alternative

No change in existing conditions would occur under the No-Action Alternative. Hard bottom habitats would be unchanged.

5.2.7 Submerged Aquatic Vegetation

The significance criterion for SAV would be the permanent loss of an identified SAV bed.

5.2.7.1 Proposed Action

No SAV is known to occur within the dredging footprint. SAV is only known in the vicinity of the Proposed Action around Cat and Ship Islands and the Chandeleur Islands. Impacts to isolated plants or small unmapped patches would be unlikely, but could occur during dredging. Any impacts to SAV populations in Mississippi Sound or near the Chandeleur Islands would be temporary and negligible.

5.2.7.2 No-Action Alternative

No change in existing conditions would occur under the No-Action Alternative. SAV beds would be unchanged.

5.2.8 Marine Mammal Communities

This section examines all potential effects to marine mammal communities except those that may result from changes in water quality and increased noise. Impacts to those resource areas are discussed in Sections 5.4 and 5.9.

The significance criterion for marine mammal communities in the vicinity of the Gulfport Channel would be a localized loss of a species; a permanent habitat change that would make the area unsuitable to meet life history requirements; or a disruption that would cause

permanent interference with the movement of native resident or migratory marine mammals.

5.2.8.1 Proposed Action

It is unlikely that localized dredging operations would affect migration, feeding, or reproduction of marine mammals. Three marine mammals commonly found along the shelf of the northern Gulf include bottlenose dolphin (*Tursiops truncatus)*, Atlantic spotted dolphin (*Stenella frontalis*), and spinner dolphin (*Stenella longirostris*) (Kinsinger, 2006). Other marine mammal species that are inhabitants of the deeper waters off the continental shelf may occasionally pass through the location of the Proposed Action, but these animals would be transients rather than residents. While many marine species may pass through the location of the Proposed Action, passage would not be geographically restricted to these areas and species would likely avoid these sites during disposal operations.

The Proposed Action is not located in an area with any known mating or breeding habitat. No impacts to reproduction would be expected to occur. Any impacts to foraging would be temporary and negligible.

5.2.8.2 No-Action Alternative

Under the No-Action Alternative, no change from existing conditions would occur. No impacts to marine mammals would result.

5.2.9 Marine and Coastal Birds

This section examines potential effects to marine and coastal birds except those that may result from changes in water quality and increased noise. Potential impacts to those resources are discussed in Sections 5.4 and 5.9.

The significance criterion for marine and coastal birds would be a permanent loss or modification of habitat critical for life history requirements, including nesting, of a species or loss of an age cohort of a species of marine or coastal birds; or substantial interference with the movement of native resident or migratory marine and coastal birds.

5.2.9.1 Proposed Action

Marine and coastal birds are common in the area and could utilize the site of the Proposed Action for foraging and adjacent islands for nesting, roosting, or stopovers during migration. Foraging birds could be displaced during dredging activities. The noise and activity of the dredging operation would likely deter birds from using areas in the vicinity of equipment during active dredging periods. Increased turbidity associated with dredging operations could temporarily decrease foraging success of diving and plunging birds that feed in deep-water areas. However, these birds are not dependent upon the site for survival and ample foraging habitat is available in the northern Gulf and Mississippi Sound. Following dredging, birds would be expected to resume normal use of the area. Any impacts would be expected to be localized, temporary, and negligible.

The Proposed Action would be unlikely to disrupt resident birds and breeding migrants (i.e., black skimmers, gulls, pelicans, terns) on barrier islands. Work would be outside of the typical state and federal 300-ft buffer zones for nesting shorebirds. Widening would bring

the channel to approximately 2,000 ft from Ship Island. At that distance, birds on the island would be unlikely to be disturbed. Placement of material in littoral disposal areas would occur in nearshore areas and not directly on the barrier islands. Any impacts to nesting and roosting behavior would be temporary and negligible.

Migratory birds using the barrier islands as a stopover point normally arrive with low body reserves of fat. Disturbance from dredging could cause some migrants to avoid the western portion of Ship Island. These migrants would likely seek other nearby areas not affected by the dredging. The peak numbers of migrants occur from mid-April through early May and early September through mid-October (Moore et al., 1989). Any impacts to migrant birds would be temporary and negligible.

When practical, the USACE would conduct dredging operations around Ship Island during timeframes that avoid high use months for migrating or nesting birds. However, final determination of the dredge schedule would be based on the availability of equipment, weather, and safety concerns.

5.2.9.2 No-Action Alternative

Under the No-Action Alternative, no change from existing conditions would occur. Impacts from maintenance dredging activities would be similar to those described in the Proposed Action. Temporary and less than significant impacts to marine and coastal birds would be expected.

5.2.10 Threatened and Endangered Species

The significance criteria for threatened and endangered species would be:

- Incidental take exceeds the annual take limit specified for the Mobile District in the RBO for sea turtles: 3 Kemp's ridley, 3 green, 1 hawksbill, and 5 loggerhead sea turtles.
- Incidental take exceeds the annual take limit specified for the Mobile District in the RBO for Gulf sturgeon: 2 fish from dredging and 8 fish from relocation trawling.
- Loss of or long-term reduction in a population.
- Habitat modification that causes a permanent disruption to breeding, foraging, or other life history requirements.
- Permanent interference with the movement of native resident or migratory protected species.
- Loss of any areas designated as critical habitat.

5.2.10.1 Proposed Action

Mammals

The whale species listed as threatened or endangered that could occur in the vicinity of the project study area (finback and humpback) typically occur in the deeper waters off the continental shelf and would only venture through the project study area as incidental transients. Any impacts to these species would be limited to annoyance and alteration of swimming patterns to avoid the active dredging areas. Any such impacts would be negligible.

The West Indian manatee migrates along the Gulf coast from Florida to Louisiana and may occur in the project study area as a seasonal transient. The project study area does not provide critical life history requirements. Any impacts would be restricted to disruption of migration and avoidance of the active dredging area, and would be temporary and negligible. Following the completion of dredging activities, any displaced animals would be expected to resume normal use of the area.

If a manatee is observed within 100 yards of an active work zone, special operating conditions would be implemented, including no operation of moving equipment within 50 ft of the manatee and operation of all vessels at no wake/idle speeds within 100 yards of the work area. Temporary signs would be posted prior to and during dredging activities to remind personnel to be observant for manatees during active operations or within vessel movement zones. Any manatee sighting would be reported to the appropriate USFWS field office and state natural heritage program.

Birds

The piping plover, bald eagle, brown pelican, and least tern occur along the Gulf coast and also may occur on the barrier islands. Foraging activities of these species could be temporarily disrupted by the Proposed Action. These species could easily relocate to other foraging areas to meet their energy requirements. Any potential impacts would be temporary and negligible.

Much of the beach area and adjacent tidal flats on the coast of Mississippi and all of Cat and Ship Islands, and the Chandeleur Islands, have been designated critical habitat for winter migrant piping plover. Direct impacts to the designated critical habitat would not be expected, as dredging operations would not encroach upon coastal beach areas of either of the islands.

When practical, the USACE would conduct dredging operations around Ship Island during timeframes that avoid high use months for migrating or nesting birds, sea turtles, and other sensitive wildlife. However, final determination of the dredge schedule would be based on the availability of equipment, weather, and safety concerns.

Reptiles

The loggerhead, green, leatherback, hawksbill, and Kemp's ridley sea turtles are known to occur in the northern Gulf of Mexico. The immediate project area is not a major provider of critical life history requirements for any of these species and any interaction between the Proposed Action and the turtles would be incidental contact during foraging. Potential impacts typically would be avoidance of active dredging areas, and would be temporary and negligible. Following the completion of dredging and placement activities, any displaced animals would be expected to resume normal use of the area. Existing Biological Opinions on hopper dredging in the U.S. South Atlantic and Gulf of Mexico waters (most recently, January 9, 2007, RBO to the USACE's four Gulf of Mexico districts) have established that non-hopper type dredging methods have discountable effects on, or are not likely to adversely affect, currently listed sea turtles (I/SER/2006/02953; I/SER/2006/01096). Incidental take may result from entrainment by hopper dredging equipment, but this is unlikely for adult sea turtles. Anticipated impacts to adult sea turtles would be temporary and minor.

Late juvenile life history stages of sea turtles are benthic and individuals could be captured or entrained by dredging equipment (USACE, 1990). As a result, the NMFS issued an RBO in 2003 for hopper dredging impacts on sea turtles. The RBO and subsequent updates in 2005 and 2007 USACE Management Protocol (NMFS, 2005; NMFS, 2007) require that USACE comply with the following terms and conditions:

- Annual incidental take for USACE-conducted hopper dredging in Mobile District: 3 Kemp's ridley, 2 green, 0 hawksbill, and 4 loggerhead sea turtles.
- Use of relocation trawlers under specific conditions to minimize turtle interactions.
- NOAA Fisheries-approved observers monitoring the hopper spoil, screening, and dragheads.
- Screening of 100 percent of dredged material at dredge inflows with 4-inch by 4-inch screen.
- Dredging pumps disengaged by the operator when the dragheads are not on the bottom.
- Sea turtle deflecting draghead used on all hopper dredges in all Gulf of Mexico channels.

NOAA Fisheries requested that hopper dredging operations be scheduled between December 1 and March 31 whenever feasible. Because dredging and placement activities would be done in compliance with the RBO, any impacts would be less than significant.

Fish

The Gulf sturgeon migrates through Mississippi Sound and may occur in the Sound at any time. These animals feed on the bottom and could be captured or entrained by dredging equipment. The immediate project study area is not a major provider of critical life history requirements and any interaction would be incidental contact while foraging. Impacts typically would be avoidance of active dredging areas, and would be temporary and negligible. Following the completion of dredging activities, any displaced animals would be expected to resume normal use of the area. Incidental take could result from entrainment by dredging equipment. The RBO terms and conditions for hopper dredging and relocation trawling limit the incidental take of Gulf sturgeon in the Mobile District jurisdiction to two fish from hopper dredging and eight fish from relocation trawling. Because work would comply with the RBO, only minor temporary impacts to Gulf sturgeon would be expected and the impacts would be less than significant.

5.2.10.2 No-Action Alternative

Under the No-Action Alternative of continuing to maintain the existing navigation channel with the present dimensions via maintenance dredging, no permanent or long-term impacts to protected species would result. Any disturbances in foraging would be minimal and following the completion of dredging activities, any displaced animals would be expected to resume normal use of the area. Maintenance dredging would comply with the RBO for sea turtles and Gulf sturgeon and annual allotted incidental takes would be limited as specified in the RBO.

5.3 Physical Environment

5.3.1 Geology

The significance criterion for the geology of the Gulfport Channel would be permanent change underlying bedrock that interferes with the natural movement and deposition of sediments in Mississippi Sound.

5.3.1.1 Proposed Action

Sediments contained within authorized dimensions and defined in the dredge prism would be removed by hopper dredging or hydraulic dredging under the Proposed Action. An estimated 6,617,500 yd^3, including 4,851,700 yd^3 of dredged material generated from construction of Gulfport Harbor to its authorized dimensions, would be associated with expansion and maintenance dredging of the existing channel. Those sediments would be placed in designated disposal areas according to approved disposal methodology. Through maintenance of the new channel, the removal of those sediments would be permanent. However, the amount of sediments removed and relocated would be minor relative to the size of Mississippi Sound. Placement of the dredged material in the open-water disposal sites, littoral zone disposal areas, and ODMDS would retain the material in the sand budget for the Sound and barrier islands.

There would be no impacts to the underlying geology resulting from implementation of the Proposed Action. Natural movement and deposition of sediments outside of the dredging footprint would not be affected.

5.3.1.2 No-Action Alternative

Selection of the No-Action Alternative would result in no impacts to geological resources within the project study area. However, sedimentation in the channel and regularly scheduled maintenance dredging performed by the USACE would result in periodic slight changes to the bottom depths of the existing channel. Impacts would not differ from existing conditions and would be temporary and minor.

5.3.2 Bathymetry

The significance criterion for bathymetry would be permanent change in depth that affects currents, tides, and/or natural water movement in Mississippi Sound.

5.3.2.1 Proposed Action

Channel Dredging

The existing ship channel through Mississippi Sound would be widened by approximately 80 ft along its approximately 11-mile length, resulting in about 107 acres of previously undisturbed bottom area being dredged (Figure 5-1).

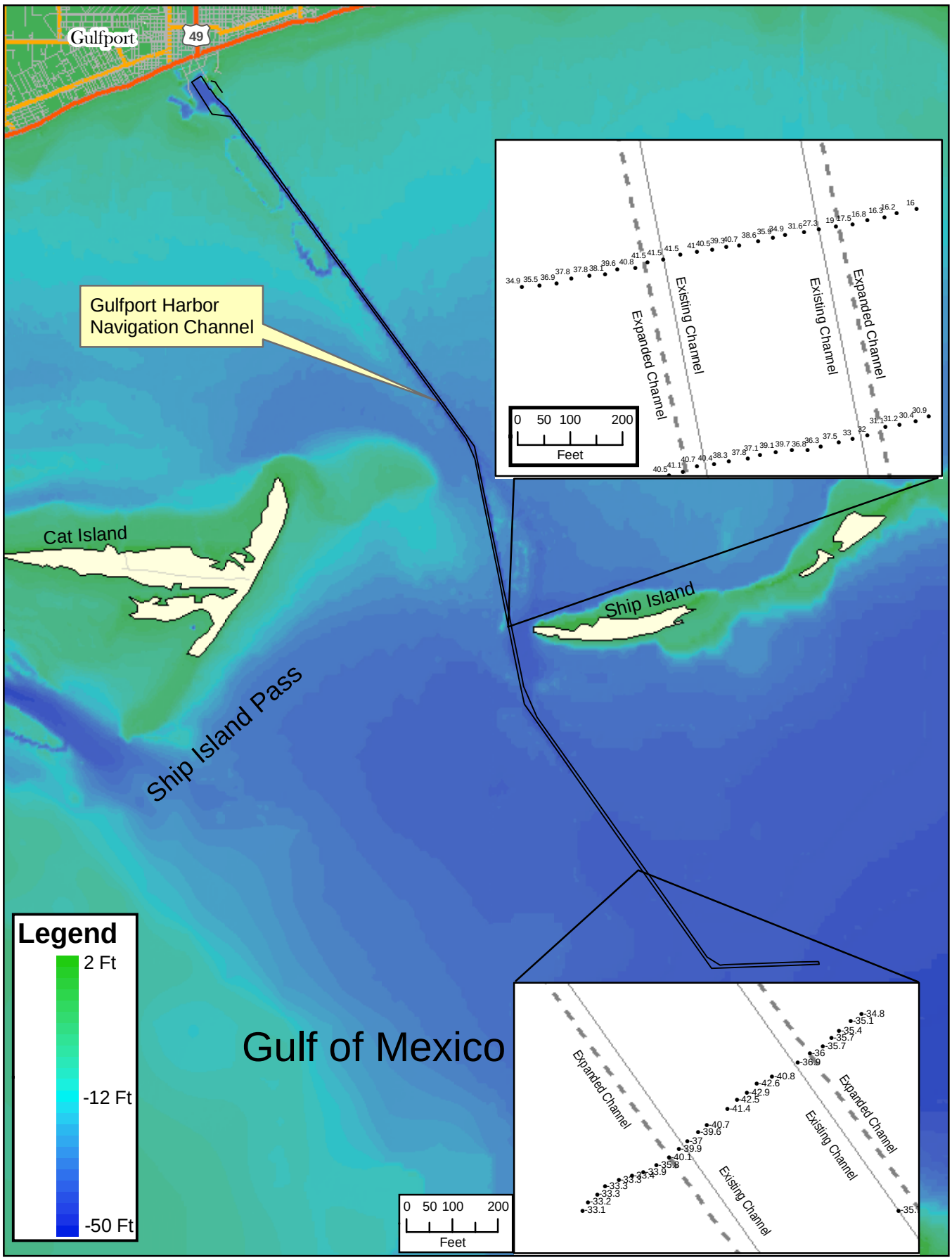

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Figure 5-1
Bathymetry in the Project Area Following Proposed Action
Gulfport Harbor Navigation Channel Final Supplemental EIS

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The width of Bar Channel and Gulf Channel would be increased by approximately 100 ft for the approximately 10 miles of the existing channel, resulting in about 97 acres of newly disturbed bottom area of the Gulf of Mexico.

The planned dredging would remove 6,617,500 yd^3 of new and maintenance material. The widening of the existing ship channel would result in a permanent change in local bathymetry. However, this change would not be expected to result in bathymetric effects outside of the area of physical disturbance.

One or more of the options discussed below would be used, in combination when appropriate, for disposal of the dredged materials. The physical and chemical characteristics of the dredged materials would be evaluated to identify the most appropriate option or combination of options on a case-by-case basis.

Disposal in Littoral Zone

There would be localized changes in bathymetry in the immediate areas where littoral zone disposal would occur. Dredged material would be placed in the Cat Island and Chandeleur Islands littoral disposal areas. At Cat Island, dredged material would be placed in shallow (14 to 18 ft deep) nearshore waters in the existing littoral disposal area southeast of the island. Wave and current action would quickly rework and spread this material along the coast and into Mississippi Sound.

Dredged material would also be placed east of the northern end of the Chandeleur Islands in water depths of 25 ft or greater. Wave and current action would move the material toward the Chandeleur Islands. Any impacts to bathymetry to either location would be minor and temporary.

Disposal in Existing ODMDS

Impacts to the existing ODMDS site on the western side of the channel were evaluated in the 1986 USEPA *Environmental Impact Statement for the Pensacola, FL, Nearshore Mobile, AL., and Gulfport, MS. Dredged Material Disposal Site Designation* as part of the approval process for that ODMDS (USEPA, 1986). Disposal activities that would occur as part of the Proposed Action would be consistent with the impacts identified in that document.

5.3.2.2 No-Action Alternative

No changes to the bathymetry in the vicinity of the existing ship channel would result from the No-Action Alternative. However, sedimentation in the channel and regularly scheduled maintenance dredging that is performed by the USACE would result in regular but slight changes to the bottom depths of the existing channel.

5.3.3 Meteorology

The significance criterion for meteorology would be a permanent disruption in the climate and weather patterns in Mississippi Sound.

5.3.3.1 Proposed Action

No changes in meteorological conditions in the vicinity would be expected as a result of the Proposed Action.

5.3.3.2 No-Action Alternative

The No-Action Alternative would have no impact on meteorological conditions in the vicinity.

5.3.4 Physical Oceanography

The significance criterion for physical oceanography would be a permanent disruption in the current and tide patterns or salinity in Mississippi Sound.

5.3.4.1 Proposed Action

Channel Dredging

The 1989 Gulf Harbor FEIS included an evaluation of the potential impacts of the then-proposed deepened and extended ship channel on circulation patterns in Mississippi Sound. The FEIS drew on results of the Mississippi Sound and Adjacent Areas Study (USACE, 1984) that compared pre-project conditions, i.e., channel depth of 10 to 12 ft, to the then-existing conditions, i.e., channel depth 30-32 ft. Results of this comparison indicated that no significant changes in circulation or salinity patterns had occurred as a result of the channel deepening. Additionally, the FEIS cites other studies that evaluated impacts associated with improvements of Federal projects at Pascagoula, Mississippi and Mobile, Alabama, which indicated that deepening and/or widening of those channels would result in localized changes in current velocities and salinity gradients but that these changes would not result in significant changes in overall circulation or salinity patterns (USACE, 1989).

A study of salinity levels in Mississippi Sound determined that higher-salinity water was introduced into, and spread radially across, the Sound via the Gulfport Federal Navigation Channel (Eleuterius, 1976). Bottom salinity in the vicinity of the expanded channel could increase as the result of channel widening.

The widening of the existing channel, by removing 4,851,700 yd^3 of dredged material associated with constructing Gulfport Harbor to its authorized dimensions, in accordance with the Proposed Action, would not be expected to cause changes to the overall circulation or salinity patterns beyond localized changes similar to those cited in the Pascagoula and Mobile studies. Higher salinity levels do occur in the Sound as a result of the existing shipping channel (Eleuterius, 1976), but the proposed channel improvements would be expected to result in only minor, if any, changes to existing salinity distribution patterns.

Disposal in Littoral Zone

There would be localized changes in current patterns in the immediate areas where littoral zone disposal would occur. Dredged material would be placed in the Cat Island and Chandeleur Islands littoral disposal areas. At Cat Island, suitable dredged material (>50% sand) would be placed in shallow nearshore waters in the existing littoral disposal area southeast or east of the island and could result in minor changes in salinity and temperature in these areas. Wave and current action would quickly rework and spread this material along the coast and into Mississippi Sound. Disposal of dredged material into waters of 25 ft or deeper, east of the northern end of the Chandeleur Islands, could result in minor changes in temperature. Wave and current action would rework and spread this material west, toward the Chandeleur Islands. Any impacts from disposal in either area would be minor and temporary.

Disposal in Existing ODMDS

Impacts to the existing ODMDS site on the western side of the channel were evaluated in the 1986 USEPA *Environmental Impact Statement for the Pensacola, FL, Nearshore Mobile, AL., and Gulfport, MS. Dredged Material Disposal Site Designation* as part of the approval process for that ODMDS (USEPA, 1986). Disposal activities that would occur as part of the Proposed Action would be consistent with the impacts identified in that document.

5.3.4.2 No-Action Alternative

No impacts to the existing circulation patterns, tides, wave action, or salinity distribution are expected to occur as a result of the No-Action Alternative.

5.3.5 Sediment Characteristics

The significance criterion for sediments in the vicinity of the Gulfport Channel would be a change in sediment characteristics that results in a permanent decline in sediment quality; a permanent decline in water quality as a result of sediment/water interactions; or a decline in sediment quality that causes permanent impacts to biological resources.

5.3.5.1 Proposed Action

Channel Dredging

Because the material to be dredged would be transported away from the channel area for disposal, sedimentation impacts resulting from the Proposed Action would be minimal in the existing and expanded channel. As the dredging proceeds, the dredge cutter heads, hopper dredges, or buckets would result in minor amounts of the finer fractions of the dredged sediments being generated at the dredge site. These finer sediments would be dispersed as a result of tidal movement and currents and would not result in any substantial physical change to the dredged or nearby areas. Sediments located in Mississippi Sound consist of fine particles. Any resuspended sediment that settles out in the Sound would consist of similar material. Some sediment resuspension by waves and tidal processes would be likely to occur. After dredged material placement, however, large-scale wind-induced water movements (such as those that might occur during periods of high winds over significant portions of the Sound), or large river flows (that often extend muddy waters out past the barrier islands) are more likely to deliver turbid water throughout the system than any potential low-level erosion from deposits; such deposits (combined) comprise less than 0.5 percent of the Sound's water bottoms. The impacts associated with resuspension and resettling would be less than significant.

Disposal in Littoral Zone

There could be localized changes in sediment characteristics in the immediate areas where littoral zone disposal would be performed. Dredged material would be placed in the Cat Island and the Chandeleur Islands littoral disposal areas. At Cat Island, suitable dredged material (>50% sand) would be placed in shallow nearshore waters in the existing littoral disposal area southeast of Cat Island. Wave and current action would quickly rework and spread this material along the coast and into Mississippi Sound. Dredged material associated with constructing Gulfport Harbor to its authorized dimensions would also be placed in waters of 25 ft or greater, east of the northern end of the Chandeleur Islands. Wave and

current action would rework and spread this material west, toward the Chandeleur Islands. Any impacts to sediment characteristics in either location would be minor and temporary.

Disposal in Existing ODMDS

Impacts to the existing ODMDS site on the western side of the channel were evaluated in the 1986 USEPA *Environmental Impact Statement for the Pensacola, FL, Nearshore Mobile, AL., and Gulfport, MS. Dredged Material Disposal Site Designation* as part of the approval process for that ODMDS (USEPA, 1986). Disposal activities that would occur as part of the Proposed Action would be consistent with the impacts identified in that document.

5.3.5.2 No-Action Alternative

The No-Action Alternative would result in no impacts from the sediments in the existing channel. Maintenance dredging of the ship channel is ongoing and deposition of the dredged material at historic disposal sites would have no impacts not previously assessed or documented.

5.4 Water Quality

The significance criterion for water quality in the vicinity of the Gulfport Channel would be a permanent decline in water quality; a temporary decline in water quality that results in the loss of a protected species, marine mammal, or foraging coastal bird; or a temporary decline in water quality that causes permanent impacts to important habitats (e.g., SAV).

5.4.1 Proposed Action

Dredging and disposal activities associated with the Proposed Action would result in short-term impacts and would not significantly degrade water quality in or near the Gulfport Shipping Channel.

Temperature, salinity, and density profiles would be affected as a result of water column mixing during dredging activities. Profiles would return to previous conditions following completion of dredging. Any impacts to profiles would be temporary and minor. Bottom salinity in the vicinity of the channel could increase following channel widening (USACE, 1975a; USACE, 1999).

Changes in DO, nutrients, and contaminant levels could occur due to mixing and release of sediments into the water column during dredging and disposal. DO concentrations could decrease during and immediately following dredging due to the movement of anoxic water and sediments through the water column. DO could also be affected by short-term increases in organic material and associated aerobic decomposition. Any impacts would be expected to be restricted to the immediate vicinity of the dredging and disposal areas. Once activities cease and disturbed material settles, DO concentrations would return to pre-disposal levels (USACE, 1975a; USACE, 1999). Any impacts would be temporary and minor.

Concentrations of nutrients may increase locally for short periods following dredging and disposal of dredged material. However, the currents and waves in Mississippi Sound would quickly dilute material in the water column and not promote nutrient concentration and eutrophication (USACE, 2006a). Any impacts would be temporary and minor.

Available water quality data indicate that sediments and water in the vicinity of the Proposed Action do not have elevated concentrations of contaminants such as hydrocarbons and metals. However, low concentrations of contaminants in sediments could be suspended in the water column during dredging activities. These contaminants would settle again following dredging activities, so no adverse impacts to water quality would be expected.

Water column turbidity would be temporarily affected during dredging activities, but plumes would be expected to quickly settle, allowing turbidity to return to background levels. Increased turbidity could cause animals, including marine mammals, coastal birds, and fish to avoid the area until dredging is complete and turbidity returns to normal. This avoidance behavior would be minor and temporary.

All requirements and conditions of MDEQ's Section 401 water quality certification for the project would be followed to protect water quality at the dredge and disposal sites. These include dredging to the proper navigational depth, implementing best management practices, meeting turbidity limits, and ensuring that no sewage, oil, refuse, or other pollutants are discharged into the watercourse.

5.4.2 No-Action Alternative

Under the No-Action Alternative, there would be no change from existing water quality conditions. Maintenance dredging activities would produce water quality effects similar to those of the Proposed Action.

5.5 Commercial and Recreational Fishing

The significance criterion for the commercial and recreational fishing in the vicinity of the Gulfport Channel would be a localized loss of a commercial or sport species or a change in the habitat structure in the area that would subsequently lead to a change in species composition and ultimately lead to significant impact in revenue for fisheries in Mississippi Sound.

5.5.1 Proposed Action

Dredging the channel would temporarily disrupt commercial and recreational fishing in the immediate vicinity of dredging activities. However, these fishing activities could be conducted at other locations in Mississippi Sound during dredging activities. Any impacts to commercial fisheries would be temporary and negligible during implementation of the Proposed Action.

5.5.2 No-Action Alternative

Leaving the channel at the current width and depth would not affect the commercial and recreational fishing in Mississippi Sound around the Gulfport area.

5.6 Essential Fish and Shellfish Habitats

The significance criterion for the EFH in the vicinity of the Gulfport Channel would be a permanent change or loss in the habitat designated as EFH such that one or more species of fish would undergo a substantial population decline within Mississippi Sound.

5.6.1 Proposed Action

Dredging to widen the Gulfport Federal Navigation Channel would temporarily adversely affect the EFH in the vicinity of the Proposed Action. However, there is ample habitat available in the vicinity to accommodate these temporarily displaced animals No estuarine emergent wetlands, oyster reefs, or SAVs would be adversely affected by the Proposed Action. Placement operations would cover benthic organisms with dredged material. However, as detailed in Section 5.2.2 no significant long-term impacts to this resource are expected as a result of the Proposed Action. Increased water column turbidity during dredging would be temporary and localized. The spatial extent of elevated turbidity is expected to be within 750 ft of the operation, with turbidity levels generally returning to ambient conditions within a few days after completion of the dredging activities. Due to the small area (on a percentage basis) of ecosystem that would be affected (less than 1 percent of Mississippi Sound) no significant long-term impacts are expected to occur.

Notwithstanding the potential harm to some individual organisms, no significant impacts to managed species of finfish or shellfish populations are anticipated from the proposed maintenance dredging and placement operations. No mitigation would be required for the temporary disruptions to EFH, as the fish would move out of the area during dredging activities and would be able to return to the channel area after activities cease.

Placement of dredged material near Cat Island and the Chandeleur Islands would result in a beneficial impact to EFH near those islands. The sediment would help renourish habitat areas for larval and juvenile stages of managed species and protect those areas from erosional forces.

In accordance with NMFS EFH conservation recommendations and the Magnuson-Stevens Fisheries Conservation and Management Act, the USACE has prepared a comprehensive EFH assessment for the continued operation and maintenance of the Gulfport Harbor Navigation project and is currently consulting with NOAA and NMFS to ensure full review of potential impacts on the habitat and species found in the EFH. Based on findings of this assessment and the USACE's comprehensive EFH assessment, the impacts are considered less than significant.

5.6.2 No-Action Alternative

Implementation of the No-Action Alternative would not affect the essential fish or shellfish habitat in Mississippi Sound around the Gulfport area.

5.7 Marine Sanctuaries

5.7.1 Proposed Action

Implementation of the Proposed Action would not affect any marine sanctuaries in the Gulf of Mexico.

5.7.2 No-Action Alternative

Implementation of the No-Action Alternative would not affect any marine sanctuaries in the Gulf of Mexico.

5.8 Cultural Resources

This section describes the potential impacts to historic and archaeological resources in the Gulfport Federal Navigation Channel environs associated with the No-Action Alternative and the Proposed Action. Federal regulations require consideration of how the Proposed Action might affect these resources. Section 106 of the National Historic Preservation Act of 1966, (NHPA), as amended, and implementing regulations at 36 CFR Part 800 require consultation with others to avoid or minimize adverse effects on historic and archaeological resources. The criteria used to evaluate potential impacts on submerged or marine archaeological resources would be related to any damage incurred by a historic shipwreck or submerged vessel as a result of the dredging operations.

5.8.1 Background, Regulatory Setting, and Methodology

5.8.1.1 Background

The assessment of impacts is focused on submerged or marine archaeological resources such as wrecks and vessels. The submerged resources, for purposes of evaluation for the NRHP, are considered structures. The NRHP is a listing of cultural resources that are significant either at the national, state, or local level.

To qualify for the NRHP, a vessel must have significance as one of five basic types of historic vessels: floating, dry-berthed, small craft, hulk, and shipwreck. The vessel must also retain integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the NRHP criteria listed below:

- Association with events that have made a significant contribution to the broad patterns of our history
- Association with the lives of persons significant in our past
- Embodiment of the distinctive characteristics of a type, period, or method of construction or representative of the work of a master, or possessing high artistic value, or representative of a significant and distinguishable entity whose components may lack individual distinction
- Yielding, or likely to yield, information important in prehistory or history

For a historic vessel, its significance also depends on establishing whether the vessel is one or more of the following:

- The sole, best, or a good representative of a specific vessel type.
- Is associated with a significant designer or builder.
- Was involved in important maritime trade, naval, recreational, government, or commercial activities.

Determining the significance of a vessel requires researching and analyzing the vessel's qualities, associations, and characteristics. This analysis determines if the vessel is historic and eligible for the NRHP. The proposed widening of the Gulfport Federal Navigation Channel would have an effect if it changed in any way the characteristics and integrity that

qualify, in this case a historic vessel, for inclusion in the NRHP. Potential effects on historic vessels and wrecks include but are not limited to:

- Physical destruction of an entire historic resource
- Damage or alteration of a portion of a historic resource, or removal of a portion of the property

Projects that affect historic or archaeological resources, including vessels and wrecks, are subject to the following primary Federal laws and regulations including: National Environmental Policy Act of 1969 (NEPA), Antiquities Act of 1906 (NHPA), Archaeological and Historic Preservation Act of 1974, Archaeological Resources Protection Act of 1979, Abandoned Shipwreck Act of 1987 (ASA) 36 CFR 800 Protection of Historic Properties, and 43 CFR 7, Protection of Archaeological Resources. The purpose of the ASA is to "vest title to certain abandoned historic shipwrecks that are buried in State lands to the respective States and to clarify the management authority of the States for these abandoned historic shipwrecks." Section 106 of the NHPA creates a process for reviewing the effects of federally assisted projects on properties listed in or eligible for the NRHP.

5.8.1.2 Area of Potential Effect

Within the project study area, an Area of Potential Effect (APE) was designated to focus on potential submerged resources and potential effects within the project dredging corridor. The boundaries of the APE for this navigation project is 200 ft on each side of the existing navigation channel. The APE would take into account the new channel width, the new side slope, and potential disturbance of the dredging equipment.

5.8.2 Proposed Action

The Proposed Action would widen the existing Bar Channel by 100 ft, from 300 to 400 ft and the Mississippi Sound Channel from 220 to 300 ft. A 1989 survey was conducted to determine if any submerged resources would be affected by deepening and widening of the navigation channel to its authorized dimensions. The survey, which was completed for the initial EIS, determined that no resources present were considered potentially eligible for the NRHP (USACE, 1989). The survey completed in 1989 used the same footprint and APE as used for this Proposed Action. Based on this report, there are no known historic resources within the APE for the Proposed Action. Two shipwrecks noted in the NOAA AWOIS database are within the APE but it is not known if these are more recent wrecks, given that they were not found in the 1989 survey of the area. Therefore, it is assumed that these are recent shipwrecks and there would be no impacts to submerged historic resources from dredging operations of the Proposed Action.

It is possible that unknown historical or archaeological resources could be discovered during dredging. In the event that any resources are discovered during dredging activities, dredging would be halted immediately and the SHPO and other appropriate authorities would be contacted within 24 hours. This would be done so that the findings could be recorded and the level of significance, if any, would be determined. If findings of significance are made, mitigation measures would be developed through a Memorandum of Agreement (MOA), which would include the USACE, the SHPO, and the Advisory Council on Historic Preservation.

For the Proposed Action, dredged material would be placed in the littoral zone disposal areas near Cat Island and the Chandeleur Islands. There are no known submerged cultural resources in the Cat Island littoral disposal area; therefore, no impacts to cultural resources would occur.

In the proposed Chandeleur Island disposal area, there is one known resource that would be affected by placement of dredged material in waters deeper than 25 ft. The placement of dredged material would not adversely affect the resource. There would be no adverse impact.

5.8.3 No-Action Alternative

Under the No-Action Alternative, existing conditions in the project study area would not change. The USACE would continue to maintain the existing navigation channel, Turning Basin and small boat harbor with the present dimensions. No impacts to historic or archaeological resources would result from the No-Action Alternative.

5.9 Noise

The significance criterion for the noise impacts in the vicinity of the Gulfport Channel would be permanent elevation of above-surface noise levels compared to existing ambient conditions or temporary creation of a high noise level (>85 dB) in the vicinity of sensitive receptors. The criterion for underwater noise would be permanent or long-term population avoidance of the area; a temporary threshold shift (TTS) of marine life; permanent threshold shift (PTS) of marine life; stranding; organ damage; or death to marine individuals.

5.9.1 Proposed Action

5.9.1.1 Surface Noise

Sensitive noise receptors (a residential area and school) are located within 1 mile of the northern portion of the Proposed Action. Those receptors would be within range of dredging activities in the Turning Basin of Gulfport Harbor. Outside of Gulfport Harbor there are no sensitive receptors within 1 mile of the Proposed Action.

When calculating potential effects of noise on nearby sensitive receptors, an A-weighted decibel level scale is used. The A-weighted scale takes into account the lower sensitivity of the human ear to noise with a frequency lower than 1 kHz. Noise levels are often expressed as Ldn, which is the A-weighted average sound level over a 24-hour day and night period. The Ldn also applies a 10-dB penalty to nighttime sounds occurring between 10 pm and 7 am to account for the desirability of a quieter night than day in order to avoid sleep interruption. A noise level considered low is less than 45 dB, a moderate noise level is 45-60 dB, and a high noise level is above 60 dB. In busy urban areas, noise levels are typically near 75 dB, and can reach 85 dB near airports and major freeways (California State Lands Commission [CSLC], 2005).

Typical noise levels produced by construction operations are in the 80- to 95-dB range (CSLC, 2005). Construction and reconstruction efforts to rebuild the Gulf coast after Hurricane Katrina are still ongoing. Residential and commercial construction onshore as well as debris removal operations are a consistent source of construction noise in the

Gulfport region. These activities are ongoing in residential areas, such that any areas considered to include sensitive noise receptors would likely be subject to daytime ambient noise levels with a construction operation nearby.

Mechanical dredging produces between 58 and 70 dB for a person located 50 ft from the operation (USEPA, 2003). Hopper dredging ships produce an average of 82 dB (DEFRA, 2005). The potential noise effects at any single location would be limited to several days. The dredging operation would be at least 1 km (0.6 mi) away from any residential area and 1.1 km (0.7 mi) from any school. Near the port, the dredging operation would be less noisy than the construction activities that are currently underway in the same area. Dredging activities would also produce noise levels below the regulatory level of 90 dBA over 8 hours set by OSHA (OSHA, 2007). The short duration, the distance from any sensitive noise receptors, and the high existing background noise level within the industrial harbor and the surrounding areas indicate that the Proposed Action would not affect the surrounding population. Any dredging-related noise impacts would be temporary and minor.

The City of Gulfport's noise ordinance does not specify any decibel levels that would be in violation of noise standards, but does specify that construction should occur between 7 am and 9 pm (Code of Ordinances, 2006). Gulfport Harbor is an industrial site, and the City of Gulfport has not published desirable noise levels for industrial operations; as a result, the Proposed Action would not violate any local noise requirements.

Seabirds are biological resources that may be sensitive to noise from the dredging activities. Sensitive bird species occurring in the area are the bald eagle, the brown pelican, the least tern, and the piping plover. The first three bird species prefer the nearshore habitat. Populations of the piping plover winter on the barrier islands as well as in Gulfport Harbor.

Because of the distance between Gulfport Harbor and the beach habitats, and because the dredging equipment would only be operating in the harbor for a few days, the noise from the dredging operation would not be likely to affect bird populations nearshore. The continued presence of bird populations in Gulfport Harbor itself also indicates a tolerance for industrial noise.

The shipping channel passes between Cat and Ship Islands, both of which have been designated critical habitat for the wintering piping plover. The shipping channel is 5.6 km (3.5 mi) from the nearest point on Cat Island. Following dredging, the navigation channel would be located approximately 2,000 ft from the western end of Ship Island. The piping plover continues to winter on western Ship Island and Cat Island, even with high levels of shipping traffic, which suggests tolerance for temporary impacts from noise.

Dredging operations would produce noise for a longer duration compared to passing ships. Hopper dredging would produce approximately 82 dB of noise (DEFRA, 2005) over 1 to 3 months during the performance of work in the area. That noise would be attenuated over the distance to Ship Island by approximately 36 percent, based on a 6-dB decrease over a hard surface (water) with each doubling of distance from the source (Washington State Department of Transportation [WSDOT], 2006; FHWA, 2007a). The result would be noise levels of approximately 52 dB at the western end of Ship Island. Noise would attenuate more rapidly once it reaches the island since vegetation and softer surfaces on the island

would provide an additional 1.5 dB of buffering over each doubling of distance (WSDOT, 2006).

Along interstate highways, bird sensitivity to noise during breeding periods has been measured from a few ft to over 1.8 miles (FHWA, 2007b). Sensitivity to noise (e.g., alert or avoidance behavior) has been measured at 57 to 70 dB in forest birds (WSDOT, 2006). Studies of waterfowl species found no behavior modifications at noise levels below 63 dB (FHWA, 2007b). A recent rule promulgated for the Fire Island National Seashore established a 1,000-ft buffer for personal watercraft as protective of sensitive habitats, including piping plover habitat. Personal watercraft generate noise ranging from 80 to 102 dB (Federal Register, 2004; 2005) which is equal to or greater than the noise generated by hopper dredging. Therefore, the noise from the Proposed Action would not be expected to significantly affect any sensitive bird populations on the barrier islands. Any impacts to nesting and roosting behavior would be temporary and negligible.

5.9.1.2 Underwater Noise

Dredging operations produce underwater noise at levels of 160 to 180 dB, with peak intensity at frequencies between 5 and 500 Hz (Hildebrand, 2003). The entire sound range of dredging is from less than 10 Hz to less than 1,000 Hz (National Research Council [NRC], 2003). For underwater sound, decibels are reported in reference to 1 micropascal of pressure and usually at 1 m from the sound source. Underwater noise is known to have a wide variety of possible effects on marine mammals in different circumstances, with effects ranging from no response to temporary avoidance, long-term avoidance, mass strandings, organ damage, and death (NRC, 2005). These responses vary depending on the frequency and intensity of sound encountered as well as the acoustic sensitivity of the individual and species involved. Different marine species are sensitive to different frequencies of sound, and respond accordingly. In addition, different sound frequencies propagate differently through the underwater medium.

Assessing a biologically significant response of a species to a single noise is therefore very difficult (NRC, 2005). However, the Marine Mammal Protection Act (MMPA) established underwater noise standards. Section 3(18)(A) of the MMPA defines "harassment'' as: …any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]. Current standards establish Level A harassment at 180 dB and Level B harassment at 160 dB for impulse sounds and 120 dB for continuous sounds (NRC, 2005). According to the MMPA, dredging operations could adversely affect sensitive marine mammal species, if these animals were in proximity to the operating dredge.

The attenuation of sound over distance also affects the sound energy when received by a marine organism. Lower frequencies attenuate to a lesser degree than higher frequencies, but the sharpest decline in sound energy is found in the first several kilometers away from the sound source. Water depth also affects sound wave propagation. Models of sound propagation in shallow waters indicate frequencies below which there is no sound propagation, called the "cutoff frequency" (NRC, 2003). Due to the amplitude of low-frequency sound waves and the vertical interference encountered in shallow waters, certain

frequencies do not propagate under certain conditions. At a depth of approximately 6.1 m (20 ft), the cutoff frequency is 500 Hz on a soft bottom, such as occurs in the dredging area. Most of Mississippi Sound is shallower than this, and the cutoff frequency is much higher in shallower water. This would eliminate a sizable portion of the dredging noise. At a depth of 9.1 m (36 ft), the typical depth of the shipping channel, the cutoff frequency is 300 Hz on a soft bottom. Sound would therefore propagate more effectively along the shipping channel, as well as farther out in deeper waters past the barrier islands.

Another factor to consider is the hearing sensitivity of the species likely to be found in the area. The behavioral responses of marine mammals to acoustic stimuli vary widely, depending on the species, the context, the properties of the stimuli, and prior exposure of the animals (NRC, 2005). Sensitive whales known from the Gulf of Mexico are finback whales and humpback whales, both federally endangered large whale species that tend to stay in the deeper waters off the continental shelf.

The manatee, Gulf sturgeon, and five species of sea turtle occur in Mississippi Sound and are more likely to encounter dredging-related noise in the Proposed Action area than whales. Although little data exist on the acoustic sensitivity of any of these species in particular, larger whales are typically more sensitive to lower frequencies (NRC, 2003). Pinnipeds might be the closest hearing analogues to manatees, given their size and shape. Pinnipeds tend to have most acute hearing near 10,000 Hz, with most of their hearing taking place between 1,000 Hz and 60,000 Hz. Odontocetes (toothed whales) have best frequency of hearing between 80,000 and 150,000 Hz (NRC, 2005). If manatee hearing is similar to pinniped hearing, the manatee would not be affected at all by the dredging noise, because it is not susceptible to noise with a frequency as low as 1,000 Hz. Very little data exist on the hearing of sea turtles.

One study indicates that loggerhead turtles can hear in a range between 250 and 750 Hz, and another indicates that green turtles hear in a range between 300 and 400 Hz (NRC, 2003). These species could therefore be susceptible to dredging noise. Fish have also exhibited the ability to hear in the lower frequency ranges (NRC, 2003). For frequencies below 1,000 Hz, fish are likely to show avoidance behavior around 135 dB (Mitson and Knudsen, 2003). Above 1,000 Hz underwater noise levels provoking avoidance responses decline sharply. As noise levels in the reaction frequency range increase, the range of reaction increases as well (Mitson and Knudsen, 2003).

Assessing the effects of noise disturbance on individuals or populations remains a challenge, however, as the criteria for a biologically significant response are not well established (NRC, 2005). Measuring a response is also very difficult. Different populations exhibit different avoidance behaviors depending on circumstances. For example, gray whales would deviate from a migration path if sonar disturbances were placed in the middle of the path, but not if the same disturbances were placed just offshore of the path, even if the whales passed close by the source (NRC, 2005). Avoidance reactions were measured from 120 dB to 170 dB, depending on the pulse conditions. Porpoises exhibited avoidance behavior to a sound source level of 132 dB at 10,000 Hz, which is well above the frequency of sounds produced by dredging.

Another measure is TTS, when hair cells in the cochlea of the mammalian ear fatigue and the animal's hearing becomes less sensitive. If the sound exposure is more intense or

consistent, the hair cells die and hearing loss is permanent, causing PTS. Using captive animals, TTS has been identified for some species at certain frequencies and decibel levels, but it varies with ocean and training conditions. Beluga whales exhibited TTS at 400 and 30,000 Hz at 226 dB; the bottlenose dolphin exhibits TTS at 160 dB at 7,500 Hz. In both species, avoidance behaviors were observed before TTS occurred, so extrapolation to conditions in the wild suggests that populations would avoid the noise before experiencing any damage.

The Proposed Action would take place over a short duration, and the dredging would proceed from Gulfport Harbor to approximately 20 miles offshore, in areas where the bottom depth is less than 11.5 m (38 ft). Due to the shallow water, much of the underwater dredging noise in the lower frequencies would have no potential to affect marine life, as those lower frequencies would not propagate. The portion of noise that is a higher frequency would be heard, and may cause temporary avoidance near the dredging operation. As sound propagating through the water column attenuates, the effects would decline logarithmically with distance (NRC, 2003), with the sharpest decline in the first few kilometers from the source. The noise is not at levels known to cause any injury, temporary or permanent, to marine life, and would not remain in any single location for longer than a few days.

Past maintenance dredging operations in the Gulfport Federal Navigation Channel and other areas along the Gulf coast have occurred at depths and durations similar to those of the Proposed Action. Marine species in the vicinity of the shipping channel and elsewhere in the Gulf have coexisted with ongoing maintenance dredging operations. Therefore, any noise impacts from the Proposed Action would be temporary and minor, restricted to avoidance or temporary disruption of foraging or movement.

5.9.1 No-Action Alternative

The No-Action Alternative would cause no changes to the existing noise conditions in the vicinity of the Gulfport Federal Navigation Channel.

5.10 Air Quality

The significance criterion for air quality impacts in the vicinity of the Gulfport Channel would be an exceedance of a chronic or acute state air quality standard.

5.10.1 Proposed Action

The existing commercial and industrial operations in Gulfport are currently in compliance with Clean Air Act (CAA) regulations, and Harrison County is in attainment with all current air quality standards. Since air emissions associated with dredging operations would be minimal, the Proposed Action would have no effect on the existing regulatory status of Harrison County. Any air quality impacts would be temporary and negligible.

5.10.2 No-Action Alternative

The No-Action Alternative would cause no changes to the existing air quality conditions in the vicinity of the Gulfport Federal Navigation Channel.

5.11 Socioeconomics

5.11.1 Demographics

Demographic impacts are considered significant if the Proposed Action would result in a substantial negative effect upon demographics in the vicinity on the project study area or within the region.

5.11.1.1 Proposed Action

The Proposed Action would support the Port's goals of increasing the number, size, and frequency of vessels reaching the Port by allowing larger and more fully loaded vessels within the channel. The number of jobs at the Port, trucking companies, and nearby railroad lines would likely increase as a result of widening the Gulfport Federal Navigation Channel. Additional workers may come from the local Gulfport area or surrounding areas, thus resulting in a small population increase. However, the number of jobs created would be limited, so any population increase would likely be negligible.

5.11.1.2 No-Action Alternative

The No-Action Alternative would not encourage population growth or redevelopment in Gulfport or the surrounding area. Under the No-Action Alternative, existing socioeconomic conditions in the ROI would not significantly change. The population for Gulfport increased from 1990 through 2003, according to U.S. Census data. However, Post-Hurricane Katrina data indicate that the population in Harrison County was 30,713 less than before the hurricane. As a result, it is likely the total population in the area immediately adjacent to the Port is smaller. Overall, the population of the area may increase slowly as the region as a whole rebuilds, irrespective of the Proposed Action.

5.11.2 Environmental Justice

EO 12898, Environmental Justice (59 Federal Register 7629 [1994]), urges each Federal agency to achieve environmental justice by addressing "disproportionately high and adverse human health effects…on minority and low-income populations." EO 13045 (Protection of Children From Environmental Health Risks and Safety Risks) was designed to safeguard children from adverse exposure to environmental and human health conditions. Disproportionate environmental health and safety risk impacts to either minority populations or low-income populations would also be considered significant, as would disproportionate environmental health and safety risks to children.

5.11.2.1 Proposed Action

The 2000 U.S. Census indicates that the area immediately surrounding the project study area is primarily commercial and includes little residential land use. The Proposed Action would not require the relocation of any populations surrounding the Port and is not expected to adversely affect or disproportionately impact any minority population, children, or low-income families. Given the distance from the shore-based population and local boaters to the dredge activities, no children are likely to be exposed to any potential sources of impact. In addition, safety precautions would be outlined in a safety plan prepared by the dredging contractor to limit potential sources. The contractor would also be required to mark all

construction areas to prohibit public boating access. The Port may aid low-income families by providing additional jobs within the area. Implementation of the Proposed Action and the addition of jobs may result in a small increase in the population.

5.11.2.2 No-Action Alternative

Due to Hurricane Katrina, the total population within the census tracts associated with the area immediately adjacent to the port is probably smaller than reported in the 2000 Census. Similarly, there are likely smaller population of minorities and children in these areas. Under the No-Action Alternative, there would be no significant direct impacts to minority populations, children under the age of 17, or families below the poverty level in the areas immediately adjacent to the port (Census Tracts 14, 21, and 22). However, there may be indirect negative impacts, as potential jobs or economic impacts to the community presented under the Proposed Action would not occur. While these potential indirect negative impacts are probably less than significant, they should be noted.

5.11.3 Socioeconomics

Socioeconomic impacts are considered significant if the Proposed Action would result in a substantial negative effect upon employment, income, or housing in the vicinity on the project study area or within the region.

5.11.3.1 Proposed Action

The widening of the navigation channel would allow for increased capacity and reduced wait time for ships entering and exiting the navigation channel. As a result of the increased capacity at the port, increased quantities of cargo would be processed at the Port. This increase may result in additional jobs and economic stimulation from taxes and fees. This economic stimulation may attract more workers who need housing in the area, encouraging the rebuilding of homes and businesses damaged by Hurricane Katrina.

5.11.3.2 No-Action Alternative

Without the Proposed Action, heavier and larger ships may choose other ports along the Gulf coast, thus hindering economic growth in Gulfport. Under the No-Action Alternative, no planned port improvements would be made and any additional jobs or economic infusion of taxes or fees would not occur. Future socioeconomic impacts may include reduced economic growth and quality of life in local and regional communities.

5.11.4 Land Use and Water

Land and water use impacts are considered significant if the Proposed Action would do one or more of the following:

- Substantially conflict with established land and water uses in the area.
- Be incompatible with surrounding land uses.
- Substantially conflict with applicable land and water use goals, objectives, policies, guidelines, or adopted environmental plans.

5.11.4.1 Proposed Action

The Proposed Action would increase the number, size, and frequency of vessels reaching the Port of Gulfport by allowing larger and more fully loaded vessels within the channel. Channel widening would facilitate vessel traffic and reduce delays by allowing two-way traffic patterns in the channel. The Proposed Action would not introduce new or different land uses in the area, nor would it alter any of the current land uses surrounding the Port. Land uses surrounding the Port appear to be primarily commercial properties; however, several of the properties no longer contain buildings due to hurricane-related destruction. The Proposed Action would not conflict with any applicable goals or policies within the area, as the Port has already been approved to maintain and dredge the channel entering the Port.

During the dredging, recreational activities such as boating, sailing, and fishing along the navigation channel may be temporarily disrupted, limited, or altered. Potential temporary impacts to nearby boaters may include noise, visual intrusion, and turbidity. After the dredging, increased vessel traffic into the Port may slightly alter recreational uses of the channel; however, overall, there would be no significant long-term or short-term land use impacts from the Proposed Action.

Vehicular and rail traffic may increase within the Port and on local roads, such as U.S. 49 and I-10, as the widening of the Gulfport Federal Navigation Channel would allow a larger number of heavier and larger commercial ships to enter the Port. This in turn would likely increase the regional trucking of materials from the Port to the local roads, highways, and interstate. It is anticipated that the local traffic from new employees hired to facilitate the distribution of goods from the Port may minimally increase traffic on local streets, such as U.S. 90.

Traffic along the local rail lines (KCS and CSX) would likely increase due to the increase in volume and need to distribute goods. Increased use of the local rail lines may also affect local traffic patterns. A traffic control plan, acceptable to the City of Gulfport, may be required in order to avoid significant traffic impacts due to the influx of trucks, rail lines, and already existing changes in traffic flow due to damaged streets and bridges from Hurricane Katrina.

5.11.4.2 No-Action Alternative

Under the No-Action Alternative, existing conditions in the project study area would not change. The USACE would continue to maintain the existing navigation channel, Turning Basin, and small boat harbor with the present dimensions. No impacts to existing traffic patterns or traffic counts along the local roads, including the nearby highways (U.S. 90 and U.S.-49) and interstate (I-10), would occur. No changes to vehicular traffic, to traffic patterns along local rail lines, or to marine traffic patterns within the Port would result from the No-Action Alternative.

5.11.5 Utilities

Utility impacts are considered significant if the Proposed Action would result in the interruption of local or regional utility services so as to pose a substantial inconvenience to the affected population.

5.11.5.1 Proposed Action

The Proposed Action would not directly impact the utility services in the area. Fuel for the dredging operations would be stored on the dredge boats, and no utility lines are known to be located within the dredge footprint of the navigation channel; therefore, no known utility lines would be significantly impacted or relocated. If utility lines are discovered during dredging, the appropriate permits would be obtained before utilities are relocated. Unknown abandoned lines could be present and could be disturbed.

5.11.5.2 No-Action Alternative

Under the No-Action Alternative, existing utility service use or location would not change. The USACE would continue to maintain the existing navigation channel with the present dimensions.

5.11.6 Public Safety

Public safety impacts are considered significant if the Proposed Action would do one or more of the following:

- Cause response times for fire or law enforcement to increase beyond acceptable levels.
- Interfere with emergency response plans or emergency evacuation plans.
- Create a potential public health risk, or involve the use, production, or disposal of materials that pose a safety hazard to people in the area affected.

5.11.6.1 Proposed Action

In the Proposed Action, the Gulfport Federal Navigation Channel would be widened via dredging. To reduce potential impacts and conflicts with dredging equipment, warning buoys would be placed a safe distance from the work area to provide notice to vessel traffic and boaters, and all construction vessels would be equipped with markings and lights in accordance with USCG regulations. The dredging contractors would participate in an orientation session with the USCG to address harbor safety operating procedures and protocol, and ensure coordination with marine traffic in the area. In addition, a Notification to Mariners would be published in the USCG's weekly publication. The dredging contractor would also participate in a safety orientation with USACE and would be required to keep the public informed of dredging activities. The Port of Gulfport would notify the appropriate mapping agencies to revise applicable navigation charts to reflect changes in channel depth due to dredging operations. No significant impacts to emergency responders for recreational boaters are expected to occur

5.11.6.2 No-Action Alternative

Under the No-Action Alternative, existing public safety issues would not change. The USACE would continue to maintain the existing navigation channel with the present dimensions. The size of incoming vessels would remain the same and emergency response and marine traffic safety issues would continue to be addressed by the USCG.

5.11.7 Navigation and Ports

The significance criterion for navigation and ports would be significant change to the current capacity of the navigation channel and the Port of Gulfport.

5.11.7.1 Proposed Action

The Port of Gulfport is the major port in Mississippi and supports national and international shipping commerce. Increased harbor access for deep-draft ships would be expected to make a positive contribution to the overall economy of the area. Increased traffic due to dredging equipment would be expected to have an intermittent temporary impact on the navigation of commercial and non-commercial ships and boats in the area. However, implementation of the Proposed Action is not expected to significantly impede commercial shipping navigation within the Safety Fairway and major shipping channels.

Commercial shipping could be temporarily disrupted by dredging and disposal activities. These impacts would recur whenever future maintenance dredging is conducted, and commercial shipping would be restricted during periods of active dredging. However, dredging would be coordinated with Harbor Control to minimize and avoid impacts to commercial traffic. The small number of dredge trips to the disposal area could occur around times of heavy commercial traffic without adversely affecting commercial shipping.

Widening the Gulfport shipping channel would allow the Port of Gulfport to receive commercial traffic from larger vessels. The Panama Canal Authority has solicited conceptual designs to widen and deepen the canal. Once that project is complete, a higher percentage of commercial shipping in the Gulf of Mexico would shift to these larger vessels. Currently, the canal accommodates container vessels up to 4,500 TEUs in size. The expanded canal may be designed for ships as large as 12,500 TEUs (http://www.pancanal.com/eng/cgi-bin/news/boletin.cgi?submit=Consulta&item=53). Implementation of the Proposed Action would allow the Port of Gulfport to sustain and grow its commercial business, including additional shipping through the Panama Canal, into the future.

It is anticipated that channel widening would take several months to complete. However, the dredging is not expected to require the closure of the Gulfport Federal Navigation Channel. The dredging contractor would participate in an orientation with the USCG prior to construction to ensure coordination with existing marine traffic in the area. Prior to construction, a Notification to Mariners would be published in the USCG's weekly publication. As required by law, all project-related vessels would comply with the Federal Navigation Rules established by the USCG. Due to the limited duration of the Proposed Action and Port-required coordination with the USCG, construction impacts on vessel transportation are not expected to be significant. Port pilots would still be used to bring commercial ships into the Port, so there would be no substantial difference in operations for large commercial ships other than an increased draft and depth for heavier and potentially larger ships. As a result of the Proposed Action, there would be an increase in the number, frequency, and size of ships entering the Port. However, the increase is not expected to negatively affect existing marine traffic.

5.11.7.2 No-Action Alternative

Under the No-Action Alternative, the existing navigation channel would remain unchanged. The USACE would continue to maintain the channel with the present dimensions. The No-Action Alternative would not be consistent with the goals of the Port of Gulfport to expand its operations to better serve and store cargo from incoming ships, which the Port plans to do with the expansion of warehouse storage area in November 2007 (addition of 60,000 square ft) and in mid-2008 (addition of 230,000 square ft). In addition, recent construction projects completed to expand the Port's capabilities would be under-utilized. One example is the Ro-Ro ramp, which aids in the loading and unloading of wheeled cargo, such as containers-on-chassis, automobiles, and other vehicles.

5.12 Cumulative Impacts

Federal regulations implementing the National Environmental Policy Act (NEPA) (40 CFR Sections 1500-1508) require that the cumulative impacts of a Proposed Action be assessed. NEPA defines a cumulative impact as an "impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions" (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This analysis considers the impacts of the Proposed Action in conjunction with other projects in Mississippi Sound and the northern Gulf of Mexico and in the vicinity of the Gulfport Federal Navigation Channel or other projects along the Mississippi Gulf coast within 15 miles of Gulfport.

The following sections address the potential for cumulative impacts resulting from interaction of the Proposed Action with other past, present, and reasonably foreseeable actions occurring since Hurricane Katrina. This powerful storm altered the barrier islands, coastal Mississippi, and the floor of the Gulf of Mexico. In conjunction with other major hurricanes (Ivan, Dennis, and Rita) in 2004 and 2005, earlier projects would have no potential for interaction with the Proposed Action.

5.12.1 MSPA at Gulfport

The amount of cargo shipped through Gulfport Harbor was expected to increase by approximately 30 to 35 percent between 2001 and 2026 (JWD Group, 2003). During this period, the non-cargo market was expected to grow as well. The non-cargo market was limited to casino gaming at the time of Hurricane Katrina, but is anticipated to include call port or home port services for cruise ships in the future. The MSPA has developed plans to alleviate traffic congestion that would accompany growth of the port and provide separate cargo, public marina, gaming, and cruise areas within the port. The separation of services and improved traffic infrastructure that would be developed under the MSPA Master Plan update would allow for growth in all aspects of the port to occur with minimal impact on daily operations in Gulfport and with long-term improvement of traffic flow in Gulfport and in the port area. Implementation of the MSPA Master Plan update would minimize the potential for interaction of the Proposed Action with other projects in the future.

5.12.2 Recovery from Hurricane Katrina

Work will continue for years to clean up and rebuild following the landfall of Hurricane Katrina in August 2005. Katrina recovery will continue to involve use of construction equipment and heavy machinery and will result in substantial placement of trash and debris in landfills. Because all of this work would be onshore, there would be no potential for interaction except for socioeconomic resources. The Proposed Action would aid in recovery of commercial shipping through Gulfport Harbor, which would in turn promote economic recovery in the region.

5.12.3 Pascagoula Shipping Channel Deepening

Plans are in place to increase the size of the Pascagoula Shipping Channel similar to the Proposed Action for the Gulfport Federal Navigation Channel. These two commercial channels are separated by more than 10 miles and have little potential for interaction in the environment. Because the two projects would be separated in time as well as in distance, no significant direct cumulative impacts to biological resources, water chemistry, or oceanographic resources are expected. As with the Gulfport project, the modification to the Pascagoula channel would aid in recovery of commercial shipping through Pascagoula Harbor, which also would contribute to regional economic recovery from Hurricane Katrina.

5.13 Summary

Impacts of the alternatives considered in this FSEIS are summarized in Table 5-1.

TABLE 5-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Biological Resources		
Plankton and Algae	No change from existing conditions.	No change from existing conditions.
Benthic Invertebrates	Short-term minor displacement and loss of infauna and epifauna invertebrates during dredging and disposal activities. Community would recover quickly.	No change from existing conditions. Minor displacements and losses associated with maintenance dredging would continue.
Fish	Temporary disruption to the mature fish community. Quick recovery upon completion of dredging operations. Beneficial impact to nearshore habitats through renourishment and protection from erosion with placement of dredged material near Cat Island and the Chandeleur Islands.	No change from existing conditions. Temporary disruptions associated with maintenance dredging would continue.

TABLE 5-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Mollusks	Temporary and minor displacement of bivalves and other semi-sessile mollusks. Loss of demersal mollusks from dredge or disposal areas. Quick recovery upon completion of dredging operations.	No change from existing conditions. Temporary and minor displacements associated with maintenance dredging would continue.
Crustaceans	Temporary disruption to mature crustaceans. Disruption of movement of juvenile organisms. Minor loss of organisms. Quick recovery upon completion of dredging operations.	No change from existing conditions. Temporary disruptions and minor losses associated with maintenance dredging would continue.
Hard Bottom Habitats	No impacts would occur.	No impacts would occur.
Submerged Aquatic Vegetation	No known submerged aquatic vegetation (SAV) beds would be impacted. Possible loss of isolated plants or small unmapped patches within dredging footprint.	No change from existing conditions.
Marine Mammal Communities	Temporary and negligible impacts to foraging behavior and activity patterns of mammals in the vicinity of dredging operations. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Temporary and negligible impacts to foraging behavior and activity in the vicinity of maintenance dredging operations would continue.
Marine and Coastal Birds	Temporary and negligible disruption to birds roosting on the western end of Ship Island during nearby dredging activities. Activity would return to normal following completion of dredging.	No change from existing conditions.
Threatened and Endangered Species	Sea turtles could be present in areas planned for dredging and placement activities. Because these activities would be done in compliance with the 2007 Regional Biological Opinion (RBO), any impacts would be expected to be temporary and minor. Potential temporary localized disruption to foraging behavior of Gulf sturgeon in dredge/disposal areas and potential for entrainment of sturgeon swimming in the dredging areas. Potential temporary disruption of roosting behavior of piping plover at the western end of Ship Island. All impacts would cease with the end of dredging.	Sea turtles and Gulf sturgeon could be present in areas planned for maintenance dredging activities. Because these activities would be done in compliance with the 2007 RBO, any impacts would be expected to be temporary and minor.
Physical Environment		
Geology	No impacts would occur.	No impacts would occur.
Bathymetry	Permanent change in bathymetry at location of channel widening. Short-term change to bathymetry in dredged material disposal areas.	No change from existing conditions.

TABLE 5-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Meteorology	No impacts would occur.	No impacts would occur.
Physical Oceanography	No change from existing conditions.	No change from existing conditions.
Sediment Characteristics	Short-term localized impacts to sediments at disposal sites. Potential beneficial impacts from disposal as beach nourishment.	No change from existing conditions. Short-term localized impacts to sediments at disposal sites for maintenance material would continue.
Water Quality	Temporary localized disruption to in-situ parameters (i.e., dissolved oxygen [DO], turbidity, conductivity, salinity, temperature) during dredging and disposal. Potential for temporary increase in nutrients and permanent increase in bottom salinity.	No change from existing conditions. Temporary localized disruptions to in-situ parameters and potential temporary increases in nutrients associated with maintenance dredging would continue.
Commercial and Recreational Fishing	Temporary disruption of commercial and recreational fishing in immediate vicinity of dredging activities. Coordination with Mississippi State Port Authority (MSPA) would minimize disruptions to commercial operations. Long-term improvement in commercial vessel traffic resulting from increased channel width and improved navigational safety.	No change from existing conditions. Temporary disruptions of commercial and recreational fishing in immediate vicinity of maintenance dredging operations would continue.
Essential Fish and Shellfish Habitats	Temporary adverse effects to Essential Fish Habitat (EFH) in vicinity of dredging activities. Possible minor and localized disruptions to seasonal shrimp migrations in the vicinity of the dredge. Potential minor loss of organisms, which could be mitigated by timing dredging operations to avoid peak migration periods. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Temporary adverse effects to EFH in vicinity of maintenance dredging activities would continue.
Marine Sanctuaries	No impacts would occur.	No impacts would occur.
Cultural Resources	No adverse impacts would occur.	No impacts would occur.
Noise	Potential short-term minor disruption of roosting behavior in birds on the western end of Ship Island and foraging behavior in marine organisms in the vicinity of dredging operations. Any impacts would be limited to the duration of the dredging operations.	No change from existing conditions. Potential short-term minor disruptions of foraging behavior in marine organisms in the vicinity of maintenance dredging operations would continue.

TABLE 5-1
Impacts Summary
Gulfport Harbor Navigation Channel Final Supplemental EIS

Resource	Proposed Action	No-Action Alternative
Air Quality	Temporary negligible increase in air pollutants during dredging and disposal.	No change from existing conditions. Temporary negligible increases in air pollutants during maintenance dredging and disposal activities would continue.
Socioeconomics		
Utilities	No impacts would occur.	No impacts would occur.
Economy, Demographics, and Environmental Justice	Long-term economic benefit from increased shipping and jobs creation. No impacts on environmental justice.	No change from existing conditions.
Vehicular, Railroad, and Marine Vessel Traffic	Long-term increase in ship, vehicular, and rail traffic in the vicinity of the Port of Gulfport. Channel widening would facilitate vessel traffic and reduce delays by allowing two-way traffic patterns in the channel.	No change from existing conditions.
Land and Water Use	Temporary localized disruption to recreation activities.	No change from existing conditions. Temporary localized disruptions to recreation activities could occur.
Public Safety	No impacts would occur.	No change from existing conditions.
Cumulative Impacts	Expected to aid in regional recovery from impacts of Hurricane Katrina by facilitating the recovery of commercial shipping operations in Gulfport Harbor. Incremental effects difficult to separate from the results of regional recovery from Katrina within the next 25 years.	No positive interaction to aid in recovery from Hurricane Katrina.

6.0 Compliance with Environmental Requirements

6.1 Introduction

This section provides an overview of laws and regulations associated with dredging of Gulfport Harbor and disposal of the dredged material. In addition, this section provides a summary and documentation of compliance with these regulations.

6.2 Clean Water Act

The Federal Water Pollution Control Act of 1972, as amended, commonly called the Clean Water Act (CWA), authorizes the USEPA to regulate activities resulting in a discharge to navigable waters. Section 401 (33 U.S.C. 1341) of the CWA specifies that any applicant for a Federal license or permit to conduct any activity that may discharge into the navigable waters shall obtain a certification that the discharge complies with applicable sections of the CWA. Section 401 of the CWA requires certification that activities, including dredge and fill activities, will not violate water quality standards. Section 401 water quality certification is obtained from the applicable state (Mississippi in this case). Section 402 established the National Pollutant Discharge Elimination System (NPDES), which regulates discharges into waters of the United States. USEPA Region 4 has jurisdiction in the Southeast, including Mississippi. USEPA may delegate portions of its regulatory authority to individual states. On January 8, 1998, the USEPA issued a Notice of Revised Draft NPDES General Permit Re-issuance to the states of Mississippi, Alabama, and Florida for activities under their jurisdiction.

Section 404 of the CWA normally requires a USACE permit for the discharge or deposition of dredged or fill material and for the building of structures in all waters of the United States. However, Section 404(r) of the CWA exempts from Section 404 permitting requirements the discharge of dredged or fill material as part of the construction of a Federal project specifically authorized by Congress if information on the effects of such discharge is included in an EIS pursuant to NEPA. Pursuant to the provisions of Section 404(r), the process used for completion of this project will be consistent with the guidelines described in Section 404(b)(1) of the CWA. Criteria to be considered in evaluating the alternatives include cost, technology, environmental effects, and logistics. Guidelines prepared for the evaluation of dredge and fill material also indicate that actions subject to the NEPA would, in all probability, meet the requirements of the analysis of alternatives specified by Section 404(b)(1) guidelines. As part of its review, USACE consults with other agencies, including the USFWS and the SHPO. The Section 404(b)(1) evaluation report is included in Appendix A.

6.3 Water Resources Development Act

Improvement of the Federal Gulfport Harbor Navigation Project was initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (PL 99-88). The project was subsequently modified by the WRDA of 1986 (PL 99-662) and again in the WRDA of 1988 (PL 100-676). The WRDA contains an environmental protection mission, codified at 33 U.S.C. 2316, which states "That the Secretary shall include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects." This FSEIS documents compliance with the provisions of the WRDA environmental protection mission in Section 5.

6.4 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the construction of structures or obstructions in navigable waters without consent of Congress (33 U.S.C. 407). Structures include wharves, piers, jetties, breakwaters, bulkheads, etc. The Act also encompasses any changes to the course, location, condition, or capacity of navigable waters and includes dredge and fill projects in those waters. The USACE oversees implementation of this law. Permission to install a feature or conduct dredging or filling requires the approval of the Chief of Engineers. This FSEIS has been completed in coordination with the USACE, Mobile District.

6.5 National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires that all Federal agencies use a systematic, interdisciplinary approach to protect the human environment. This approach promotes the integrated use of natural and social sciences in planning and decision-making that could have an impact on the environment. NEPA also requires the preparation of an EIS for any major Federal action that could have a significant impact on the environment. The EIS must address any adverse environmental effects that cannot be avoided or mitigated, alternatives to the Proposed Action, the relationship between short-term resources and long-term productivity, and irreversible and irretrievable commitments of resources.

The NEPA regulations provide for the use of the NEPA process to identify and assess reasonable alternatives to Proposed Actions that avoid or minimize adverse effects of these actions upon the quality of the human environment. "Scoping" is used to identify the scope and significance of environmental issues associated with a proposed Federal action through coordination with Federal, State, and local agencies; the general public; and any interested individuals and organizations prior to the development of an EIS. The process also identifies and eliminates from further detailed study issues that are not significant or have been addressed by prior environmental review.

40 CFR 1502.9 provides that a supplement to either a draft or final EIS shall be prepared if an agency makes substantial changes in the Proposed Action that are relevant to environmental concerns, or there are significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts. This FSEIS

has been prepared in accordance with the NEPA process for Federal actions that may impact the environment and addresses new conditions that were not evaluated in the 1989 EIS for Gulfport Harbor Navigation Improvements. Specifically, this FSEIS evaluates the dredging impacts associated with widening the Mississippi Sound Channel to its federally authorized dimension of 300 ft and the Bar Channel to 400 ft. Additionally, various disposal options for the dredged material are evaluated in this FSEIS.

6.6 Marine Protection, Research, and Sanctuaries Act

The Congress declared that ocean dumping in the territorial seas or the contiguous zone of the United States would be regulated under the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) (33 U.S.C. 1401 et seq.). 40 CFR 228.1, pursuant to Section 102 of the MPRSA, identifies the authority to establish criteria for evaluating proposed ocean disposal of dredged and non-dredged materials. The program is designed to prevent unreasonable degradation of the marine environment from all materials being disposed of into the ocean. The EISs for these disposal sites describe impacts that are expected to occur over a period of 25 years. Under 33 U.S.C. 1413 (33 CFR 324), USACE issues permits to transport dredged and non-dredged materials for the purpose of disposing of them in ocean waters.

This FSEIS has been completed in coordination with appropriate State and Federal agencies in accordance with the MPRSA and includes an evaluation of the Proposed Action's potential impacts to resources protected under this Act.

6.7 National Marine Sanctuaries Act

The National Marine Sanctuary and National Estuarine Research Reserve Programs are administered by the Sanctuaries and Reserves Division, National Ocean Service, NOAA, of the U.S. Department of Commerce (USDOC). The National Marine Sanctuary Program was established by the MPRSA (33 U.S.C. 1401-145), and the National Estuarine Research Reserve Program was established by the Coastal Zone Management Act (CZMA) of 1972.

The National Marine Sanctuaries Act (NMSA), or Title III of the MPRSA, allows the Secretary of Commerce to designate any discrete area of the marine environment as a National Marine Sanctuary if the Secretary finds the following:

- The marine site is of special national significance due to its conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, or aesthetic qualities; the communities of living marine resources it harbors; or its resource or human-use values.
- Existing State and Federal authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education, and designation as a National Marine Sanctuary will facilitate these objectives, and
- The area is of a size and nature that will permit comprehensive and coordinated conservation and management.

The NMSA stipulates that if a Federal action is likely to destroy, cause the loss of, or injure a sanctuary resource, the Secretary must recommend reasonable and prudent alternatives that can be used by the agency, in implementing the action that will protect sanctuary resources.

There are no National Marine Sanctuaries located near Gulfport Harbor and the only designated Marine Reserve in Mississippi is the Grand Bay Reserve located in Jackson County. Therefore, the Proposed Action would not adversely impact any marine sanctuaries or marine reserves.

6.8 Fishery Conservation and Management Act

The Fishery Conservation and Management Act of 1976 (16 U.S.C. 1801 et seq.) established the following (NMFS, 2004b; MMS, 2004a):

- A fishery conservation zone between the territorial seas of the U.S. and 200 nmi (370.4 km) offshore;
- An exclusive U.S. fishery management authority over fish within the fishery conservation zone (excluding highly migratory species); and
- Regulations for foreign fishing within the fishery conservation zone through international fishery agreements, permits, and import prohibitions.

In 1996, Congress enacted amendments to the Act, known as the Sustainable Fisheries Act (SFA) (PL 104-297), to address the substantially reduced fish stocks, which had declined as a result of direct and indirect habitat loss. The amended Act was renamed the Magnuson-Stevens Fishery Conservation and Management Act (FCMA) (PL 94-265), as amended on October 11, 1996. This Act provides for the conservation and management of the fisheries, and the identification and protection of EFH. Potential impacts on fish species and associated essential habitats have been evaluated in this FSEIS.

6.9 Endangered Species Act

The ESA of 1973 (16 U.S.C. 1531-1543), as amended, establishes a national policy designed to protect and conserve threatened and endangered species and the ecosystems upon which they depend. The ESA is administered by the Department of the Interior, through the USFWS, and by the USDOC, through the NMFS. Section 7 of the ESA specifies that any agency that proposes a Federal action that could jeopardize the "continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species "(16 U.S.C. 1536 Section 7(a)(2)) must participate in the interagency cooperation and consultation process. The Proposed Action will be reviewed by the USFWS and the NMFS to determine compliance with the ESA. After consultation, the Secretary (of Interior or Commerce or both) will issue an opinion on the action. If unacceptable adverse impacts to threatened or endangered species are identified by the USFWS or the NMFS, the Secretary will recommend reasonable alternatives (16 U.S.C. 1531 Section 7(b)(3)(A)).

Potential project impacts to threatened or endangered species have been evaluated in this FSEIS. Compliance obligations under Section 7 of the ESA would be documented prior to implementation of the Proposed Action.

6.10 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1934, as amended, requires consultation and coordination with the USFWS and state fish and wildlife agencies, where "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted… or otherwise controlled or modified" by an agency under Federal permit or license (16 CFR 661-667e). The USACE generally requests a letter from the USFWS for maintenance dredging projects when a new disposal site is proposed. The USFWS letter identifies fish and wildlife resources that may be impacted by the dredging and disposal operations, and identifies threatened or endangered species within the general area of dredging and disposal operations.

6.11 National Historic Preservation Act

The NHPA, enacted in 1966 and amended in 1970 and 1980, provides for a NRHP to include districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture. The law seeks to preserve the historical and cultural foundation of the United States. According to EO 11593 of 1991, the Federal Government will provide leadership in preserving, restoring, and maintaining the historic and cultural environment. The NHPA provides funding for each State to establish a SHPO. The SHPO oversees performance of appropriate surveys to ensure that historic and cultural resources are protected under the law.

The Proposed Action would follow the USACE Section 404 permit application process and seek SHPO review of archaeological and historical resources and concurrence prior to operations. Compliance with Section 106 of NHPA would be required for any cultural resources located in the marine environment. This FSEIS addresses measures proposed to assure compliance with the provisions of this Act.

6.12 Coastal Zone Management Act

The CZMA (16 U.S.C. 1451 et seq.) was enacted by Congress in 1972 to develop a national coastal management program that comprehensively manages and balances competing uses of and impacts on any coastal area or resource. The program is implemented by individual State coastal management programs in partnership with the Federal government. According to the CZMA Federal consistency requirement, 16 U.S.C. 1456, direct and indirect Federal activities must be consistent, to the maximum extent practicable, with a State's federally approved coastal management program. The Federal consistency requirement is an important mechanism to address coastal effects, to ensure adequate Federal consideration of State coastal management programs, and to avoid conflicts between States and Federal agencies. The Coastal Zone Act Reauthorization Amendments of 1990 (PL 101-508), enacted on November 5, 1990, as well as the Coastal Zone Protection Act of 1996, amended

and reauthorized the CZMA. The CZMA is administered by the Office of Ocean and Coastal Resource Management (OCRM), within the NOAA National Ocean Service (MMS, 1999).

NOAA approved the Mississippi Coastal Area Management Program (known as the Mississippi Coastal Program) in 1980. The MDMR is the lead agency for the program, which resolves conflicts over local coastal uses. The MDMR has led a comprehensive planning effort, as described in the Comprehensive Resource Management Plan, that incorporates stakeholder interests in coastal development issues in Mississippi (NOAA, 2003).

This FSEIS has evaluated impacts of the Proposed Action to coastal resources as described in Section 5.

6.13 Marine Mammal Protection Act

Under the MMPA of 1972 (16 U.S.C. 1361 et seq.), the Secretary of Commerce is responsible for all cetaceans and pinnipeds, except walruses, and has delegated authority for implementing the Act to the NMFS. The Secretary of the Interior is responsible for walruses, polar bears, sea otters, manatees, and dugongs, and has delegated the responsibility for implementing the MMPA to the USFWS. The MMPA established the Marine Mammal Commission and its Committee of Scientific Advisors on Marine Mammals, whose members are responsible for overseeing and providing advice to the responsible regulatory agencies on all Federal actions bearing upon the conservation and protection of marine mammals (MMS, 1999).

Potential impacts to marine mammals resulting from the Proposed Action and mitigation measures to offset the potential impacts are considered in Section 5.

6.14 EO 12898 - Environmental Justice Policy

The Environmental Justice Policy, based on EO 12898 of 1994, requires agencies to incorporate into NEPA documents an analysis of the environmental effects of their proposed programs on minorities and low-income populations and communities. Environmental Justice (EJ) is defined by the USEPA as, "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies." The effects of the Proposed Action on local populations and the resources used by local groups, including minority and low-income groups, are addressed in Section 5.

6.15 EO 13045: Protection of Children

On April 21, 1997, President Clinton issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to

children that result from environmental health risks or safety risks. These risks arise because:

- Children's neurological, immunological, digestive, and other bodily systems are still developing.
- Children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults.
- Children's size and weight might diminish their protection from standard safety features.
- Children's behavior patterns make them more susceptible to accidents because they are less able to protect themselves.

Therefore, to the extent permitted by law, and appropriate and consistent with each agency's mission, the President directed each Federal agency to:

- Make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children.
- Ensure that the agency's policies, programs, and standards address disproportionate health risks to children that result from environmental health risks or safety risks.

Examples of risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants that children might come into contact with or ingest. The potential environmental health or safety risks to children resulting from the Proposed Action are addressed in Section 5.

6.16 Ports and Waterways Safety Act

The Ports and Waterways Safety Act (PWSA) is designed to promote navigation, vessel safety, and protection of the marine environment. The PWSA applies in any port or place under the jurisdiction of the U.S. The PWSA requires the USCG to promulgate regulations regarding "design, construction, alteration, repair, maintenance, operation, equipping, personnel qualifications, and manning of vessels necessary for the increased protection against hazards to life and property, for navigation and vessel safety, and for enhanced protection of the marine environment" (MMS, 2004b).

The PWSA was amended by the Port and Tanker Safety Act of 1978 (PTSA). Under this amendment, Congress found that navigation and vessel safety and protection of the marine environment are matters of major national importance and that increased vessel traffic in the nation's ports and waterways creates substantial hazard to life, property, or the marine environment (MMS, 2004b). Section 5 includes an evaluation of potential impacts of the Proposed Action on socioeconomics and the marine environment.

6.17 State of Mississippi Regulatory Programs

In Mississippi, the Mississippi Coastal Program oversees coastal development projects, as discussed in Section 6.12. In addition, there are several policies regarding dredging of

harbors/channels and disposal of dredged material. A joint MDMR/USACE coastal wetlands permit and an MDEQ water quality certification are required for all dredging and filling projects (Lukens, 2000). Agency review and coordination procedures are discussed in Chapter 8 of the Rules, Regulations, Guidelines, and Procedures of the 1988 Mississippi Coastal Program. The MDMR is currently coordinating with the USACE to develop a comprehensive dredged material management plan for maintenance dredging and beach nourishment programs in coastal waters (Lukens, 2000).

Mississippi guidelines include the following related to dredged material disposal:

- Permanent dredged material disposal sites shall be designated for initial construction as well as future maintenance dredging for all canal or channel projects (Lukens, 2000; USACE, 2001);
- All dredged material shall be viewed as a potential reusable resource and materials suitable for beach nourishment, construction, or other purposes shall be used immediately for such purposes or stockpiled in existing disposal areas or other non-wetland areas for later use;
- Existing upland disposal areas shall be used to the fullest extent possible;
- Permanent, upland disposal sites or deepwater disposal sites shall be used in preference to coastal wetland disposal;
- Areas containing submerged vegetation or regularly flooded emergent vegetation shall not be used for dredged material disposal; and
- New dredged material proposals shall include a maintenance plan for the shorter of 50 years or the life of the project.

This FSEIS has been prepared in coordination with USACE, and is consistent with State of Mississippi policies and addresses the above guidelines, where appropriate.

6.18 State of Louisiana Regulatory Programs

In Louisiana, the LDNR Coastal Management Division (CMD) oversees coastal development projects and implements the Louisiana State and Local Coastal Resources Management Act. That law seeks to protect, develop, and, where feasible, restore or enhance the resources of the state's coastal zone. A joint CMD/USACE coastal use permit and Louisiana Department of Environmental Quality water quality certification are required for all dredging and filling projects (LDNR, 2008).

This FSEIS has been prepared in coordination with USACE, and is consistent with State of Louisiana policies to restore or enhance the resources of the state's coastal zone.

6.19 The Clean Air Act

Although the 1990 CAA is a Federal law covering the entire country, the states do much of the work to implement the Act. Under this law, USEPA sets limits on how much of a pollutant can be present in an area anywhere in the United States. This promotes uniformity

in basic health and environmental protections. The law recognizes that it is appropriate for states to take the lead in implementing the CAA because pollution control problems often require special understanding of local industries, geography, housing patterns, etc. (MMS, 1999).

States must develop State Implementation Plans (SIPs) that explain how each state will do its job under the CAA. A SIP is a collection of the regulations a state will use to clean up areas that exceed applicable air quality standards. The potential air quality impacts resulting from this project are discussed in Section 5.

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7.0 Public Involvement

7.1 Introduction

NEPA is intended to ensure full public participation in the EIS process. Public participation includes effective communication between all federal, state, and local agencies, tribal governments, and other persons or organizations that may have an interest in the project. As required by NEPA, the public was invited to attend a public scoping meeting, a public workshop, and a public hearing for the Gulfport Navigation Channel EIS. Other methods used to reach the general public and interested stakeholders included meeting announcements, newsletters, news releases to local print and broadcast news media, and a web site. Further public communications included maintaining contact with public officials and agency representatives, ensuring that calls from the public were addressed in a timely manner, and contacting stakeholders through placement of notices of public meetings in stakeholder newsletters. In addition, the EIS was widely circulated and comments were requested. The Public Involvement Management Strategy (PIMS) is included in Appendix C. Also in Appendix C are copies of the NOI, newsletters, public notices for the scoping meeting, public workshop, and public hearing, and the project mailing list.

7.2 Notice of Intent

An NOI to prepare a DEIS was published in the Federal Register (Vol. 71, No. 62) on March 31, 2006.

7.3 Coordination

An extensive list of environmental issues was identified and reviewed with appropriate federal and state (Mississippi and Louisiana) agencies. Discussions and resolution of issues took several years to conclude. Coordination topics are summarized in Table 7-1. Appendix D contains copies of correspondence directed to and received from the public and cooperating state and federal agencies.

TABLE 7-1
Summary of Public, State, and Federal Coordination
Gulfport Harbor Navigation Channel Final Supplemental EIS

Agency	Nature of Correspondence
Louisiana Department of Culture, Recreation and Tourism	Concurrence that historic structures and archeological resources would not be impacted
Louisiana Department of Natural Resources	Discussions of beneficial reuse locations
	Consistency determination under the Louisiana Coastal Resource Program
Louisiana Department of Environmental Quality	Water quality certification

TABLE 7-1
Summary of Public, State, and Federal Coordination
Gulfport Harbor Navigation Channel Final Supplemental EIS

Agency	Nature of Correspondence
Mississippi Department of Environmental Quality	Water quality certification
Mississippi Department of Marine Resources	Consistency determination under coastal zone management program.
	Discussions of beneficial reuse locations
National Marine Fisheries Service	Review and comments on Draft EIS
	Endangered species consultation
	Essential fish habitat consultation
U.S. Department of the Interior	Review and comments on Draft EIS
U.S. Environmental Protection Agency	Review and comments on Draft EIS
U.S. Fish and Wildlife Service	Review and comments on Draft EIS
	Endangered species consultation
George Boddie	Cat Island
Oscar Eckhoff	Sediment Disposal

7.4 Public Scoping Meeting

Participation in scoping was encouraged through a public scoping meeting announcement to federal, state, and local agencies, environmental groups, and interested individuals. A public scoping meeting was held on May 16, 2006.Participation in public scoping was also encouraged through posting on the Gulfport Harbor Navigation Channel EIS web page and in local newspapers.

The public scoping meeting announced the commencement of the SEIS process and was used to gather initial public concerns and issues. The USACE presented background information on the project and its purpose, the area of study, and the possible options available. A public notice was mailed to stakeholders and the entire general public mailing list 30 days prior to the public scoping meeting. Notice of the public scoping meeting was also posted on the Gulfport Harbor Navigation Channel EIS web page and in local newspapers. At the scoping meeting, the public was given an opportunity to ask questions and make comments concerning the project. A court reporter was present and transcribed the meeting. A meeting summary, which included comments received at the public scoping meeting, was prepared. The summary and transcript, as well as the presentation and scoping meeting posters, were posted on the Gulfport Harbor Navigation Channel EIS web site.

7.5 Public Workshop and Public Hearing

Meetings to present information on the Proposed Action were held with federal, state, and local agencies, environmental groups, and interested individuals as part of the NEPA process. Meetings included a public workshop which took place on October 24, 2006, and a public hearing that was held March 8, 2007, both in the Gulfport area. The availability of the EIS was also published in the Federal Register (FR 71:62:16294-5) (Appendix C).

The public workshop was held to present the evaluation framework and the status of the studies for the EIS. The workshop was an opportunity for the public to learn about the initial steps in the EIS process. During the workshop, the public was presented with the preliminary range of alternatives to be evaluated. A court reporter was present and transcribed the meeting. Thirty days prior to the workshop, a public notice was mailed to interested stakeholders and the general public mailing list. The workshop announcement was also posted on the Gulfport Harbor Navigation Channel EIS web site. A workshop summary was prepared and included comments received from the public. The summary, workshop transcript, workshop presentation, and workshop posters were also posted on the Gulfport Harbor Navigation Channel EIS web site.

A public hearing, with government representatives participating, was held to discuss the SEIS. The USACE project manager and key contractor personnel presented the alternatives, the evaluation framework for the alternatives, and the possible environmental effects of the alternatives. A summary of the findings of the EIS was presented, and the general public and interested stakeholders were given an opportunity to provide oral comments on the Proposed Action. A court reporter was present to transcribe the meeting. A public notice announcing the date of the hearing and the availability of the document was mailed to interested stakeholders and the general public mailing list and published in the newspaper on February 15, 2007. The draft EIS and the notice of the public hearing were also posted on the website. A summary of the hearing, hearing transcript, hearing presentation, and posters was posted on the Gulfport Harbor Navigation Channel EIS web site. Letters received during the public involvement period are included in Appendix D. Responses to those letters are also addressed in Appendix D.

7.6 Distribution of the Draft and Final SEIS

The Draft and Final SEIS documents were posted on the Gulfport Harbor Navigation Channel EIS web site and were available at local libraries. Copies of the Draft and Final EIS were also available from the USACE upon request.

7.7 Point of Contact

Requests for more information regarding this EIS should be sent to:

U.S. Army Corps of Engineers, Mobile District
Planning & Environmental Division, Coastal Environmental Team
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APPENDIX A

Section 404

SECTION 404(b)(1) EVALUATION REPORT FOR THE WIDENING AND OPERATIONS AND MAINTENANCE OF THE FEDERALLY AUTHORIZED GULFPORT HARBOR NAVIGATION CHANNEL CITY OF GULFPORT, HARRISON COUNTY, MISSISSIPPI

I. **PROJECT DESCRIPTION**:

A. **Location**. The Federally authorized Gulfport Harbor Navigation Project is located in the City of Gulfport, Harrison County, Mississippi (Figure 1). The navigation project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. Mississippi Sound is 81 miles long, 7 to 15 miles wide, and averages 9.9 feet in depth (Eleuterius, 1976). Its seaward limit is formed by six barrier islands. This barrier island system consists of Cat, East Ship, West Ship, Horn, Petit Bois, and Dauphin Islands. The Gulfport Channel passes between Cat and Ship Islands.

B. **General Description**. The Proposed Action addressed in this Section 404(b)(1) is widening and operations and maintenance (O&M) dredging of the Federally authorized Gulfport Harbor Navigation Project. The Congressionally authorized Gulfport Harbor Navigation Project provides for:

(a) An entrance channel 38 feet deep and 400 feet wide from the Gulf of Mexico to the Bar Channel at Ship Island Pass
(b) A channel 36 feet deep and 300 feet wide in Mississippi Sound
(c) Realigning the Bar Channel through Ship Island Pass to a location generally parallel to and about 1,000 feet west of the existing authorized channel.

The channel through Ship Island Pass was realigned during a previous project.

The widening portion of the project would generate approximately 4,851,700 cubic yards of new work material from the Gulf Entrance, Bar Channel, and Mississippi Sound segments of the navigation channel. Disposal areas for the new work material include the littoral zone area between the 14- and 18-foot -contours for suitable material near Cat Island and the littoral zone area greater than the 25-foot contour east of the Chandeleur Islands.

In order to maintain channel dimensions of the Gulfport Harbor Navigation Project, maintenance dredging also would be performed, generating approximately 1,765,800 cubic yards of material from the channel. Maintenance material would continue to be disposed in the existing US Environmental Protection Agency (USEPA) Gulfport West Ocean Dredged Material Disposal Site (ODMDS) and open water disposal areas parallel to the channel in Mississippi Sound.

It is anticipated that construction of the Federally authorized channel would require

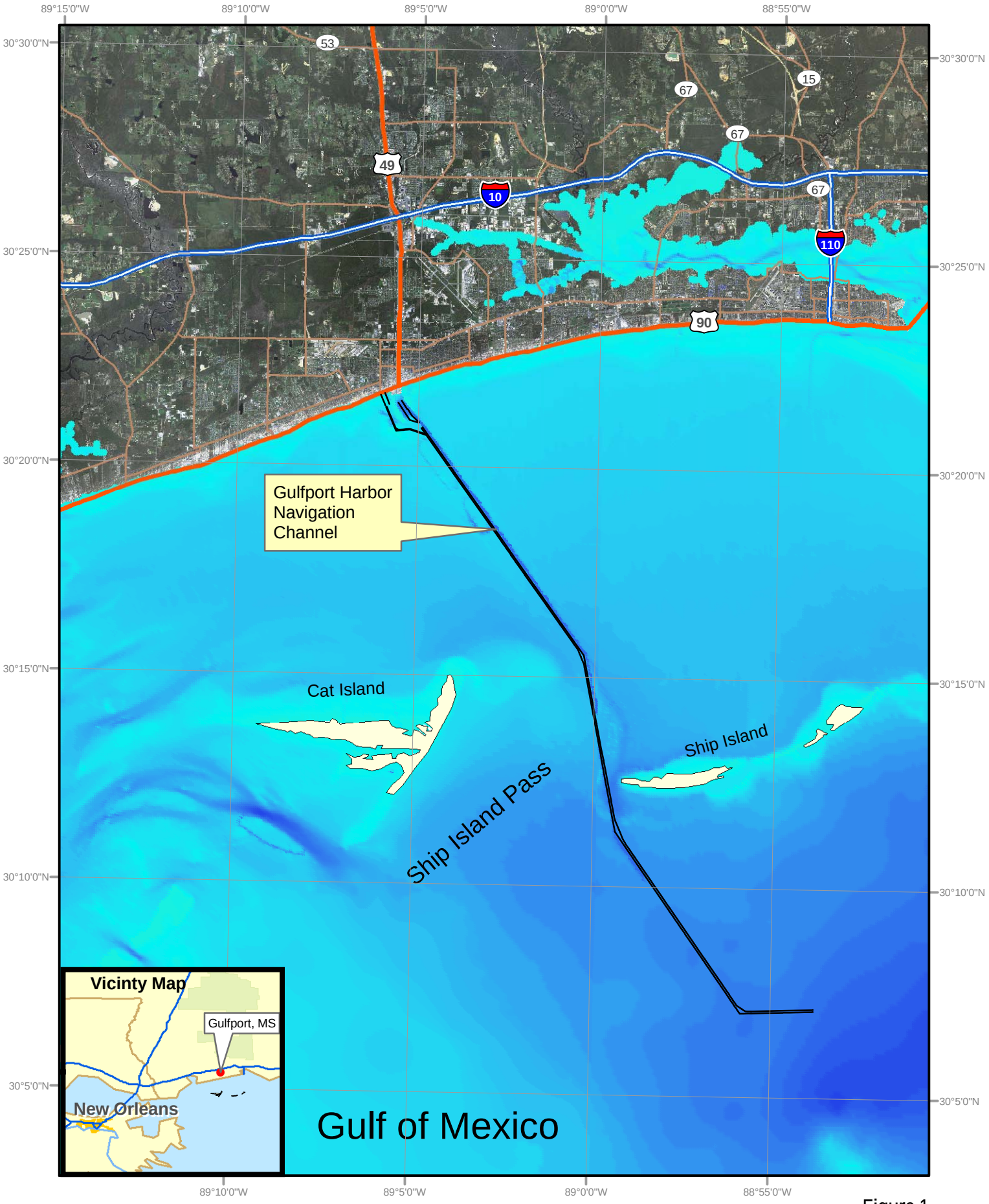

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Figure 1
Project Map
Gulfport Harbor Navigation Channel Final Supplemental EIS

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the use of a hopper dredge to remove new work material within the Gulf Entrance and Bar Channel segments and a mechanical or hopper dredge to remove new work within the Mississippi Sound channel segment. Additionally, it is possible that a hydraulic cutter head dredge would be used for removal of new work material within the Bar Channel segment. Typically, a hopper dredge is used to maintain the outer portion of the entrance channel with material placement in the USEPA Gulfport West ODMDS, while a hydraulic pipeline dredge is used to maintain the remainder of the project utilizing open-water and littoral sites.

Previously certified disposal sites include open-water sites adjacent to the channel within the Mississippi Sound and a nearshore littoral zone disposal area between the 14- and 18--foot depth contours southeast of the east end of Cat Island. The USEPA Gulfport West ODMDS is an approximately 5.2-square-mile area located southeast of Cat Island in the Gulf of Mexico. Although the scenario described above is typical for the project, adjustments to the placement of material are reviewed annually as part of the dredged material management plan. If adjustments are made, they typically involve the transportation of materials from the Mississippi Sound to the ODMDSs. This helps preserve the long-term maintenance ability of the project.

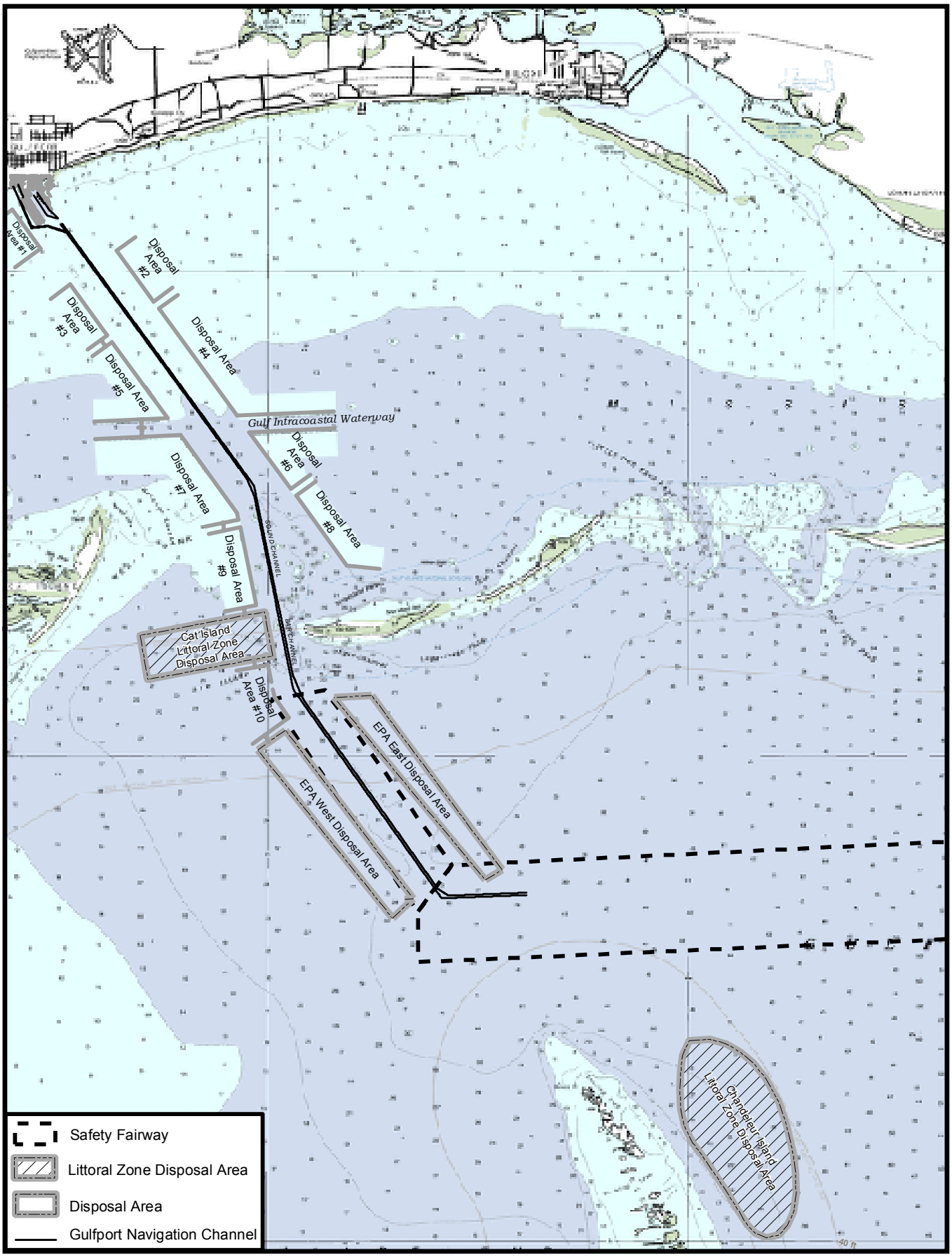
The proposed maintenance dredging and placement sites were most recently certified as described in Mississippi Bureau of Pollution Control – Mississippi Department of Environmental Quality – U.S. Army Corps of Engineers, Mobile District Joint Public Notice No. FP07-GH01-02.

Gulfport Harbor Entrance Channel and Horn Island Pass:

Material dredged from the bar channel and Ship Island Pass would be placed in a previously approved and utilized littoral zone disposal area at a depth between the 14- and 18--foot depth contours southeast of the east end of Cat Island, in a littoral zone disposal area at a depth greater than 25 feet east of the Chandeleur Islands.

Mississippi Sound:

Widening and maintenance dredging and placement activities are proposed for the Gulfport Harbor Navigation Channel of the Gulfport Harbor Navigation Project (Figure 2). The sediments located in Mississippi Sound consist of silts and clays. The new work material generated during the dredging operations would be placed in a littoral zone disposal area at a depth greater than 25 feet east of the Chandeleur Islands.. The material generated during the maintenance portion of dredging operations would be placed in the open-water disposal areas located adjacent to and on the west side of the navigation channel and in the USEPA Gulfport West ODMDS. Adjustments to the dredged material management plan to preserve long-term management of these upland and open-water sites could include disposing of material dredged from Mississippi Sound at the ODMDS.



Reference:
NOAA Chart Number 11373
Mississippi Sound, Chandeleur Islands, and Surrounding Area

Figure 2
Navigation Channels and Potential Disposal Sites
Gulfport Harbor Navigation Channel Final Supplemental EIS

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C. **Authority and Purpose**. The Gulfport Harbor Navigation Project was Federally authorized by Congress through the River and Harbor Acts of July 3, 1930 and June 30, 1948. Construction of the existing Federal project commenced in 1932 and was completed in 1950. Improvements in the navigation dredging projects were authorized by the Supplemental Appropriations Act of 1985 (Public Law 99-88) and the Water Resources Development Act of 1986 (Public Law 99-662).

D. **General Description of Dredged or Fill Material**.

(1) **General Characteristics of Material.** Bottom sediments along the navigation channel range from silt and clay to fine to medium sands.

Widening project:

Gulfport Harbor and Entrance Channel. The Bar Channel sediments consist of medium-grained and fine-grained fractions. The sediments include as a group: medium grained sands, clayey silt, and silty clays. The surface layer (medium grained sand) is approximately 6 feet thick. The layer covers mostly clayey silt, which is inter-layered with two fine sand lenses.

Mississippi Sound. The Mississippi Sound Channel is primarily in a silt and clay/mud region, although lenses of fine and very fine sands are found at depth over the proposed dredge prism. The lenses are typically 2-3 feet thick and are approximately 17 feet and 23 feet below the sediment/water interface.

Operations and Maintenance Project.

The Mississippi Sound Channel. Dredged materials that would be removed from the Mississippi Sound Channel maintenance project consist of 85% silts and clays throughout the length of the project. Sediments in the Ship Island Pass between Ship and Cat Islands consist of >80% to 90% sands.

(2) **Quantity of Material**. Approximately 4,851,700 cubic yards of material would be dredged during the widening portion and 1,765,800 cubic yards during the maintenance dredging portion of the project from the Gulfport Harbor Navigation Channel. The continuing maintenance dredging cycle is dependent upon where shoaling occurs.

(3) **Source of Material**. The material would be dredged from the Gulfport Harbor Federal Navigation Project, in Mississippi, which extends from the Port of Gulfport south through the Ship Island Pass and into the Gulf of Mexico.

E. **Description of the Proposed Discharge Site**.

(1) **Location**.

- USEPA Gulfport West ODMDS.

30°12’00.00”	89°00’30.00”
30°12’00.00”	88°59’30.00”
30°11’00.00”	89°00’00.00”
30°07’00.00”	88°56’30.00”
30°06’36.00”	88°57’00.00”

- Littoral Zone and Open Water Disposal Areas

Cat Island Littoral Zone

30° 12' 57"	89° 0' 3"
30° 12' 27"	89° 3' 1"
30° 11' 32"	89° 2' 50"
30° 12' 2"	88° 59' 52"

Chandeleur Islands Littoral Zone

30° 4' 5"	88° 49' 57"
30° 3' 47"	88° 50' 7"
30° 3' 26"	88° 50' 9"
30° 3' 6"	88° 50' 10"
30° 2' 42"	88° 50' 9"
30° 2' 19"	88° 50' 4"
30° 1' 59"	88° 49' 52"
30° 1' 38"	88° 49' 34"
30° 1' 18"	88° 49' 19"
30° 0' 58"	88° 49' 3"
30° 0' 37"	88° 48' 49"
30° 0' 17"	88° 48' 35"
30° 0' 7"	88° 48' 23"
30° 0' 1"	88° 48' 7"
30° 0' 5"	88° 47' 49"
30° 0' 17"	88° 47' 37"
30° 0' 33"	88° 47' 28"
30° 0' 57"	88° 47' 25"
30° 1' 19"	88° 47' 26"
30° 1' 44"	88° 47' 29"
30° 2' 19"	88° 47' 38"
30° 2' 50"	88° 47' 50"
30° 3' 19"	88° 48' 9"
30° 3' 38"	88° 48' 26"
30° 3' 51"	88° 48' 44"
30° 4' 2"	88° 49' 4"
30° 4' 7"	88° 49' 28"

(2) **Size**.

- USEPA Gulfport West ODMDS, 5.2 square nautical miles
- Cat Island Littoral Zone, 2,044 acres
- Chandeleur Islands Littoral Zone, 5,408 acres

(3) **Type of Site**. The disposal sites for the new work are the existing littoral zone disposal site southeast of Cat Island (suitable material from Ship Island Pass), the littoral zone near the Chandeleur Islands, or the USEPA Gulfport West ODMDS. The disposal site types that would be utilized for maintenance of the project are open-water areas or ODMDSs.

(4) **Type of Habitat**. The open-water areas, littoral zone site, and ODMDSs are open-water habitats.

(5) **Timing and Duration of Discharge**. Timing and duration of the Proposed Action are dependent upon where shoaling occurs in the navigation project.

F. **Description of Disposal Method**. The USACE would dispose of dredged material into the sites by a hopper dredge, hydraulic pipeline, or mechanical dredge.

II. **Factual Determinations (Section 230.11)**:

A. **Physical Substrate Determinations**.

(1) **Sediment Type**. Dredged materials proposed for disposal range from silt and clay/muds (less than 62 microns) to fine to medium sands. Predominant sediment types associated with the Gulfport Harbor consist of sands, silts, and clays with some oyster reefs.

(2) **Dredged/Fill Material Movement**. Disposal at open-water, littoral zone disposal areas, and/or the ODMDS would be confined to an area that would allow the dredged material to remain within the coastal sediment budget and be transported via natural processes.

The Cat Island and Chandeleur Islands littoral disposal areas would be used for material that would serve to benefit the sand budget for Mississippi Sound barrier islands and aid in the restoration of the Chandeleur Islands.

(3) **Physical Effects on Benthos**. Non-motile benthic fauna within the open-water, littoral zones, and/or ODMDS disposal sites may be destroyed by the proposed operations, but should repopulate within several months after completion. Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, would be able to avoid the disturbed area and should return shortly after the activity is completed. Larval and juvenile stages of these forms may not be able to avoid the activity due to limited mobility. The overall impact on benthos is expected to be minimal.

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

(5) **Actions Taken to Minimize Impacts (Subpart H)**. No other actions to minimize impacts to the physical substrate are deemed appropriate for this project.

B. **Water Column Determinations**.

(1) **Salinity**. The salinity of the water may increase slightly. However, this is not deemed a significant effect.

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

(3) **Clarity**. Minor increases in turbidity may be experienced in the immediate vicinity of the project during dredging and disposal operations. However, these increases would be temporary and clarity 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 would likely result from the operations, though only for a short period of time. No significant effect to the water column would be anticipated.

(8) **Nutrients**. Slight increases in nutrient concentrations may occur from disposal operations; however, these nutrients would rapidly disperse. These increases would have no significant effect on 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, littoral zones, or ODMDSs is not anticipated to adversely affect current patterns and flow in the project vicinity.

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

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

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

(4) **Normal Water Level Fluctuations**. No significant effects.

(5) **Salinity Gradient**. Slight increases in salinity could occur from dredging operations. These increases would have no significant effect on salinity gradient.

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

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

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

(a) **Light Penetration**. Light penetration through the water column at the littoral zone disposal sites, open-water disposal areas, and ODMDSs may be temporarily affected, but penetration would be anticipated to return to previous conditions upon completion of widening and O&M activities.

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

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

(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 disposal sites and placement activities due to the presence of food items in the dredged material.

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

E. **Contaminant Determinations**. The materials proposed for placement are naturally occurring materials. There is no reason to believe that the materials are unsuitable for placement. Therefore, the materials are excluded from testing under Section 404(b)(1)(d).

F. **Aquatic Ecosystem and Organism Determinations**. No effect.

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

(2) **Effects on Benthos**. Temporary disruption of the aquatic community would be anticipated in the littoral zone disposal areas, open-water areas, and the ODMDSs. Non-motile benthic fauna within the area may be destroyed by the proposed dredging operations, but should repopulate within several months after completion. Due to the dredging cycle occurring every 18 to 24 months, repopulation of non-motile benthic fauna should not be adversely impacted. Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, could avoid the disturbed area and should return shortly after the activity is completed. Larval and juvenile stages of these forms may not be able to avoid the activity due to limited mobility. The overall impact to benthos is expected to be minimal.

(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**. Not applicable.

(b) **Wetlands**. No effect.

(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 U.S. Army Corps of Engineers, Mobile District, consulted with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act regarding Gulf sturgeon.

(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 State of Mississippi would specify a mixing zone limit not to exceed 50 Nephelometric Turbidity Units (NTUs) for turbidity

compliance. Disposal into the littoral zone, open-water, and ODMDSs is not anticipated to exceed the proposed turbidity compliance limit.

(a) **Depth of water at the disposal site**. Designated open-water disposal sites adjacent to the channel range from -12 to -24 feet in depth. Depths in the USEPA Gulfport West ODMDS are approximately 32 feet. The nearshore Cat Island littoral zone disposal area would be in waters between the 14- and 18- –foot depth contours southeast of the east end of Cat Island. Disposal at the Chandeleur Island littoral disposal area would occur in water greater than 25 feet deep. The changes in water depth are not considered a significant effect.

(b) **Current velocity, direction, and variability at the disposal site**. Astronomical tides, winds, and freshwater discharge dominate the circulation patterns within Mississippi Sound. Data collected within the Gulf of Mexico between November 1980 and September 1981 indicate that the progression of the tide through Ship Island Pass segments the Gulf into eastern and western areas, dominating circulation within this portion of the Gulf. The eastern area is between Horn Island Pass, Mississippi, and the main pass entering Mobile Bay, Alabama. The western area is between Horn Island Pass and the Chandeleur Islands. As tide propagates from the Gulf into Mississippi Sound, a clockwise movement of water occurs in the eastern area while a counterclockwise movement occurs in the west. Predominant currents in the vicinity of the USEPA Gulfport West ODMDS are to the west-southwest. Predominant currents east of the Chandeleur Islands are to the east-southeast.

(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**. Rate of discharge would vary according to the particular type of dredge used to dispose 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**. Approximately 6,617,500 cubic yards of material would be dredged from the Federally authorized project by either a hopper, hydraulic, or mechanical dredge. For the widening project, an estimated 4,851,700cubic yards of new work material would be generated and 1,765,800 cubic yards would be generated during maintenance dredging. Dredged material along the navigation channel ranges from silt and clay/muds (less than 62 microns) to fine to medium sands. Settling of particles would be anticipated due to the dredged material size.

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

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

(3) **Potential Effects on Human Use Characteristics**. No effect.

(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 effect.

(d) **Esthetics**. 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 placement represents the least environmentally damaging practicable alternative.

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

D. Use of the proposed disposal sites would not jeopardize the continued existence of any Federally listed endangered or threatened species or their critical habitat.

E. The proposed placement of fill material would not contribute to significant degradation of waters of the United States. Nor would 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 would be taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

DATE_____ _____

Todd T. Semonite
Brigadier General, US Army
Division Commander

APPENDIX B

Essential Fish Habitat Figures

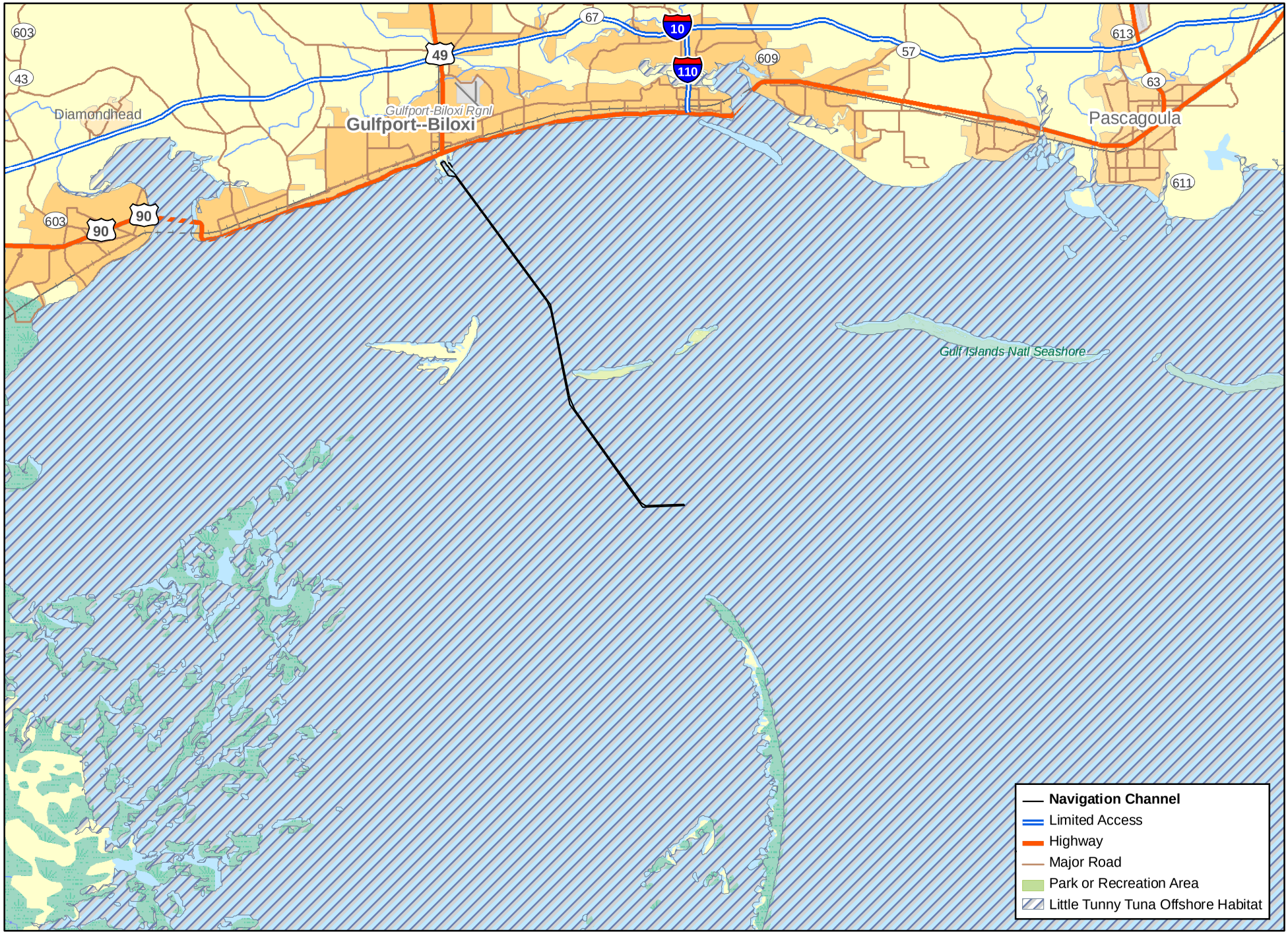

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Figure B-1

General Locations of the Essential Habitat for the Little Tunny Tuna

Gulfport Harbor Navigation Channel Final Supplemental EIS

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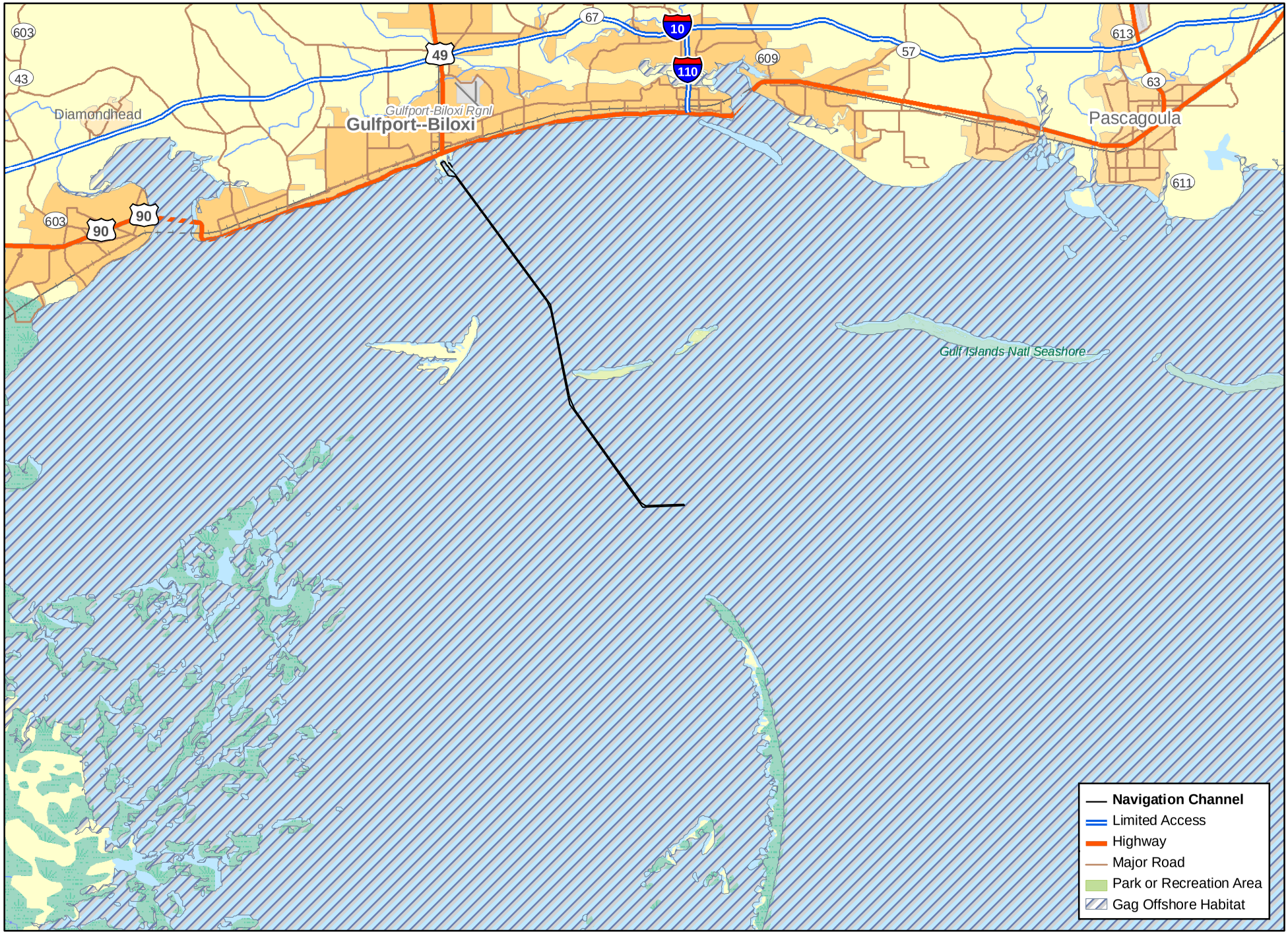

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Figure B-2

General Locations of the Essential Habitat for the Gag

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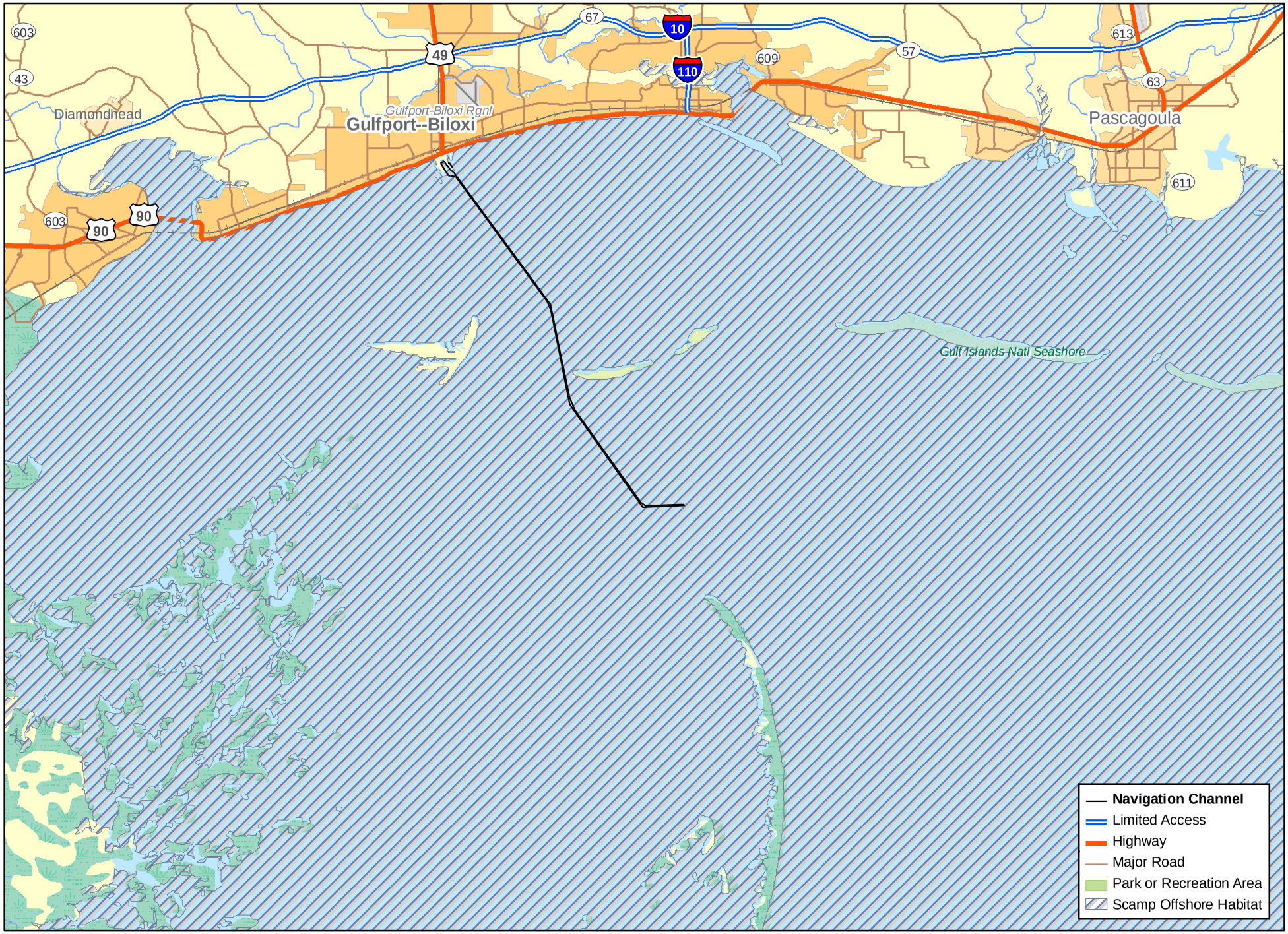

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Figure B-3

General Locations of the Essential Habitat for the Scamp

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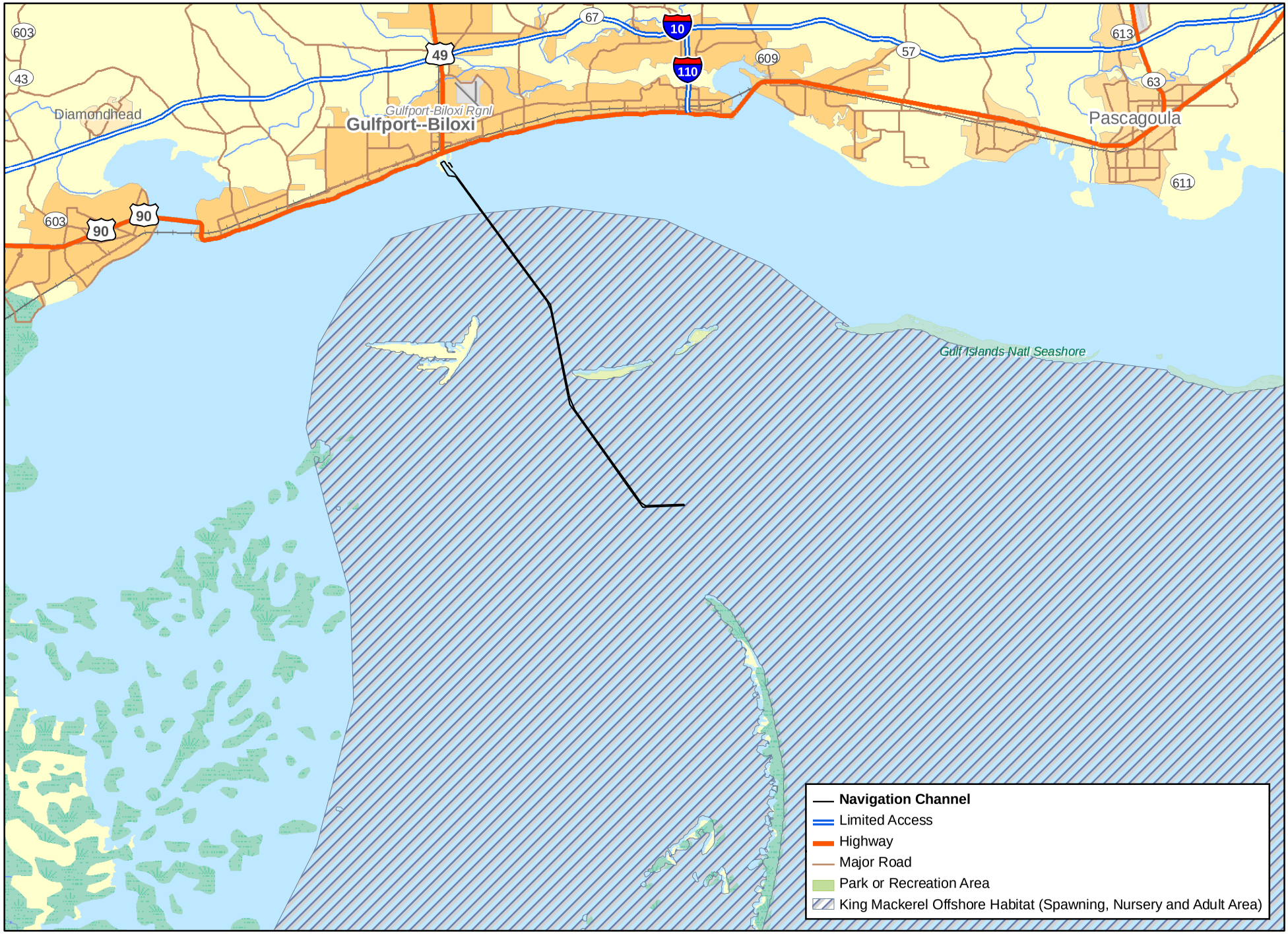

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Figure B-4

General Locations of the Essential Habitat for the King Mackerel

Gulfport Harbor Navigation Channel Final Supplemental EIS

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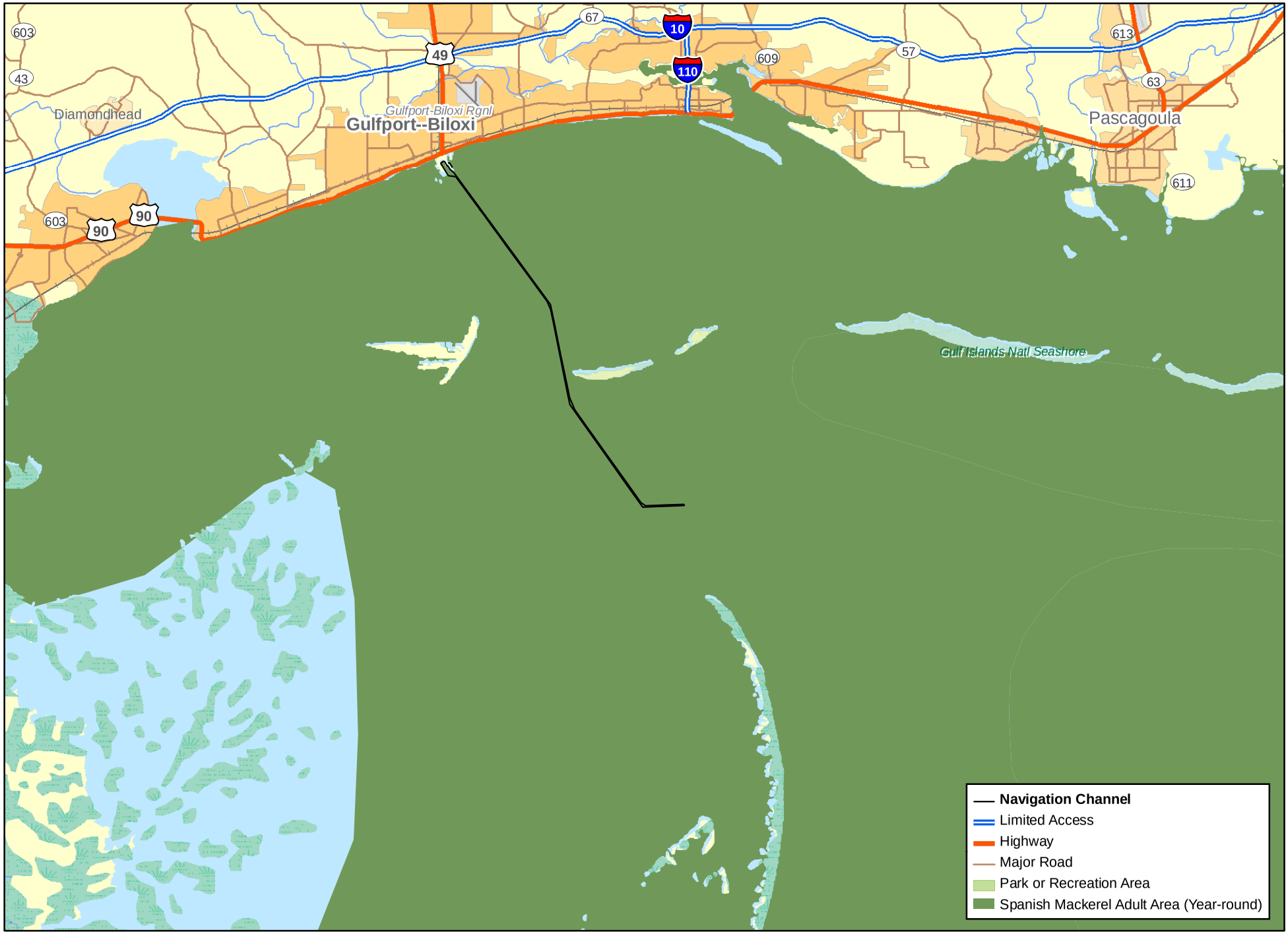

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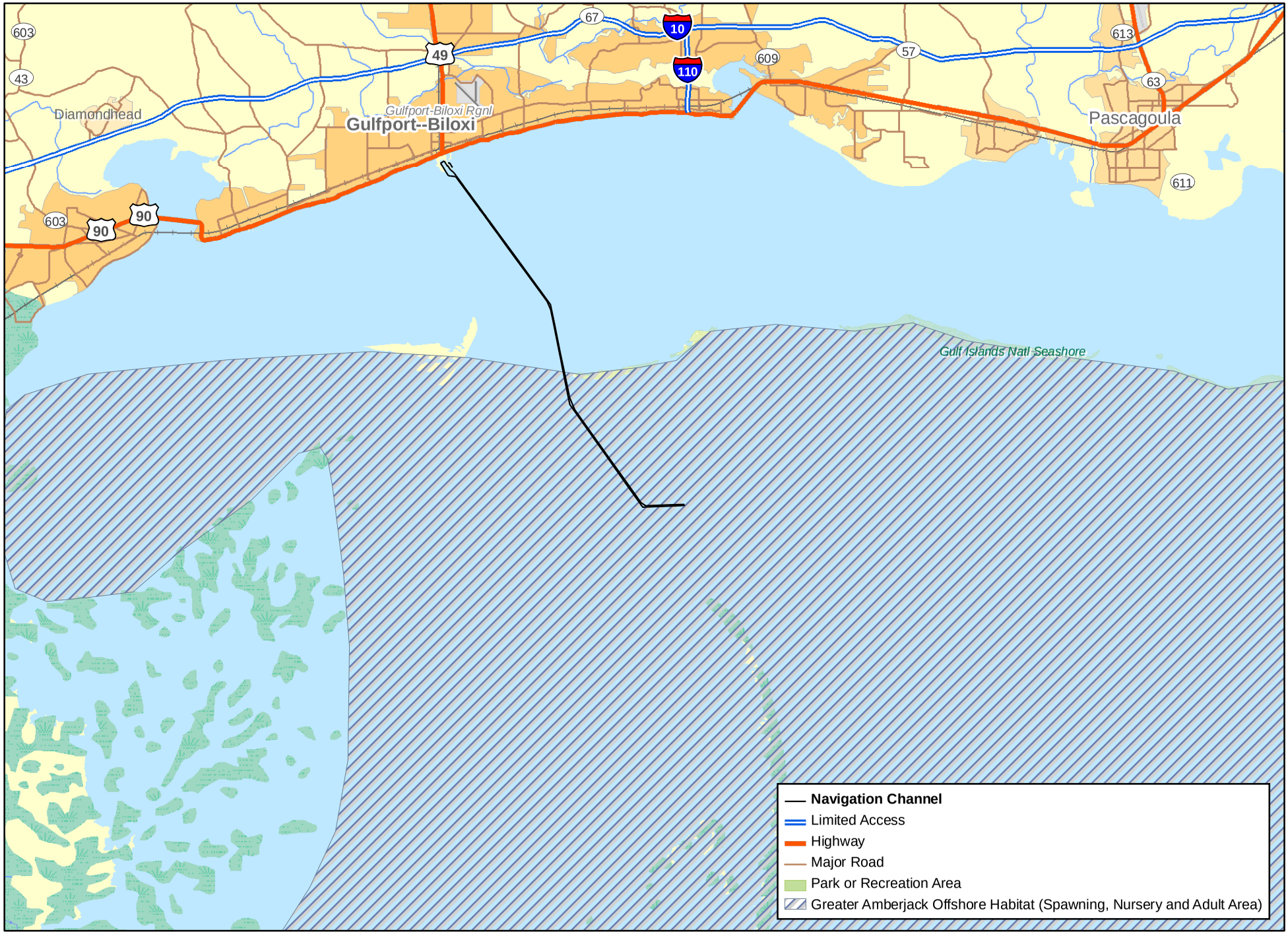
Figure B-5

General Locations of the Essential Habitat for the Spanish Mackerel

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Spanish_Mackerel.mxd, 12/4/2008, KAllen4



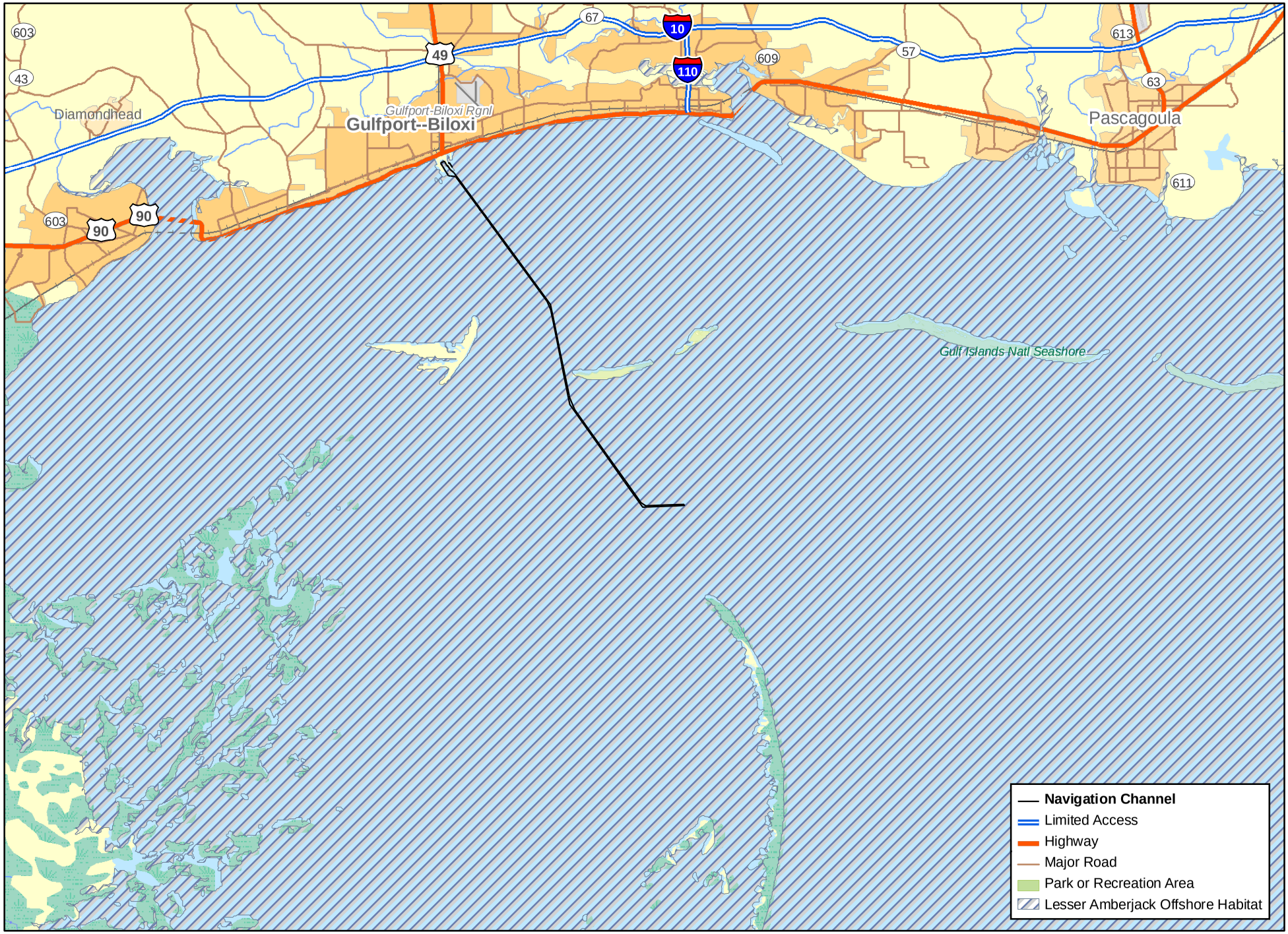
CH2MHILL

Figure B-6

General Locations of the Essential Habitat for the Greater Amberjack

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Greater_Amberjack.mxd, KAllen4 12/4/2008



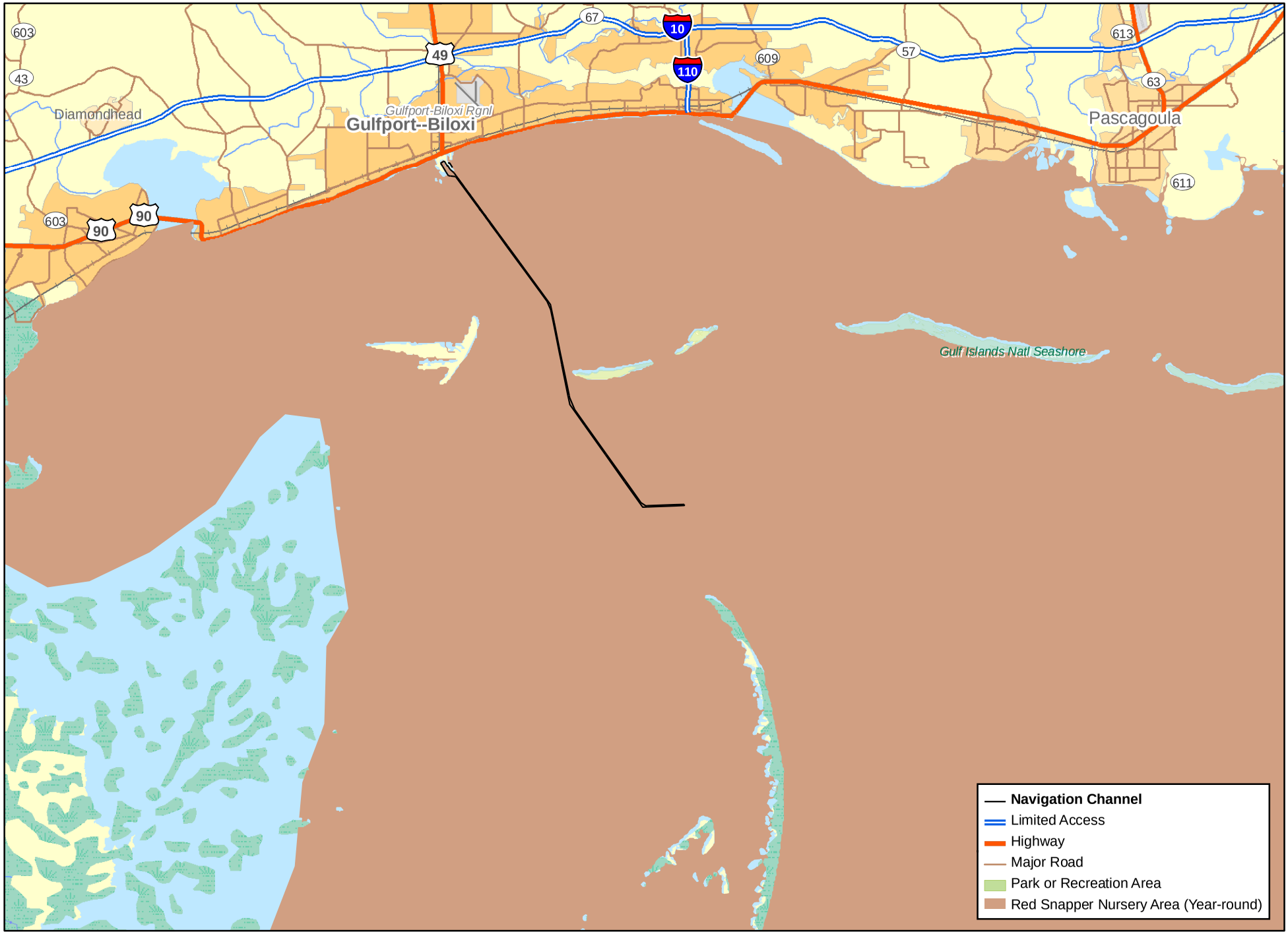
CH2MHILL

Figure B-7

General Locations of the Essential Habitat for the Lesser Amberjack

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Lesser_Amberjack.mxd, 12/4/2008 KAllen4



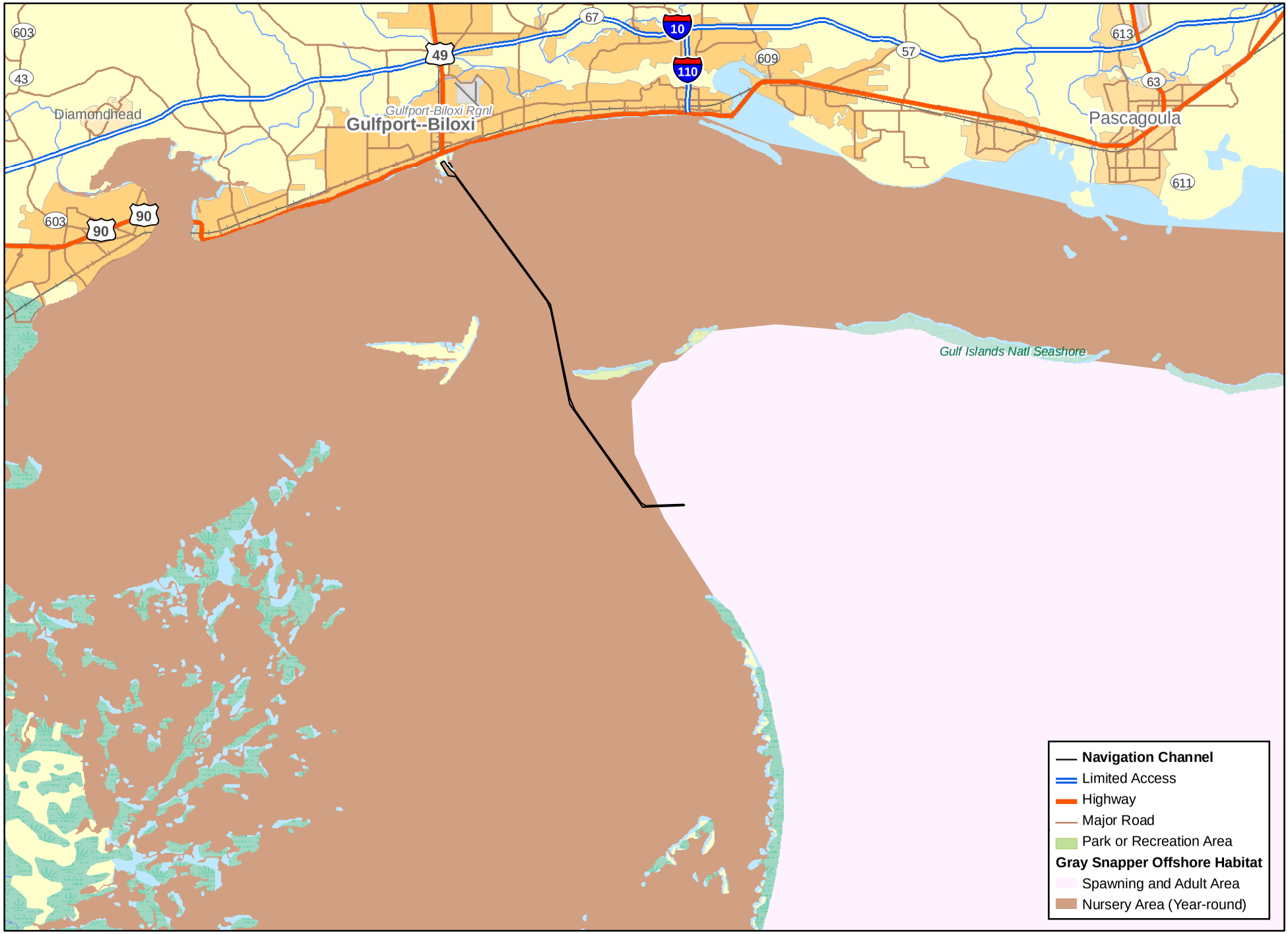
CH2MHILL

Figure B-8

General Locations of the Essential Habitat for the Red Snapper

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Red_Snapper.mxd, 12/4/2008, KAllen4



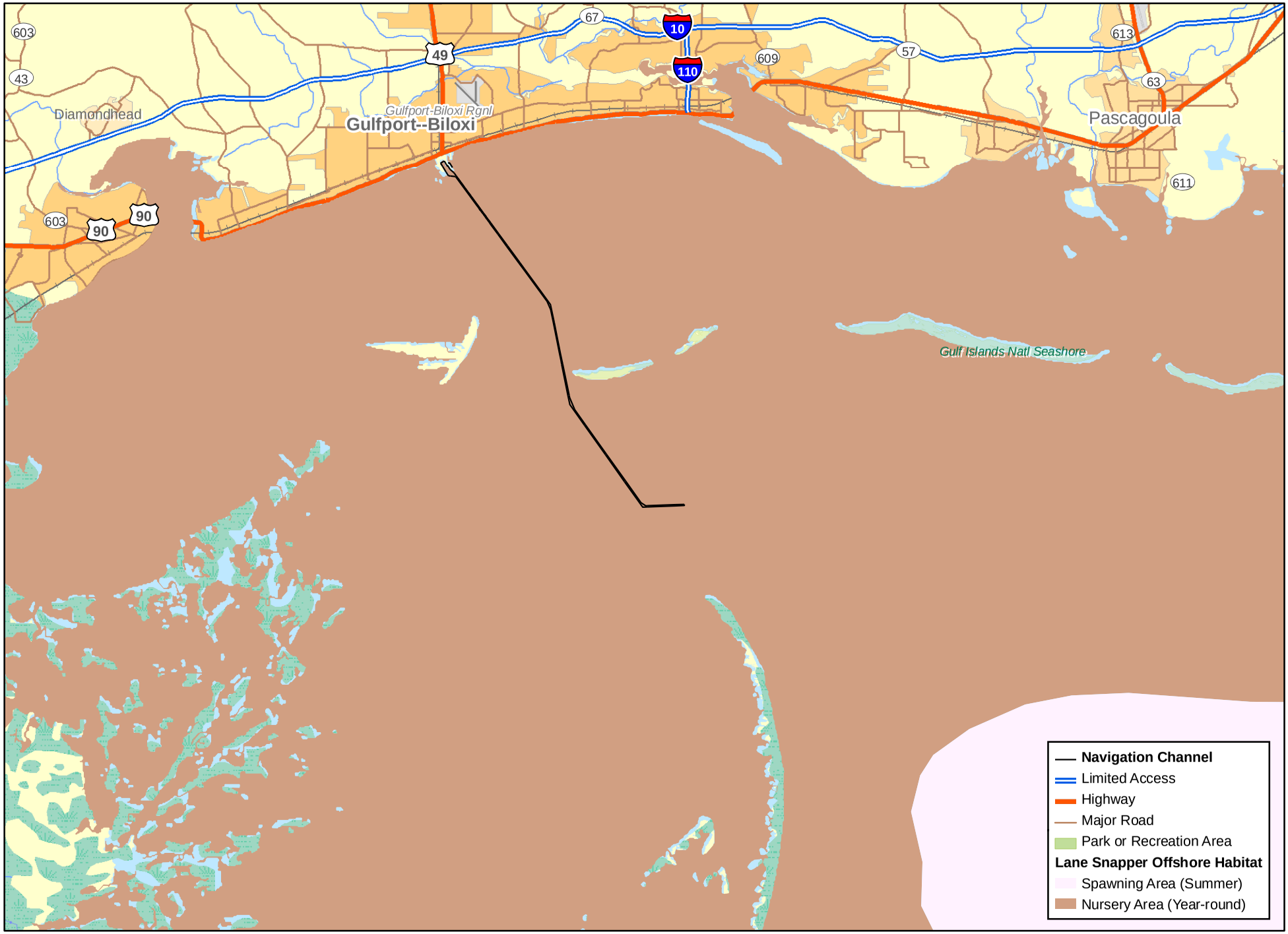
CH2MHILL

Figure B-9

General Locations of the Essential Habitat for the Gray Snapper

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Gray_Snapper.mxd, 12/4/2008 KAllen4



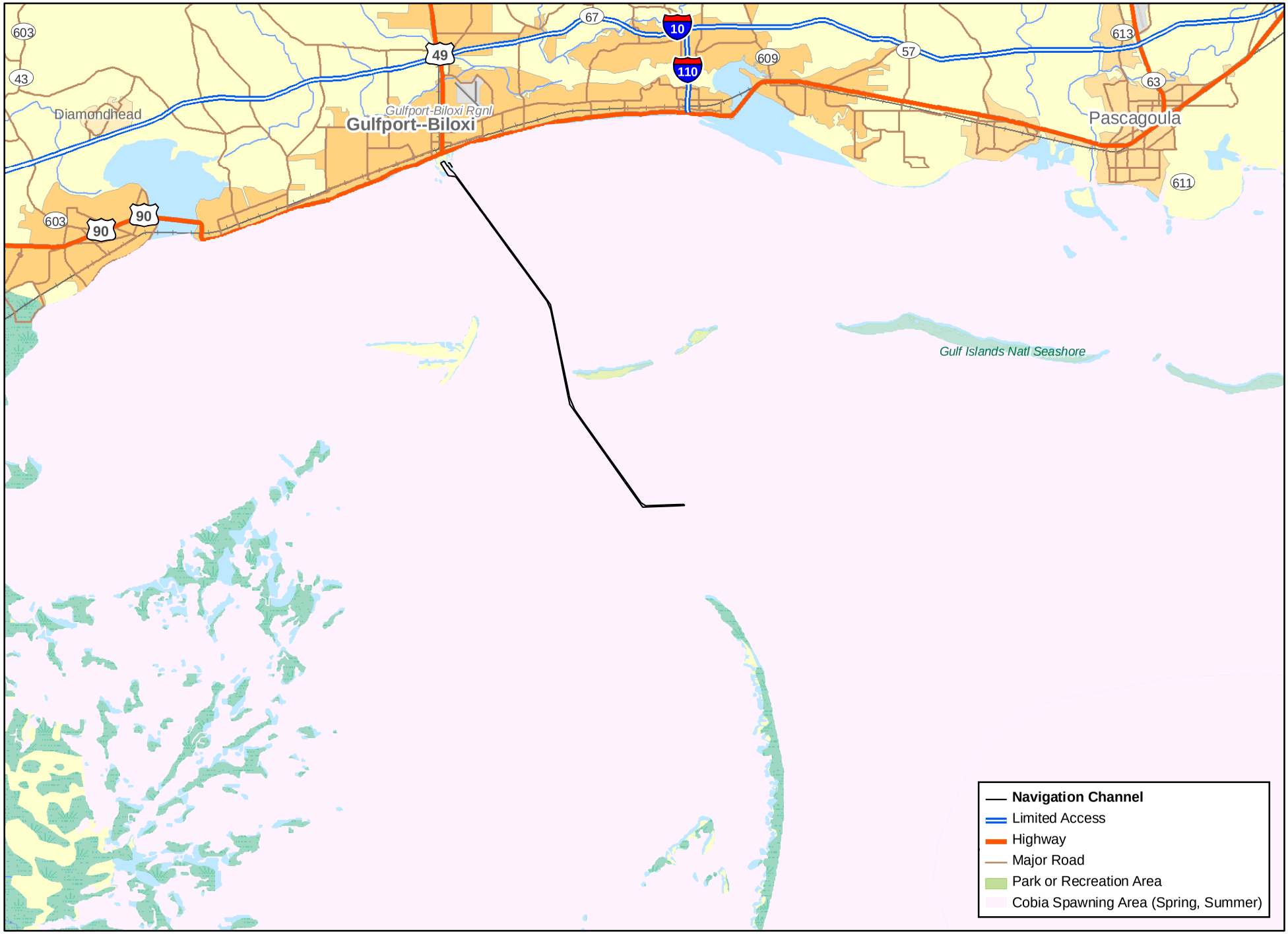
CH2MHILL

Figure B-10

General Locations of the Essential Habitat for the Lane Snapper

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Lane_Snapper.mxd, 12/4/2008 KAllen4



CH2MHILL

Figure B-11
General Locations of the Essential Habitat for the Cobia
Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Cobia.mxd, 12/4/2008, Kallen4

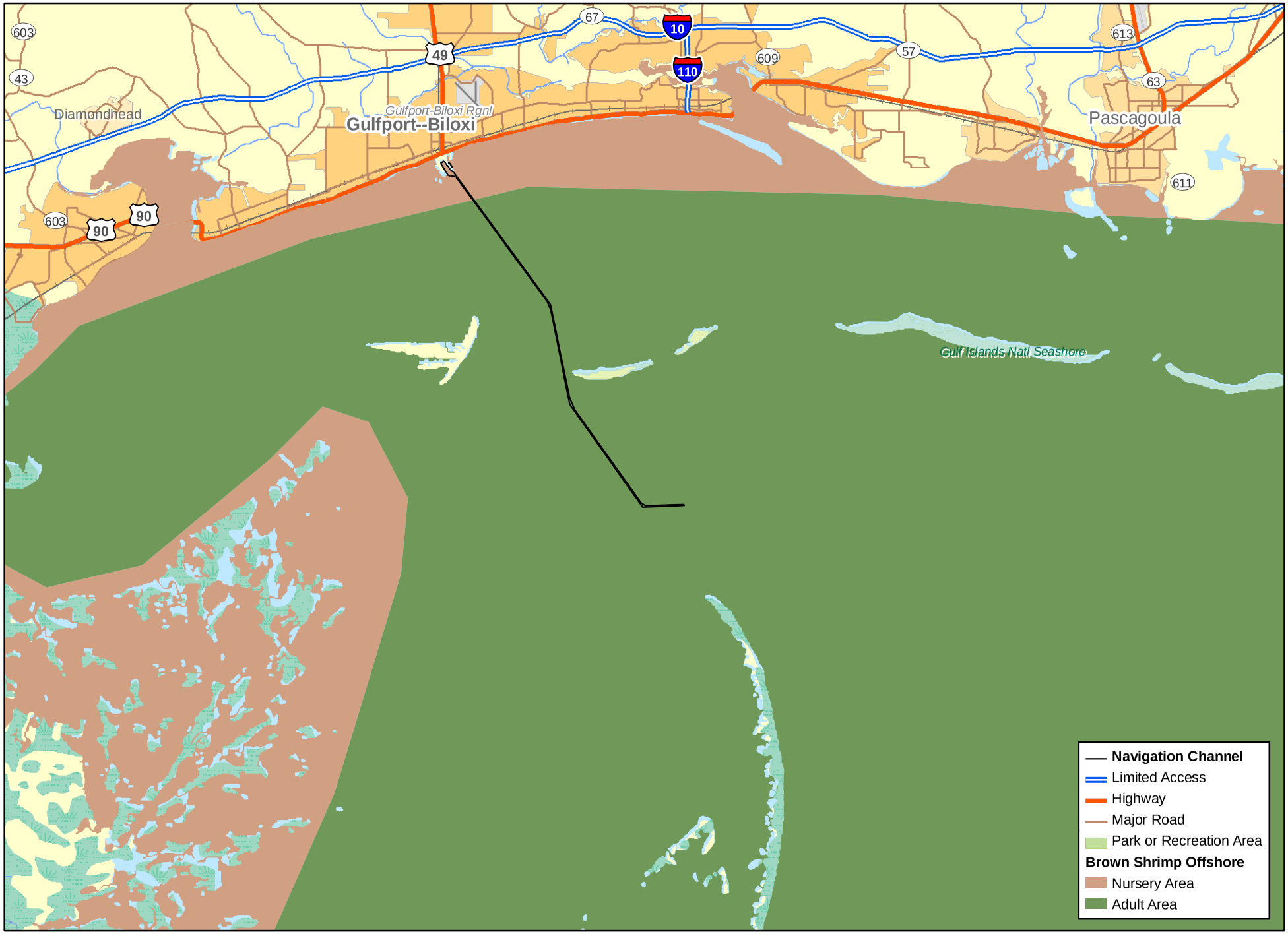
CH2MHILL

Figure B-12

General Locations of the Essential Habitat for the Red Drum

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Red_Drum.mxd, 12/4/2008, KAllen4



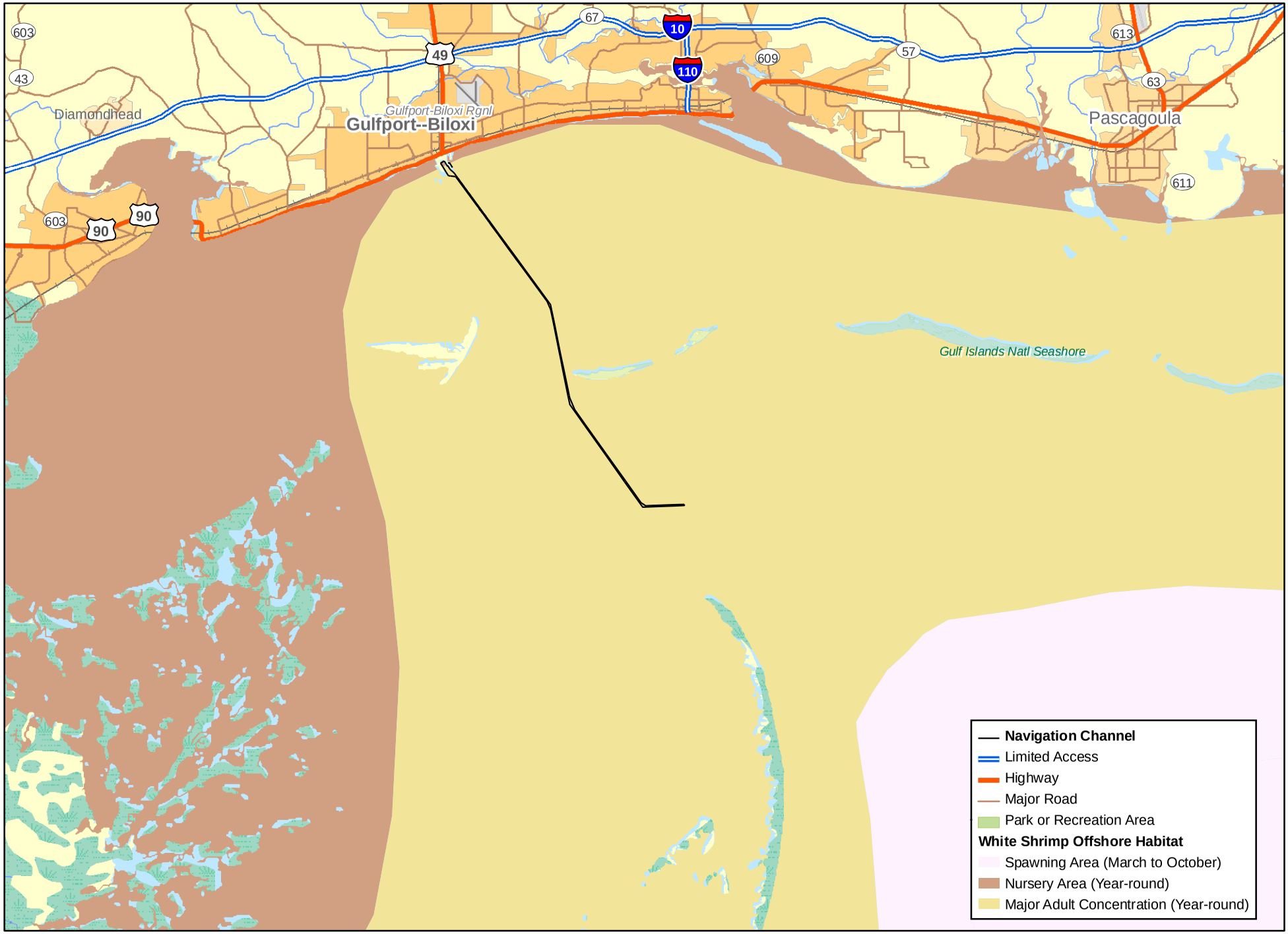
CH2MHILL

Figure B-13

General Locations of the Essential Habitat for the Brown Shrimp

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Brown_Shrimp.mxd, 12/4/2008, KAllen4



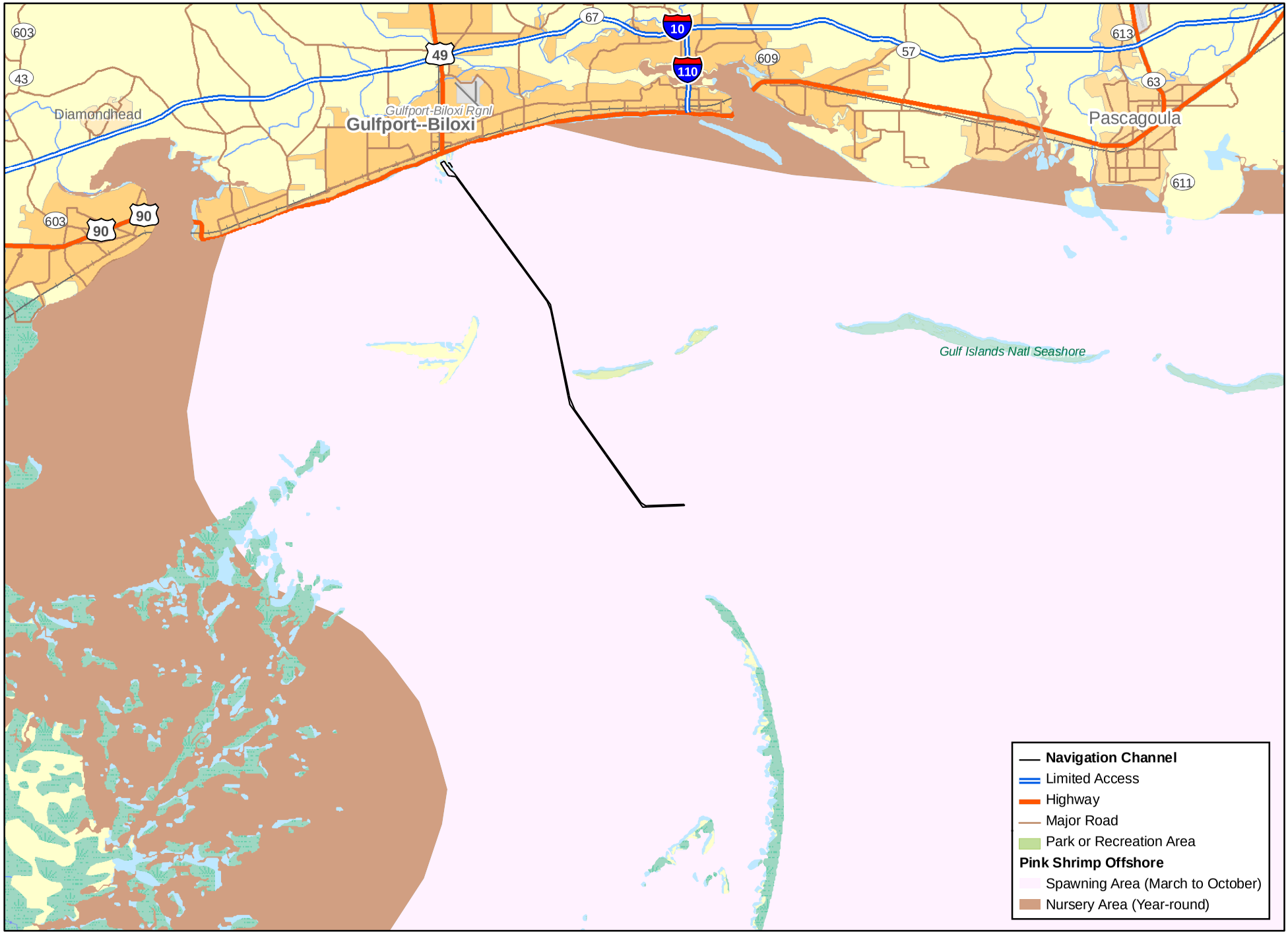
CH2MHILL

Figure B-14

General Locations of the Essential Habitat for the White Shrimp

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_WhiteShrimp.mxd, 12/4/2008 KAllen4



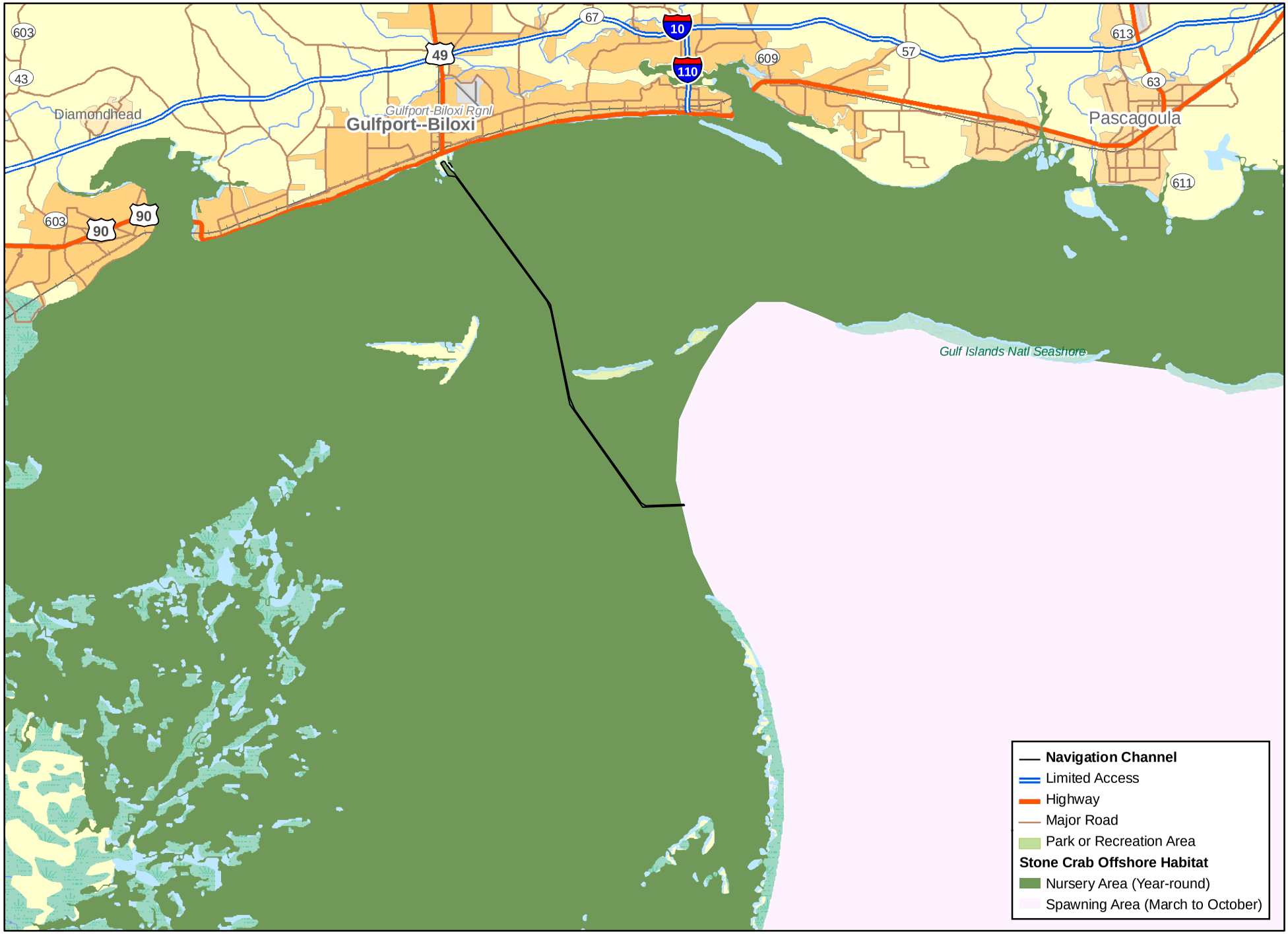
CH2MHILL

Figure B-15

General Locations of the Essential Habitat for the Pink Shrimp

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Pink_Shrimp.mxd, 12/4/2008 KAllen4



CH2MHILL

Figure B-16

General Locations of the Essential Habitat for the Stone Crab

Gulfport Harbor Navigation Channel Final Supplemental EIS

\\boomer\H\projects3\Gulfport\mxd\Appendix_A\Habitat_Stone_Crab.mxd, 12/4/2008 KAllen4

APPENDIX C

Public Involvement

NAME	ATTENTION	FIRSTNAME	LASTNAME	STREET	CITY	TE	ZIP_CODE	E	TE	EMAIL	PHONE NUMBER	O	FAX
Begley Law Firm LLC				P. O. Box 287	Jackson	MS	39207						
BILOXI PORT COMMISSION	DIRECTOR	FRANKIE	DUGGAN	PO BOX 1908	BILOXI	MS	39533			biloxiport@aol.com	228-374-6600		228-435-7228
Bonner & Analytical Testing Co.				2703 Oak Grove Rd	Hattiesburg	MS	39402						
BROWN AND MITCHELL	CONSULTANT FOR HCDC	DON	CLARK	521 34TH ST	GULFPORT	MS	39507			gptadmin@brownandmitchell.com	228-864-7612		
Bunge Corp				992 River Grain Rd	Greenville	MS	38701-2317						
CH2M HILL		ELIZABETH	CALVIT	1515 POYDRAS STREET, SUITE 2110	NEW ORLEANS	LA	70115			ecalvit@ch2m.com	504-593-9421x22		504-593-9460
Cherokee Nation of Oklahoma	Tribal Historic Preservation Office	Rabon	David	P.O. Box 948	Tahlequah	OK	74465						
Cherokee National of Oklahoma	Principal Chief	Smith	Chadwick	P.O. Box 948	Tahlequah	OK	74465						
Choctaw Nation of Oklahoma	Director Cultural Resources	Cole	Terry	P. O. Drawer 1210	Durant	OK	74702						
Cirino Consultanting Serv		Cirino	John	244 Woodland Circle	Ocean Springs	MS	39564						
City of Amory		Bryan	W. H.	P. O. Box 457	Amory	MS	38821						
Clarion-Ledger		Oliver	Valerie	715 Cox Avenue	Ocean Springs	MS	39564-3730						
Coastal Environmental Inc.		Ellis	Randy	1900 E. Beach Blvd.	Gulfport	MS	39501						
Compton Farry LLC		Oivanki	Stephen	156 Nixon Street	Biloxi	MS	39530						
Concerned Citizens to Protect the Isle				P. O. Box 172	Pass Christian	MS	39571-0172						
Coushatta Tribe of Louisiana	Chairman	Nuncio	Felix	P. O. Box 818	Elton	LA	70532						
Coushatta Tribe of Louisiana	Tribal Planner	Hoffpauir	James	P. O. Box 818	Elton	LA	70532						
Coushatta Tribe of Texas	Tribal Historic Preservation Office Alabama	Thomas	Debbie	571 State Park Road 56	Livingston	AL	77351						
Deviney Inc.				P. O. Box 431	Gulfport	MS	39501						
Dickinson & Associates				P. O. Drawer 660	Gulfport	MS	39502-0660						
Earth Consulting Group				P. O. Box 2276	Gulfport	MS	39905-2276						
Eastern Band of the Cherokee National	Tribal Historic Perservation Officer	Bird	James	P.O. Box 455	Cherokee	NC	28719						
Eastern Shawanee Tribe of Oklahoma	Chief	Enyart	Charles	P. O. Box 350	Seneca	MO	64865						
Endangered Species Act Consulting Services LLC		Neal	Wendell	316 Remington Drive	Brandon	MS	39042						
Enviro South		Cuevas	Gary	6017 Vista Circle	Gulfport	MS	39507						
Environmental Protection Agency		Fox	Catherine	61 Forsyth Street, SW	Atlanta	GA	30303-3104						
Environmental Protection Agency	Wetlands & Coastal	Johnson	Doug	61 Forsyth Street, SW	Atlanta	GA	30303-3104						
Environmental Protection Agency	Chief Wetlands Regul			61 Forsyth Street, SW	Atlanta	GA	30303-3104						
Environmental Protection Agency		Howard	Bob	61 Forsyth Street, SW	Atlanta	GA	30303-3104						
Environmental Protection Agency	Envir Policy Section	Miller	Gerald	61 Forsyth Street, SW	Atlanta	GA	30303-3104						
EO-TEX				P. O. Box 2224	Madison	MS	39130						
Erath Consulting Group Inc.				P. O. Box 2276	Gulfport	MS	39905-2276						
Geo-Tex Inc.		Jones	Terry	P. O. Box 2224	Madison	MS	39130						
Gulf City Fisheries Inc.		Graham	Charles	P. O. Box 1346	Pascagoula	MS	39567						
Gulf Intracoastal Canal Assn.		Behvhorst	Vernon	303 Myrtle Place	Lafayette	LA	70506-3410						
Gulf Islands National Seashores	Resource Mgmt & Visitor Prot			3500 Park Road	Ocean Springs	MS	39564						
Gulf Restoration Network		Ludden	Vickie	P. O. Box 2245	New Orleans	LA	70176						
GULFPORT SMALL CRAFT HARBOR		D.J.	ZIEGLER	1244 E. Beach	Gulfport	MS	39501				228-864-1014		
											228-868-5713		228-868-2447
HANCOCK COUNTY BOARD OF SUPERVISORS		LARRY	LEWIS	521 34TH ST	GULFPORT	MS	39507			llewis@brownandmitchell.com	228-864-7612		228-864-7676
HANCOCK COUNTY BOARD OF SUPERVISORS		JENELL	TOMPKINS	PO BOX 429	BAY ST. LOUIS	MS	39520			JVT@co.hancock.ms.us	228-467-0172		228-466-5994
Hancock County Chamber of Commerce				P. O. Box 10385	Bay St. Louis	MS	39520						
Harrison County Dev Comm				P. O. Box 569	Gulfport	MS	39501						
HARRISON COUNTY DEVELOPMENT COMMISSION (HCDC)	DEPUTY DIRECTOR	KIM	COMPTON	PO BOX 1870	GULFPORT	MS	39502			kcompton@mscoast.org	228-863-3807		228-863-4555
HARRISON COUNTY SAND BEACH	DIRECTOR	BOBBY	WEAVER	842 COMMERCE ST	GULFPORT	MS	39507			rweaver@co.harrison.ms.us	228-896-0055		228-895-0055

Harrison County Wastewater & Solid	Executive Director Mgmt District			P. O. Box 2409	Gulfport	MS	39505							
Honorable Gene Taylor		Lagarde	Chris	237 St. Charles Street	BAY ST. LOUIS	MS	39520							
Honorable Jo Bonner	US House of Reps			1631 Longworth Blvd.	Washington	DC	20515							
Honorable Trent Lott				U. S. Senate	Washington	DC	20510							
Honorable Trent Lott				3100 S. Pascagoula Street	Pascagoula	MS	39537							
Jackson County Board of Sups	County Administrator			P. O. Box 998	Pascagoula	MA	39567							
Jena Band of Choctaw Indians	Chief	Smith	B. Cheryl	P. O. Box 1406	Jenna	LA	71342							
Kialegee Tribal Town of the Creek Nation of Oklahoma		Herrod	Deleores	P. O. Box 332	Wetumka	OK	74883							
L & A Contracting Company				P. O. Box 16749	Hattiesburg	MS	39404-6749							
LA Dept of Wildlife & Fisheries	Habitat Section			P. O. Box 98000	Baton Rouge	LA	70898-9000							
Louisiana Department of Natural Resources	Coastal Management Div, Interagency Affairs	Gregory	DuCote	PO Box 44487	Baton Rouge	LA	70804-4487							
Miccosukee Tribe of Indians of Florida		Terry	Steven	Mile Marker 70, US 41 at Admin Bldg.	Miami	FL	33194							
Minerals Management Service	Gulf of Mexico Region	John	Rodi	1201 Elmwood Park Boulevard	NEW ORLEANS	LA	70123-2394							
Mississippi Band of Choctaw Indians	Tribal Archaeologist	Carleton	Kenneth	P. O. Box 6257	Choctaw	MS	39350							
Mississippi Dept. of Environmental Quality	Office of Pollution Control	Robert	Seyfarth	PO Box 10385	JACKSON	MS	39289-0385							
MISSISSIPPI DEPT. OF MARINE RESOURCES		JAN	BOYD	1141 BAYVIEW AVE, SUITE 101	BILOXI	MS	39530			jan.boyd@dmr.state.ms.us	228-374-5022x5216		228-374-5008	
MISSISSIPPI DEPT. OF MARINE RESOURCES		Jerry	Brashier	1141 BAYVIEW AVE, SUITE 101	BILOXI	MS	39530							
MISSISSIPPI GULF FISHING BANKS		MARK	MILLER	PO BOX 223	BILOXI	MS	39533			Mark@mgfb.org	228-617-3060		228-374-8162	
Mississippi Museum of Natural Science		Tom	Mann, PhD	2148 Riverside Drive	JACKSON	MS	39202-7227							
Mississippi Power Company				P. O. Box 4079	Gulfport	MS	39501-4079							
MISSISSIPPI SECRETARY OF STATE'S OFFICE		MARGARET	BRETZ	P.O. BOX 136	JACKSON	MS	39205-0136			mbretz@sos.state.ms.us	228-863-9220		228-864-0254	
Mississippi Secretary of State's Office		Anitra	German Conner	PO Box 97	GULFPORT	MS	39502							
MISSISSIPPI STATE PORT AUTHORITY	DEPUTY DIRECTOR OF ENGINEERING	JOHN	WEBB	PO BOX 40	GULFPORT	MS	39502			john@gulfport.state.ms.us	228-865-4300		228-865-4335	
MS Bureau of Land & Water Res		Stewart	Marion	P. O. Box 10631	Jackson	MS	39209							
MS Dept of Archives & History	Div of Historic Preservation	Walker	Roger	P. O. Box 571	Jackson	MS	39205							
MS Dept of Env Quality Office of Pollution Control				P. O. Box 10385	Jackson	MS	39289-0385							
MS Dept of Enviromental Qualtiy		Scmid	Keil	P. O. Box 20307	Jackson	MS	39289							
MS Dept of Natural Resources	Bureau of Poll Cntrl			P. O. Box 10385	Jackson	MS	39209							
MS Dept of Wildlife & Fisheries		Polles	Dr. Sam	P. O. Box 451	Jackson	MS	39205							
MS DEQ Office of Land & Water Resources		McGregor	E. G.	P. O. Box 10631	Jackson	MS	39209							
MS Export Railroad Company				P. O. Box 743	Moss Point	MS	39563							
MS Gulf Fishing Bank				P. O. Box 223	Biloxi	MS	39530							
MS Department of Archives and HIstoric Preservation	SHPO			P. O. Box 571	Jackson	MS	39205							
MS Department of Archives and HIstoric Preservation	Archaeology	Pam	Edwards	P. O. Box 571	Jackson	MS	39205							
MS Natural Heritage Program		Gordon	Kenneth	2148 Riverside Drive	Jackson	MS	39202-1353							
MS Press				P. O. Box 849	Pascagoula	MS	39567							
MS Sea Grant Advisory		Burrage	Dave	1815 Popps Ferry Rd.	Biloxi	MS	39532-2108							
MS Secretary of State	Public Lands Division			P. O. Box 97	Gulfport	MS	39502-0097							
MS State Port Authority		Duke	William	P. O. Box 40	Gulfport	MS	39502							
MS-AL Sea Grant Legal Program		Fletcher	Kristen	Unv of MS Law School RM 518	University	MS	38677							
MSU/STRC		Lorio	Wendall	2435 Butler Bldg	Stennis Space Center	MS	39529							
Muscogee (Creek) Nation of OK	Tribal Historic Preservation Office	Beas	Joyce	Box 580	Okmulgee	OK	74447							
National Marine Fisheries Service	Habitat Conservation Div, Panama City Office	Mark	Thompson	3500 Delwood Beach Rd	Panama City	FL	32404							

National Marine Fisheries Service	SE Region OFC/Habitat Cons Div			9721 Executive Center Drive	St. Petersburg	FL	33702-2432							
National Marine Fisheries Service	SE REG OFC/Protected Res Div			9721 Executive Center Dr. N.	St. Petersburg	FL	33702							
National Park Service	Mississippi Headquarters	Gary	Hopkins	3500 Park Road	OCEAN SPRINGS	MS	39564-9709							
National Wildlife Federation		McCallie	Graddy	1400 16th St NW	Washington	DC	20036-2266							
News Advertiser	Editor				Amory	MS	38821							
NOAA Fisheries	Southeast Regional Office, Protected Resources Div	David	Bernhardt	263 13th Ave. S.	St. Petersburg	FL	33701							
NOAA Fisheries	Southeast Regional Office, Protected Resources Div	Eric	Hawk	263 13th Ave. S.	St. Petersburg	FL	33701							
NOAA Fisheries	Southeast Regional Office, Protected Resources Div	Stephania	Bolden, PhD	263 13th Ave. S.	St. Petersburg	FL	33701							
Pearl River Basin Dev District		Davis	Mike	P. O. Box 5332	Jackson	MS	39216							
Picayune Item	Editor			P. O. Box 580	Picayune	MS	39466							
Porch Band of Creek Indians		Day	Bill	LANG-DFE-CB, Camp Beauregard Bldg 801, 11th Street	Pineville	LA	711360-3737							
Public Works Department Biloxi	City Engineer			P. O. Box 429	Biloxi	MS	39533							
SCI INC.				13582 Old Highway 67	Biloxi	MS	39532-8069							
Sea Coast Echo		Shallbetter	Bennie	P. O. Box 2009	Bay St. Louis	MS	39520							
Seminole Nation of Oklahoma	Historic Preservation OFC/Nagpra	Spain	Emman	P. O. Box 1498	EWewoka	OK	74884							
Seminole Tribe of Florida, Dept of Anthropology & Genealogy	Director	Wickman	Patricia	6300 Stirling Road - Rm 421	Hollywood	FL	33024							
SENATOR THAD COCHRAN		JoANN	CLARK	188 E. CAPITOL ST	JACKSON	MS	39201			senator@cochran.senate.gov	601-965-4450		601-965-4919	
Shawnee Tribe	Nagpra Resersentative	Hawkins	Rebecca	P.O. Box 189	Miami	OK	74355							
Shawnee Tribe	Nagpra Representative	Smith	Nick	430859 E 280 Road	Vinita	OK	74301							
Shawnee Tribe of Oklahoma	Nagpra Contact Tribal Secretary	Daugherty	Kenneth	2025 S. Gordon Cooper Dr	Shawnee	OK	74801							
Ship Island Excursions		Skrmetta	Louis	P. O. Box 1467	Gulfport	MS	39507			shipisland@cableone.net	228-864-1014			
Solution Inc.				P. O. Box 820127	Vicksburg	MS	39182-0127							
Solutions Inc.		Necaise	Eric	P. O. Box 4921	Biloxi	MS	39535							
State of Mississippi, Office of the Attorney General		Boyd	Nicole	P. O. Box 2200	Jackson	MS	39205							
The Chickasaw Nation	Tribal Historic Preservation Office	Duncan	Rena	P. O. Box 1548	Ada	OK	74820							
The Chickasaw Nation	Admin, Heritage Education	Perry	Kirk	P. O. Box 1548	Ada	OK	74821-1548							
The Chickasaw Nation	Governor	Anoatubby	Bill	P. O. Box 1548	Ada	OK	74821-1548							
The Chickasaw Nation		Nail	Gingy	P. O. Box 1548	Ada	OK	74821-1548							
The Nature Conservancy				1709 Government Street	Ocean Springs	MS	39564							
The Sun Herald		Ebner	Sharon	P. O. Box 4567	Biloxi	MS	39535-4567							
The Sun Herald		Harmon	Greg	609 Washington Avenue	Ocean Springs	MS	39564-4633							
Thlopthlocco Tribal Town	Trival Administrator	Harjo	Allen	P. O. Box 188	Okemah	OK	74859							
Tishomingo County News	Editor			P. O. Box 70	Iuka	MS	38852							
Tunica-Biloxi Tribe of Louisiana	Chairman	Barby, Sr.	Earl	P. O. Box 331	Marksville	LA	71351							
United Keetoowah Band of Cherokee Indians Oklahoma	THPO/NAGPRA Rep	Mouse	Archie	P. O. Box 189	Park Hill	OK	74431							
USACE, Mobile District	PLANNING & ENVIRONMENTAL DIVISION	JENNIFER	JACOBSON	PO BOX 2288	MOBILE	AL	36628-0001			jennifer.jacobson@sam.usace.army.mil	251-690-2724		251-690-2727	

USACE, Mobile District	PLANNING & ENVIRONMENTAL DIVISION	Linda	Brown	PO BOX 2288	MOBILE	AL	36628-0001			linda.t.brown@sam.usace.army.mil	251-694-3789			
US Army Corps of Engineers	Resource Manager			P. O. Box 96	Chattahoochee	FL	32324-0096							
US Army Corps of Engineers	Resource Manager			82 Bay Springs Resource Road	Dennis	MS	38838-9723							
US Army Corps of Engineers				WFG-West Ponit Pwr	Shorterville	AL	36373							
US Army Corps of Engineers	Resource Manager			P. O. Box 487	Cartersville	GA	30120-0487							
US Army Corps of Engineers	Resource Manager			P. O. Box 567	Buford	GA	30518-9531							
US Army Corps of Engineers	Resource Manager			P. O. Box 98	Collinsville	MS	39325-0098							
US Army Corps of Engineers	Area Engineer			1706 East 5th Street	Panama City	FL	32401-4399							
US Army Corps of Engineers	BWT Lakes Res Mgr			P. O. Box 295	Peterson	AL	35478							
US Army Corps of Engineers	Area Engineer			101 21st Avenue & Black Warrior Rd	Tuscaloosa	AL	35401-1015							
US Army Corps of Engineers	WFG-West Point Pwr				Shorterville	AL	36373							
US Army Corps of Engineers	SAD-ET-CO-R Div Engineer			60 Forsythe St SW, RM 9M15	Atlanta	GA	30303-3490							
US Army Corps of Engineers	Jim Woodruff Power			P. O. Box 65	Chattahoochee	FL	32324-0065							
US Army Corps of Engineers	Area Engineer			3606 West Plymouth Road	Columbus	MS	39701-9504							
US Army Corps of Engineers	Resource Manager			P. O. Box 86	Oakman	GA	30732-9999							
US Army Corps of Engineers	Resource Manager			384 Resource Management Drive	Demopolis	AL	36732							
US Army Corps of Engineers	Resource Manager			500 Resource Management Drive	West Point	GA	31833-9517							
US Coast Guard	Marine Safety Office			Brookley Complex Bldg 102 South Board Street	Mobile	AL	36615-1309							
US Coast Guard	Eight Dist CMDR (MPS)			501 Magazine Street	New Orleans	LA	70130-3396							
US Coast Guard Eighth Dist	Bridge Admin Branch	Pepin		501 Magazine Street	New Orleans	LA	70130-3396			FPepin@MSDPanamaCity.USCG.mil	251-441-5201			
US Coast Guard	Bridge Admin Branch	Taylor		501 Magazine Street	New Orleans	LA	70130-3396			JWTaylor@midmobil.uscg.mil	251-721-6147			
US Coast Guard Eighth Dist	Bridge Admin Branch			501 Magazine Street	New Orleans	LA	70130-3396							
US Coast Guard Eighth Dist	Privat Aids to Nav CMDR (OAN)			501 Magazine Street	New Orleans	LA	70130-3396							
US Environmental Protection Agency	Region 4	Gerald	Miller	61 Forsyth Street, SW	Atlanta	GA	30303							
US Environmental Protection Agency	Region 4	Doug	Johnson	61 Forsyth Street, SW	Atlanta	GA	30303							
US FISH & WILDLIFE SERVICE	ASST FIELD SUPERVISOR	CURTIS	JAMES	6578 DOGWOOD VIEW PKWY	JACKSON	MS	39213			Curtis_James@fws.gov	601-321-1131		601-965-4340	
US Fish & Wildlife Service		Goldman	Larry	1208-B Main Street	Daphne	FL	36526							
US Fish and Wildlife Serv				6578 Dogwood View Pkwy Ste A	Jackson	MS	39213							
USEPA/ GULF PROGRAM	ACTING DIR. OF GULF OF MEXICO PROG. OFFICE	BRYON	GRIFFITH	MAILCODE: EPA/GMPO	STENNIS SPACE CENTER	MS	39529			griffith.bryon.epa.gov	228-688-1172		228-688-2709	
Wetlands Inc.		Eleuteriius	Dr. Lionel	3236 Red Bluff Circle	Ocean Springs	MS	39564-9758							
Wetlands Solutions LLC		Pike	Brandon	P. O. Box 2407	Gulfport	MS	39505							
Wildlife Society		Hogdon	Harry	5410 Grosvenor Lane	Bethesda	MD	20814							
		Andre	David	602 Commerce Street	Gulfport	MS	39507				228-806-2444			
		Barrios	James	2119 Dupont Drive	Pass Christian	MS	39571							
		Baurle	Barry	13419 County Road 54	Bay St. Louis	MS	39520-2005							
		Binninger	Gerald	926 Hwy 90	Waveland	MS	39576							
		Boddie	George	4443 Garland Lane	Ocean Springs	MS	39564							
		Brown	Bob	15111 Dauphin Island Pkwy.	Bay St. Louis	MS	39520							
		Cagle, Jr.	W. M.	P. O. Box 16765	Biloxi	MS	39532							
		Chaporon	Michael	804 N. Beach Blvd.	Pass Christian	MS	39571							
		Chubb	Patrick	11040 Pinoak Drive	Pass Christian	MS	39571							
		Clark	Jean	P. O. Box 1457	Bay St. Louis	MS	39520							
		Davis	Robert	127 Felicity Street	Bay St. Louis	MS	39520							

		Davis	Don	P. O. Box 86	Gulfport	MS	39503							
		Dawkins	Deborah	22383 Meadowbank Dr.	Pass Christian	MS	39571							
		De Buys	Mrs. Herbert	101 Fox Road	Biloxi	MS	39533							
		Dunlap	David	P. O. Box 1729	Ocean Springs	MS	39564							
		Edwards	John	32840 Edwards Lane	Pascagoula	MS	39568							
		Ford	John	P. O. Box 1655	Pascagoula	MS	39567							
		Friedlander	Kay	150 Orange Ave.	Pass Christian	MS	39571							
		Furr, MD	Richard	1800 Government St.	Jack	MS	39289-1307							
		Harper	Bonnie	P. O. Box 332	Madison	MS	39110							
		Hiott	Ana	Swingle Hall	Bay St. Louis	MS	39521							
		Hodges	Tom	2135 Hwy 180	Biloxi	MS	39530							
		Holt	Donald	10552 Hwy 603	Pass Christian	MS	39571							
		Hudgins	Andy	4241 Mars Hill Road	Bay St. Louis	MS	39520							
		Jernigan	Conway	11900 Pioneer Road	Waveland	MS	39576							
		Ladd	Russell	4254 Jordan Lane	Bay St. Louis	MS	39520							
		Lawson	Mitch	408 Broad St	Gulfport	MS	39507							
		Lee	Milt & Maureen	812 W. Canal Drive	Hattiesburg	MS	39402							
		Lewis	Linwood	110 Lay Port Loop	Biloxi	MS	39530							
		Ludlow	Mr. & Mrs. Howard	32135 River Cove Drive	Pass Christian	MS	39571							
		Ludvigsen	Michael	412 Labree Road	Bay St. Louis	MS	39520							
		Mallini	Michael	7615 Bay Road	Vicksburg	MS	39180							
		Mann	C. Baxter	P. O. Box 2611	Bay St. Louis	MS	39520-3826							
		Manual	Wilmer	521 Roy Avenue	Ocean Springs	MS	39566							
		Matheieu	Steve	223 Gayfer Ct.	Pass Christian	MS	39571							
		McGee	Dianne	219 Lakewood Dr. E	Waveland	MS	39576							
		McNeal	W. C.	2519 Bristol Place	Bay St. Louis	MS	39520							
		Meinders	Bruce	8780 Neumann	Pass Christian	MS	39571							
		Millan	Stanley	201 St. Charles Avenue - 50th floor	Gauthier	MS	39553							
		Miller	Donald	P. O. Box 423	Bay St. Louis	MS	39520-1000							
		Moore	Colin	P. O. Box 12710	Pascagoula	MS	39567							
		Prychitko	Mrs. S. B.	142 Leopold St	Bay St. Louis	MS	39520							
		Rawson	Bill & Martha	5210 Pine Road	Hurley	MS	39555							
		Reid	Mrs. James	220 Chartres St.	Pass Christian	MS	39571							
		Reid	Robert	2616 Mountain Brook Pkwy	Bay St. Louis	MS	39520-9732							
		Shuba	Peter	5516 Grande Lagoon Court	Bay St. Louis	MS	39520-4004							
		Sims	Larry	3010 Calais St.	Bay St. Louis	MS	39520-8760							
		Sives	Mark	P. O. Box 2151	Waveland	MS	39576							
		Vassey	Paula	3125 Graveline Road	Pass Christian	MS	39571							
		West	Frances	12420 Pine Beach Road	Ocean Springs	MS	39564							

Intent To Prepare a Draft Supplement to the Environmental Impact Statement To Evaluate Construction of Authorized Improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS

[Federal Register: March 31, 2006 (Volume 71, Number 62)]
[Notices]
[Page 16294-16296]
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[DOCID:fr31mr06-54]

DEPARTMENT OF DEFENSE
Department of the Army; Corps of Engineers

Intent To Prepare a Draft Supplement to the Environmental Impact Statement To Evaluate Construction of Authorized Improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.
ACTION: Notice of intent.

SUMMARY: The Mobile District, U.S. Army Corps of Engineers (Corps), intends to prepare a Draft Supplement to the Environmental Impact Statement (DSEIS) to address the potential impacts associated with construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS. The DSEIS will be used as a basis for ensuring compliance with the National Environmental Policy Act (NEPA) and evaluating the following two alternative plans: ``No Action'' and widening to the authorized project dimensions. Gulfport Harbor is authorized to (a) A channel 38 feet deep by 400 feet wide and about 8 miles long across Ship Island Bar; (b) a channel 36 feet deep by 300 feet wide and about 12 miles long through Mississippi Sound; and (c) a stepped anchorage basin at Gulfport Harbor 32 to 36 feet deep by 1,120 feet wide and 2,640 feet long.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and the DSEIS should be addressed to Dr. Susan Ivester Rees, Coastal Environment Team, Mobile District, U.S. Army Corps of Engineers, P.O. Box 2288, Mobile, AL 36628 by telephone (251) 694-4141 or e-mail her at susan.i.rees@sam.usace.army.mil.

SUPPLEMENTARY INFORMATION:

1. Gulfport Harbor is located in Harrison County, MS, on Mississippi Sound about equidistant (80 miles) from New Orleans, LA,

and Mobile, AL. The existing project was adopted by the River and Harbor Act approved July 3, 1930 (House Document Number 692, 69th. Congress, 2nd. Session) and the River and Harbor Act approved June 30, 1948 (House Document Number 112, 81st. Congress, 1st Session). Construction of the existing federal project commenced in 1932, and was completed in 1950. The River and Harbor Act approved July 3, 1958 (Senate Document Number 123, 84th. Congress, 2nd. Session) adopted the small boat harbor as part of the existing federal project. Deepening improvements to the existing Federal project at Gulfport Harbor was authorized in the Supplemental Appropriations Act of 1985 (Pub. L. 99-88), which was approved on August 15, 1985. The project was also authorized in the Water Resources Development Act of 1986 (Pub. L. 99-662), which was approved November 17, 1986, and provided for development to deepen and widen the existing ship channel 36 by 300 feet in Mississippi Sound, and 38 by 400 feet across the bar, with changes in the channel alignment and entrance to the anchorage basin for safe and unrestricted navigation.

The 1976 Feasibility Report considered a number of improvement plans, such as widening the Mississippi Sound channel to 300 feet at the existing 30-foot depth and deepening the channel in 2-foot increments to a maximum depth of 36 feet. In addition, widening the channel across the bar into the Gulf of Mexico to 400 feet at the existing 32-foot depth and deepening the channel in 2-foot increments to a maximum depth of 38 feet were also evaluated. The Corps analyzed realignment of the Ship Island channel, adjustment of the turning basin's width, and enlargement of the channel entrance into the turning basin. A number of disposal options were considered including: open-water alongside of the channels, island creation within Mississippi Sound, and use of specially designed equipment to transport the dredged material to sites within the Gulf of Mexico. The 1976 Feasibility Report recommended enlarging the Bar channel to 38 feet by 400 feet from the 38-foot depth contour in the Gulf of Mexico for a distance of about 9.1 miles to a point in Mississippi Sound near the western end of Ship Island; enlarging the channel through Mississippi Sound near the western end of Ship Island; and enlarging the Mississippi Sound channel to 36 feet by 300 feet for a distance of about 11.8 miles between the inner end of the Gulf Entrance channel and the turning basin at Gulfport; realigning the Bar channel through Ship Island Pass to a location generally parallel to and about 1,000 feet west of that presently authorized, with a deposition basin for littoral drift 38 feet deep, 300 feet wide and 2,000 feet long adjacent to the east side of the channel at the west end of Ship Island; and enlarging and adjusting the dimensions of the turning basin and channel entrance by extending the southern limits of the basin seaward about 1,180 feet along the west pier and 2,300 feet along the west side of the Ship channel, decreasing the width of the turning basin from 1,320 feet, as presently authorized, to 1,120 feet, and deepening the basin and

adjusted channel approach to 36 feet. Improvements of the Gulfport Harbor navigation project was initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99-88) in accordance with the 1976 Feasibility Report. As a result of this authorization, studies were initiated relative to the island construction within the Sound and the impacts of thin-layer disposal of new work material. This initial authorization was subsequently modified by the Water Resources Development Act (WRDA) of 1986. A revised Draft Environmental Impact Statement (DEIS), circulated in 1988, considered widening and deepening the existing Gulfport Harbor navigation channel to the authorized dimensions. In addition, five alignments for the channel segment through Ship Island Pass were also considered. Material from the construction and maintenance of the project were to be disposed of in the ocean sites. The WRDA of 1988 further modified the authorized project to include disposing of construction material via thin-layer disposal in Mississippi Sound under a demonstration program. The maintenance material would be disposed of in Mississippi Sound under a plan developed by the Secretary and approved by the Administrator of the Environmental Project Agency. The Corps published an Environmental Impact Statement (EIS) in June 1989 evaluating deepening and widening Gulfport Harbor with subsequent placement via thin-layer and ocean disposal. The proposed Draft Supplemental Environmental Impact Statement (DSEIS) uses the 1989 EIS as a reference during its evaluation of constructing Gulfport Harbor to authorized project dimensions. The DSEIS will evaluate any new conditions that were not previously addressed in the 1989 EIS.

2. Alternative scenarios to be considered include the ``No action'' alternative and widening to the federally authorized dimension of 300 feet in the Mississippi Sound channel and 400 feet in the Bar channel. In addition, an array of disposal options are also being evaluated for the new work as well as for the maintenance material including island creation, littoral zone disposal, disposal in the existing Ocean Dredged Material Disposal Site (ODMDS), and disposal in a new ODMDS. Currently, the U.S. Environmental Protection Agency (EPA) is preparing an EIS for the ``Designation of a New Gulfport Harbor Offshore ODMDS.''

3. Scoping: a. The Corps invites full public participation to promote open communication on the issues surrounding the proposal. All Federal, State, and local agencies, and other persons or organizations that have an interest are urged to participate in the NEPA scoping process. Public meetings will be held to help identify significant issues and to receive public input and comment.

b. The DSEIS will analyze the potential social, economic, and environmental impacts to the local area resulting form construction of authorized improvements. Specifically, the following major issues will

be analyzed in depth in the DSEIS: Hydrologic and hydraulic regimes, threatened and endangered species, essential fish habitat and other marine habitat, air quality, cultural resources, wastewater treatment capacities and discharges, drainage discharges, transportation systems, alternatives, secondary and cumulative impacts, socioeconomic impacts, environmental justice (effect on minorities and low-income groups) (Executive Order 12898), and protection of children (Executive Order 13045).

c. The Corps will serve as the lead Federal agency in the preparation of the DSEIS. It is anticipated that the following agencies will be invited and will accept cooperating agency status for the preparation of the DSEIS: U.S. Environmental Protection Agency, U.S. Department of the Interior--Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Department of Commerce--National Marine Fisheries Service, Mississippi Department of Environmental Quality, Mississippi Department of Marine Resources, Mississippi State Port Authority at Gulfport, City of Gulfport, and State Historic Preservation Officer.

4. It is anticipated that the first scoping meeting will be held in the April 2006 time frame in the local area. Actual time and place for the meeting and subsequent meetings or workshops will be announced by the Corps by issuance of a public notice and/or notices in the local media.

5. It is anticipated that the DSEIS will be made available for public review in May 2006.

Curtis M. Flakes,
Chief, Planning and Environmental Division.
[FR Doc. 06-3146 Filed 3-30-06; 8:45 am]
BILLING CODE 3710-CR-M

PROOF OF PUBLICATION

APR 24 2006

PUBLIC SCOPING MEETING

The U.S. Army Corps of Engineers, Mobile District and the U.S. Environmental Protection Agency are holding a joint public scoping meeting for the Gulfport Harbor, Construction to the Federally Authorized Navigation Project, Harrison County, Mississippi, Environmental Impact Statement and the Gulfport Offshore Ocean Dredged Material Disposal Site Designation, Harrison County, Mississippi, Environmental Impact Statement. The scoping meeting is scheduled for Tuesday, May 16, 2006, at the 19th Street Community Center in Gulfport beginning at 5:00 pm. For additional information, contact Dr. Susan I. Rees at (251) 694-4141 or via email at susan.i.rees@sam.usace.army.mil, or Jennifer Jacobson, at (251) 690-2724 or via email at jennifer.l.jacobson @sam.usace.army.mil.

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STATE OF MISSISSIPPI
COUNTY OF HARRISON

Before me, the undersigned Notary of Harrison County, Mississippi personally appeared Kandi Berkley who, being by me first duly sworn, did depose and say that she is a clerk of The Sun Herald, a newspaper published in the city Gulfport, in Harrison County, Mississippi, and the publication of the notice, a copy of which is hereto attached, has been made in said paper 1 times in the following numbers and on the following dates of such paper, viz:

Vol. 122 No., 193 dated 14 day of April, 20 06

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Affiant further states on oath that said newapaper has been established and published continuously in said country for a period of more than twelve months next prior to the first publication of said notice.

Kandi Berkley
Clerk

Sworn to and subscribed before me this 14 day of April, A.D., 20 06

Commission Expires on:
October 15, 2007

Karen Shook
Notary Public

Printer's Fee ..... $ 90.00

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PAID

GULFPORT ODMDS and HARBOR CONSTRUCTION TO AUTHORIZED DIMENSION

ORIGINAL

U.S. ARMY CORPS OF ENGINEERS
MOBILE DIVISION

PUBLIC SCOPING MEETING
HELD AT THE
COMMUNITY CENTER; GULFPORT, MISSISSIPPI

MAY 16, 2006; 5:30 P.M.

APPEARANCES:

Elizabeth Calvit (CH2M Hill)
Russ Short (CH2M Hill)
Rhonda Wall, Mobile District
Jennifer Jacobson, Mobile District
Curtis Flakes, Mobile District

I N D E X

DEEPENING CHANNEL FOR
NAVIGATION/OFFSHORE DRILLING

- - -

MR. FLAKES: I want to welcome you all to this scoping meeting. My name is Curtis Flakes and I'm the Chief of Planning in the Environmental Division in the Mobile District.

I'm going to deviate just a little bit. Since there's so few of us, I was actually going to introduce people, but I tell you what, since there's only about seven of us, why don't we just have the people stand up and introduce themselves. And I'll start with Russ.

MR. SHORT: I'm Russ Short, CH2M Hill, out of Atlanta, Georgia. And my purpose on the project is to help evaluate the impact associated with the two different projects that we're going to be talking about, preparing the different documents as they come through, listening to comments and feedback, incorporating those into the

documents, bringing our subject matter experts together to help address those and turn the documents around and get them back out. We're here to support the Corps of Engineers with that process.

MR. WEBB: I'm John Webb. I'm the Engineering Director with Mississippi State Port Authority, Port of Gulfport, and I'm excited about this project.

MS. JACOBSON: I'm Jennifer Jacobson. I'm a biologist for the Corps of Engineers and I'm going to be overseeing the preparation of both environmental impact statements.

MS. WALL: I'm Rhonda Wall. I'm the project manager for the Corps of Engineers so I get to do the environmental and I'm here to help with the design and the construction of the project.

MR. SKRMETTA: I'm Louis Skrmetta with Ship Isles, Inc., and we are a concessional with the National Park Service providing the extended ferry services. And

we use the Gulfport ship channel as a part of our route. And I'm here just to get more information about the upcoming project.

MR. TAYLOR: Jim Taylor. I'm the liaison for the Coast Guard for Harrison County.

MR. PEPIN: Buddy Pepin, Reef Specialist for the Coast Guard. I work with DMR as a liaison.

MR. LaGARDE: Chris LaGarde for Congressman Gene Taylor.

MS. CALVIT: Elizabeth Calvit, CH2M Hill, with the Corps of Engineers.

MR. FLAKES: Thank you. We've spent a lot of time in coastal Mississippi over the last month attending the public meetings and this is about the number that we've been getting so I think this is a good turnout, given all the issues that people in this area are dealing with. Thank you again for attending tonight.

This is a joint scoping meeting between the Corps of Engineers and the

Environmental Protection Agency. We're looking at two separate but related issues here tonight. We've hired CH2M Hill with the Corps to prepare the documentation for these two EIS's.

We're going to implement these actions under the National Environment Policy Act of 1969. And that is a law that all of the projects that we do with the Corps have to be covered by some type of a legal document. That's usually an Environmental Impact Statement or Environmental Assessment. In this case, the document that's being produced is an Environmental Impact Statement.

The purpose of tonight's meeting is to present these two projects while bringing together agencies. And at this point, we don't have any agencies represented but, of course, the general public.

We're asking you to look at these projects and help us to scope the issues.

Obviously, when you are doing

Environmental Impact Statements you can just be all over the board in terms of what the issues can be. And so what we want you to do here tonight is help us scope the issues so that we can look at those things that are important to the environmental impact process. We want you to help us identify significant issues on the projects.

It is our intent this evening to give you an opportunity to share with us your thoughts on these two EIS's.

The first EIS will evaluate constructing Gulfport Harbor Navigation Project located in Harrison County, Mississippi to its federally authorized project dimensions.

The second EIS will involve designating a new ocean dredge material disposal site, which we refer to as the ODMDS site, in the Gulfport vicinity.

The U.S. Environmental Protection Agency, Region 4, is responsible for the 102 designation of the new ODMDS site, which is

pursuant to the Marine Protection, Research and Sanctuaries Act.

The EPA, Region 4, will oversee the Corps of Mobile District's preparation of this EIS.

Now, Russ Short will provide a brief presentation of each of the two projects. Once he has given you the presentation, we will present the ground rules on how we will conduct the remaining public hearing.

Russ?

MR. SHORT: Thank you, Curtis. As Curtis mentioned, what I would like to do is just to give you a brief description of the two projects that are going to take place offshore of Gulfport.

The first one is a channel widening project to authorized dimensions, according to the federal law.

The other one is designation of an ocean dredge material disposal site.

Gulfport Harbor existing dimensions are identified in this slide. As you can

see, there's a channel that's 38 feet deep by 300 feet wide and about 8 miles long that crosses the Ship Island Bar. And we'll refer to that as the Bar Channel area.

There's a second segment of it that's a channel 36 feet deep by 220 feet wide and about 12 miles long that extends through the Mississippi Sound and we'll refer to that as the Sound Channel.

And then the third component is a Stepped Anchorage Basin at Gulfport Harbor, which is 32 feet to 36 feet deep, 1,120 feet wide by 2,640 feet long.

This is an aerial image that identifies the location of the existing channel.

And paralleling the channel, you can see that there's several existing dredge material disposal sites. Some of them are at capacity, as we understand it. Other ones can't be used just because of the locations. And some of the longshore processes and the impact that has on the use of the navigation

channel.

So, designating a new ODMDS is important to be able to take some of the capacity that is going to be required for the dredging process that's going to take place under the channel widening project.

The Gulfport Harbor construction will involve widening the 38-foot-deep Bar Channel from 300 feet to 400 feet. And that will extend for about 8 miles across the Ship Island Bar. And that's this area right in here.

The other part is a widening of the 36 foot deep Sound Channel from 220 feet to 300 feet wide for about 12 miles through Mississippi Sound. And that would go through this area through here.

The second project is designating an ODMDS. This process involves both the Corps of Engineers and the USEPA and it's defined in 40 CFR, sections 220-229. And that component identifies the different steps and processes that have to be followed for

identifying location for conducting studies and for designating that location.

As part of that process, the Corps identifies prospective areas, evaluates the environmental conditions in those areas and it makes recommendations on areas that should be designated for dredge material disposal.

EPA will take those recommendations and findings, review them, conduct their own internal evaluation and then designate sites that they feel are going to meet the environmental requirements that they have.

As part of the process, the Corps identifies ODMDS's by conducting a zone of siting feasibility. I'll talk about that in a minute.

But, generally, there's a variety of screening criteria that are used to designate an area that could potentially be used for an ODMDS.

As part of that screening criteria we have to look at navigational restrictions, political boundaries, the distance to the

continental shelf, the feasibility of surveillance and monitoring. Because once an area is designated you have to go back routinely to look at the placement of the material, what's happening to the environment, where is that material going, are there significant impacts that have emerged after the material has been placed that weren't anticipated up front.

Operational and transport costs for moving that material from the dredged area to the disposal site.

And then other factors such as the dredging requirements, the water depth, the biological resources of the area.

The Zoning Siting Feasibility is a desktop study that's done in advance really of any field studies. You try and identify areas that you can go out to and begin to focus in on as potential areas. We use the existing information to do that. And that includes, you know, university studies. It includes existing Environmental Impact

Statements. It includes information from the Marine Fisheries Commission, Fish and Wildlife and habitat utilization by different resources to figure out where those areas are and that are potentially useful for designating a site.

It includes a review of existing disposal sites. Like I mentioned before, there's a variety of them that parallel the existing channel.

It also has to be in proximity to the project area. If the material has to be transported too far, the economics of the project becomes difficult to accomplish.

Once again, the Gulfport ODMDS capacity is targeting about 95 million cubic yards over the course of the existing projects we're talking about, plus potential future projects that might occur.

That's a large amount of material, and so you have to look at a fairly sizeable area to be able to site that ODMDS, some of the primary constraints for siting the ODMDS,

impacts to bathymetry and navigation, impacts to biota, and of course the fate of dredged material that is placed there, where is it going to go over time in relationship to the normal currents, in relationship to storm patterns and things like that. So there's a variety of computer models that are used to predict where that material may go, what the nature of it will be after it's placed there. Those are all parts of the analyses that will be done during the preparation of the documents.

The Zone of Siting Feasibility has been conducted and the preliminary screening process is identified, a 10-mile radius around the end of the existing, close to the navigation channel. We've included the channel itself, the Safety Fairway, Chandeleur Islands. There's some fish havens out there. And then, of course, we have to have the correct amount of water to be able to place the material out there. So when you look at 95 million cubic yards, you know, that raises the water depth a considerable

amount depending upon the size of the area you place the silt.

We're looking at an area that might be about ten square miles. And that's to kind of keep the height of the deposit material from impacting about 20 or 25 feet to the surface of the water.

So we've identified two areas that we were looking at during Zone Siting Feasibility. And one of them is north of the Safety Fairway and one of them is south. The one south of Safety Fairway has a little bit more water depth. The one north is quite a bit shallower.

To date, we've conducted two site investigations and it's on the area that's south of the Safety Fairway. That area looks like it has the most potential. It's a little bit north of the fish haven that's down there. It's just east of the Chandeleur Islands.

During the cruises we looked at the water quality. We looked at the bathymetry.

We looked at sediment quality. We took sediment samples and ran them through the laboratory to find out, you know, what the nature of them was like. We looked at the animals that live there, both the animals that live in the bottom as well as the animals that live on the bottom itself. The ones that live on the bottom would be like shrimp and those kinds of organisms. The ones that live in the bottom are polychaetes and invertebrates and things like that that some crabs will burrow into.

We're in the midst then of preparing the Environmental Impact Statement. There's going to be two of them that are prepared. Designation of the ODMDS and Widening of the Sound and Bar Channels.

As Mr. Flakes mentioned, we're seeking public comments on these two EIS's and try and identify significant issues up front that we need to take into account during our analysis and preparation of the two documents.

Thank you. That concludes my presentation at this time.

MR. FLAKES: Thank you, Russ. The next portion of the meeting will be to receive comments from you. Obviously, anyone who would like to make any comments on the significant issues that we're dealing with, these two EIS's, please speak now.

By the way, I need to add that we have a court reporter tonight who is formally recording all of the comments that are made. If you wouldn't mind, state your name.

MR. PEPIN: Buddy Pepin with the Coast Guard. What is the bottom made of? What's the consistency of the bottom? What material is down there? Sand? Sludge? Clay? Do you have an idea?

MR. SHORT: Yes. During the studies that we conducted, we did particle size analysis and we had two cruises. One of them occurred before Hurricane Ivan went through and one of them occurred after Hurricane Ivan went through. So we have a pretty good basis

on what that bottom looks like because there was a fair amount of change as a result of that storm passing through there.

Primarily in the western portion -- the western three-quarters of the area is a sand -- silty-sand complex.

As you get to the east, it's a little bit more silty material.

MR. ANDRE: I have a question. My name is David Andre. And I apologize, I was on the wrong part of 19th Street and didn't find this place right away.

I take it that all of the spoils will be disposed in this proposed area? Is that a correct assumption?

MR. SHORT: I think the studies that we're going to be conducting are going to be looking at alternatives to figure out where that material might go. And the project you're talking about I guess would be the widening project, the material that's generated as a result of that. Would it be placed only in the offshore dredging material

disposal site? Would it be placed in other disposed areas? Those are things that we're going to be evaluating as we move forward and we're looking for comments to help us figure out what's the best approach.

MR. ANDRE: Well, I sail a lot. And in years past there have been water of restrictive depth for sailboats with keels on the west side of the channel because that was always marked as a spoil area. And sometimes with a bit of inaccuracy in dredging they got those areas too shallow to pass safely over it and it drew six feet of water. The average depth out in the Sound is about 13 feet. And it would be nice not to have it any less than that along both sides of the channel between the Port and Ship Island Pass.

And there's also channel work yet to be done to provide a channel for the commercial harbor in the area where the Grand Hotel barge was once. And, of course, we wouldn't want to see any spoil put in that

area because that all has to be dug out. Those channels have to be improved around the area that the board is presently filling out there.

So I would think we wouldn't want the spoils to be put within five miles of the coastline at a minimum. And preferably not in the Mississippi Sound if they couldn't be carried out and put in this offshore location.

MR. FLAKES: Those comments will be incorporated into the record and be evaluated in the EIS process. Thank you.

MR. WEBB: John Webb, Port of Gulfport, regarding disposal option. Have you looked at beach restoration, island "repairishment," particularly the barrier islands as a source of some material disposal?

MR. FLAKES: In the EIS process we look at the full range of options. As I stated previously, we're looking for cost-effective environmentally-sound means of

disposal.

Any other comments?

MR. WEBB: I've got one more. No doubt in my mind that when the project was previously authorized to depths of 300 feet and 400 feet for the Sound, was there not an EIS done at that time for that work?

MR. FLAKES: There was an EIS done when the project was constructed.

Any other comments?

MR. ANDRE: I have another question, not being familiar with this. If after you have this input will there be another public comment opportunity with proposals perhaps for alternate disposal sites so we can review what those proposals would be?

MR. SHORT: We'll take the input that we receive tonight, we will prepare the draft of Environmental Impact Statement, that statement will be put out for public review. And during that period there will be another public meeting where we will receive agency and public input on the alternatives that

were worked out.

MS. CALVIT: As far as public access to this draft EIS, when you signed in on that sheet, we will be mailing and do newsletters and you can go to the website where you download it and you can get the draft and review it.

MR. WEBB: Certainly I would encourage Chris LaGarde with the Congressman, especially with Cat Island being to the west -- I think I heard right, he said that the material on the west side was sandy silt and the material on the east side was more of a silty material, so obviously you don't want to put silty material on an island. But if there's any opportunity to use whatever sandy material we have -- it seems rather simplistic, but if you can swing that thing over to Cat Island and let nature what it will do with it. Because the sediment dredging that we have out here, we all know that we're losing sediment on the beaches and on the islands. So I would certainly encourage to keep an

open eye to try and do something and get -- and again, I understand that some materials are not suitable for beach refurbishment or island inertia, but if it is, I would hope that we look to turn the dredge pipe toward the west and let the stuff go and take it to Cat Island. I'm not sure how much the park service owns of Cat Island, but it's a significant portion.

MR. SHORT: Thank you. We will incorporate that into the record.

Any other comments?

MR. ANDRE: I have another question that his comment made. I was envisioning with a spoil site being offshore that probably it would be with a copper dredge that would carry it out there. Obviously, it wouldn't be pumped in a pipe to that area. Is it determined already, the means or the methods that would be used to dredge the channel? I know sometimes they've used, you know, harbor dredges and sometimes they've used a conventional dredge with a dredge

pipe. Is there any determination of that at this time?

MR. FLAKES: No. This is the preliminary stage. We're just receiving comments. And we will take these comments along with the other comments that we receive and evaluate them and from that come up with a set of plans.

Obviously, if you have other thoughts after you leave here tonight, you can mail those to us. I think we have cards in the back of the room with the address on them. Just drop them in the mail and send them to us. We encourage you to do that. Any input that we receive on this process will help us.

Russ said previously we want to address as many things up front as we can. Once it hits the street, then it's more of a reactive than a proactive.

I want to thank you all for coming tonight. Thank you for your input. We've heard some good remarks that will help us as we move forward and eventually moving toward

the construction of this project.

Thank you.

(The meeting was concluded at 6:00 p.m. on May 16, 2006)

- - -

C E R T I F I C A T E

STATE OF ALABAMA)

COUNTY OF CONECUH)

I do hereby certify that the above and foregoing transcript of proceedings in the matter aforementioned was taken down by me in machine shorthand, and the questions and answers thereto were reduced to writing under my personal supervision, and that the foregoing represents a true and correct transcript of the proceedings given by said witness upon said hearing.

I further certify that I am neither of counsel nor of kin to the parties to the action, nor am I in anywise interested in the result of said cause.

PATRICIA TAYLOR, AL-CSR-396
COURT REPORTER, NOTARY PUBLIC
STATE OF ALABAMA AT LARGE

My Commission Expires: 1/2/2009

US Army Corps of Engineers ®
Mobile District

Supplemental Environmental Impact Statement for the Proposed Construction to Authorized Dimensions for the Gulfport Harbor Navigation Channel, Harrison County, Mississippi

Newsletter 1 • September 2006

Project Background

This is the first in a series of newsletters intended to inform you of progress in the preparation of the Supplemental Environmental Impact Statement (SEIS) for the Proposed Construction to Authorized Dimension for Gulfport Harbor Navigation Channel, Harrison County, Mississippi.

Historically, the Port of Gulfport has offered deep water access for the shipping industry since the early 1900s. As operations continue to expand, larger ships are calling on the Port. Deeper draft container ships and Roll on, Roll off operations have stimulated the need to widen the channel. Maintaining channels means keeping them at specified depths and widths by dredging. Improving means making them deeper or wider.

The U.S. Army Corps of Engineers (USACE) determined changes were required in the existing Federal Gulfport Harbor Navigation Channel to provide for safe and unrestricted navigation into and out of Gulfport Harbor. Mississippi State Port Authority has documentation demonstrating the frequent "waiting at anchor" status of many vessels attempting to enter the Port. Likewise oftentimes vessels are waiting in the Port while inbound vessels navigate through the channel. These conditions pose a financial impact to the shippers operating out of Gulfport Harbor.

Interest in improving dimensions for the Gulfport Harbor Navigation Channel has been ongoing since the mid-1970s. During that time frame, there have been many different alternatives discussed that included alignments, depths, widths, and disposal options. These alternatives included several channel depth options, and realignment of the channel near Ship Island Pass and in the Mississippi Sound.

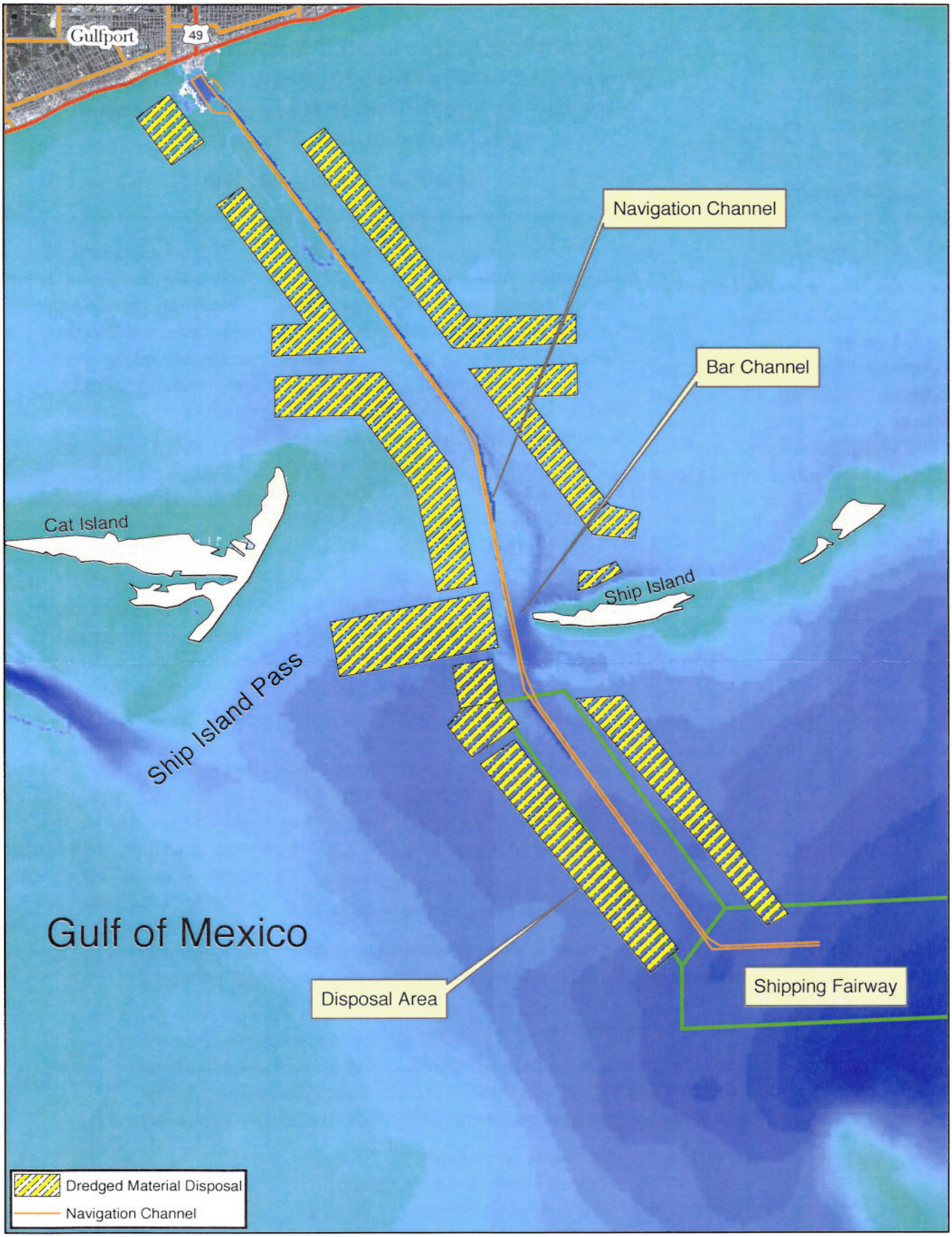
What is a Supplemental Environmental Impact Statement?

An SEIS is a document which contains an evaluation of issues that were not previously addressed in an EIS. An EIS evaluates potential environmental impacts of a proposed Federal action and alternatives to that action according to the National Environmental Policy Act, 1969 (NEPA).

The USACE prepared a Draft Environmental Impact Statement (DEIS) for the navigation channel in 1988. The DEIS considered five alignments for the navigation channel through Ship Island Pass. Dredged material disposal was planned for ocean disposal (placement in an Ocean Dredged Material Disposal Site [ODMDS]). After continued review, evaluation, and discussion, USACE published a Final EIS (FEIS) in June 1989 for deepening and widening the Gulfport Harbor with subsequent placement via thin-layer and ocean disposal. This Draft SEIS will review the original FEIS and evaluate any new conditions that were not previously addressed in the 1989 FEIS.

As part of a public outreach program, the USACE invites you to attend a public workshop that will present the evaluation framework for the Gulfport Harbor Navigation Channel SEIS. The workshop will be held:

Tuesday, October 24, 2006
Open House 4 p.m. - 5:30 p.m.
Presentation 5:30 p.m. - 7:00 p.m.
19th Street Community Center
3319 19th St.
Gulfport, Mississippi



Navigation Channels and Disposal Sites

Gulfport Harbor Navigation Channel Draft Supplemental EIS

Public involvement is a vital part of the SEIS process: It provides stakeholders an opportunity to understand and comment on Federal projects that could affect them. Public involvement tools and activities for the Gulfport Harbor Navigation Channel SEIS will include: a public workshop, newsletters, an interactive web site, public hearings, and news releases. The public is encouraged to participate.

Purpose and Need

Every EIS has a defined purpose and need that frames the investigation and evaluation of possible alternatives. The purpose and need of the Gulfport Harbor Navigation Channel SEIS will be to study the issues of widening the navigation channel to the federally authorized dimension of 300 feet in the Mississippi Sound Channel and 400 feet in the Bar Channel.

Disposal options to be studied will include littoral zone disposal, thin-layer disposal, disposal in existing ODMDS, and disposal in a new ODMDS. The evaluation of beneficial use options will include island creation, beach replenishment, or other potential sites.

Status of the EIS

An EIS typically takes between 18 - 24 months to prepare. The SEIS for Gulfport Harbor Navigation Channel began in fall 2003, with a scoping meeting held May 16, 2006. A draft SEIS will be available for public review in December 2006, with the final SEIS completed in April 2007.

The Role of Cooperating Agencies

As part of the SEIS process, numerous state and Federal agencies are participating as Cooperating Agencies. Agencies on the team have special expertise or jurisdiction in areas that may be affected by the preferred alternative. The agencies will verify data of historic, existing, and projected future conditions of resources and participate in developing and analyzing impacts to resources.

Below is a selected list of the state and Federal agencies included on the team, the types of data they may provide, and their expected assistance in the SEIS process.

Agency/Responsibility:

US Fish and Wildlife Service - Evaluation of impacts on protected species, wetlands and aquatic resources

US National Marine Fisheries Service - Review potential impacts on Essential Fish Habitat in estuarine areas and protected marine resources

MS DEQ - State evaluation of impacts to water quality and issues of water quality certification

MS DMR - State evaluation of impacts to protected species, wetlands and aquatic resources and issues of Coastal Zone Management Determination

MS Port Authority - Review of impacts and benefits to the Port

"How Can I Get Involved?"

You can participate in the SEIS process by providing comments at any time during the preparation of the SEIS. Below is a listing of how and where you can provide your comments:

- Attend the public workshop scheduled for October 24, 2006 and provide comments on the evaluation framework for the SEIS process.
- Submit written comments on the Gulfport Harbor Navigation Channel SEIS Web Site: **www.usacegulfportnavigationeis.net**
- Mail or fax comments or questions to the U.S. Army Corps of Engineers SEIS Project Manager (see page 4).
- Provide written comments on the Draft SEIS that is scheduled for release in December 2006.

Gulfport ODMDS EIS

The USACE is assisting the U.S. Environmental Protection Agency (USEPA) in the preparation of an EIS to address designation of a new ODMDS. A public workshop will be

Gulfport Harbor Navigation Channel SEIS Schedule

Public Workshop	October 24, 2006
Draft SEIS filed and Available to the Public	December 29, 2006
Public Hearing to Discuss Draft SEIS	January 30, 2007
Final SEIS filed	April 6, 2007
Record of Decision	May 14, 2007

held October 24, 2006 at the 19th Street Community Center in Gulfport to discuss the Gulfport ODMDS EIS. This workshop will run concurrently with the Gulfport Harbor Navigation Channel EIS public workshop.

How Can I Get More Information?

Information on the **Gulfport Harbor Navigation Channel SEIS** process and supporting information can be found on the **Gulfport Harbor Navigation Channel web site**. The web site includes information about the SEIS process, bibliography, newsletters, press releases, and links to related web sites. You can also contact the Corps SEIS project managers:

Ms. Jennifer Jacobson and
Ms. Linda Brown
U.S. Army Corps of Engineers
Planning & Environmental Division
Coastal Environment Team
P.O. Box 2288
Mobile, AL 36628-0001
251/694-2724 or 251/690-3789
251/690-2727 Fax
Jennifer.L.Jacobson@sam.usace.army.mil
Linda.T.Brown@sam.usace.army.mil

Offshore Ocean Dredged Material Disposal Site Designation EIS

For more information regarding this EIS, please contact Ms. Jennifer Jacobson or Ms. Linda Brown, USACE, Planning & Environmental Division, Coastal Environment Team at:

P.O. Box 2288
Mobile, AL 36628-0001
251/690-2724 or 251/694-3786
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Linda.T .Brown@sam.usace.army.mil
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Mobile District

Planning & Environmental Division
P.O. Box 2288
Mobile, AL 36628-0001

www.usacegulfportnavigationeis.net

Public Involvement Management Strategy

Supplemental Environmental Impact Statement
for the
Proposed Construction to Authorized Depths for
Gulfport Harbor, Harrison County, Mississippi

U.S. Army Corps of Engineers

Mobile District

September 18, 2006

Contents

Section **Page**

1.0 Introduction

This Public Involvement Management Strategy (PIMS) has been prepared to support the Supplement Environmental Impact Statement (SEIS) for the Proposed Construction to Authorized Depths for Gulfport Harbor, Gulfport, Mississippi (Gulfport Navigation Channel). The purpose of this PIMS is to develop and guide the implementation of a public involvement strategy that will be used to inform and educate the general public and interested stakeholders about the Gulfport Navigation Channel SEIS process. The PIMS is composed of tools and activities, such as newsletters/brochures, a web page, a public scoping meeting, a public workshop, a public hearing, public notices, and news releases that will be used to communicate with the general public and stakeholders as the project moves through the SEIS process.

2.0 Project Background

The U.S. Army Corps of Engineers, Mobile District (the Corps) has conducted physical, chemical, and biological studies required to construct the Gulfport Harbor Navigation Channel to its federally authorized project dimensions off the shores of Gulfport, Harrison County, Mississippi. The Corps, in accordance with Section 102(2) (c) of the National Environmental Policy Act (NEPA), will prepare a Draft Supplemental Environmental Impact Statement (DSEIS) and a Final SEIS (FSEIS). The extent of the geographical coverage for the Gulfport Navigation Channel SEIS environmental analysis will include a 150-mile radius around Gulfport Harbor.

The Draft SEIS will be used as a basis for evaluating the alternatives to implement the authorized construction action of deepening and widening the Gulfport Navigation Channel to its federally authorized project dimensions in compliance with NEPA.

3.0 Project Issues and Stakeholders

NEPA is intended to ensure full public participation in the SEIS process, which includes the identification and evaluation of project specific issues. Public participation includes effective communication between all Federal, state, local agencies, and tribal governments, and other persons or organizations that may have an interest in the project. As part of the process, the public will be invited to attend a public workshop, and once the draft SEIS is completed, a public hearing.

A public scoping meeting was held on May 2006 to announce the commencement of the SEIS process and to gather any initial concerns or issues the public might have with the project. At the meeting, the Corps presented background information on the project and its purpose, the area of study, and the possible options available. The public was given an opportunity to ask questions and make comments concerning the project. Continued public involvement for the remainder of this project will be ensured through enactment of this PIMS.

Methods to reach the general public and interested stakeholders, in addition to the required public meeting and hearings, will include meeting announcements, newsletters/brochures, news releases to local print and broadcast news media, and a web site. Further public communications may also include: maintaining contact with public officials and agency representatives; ensuring that calls from the public are addressed in a timely manner; and contacting stakeholders, including placing notices of public meetings in stakeholder newsletters.

The Corps will be the lead agency for this construction to authorized dimensions process and the subsequent SEIS. Cooperating agencies will include:

- National Marine Fisheries Service
- U.S. Fish and Wildlife Service
- Mississippi Department of Marine Resources
- Mississippi Department of Environmental Quality
- Mississippi State Port Authority
- Mississippi State Historic Preservation Officer
- Mississippi Secretary of State Office

4.0 Public Involvement Tools and Activities

Public involvement is a vital part of the SEIS process: it provides the general public and stakeholders an opportunity to understand and comment on Federal projects that could affect them. There are many different methods used to involve the general public and stakeholders, however every public involvement strategy must include a public scoping meeting, a public workshop, a public hearing, and public comment, as well as legal notices and news releases. The public involvement tools and activities for the Gulfport Navigation Channel SEIS will include the following:

- A Public Scoping Meeting (held on May 2006)
- A Public Workshop
- A Public Hearing
- Newsletters/Brochures
- Legal Notices and News Releases
- Mailing Lists
- An Internet Web Page
- Compliance with Executive Order 12898, Environmental Justice and Executive Order 13045, Child Protection Requirements

Upon completion of the project, the public involvement documents will be included in the Administrative Record.

4.1 Public Scoping Meeting

A public scoping meeting, held in Gulfport, Mississippi, occurred in May 2006 to announce the commencement of the SEIS process and to gather any initial concerns or issues the public might have with the project. The Corps presented background information on the project and its purpose, the area of study, and the possible options available. All graphic displays and handouts were reviewed by the Corps prior to use.

A public notice was mailed to interested stakeholders and the entire general public mailing list thirty (30) days prior to the public scoping meeting. Notice of the public scoping meeting was advertised in the local newspapers. At the scoping meeting, the public was given an opportunity to ask questions and make comments concerning the project. A court reporter was present to transcribe the meeting.

A draft and final meeting summary, submitted to the Corps, was prepared, summarizing the results and comments received at the public scoping meeting. A hard copy of the meeting transcript was included in the meeting summary. This meeting summary will be posted on the Gulfport Navigation Channel SEIS web site.

4.2 Public Workshop

One public workshop, scheduled for October 2006, will be held to present the evaluation framework for the Gulfport Navigation Channel SEIS. The workshop will be an opportunity for the public to understand the initial steps in the SEIS process. During the workshop, the public will be presented with the preliminary range of alternatives that will be evaluated. Public comment will be solicited at this workshop on the scope and the level of analysis to be included in the SEIS. A court reporter will be present to transcribe the meeting.

The workshop will provide a general overview and reasons for the project; how a SEIS is typically organized; and how the general public is included in the SEIS process. The format for the workshop will be to present the project using graphic displays, such as maps and charts, which will be displayed on tables and easels. The displays will illustrate such things as the project area and boundaries, potentially affected areas, endangered species, and other topics representing stakeholder and agency interests.

Government representatives will open the workshop, with the project manager and other key contractor personnel present to facilitate the workshop and answer questions from the general public. All graphic displays and handouts will be reviewed by the Corps prior to use. The date for the workshop will be timed in order to incorporate the Description of Proposed Action and Alternatives (DOPAA).

The workshop, to be held in Gulfport, Mississippi, will last approximately 2.5 hours. Handouts, such as project description brochures and maps, will be provided to the general public and interested stakeholders. A public notice will be mailed to interested stakeholders and the entire general public mailing list thirty (30) days prior to the public workshop. The workshop announcement will also be posted on the Gulfport Navigation Channel SEIS web site.

A draft and final workshop summary will be prepared, summarizing the results and comments received at the public workshop. This workshop summary will also be posted on the Gulfport Navigation Channel SEIS web site. A hard copy of the meeting transcript will be included in the meeting summary.

The date for the public workshop will also be coordinated with the Gulfport Ocean Dredged Material Disposal Site (ODMDS) EIS, an EIS being prepared concurrently to the Gulfport Navigation Channel SEIS. Representatives from the Gulfport ODMDS EIS project team will be present at the workshop to answer questions and to help clarify the differences between the two projects.

4.3 Public Hearing

One public hearing will be held January 2007 in Gulfport to address the Draft SEIS. The format of the public hearing will include a presentation of the purpose and need for the project; a short presentation on how a SEIS is organized; the alternatives evaluated under the SEIS; and the purpose of the general public comment period. Graphic displays, including maps and charts, will be displayed in the meeting area. All graphic displays and handouts will be reviewed by the Corps prior to use.

Government representatives will open the public hearing. The project manager and other key contractor personnel will present the proposed alternatives, the evaluation framework for the alternatives, and the possible environmental effects of the proposed alternatives. A summary of the Draft SEIS will be presented. The general public and interested stakeholders will then be provided an opportunity to make oral comments on the proposed action.

A court reporter will record the meeting, and a draft and final summary of the public hearing will be prepared. The summary for the hearing will be posted on the SEIS web site. A hard copy of the meeting summary, along with a copy of the court reporter's transcript, will be provided to the Corps.

A public notice will be mailed to interested stakeholders and the entire general public mailing list thirty (30) days prior to the public hearing. A notice of the meeting will also be posted on the Gulfport Navigation Channel SEIS web site and in local newspapers.

The date for the public hearing will be coordinated with the Gulfport ODMDS EIS. Representatives from the Gulfport ODMDS EIS project team will be present at the hearing to answer questions and to help clarify the differences between the two projects.

4.4 Newsletters/Brochures

Another tool for public involvement that will be utilized for the Gulfport Navigation Channel SEIS will be the preparation and distribution of a newsletter/brochure. There will be three (3) newsletters/brochures produced for the Gulfport Navigation Channel SEIS, each providing information on project activities and status. The distribution of the newsletters/brochures will be coordinated with dates of the public workshop and public hearing. The newsletters/brochures will be mailed to the general public and stakeholder mailing list at least thirty (30) days prior to the scheduled public workshop and hearing. The newsletters/brochures will also be posted on the Gulfport Navigation Channel SEIS web site.

The newsletters/brochures will include information on the project, the proposed alternatives, public workshop and hearing dates, location of the workshop and hearing, the Notice of Availability, workshop summaries and transcripts, and other pertinent information. The newsletters/brochures will also provide contact information for the Gulfport Navigation Channel SEIS.

4.5 News Releases and Legal Notices

News releases and legal notices serve to notify the public of the status of an SEIS. News releases for the Gulfport Navigation Channel SEIS will be distributed prior to the public workshop, the Draft SEIS filing, the public hearing, and the submittal of the Final SEIS. A legal notice will also be published prior to the public hearing. The news releases will be issued thirty (30) days prior to the scheduled public workshop and the public hearing. Each news release will include the date, location and purpose of the workshop and the hearing. All public meetings will be held in the Gulfport, Mississippi area.

The news releases for the Draft and Final SEIS will be issued concurrently with the filing of each document. The news release for the Draft SEIS will include the Notice of

Availability of the draft document as well as the date for the public hearing. The news release for the Final SEIS will include the Notice of Availability for the final document.

The following list presents the total number of news releases and corresponding milestones:

News Release #1	Public Workshop
News Release #2/Legal Notice	Filing of Draft SEIS
News Release #3/Legal Notice	Public Hearing
News Release #4	Filing of Final SEIS

4.6 Mailing List

Interested stakeholders and the general public also participate in the SEIS process through inclusion in the public mailing list. Those included on the mailing list will be environmental organizations, Gulfport organizations, local agencies, state and Federal agencies, state legislative representatives and Federal congressional representatives, and waterway user groups. Others to be included in the list will be the news media and public libraries within the coastal Mississippi area, and those individuals who commented during the scoping process and/or during the public workshop and hearing.

The mailing list will be used as a source for the distribution of Notices of Availability for the Draft and Final SEIS as well as for the public meeting announcements, news releases and other notices and communications to the public. The distribution list for the Draft and Final SEIS will also denote the format in which these documents will be provided, either in hard copy or electronically.

The mailing list will be edited and updated periodically (and prior to the release of the newsletters/brochures) so that those individuals who commented at the scoping meeting, the public workshop, and public hearing will be included. The list will also be updated to include others who have expressed an interest in the project, as well as deleting those requesting removal from the list, changes in address, and undeliverable mail.

4.7 Internet Web Page

An effective public involvement tool is an internet web site which can assist and increase communication to the general public and stakeholders. This has proven to be a very efficient means of providing information on public workshops and hearings and serves as another method for the general public to provide comments. Other information, such as newsletters/brochures and project information, can be posted and updated to a web site quickly.

A web site for the Gulfport Navigation Channel SEIS will be created and will include a home page, information on the SEIS process, status of the project, and updates on public

involvement activities. The Draft SEIS and other support documents will also be posted to the web site. It will also provide the means for the general public and stakeholders to respond to the various submittals during the Gulfport Navigation Channel SEIS process. Other information that will be included on the web site will be meeting summaries, Gulfport Navigation Channel SEIS newsletters/brochures, Notices of Availability, the SEIS bibliography, press releases, and the project schedule, as well as links to other web pages. The web site will also include updated information on existing and collected chemical, physical, and biological data and the status of comprehensive study products on the project area. A link to the Gulfport ODMDS web site will also be created.

The web site, created and maintained by the contractor, will be compatible with the Government internet server. It is expected that there will be a total of eight updates to the web site during the life of the project.

4.8 Public Officials

One tool, that will be used to ensure lines of communication are kept open, will be to keep public officials up-to-date on project developments throughout the Gulfport Navigation Channel SEIS process. This may include regular telephone contact, emails, and/or meetings with public officials. Prior to the public workshop and hearing, public officials will be contacted and invited to attend. Communications with public officials will be handled by the Corps with the assistance of the contractor.

4.9 Executive Order 12898, Environmental Justice and Executive Order 13045, Child Protection Requirements

Another component of a SEIS, as part of the public involvement plan, is ensuring that two executive orders, Executive Order 12898 and Executive Order 13045, are followed. Executive Order 12898 requires Federal agencies, to the greatest extent possible and permitted by law, to address environmental justice in minority and low-income populations, when Federal actions are involved. Executive Order 13045 was issued to protect children from environmental health and safety risks.

To ensure compliance with these executive orders, representatives of minority and children's groups will be contacted and asked to identify issues of potential interest. They will also be asked to identify other groups or individuals that should be included on the general public mailing list.

To comply with these executive orders, all public notices, documents, and meetings will be concise, understandable, and readily accessible to the public. These executive orders for environmental justice and child protection requirements will be explained at the public workshop and hearing and in the SEIS newsletters/brochures.

Appendix A: PIMS Schedule for the Gulfport Navigation Channel SEIS

Activity	**CY 2006**
Newsletter #1 & Public Notice #1	
(mailed 30 days prior to workshop)	25 Sept 2006
News Release #1 (mailed 14 days prior to workshop)	11 Oct 2006
Public Workshop	***25 Oct 2006***
Newsletter #2 & Public Notice #2 (30 days notice)	31 Dec 2006
News Release #2 Notice of Availability	
(14 days notice -Federal Register)	11 Dec 2006
Draft SEIS to the Public	29 Dec 2006
	CY 2007
New Release #3 (mailed 30 days prior to meeting)	16 Jan 2007
Public Meeting	***30 Jan 2007***
Newsletter #3	6 Apr 2007
News Release #4 Notice of Availability	
(14 days notice -Federal Register)	6 Apr 2007
FSEIS Public comment period	9 Apr – May 9 2007
Final Record of Decision	**8 June 2007**

ORIGINAL

ENVIRONMENTAL IMPACT STATEMENTS

GULFPORT ODMDS AND HARBOR CONSTRUCTION

GULFPORT HARBOR

HARRISON COUNTY, MISSISSIPPI

PUBLIC ~~SCOPING~~ Workshop MEETING

HELD AT THE

19TH STREET COMMUNITY CENTER

GULFPORT, MISSISSIPPI

OCTOBER 24, 2006; 5:30 P.M.

APPEARANCES:

Russ Short (CH2M Hill)

Elizabeth Calvit (CH2M Hill)

Kira Zender (CH2M Hill)

Rob Price (CH2M Hill)

Jeremy Scott (CH2M Hill)

Jennifer Jacobson, Mobile District

Rhonda Wall, Mobile District

Linda Brown, Mobile District

Marilyn Phipps, Mobile District

Monica Carley, Mobile District

I N D E X

P R O C E E D I N G S

MS. JACOBSON: Hi. Thank you for coming. I'm Jennifer Jacobson with the Corps of Engineers in Mobile. I am the environmental co-lead on the two EISes that we're going to be talking about. The first one is Gulfport Channel Construction, the authorized dimensions. And then the second EIS will be for the Ocean Dredged Material Disposal Site. The first one is a supplemental EIS to the late 1980s EIS. And the second one we're designating the new ocean dredged material disposal site.

I'm going to hand the -- or have the presentation be given by our contractor, CH2M Hill, Russ Short. And if you haven't already -- which I think everybody has. But there are posters that you can look at. And then we also have a court reporter, that if you don't -- we have comment sheets that you can fill out and send in to us. However, if you don't feel like filling out a comment sheet, you can speak with the court reporter after the presentation.

MR. SHORT: Thanks, Jenny. Can everybody hear me? I'd rather walk around and punch buttons, and it makes it a little easier.

Thank you all for coming tonight. Sorry for the misinformation about the start time and everything. But I'm glad you all could stay around and provide us input on our presentation.

What I'd like to do tonight is to talk to you about the studies that we conduct for these different types of projects and the information that we collect that goes into preparation of the different environmental impact statements. And there's a variety of different studies, including sediment analysis, collection of animals in the area where the dredged material disposal sites will be located. And I'll walk you through that process so you can see the kinds of information that's used in the overall decision process.

As Jenny had mentioned, there are two projects that we're going to be talking about tonight, the navigational channel evaluation and designation of an ocean dredged material disposal site.

The navigational project improvement elements include issues that have been discussed over the past several years. I know that there was a feasibility study done in the late 1970s that began to

look at this very issue that we're talking about today. The improvements have been considered, both widening and deepening of the channel, the harbor and the turning basin. The present project that we're talking about today, though, only addresses the channel widening.

These are the statistics on the existing channels. The Mississippi Sound Channel is 220 feet wide and 36 feet deep. The Ship Island Bar Channel is 300 feet wide and 38 feet deep. There's primarily a single-lane traffic flow, and so there can only be ingress and egress of one ship at a time.

This figure just gives you an idea about the orientation of the ship channel, some of the key islands, Cat Island and Ship Island, and the existing disposal sites that parallel the ship channel itself. And those are used on a regular basis for maintenance dredging disposal material.

What I'd like to talk about now is the investigations that are used to characterize the sediments in the shipping channel and in the areas adjacent to the shipping channel to make sure that we understand the nature of those materials and we can

figure out the best place to put that material and make sure that there's no or minimal environmental impacts.

The Corps of Engineers performs a variety of different types of investigations on the sediments in advance of the dredging activities. There's a guidance document that they follow, and that guidance document was prepared in conjunction with the United States Environmental Protection Agency. And in that document they lay out a variety of different types of tests and organisms that need to be used in those investigations to make sure that they understand the results of those studies and what impacts those will have on the environment.

The investigations look at chemical and physical conditions of the sediments. And the investigations also evaluate disposal activities and what impacts that will have on the marine biological community.

The investigation for the Gulfport Navigational Channel Study took place in July and August of 2004. There was an evaluation of the sediment chemistry, of the local water quality

chemistry, of the toxicity to the biological community, and evaluation of bioaccumulation. And bioaccumulation means what will happen to an organism that is exposed to chemicals that may be in an environment. In other words, will those organisms take that material up and deposit it in its body? And so there's a laboratory study that you can use to figure out if there's material out there and you're going to take it out and put it somewhere; what will happen to those organisms in that area where it's disposed.

Evaluation of the sediment chemistry was based upon vibracore samples that were collected through a vertical profile in the potential dredge prism. And the dredge prism is an area that parallels the channel itself, and you figure out where the cut is going to go so you understand what material is going to come out. And so the sampling was done in the channel center line as well as in areas that parallel the channel itself.

The vibracore is a device that takes a rod and it penetrates it into the bottom of the sediment by vibrating it back and forth. And the samples in

the channel itself were penetrated down six to 12 feet below what's known as the sediment/water interface, and that's where the water meets the bottom.

In the channel widening area those samples went down 12 to 21 feet. Since the material had never been removed before, those cores itself had to be deeper because it has to get down to the bottom of the dredge prism.

This is a list of the compounds that were analyzed in the laboratory to find out if those were present in the sediments. And these particular compounds historically are understood to cause problems in the environment. And so there's a laundry list of these that are included and identified in that inland testing manual, and samples are taken along that channel center line, they're sent off to a laboratory, and those analyses are performed and provided back through a contractor.

There's an evaluation of water chemistry as well at the site. And the collection of those samples are collected at the surface, the mid depth, which is between the surface and the bottom, and then at the bottom, and a sufficient quantity of water is taken

and sent off to the laboratory for chemical analysis. In addition, there's a vertical profile that's taken with in situ meters so you can read from the surface all the way to the bottom. And you look at temperature, salinity, pH, turbidity and dissolved oxygen. Those are some key characteristics that are used to help understand what the existing conditions are like in the natural setting.

Once again, the water chemistry, these analyses parallel the same analyses that were conducted on the sediment chemistry. And the only difference, of course, is the sediment chemistry had a particle size analysis. And what that does is it looks at the sediments and it breaks down the different size classes of that sediment throughout that vertical profile. And that will help figure out some of the disposal options that might take place with that material.

In addition, there are a couple of different laboratory tests that are called toxicity tests. And these tests are to take the material that's in the sediments and use it in a laboratory to expose it to test animals. The acute water column test takes that

material and it shakes it first. And the purpose of that is to release any chemicals that might be contained in the sediment, put that into the water column, and then the water is used in the laboratory, and animals are exposed to that to find out what impact that will have. If that sediment is released through disposal options and it floats down through the water column, that material could be released, you could have chemicals in there. You need to know what that is. And that's the purpose of this test.

The three test organisms that were used were sea urchin larvae, an opossum shrimp and a sheepshead minnow. Those three test organisms have been used for 30 or 40 years. There's a very deep wealth of knowledge on how they react to different types of chemicals. Those organisms are approved by EPA for the testing process. And the scientific community has confidence that they understand what those results are like when they come out of a laboratory.

Ten-day-old sediment test, an actual plug out of the bottom is taken of sediment. That's put into a test chamber in a laboratory, and organisms are exposed to that sediment. And there was a polychaete

worm which lives in the bottom itself and there's an amphipod, which is a shrimplike organism that lives on the sediment and sometimes can burrow down into the surface of the sediments. Once again, those are approved by EPA as test organisms that have good background information in terms of how they're going to respond to the chemicals.

The next study then is a bioaccumulation test. This is a 28-day laboratory exposure to the sediments. Once again, a plug at the bottom is taken, it's put into a test chamber, the animals are put into that test chamber, and after 28 days the number of animals that are alive are counted. And then the animals that are there that are alive are sent through chemical analysis to find out which chemicals might have accumulated in the tissue of the body. The sand worm and the clam are the test organisms. Once again, these are approved by EPA, and they have shown a very good reliability in use, and there's a high confidence that the results that come out really demonstrate what chemicals might accumulate in the sediments.

The test results then, the toxicity test to the sea urchin larvae, the opossum shrimp, the

sheepshead minnow, all were acceptable. The whole sediment tests were all acceptable. And bioaccumulation, there was only low levels of metals that occurred in the clam and the worm. There were no PCBs and no dioxins and furans. Those last two groups of compounds are ones that you would expect to show up in concentrations that could be harmful, and they're classic compounds that are manufactured through the chemical processes. And that's of high interest in the environmental field.

Potential impacts, then, of the channel alignment assigned a 50-feet width to each side of the channel. I'm going to show you a figure in a minute that's going to show you an area near Ship Island, because I know that that's of interest with the channel widening. Also there are some areas in Mississippi Sound where the water depths are shallow, and I know there's some interest up there as well.

So this figure, you can see near Ship Island, south of it -- and this dotted line right here represents 50 feet on the east side of the existing channel boundary. And you can see that that area there is about 32 feet. That location is right here.

And the numbers that you see here actually are recent bathymetric surveys that were conducted by the Corps of Engineers. And those results were put into a GIS system so that we could display that information and figure out what the bathymetry looks like along that channel center line.

In this particular insert -- and that occurs just north of Ship Island Channel -- you can see that the water depths are 19, 17 and a half, 16 feet, about 27 and a half to 31 and a half inside the channel itself.

Up in the Mississippi Sound the water depths get a little bit shallower outside the channel center line, although it's 39 feet, and then it moves up to 25 feet right at the edge of the boundary, and then it goes off to 14 and 13 and a half feet.

The next series of slides I'd like to go through and give you just a brief indication about the kinds of studies that we performed for designating the ocean dredged material disposal site. There's a specific set of studies, once again, that has to be performed to make sure we understand what the existing conditions are like. And we know then if the material

is placed out there, what the potential impacts to that environment might be.

We have a couple of stars here, too. These two guys in the front row, they were actually part of the sampling team.

Designating an ODMDS, then, the process involves the Corps of Engineers and the EPA, and the whole process is defined in 40 CFR 220 to 229. The Corps identifies prospective areas, evaluates the environmental conditions and makes recommendations. There's a procedural guide that is used to identify what those surveys are that have to be performed and the analyses and the interpretation that has to be performed. An EPA then looks at those findings and the recommendations, and then ultimately they're responsible for designating the site.

Once the site is designated and it's put into use, then there is a monitoring program that has to be put into place. So we understand that once material goes in there, you come back after a couple of years, five years, I think it is, and you look at what those impacts were like and you can track it over time to make sure that the assumptions and the impacts

that you assumed in advance were going to take place actually are taking place. And if there are changes there that need to be made, then those will be incorporated as time goes on.

In identifying prospective areas, one of the first steps is trying to conduct a zone of siting feasibility, where out there can you actually place an area that could be suitable for disposal of dredged material. And within the guidance, there are general screening criteria that you can see here. And those are some of the first things you have to use to be able to figure out, well, gees, do we go way out into the Gulf of Mexico, 100 miles offshore, or do we go three miles offshore and we can put it there. And we have to look at all of those factors to try and figure out what makes the most sense. And, of course, economics comes into play because you can't take it all the way out into the deepest water and still sometimes have a good viable project. There's a lot of material, and economics just makes it impossible to happen.

The zone of siting feasibility is based on existing information. It includes a review of

existing disposal sites in proximity to the project area. It's based on a screening of the general criteria. And when we began looking at the ODMDS for Gulfport, the capacity that we were looking at was 95 million cubic yards, which is -- that was to address both the deepening and widening of the Gulfport channel.

Some of the primary constraints, then, that we have to take into account are impacts to the bathymetry and navigation, impacts to marine organisms, and the fate of the dredged material in the ODMDS. When you put it out there, where is it going to go? Is it going to stay there in one place? What happens to it? Those are some questions, I think, that everybody has. And we have some computer simulation models that we ran to figure out once that material is placed out there, where do we think it's going to go. And I'll go through those in a little bit.

This is an example of the zone of siting feasibility that was conducted for the new offshore Gulfport ODMDS. It's in that figure there as well. But one of the things that we focused on, of course,

is this area B. And that's where the studies were conducted that I'll be talking about in a minute.

The site investigation, the purpose is to define baseline conditions. There were two data collection cruises, one in the spring and one in the fall. And these, by the way, sandwiched Hurricane Ivan. So we were out there, I think it was in April 2004, and then late October/early November of 2004. So we were able to see some of the changes in that area that took place as a result of the passage of the hurricane. And, of course, everybody knows that the Chandelier Islands were affected by that hurricane, and some of the material wound up over on the western side of the area that we were looking at.

The parameters that we were evaluating were water quality, bathymetry, sediment quality and marine organisms. And we were sampling for infauna and epifauna. Infauna are those animals that live in the bottom itself, worms, sometimes crabs burrow in there, those kinds of animals. Epifauna, those are animals that live on the surface of the bottom itself. Those can be crabs, those can be starfish, those can be shrimp that will walk on the bottom, all kinds of

organisms like that. And those are animals -- the infauna are ones that are not likely to be able to get away from material that's placed there. Epifauna they can, but sometimes their movement is limited. So those are ones that we wanted to focus in on to make sure we understood what the conditions were like there and what would be impacted.

I mentioned before about placing the material out there and understanding what's going to happen to it. We ran computer -- two types of computer models. One is MPFATE and the other is LTFATE. MPFATE is called multiple placement fate. And that means over the course of a month, a day, a year, how many barges go out there, how much material is placed in the location, and then what happens with the buildup of that sediment on the bottom. This particular model looks at that buildup in the absence of things like waves and currents and tides. The LTFATE, the long-term fate, takes those parameters into account. And so when I show you the figures that I'm going to display in a minute, you'll see there's a slight bit of difference when we look at the long-term fate compared to the MPFATE.

These figures -- both of the figures you see here, this is multiple placement fate. He had a six-month timeline and one-year timeline. And this, like I mentioned, is in the absence of any currents and tides and waves. And you can see as the material gets lighter, that means the water depths are shallower. And this, of course -- the outer side boundary is about a ten-square-mile area. And so you can see that over time it begins to build up. Let's see. The water depths initially were -- this is a 48-foot contour out there. That's 46 feet (indicating). This is 44 feet in here (indicating). So you can see that we've got -- this is starting to show 44 feet. And that's after a year's worth of placement of material. So you can see that you start to build up about four or five feet on the bottom itself. And that's without -- that's in the absence of tides and currents.

Now, this series of pictures show you MP fate at six months and then the long-term fate at six months. And this includes tides, currents, waves. And you can see there's a difference in the distribution of the material. If you'll look along

this boundary here (indicating), the material has started to move out of there. This material here is moving as well (indicating). We're getting a little bit of buildup there. But generally you can see that it looks like it's moving out of the ODMDS box.

So right now we're in the midst of preparing two EISes. As Jenny had mentioned, one of them is a supplemental EIS. That's for the navigational channel. And the other one is a regular ol' EIS for ocean dredged material disposal site. The purpose of our workshop is to obtain public comments, ideas, and we're looking at trying to figure out what the best alternatives are for disposal of dredged material. And if there's any perceived impacts that you have, we want to be able to capture those. Those will go into the public record. They'll become part of the administrative record. They'll be factored into the reports that we produce and everything. So it's important that we're able to get feedback from you. And we certainly appreciate you coming.

With that, that's the end. So does anybody have any comments or statements? We have a court reporter here. Elizabeth, is this microphone working,

too?

MS. CALVIT: No. But they can talk loud enough.

MR. SHORT: Anybody? Yes, sir.

MR. BECKER: Yes. My name is Tom Becker. I'm a charter boat captain, also president of the Mississippi Charter Boat Captains Association.

We are not against any business. We are all businessmen ourselves. But our concerns are your long-term effect. The area you showed is an area just north of a reef we designed and built out of public funds, grants, wherever we could get the money to build a reef. And that reef was put there for a reason. There's a lot of red snapper that come out of the bay, come out to a channel at the north end of Chandelier, and they go to that reef. And that was our intention.

Well, Katrina has really devastated these reefs that we have built. They have silted over the material we have. You had a barge. Now you may have the cleats standing up, that's all you see. We're trying to figure out what we can put down to stop this. And you're in an area with your proposed

material that we are afraid will have an adverse effect on fishing in that area, silting back over, putting a chance of more material -- we don't know which way the currents are going to flow during any hurricane. And the site scan we've done, we're seeing huge silting over pictures from the material.

Our industry is fighting for its life right now. And we cannot afford to lose fish because we're fighting the National Marine Fishery right now. It wants to put us to two fish of red snapper per person on a trip. We're having to charge more to get out there. People aren't going to pay to catch two fish per person. We're afraid this is going to go into effect the first of the year. This is really going to devastate us. We never seem to get anything back when they take it from us. So that's a major concern with us.

There's a lot of boats that are up for sale because we had hoped -- gone to the congressmen and to the senators asking for help for the fleet industry -- I'm not just talking Mississippi, I'm talking the whole Gulf of Mexico -- to get help from Wilma, Katrina and Rita; in one year devastated a large

percentage of the charter boats. We are trying to get our fleet back on the ground, and we don't need to lose anything.

Two areas that we noticed, one was done by dredging the Gulfport Ship Channel a few years ago. You used a hopper barge. They came outside of Ship Island, they opened up their hoppers. We watched them. We used to come out to Camille Cut, fish approximately three miles out, we'd dump the lines over and start fishing. It doesn't do us any good until we get down to the channel now. For some reason that material has made that area a dead area.

Off of Pascagoula, they came out of Pascagoula Ship Channel, turned to the southwest, dumped it over there. That area is now dead. Why we don't know. But we're not catching any fish there. We might as well not even have our lines in the water.

So we're trying to protect and look at a long-term problem that could happen with this if it's placed in the wrong area. So where you're looking at is not in our best interest because we're not going to be able to run over off of Pascagoula to our reefs that we built. That would be our only reef left to

maybe catch a snapper or two. Otherwise it's going to be -- they're not going to pay that kind of price to run and catch two fish.

So please look at where you want it. And if there's a reef already permitted there by you, please don't put any material close by it that possibly could cover it back up. Thank you.

MR. SHORT: Thank you. Yes, sir.

MR. ANDRE: My named is David Andre. Did you do any study of the fledgling fishery or only the benthic organisms?

MR. SHORT: You know, we looked at the fisheries that are out there. We have not collected any fish per se. But we certainly look at utilization of that habitat by commercial fisheries.

MR. ANDRE: In the testing that you did of the potential dredged matter -- I forgot the word you used now instead of spoils.

MR. SHORT: Materials.

MR. ANDRE: Materials. It looked like the reports were -- essentially that you didn't find anything that would render the dredged materials unsuitable for beach fill or other purposes; could we

conclude that, that you didn't find -- only trace metals and no toxins and the other things that you --

MR. SHORT: Yeah. I didn't see anything there that would pose any harm.

MR. ANDRE: So nothing has to be treated or that gets deposit in other places would lead to a detriment of the benthic organisms, at least?

MR. SHORT: It depends on the location that it's going to go. You'd have to look at the material and figure out the particle sizes. You might have to separate some of the material out to make sure you have the right type of material to be used beneficially. But, you know, that's a physical process. But you wouldn't have to remove any chemical contamination, if that's what you're asking.

MR. ANDRE: Of the core samples that you took, did you do that along the whole length of the proposed widening?

MR. SHORT: That's correct. It went from Gulfport Harbor to the end of Ship Island.

MR. ANDRE: Could you characterize the percentage that was sand and the percentage that was finer sediments? Is that part of what you do to know

how much mud is there, how much sand is there of what is proposed to be dredged?

MR. SHORT: That information will be in the report. I don't have that off the top of my head right now. But certainly in the Environmental Impact Statement, that will be included.

MR. ANDRE: My experience has been, just from anchoring, usually -- a lot of the bottom is sandy, but there are places that there is mud. And I was just curious as to what was going to be dredged. That information will be available after you summarize the findings of your core samples?

MR. SHORT: That's correct.

MR. ANDRE: You said that originally the depth of the channel was proposed -- it was proposed to be deeper. Now you're only addressing widening the channel. Who makes that decision? I know one is 4 million cubic yards and the other is 95 million or something. Obviously it's a huge difference. What group -- is that the Corps of Engineers decision, that it's just too expensive to make it deeper?

MS. JACOBSON: Actually Congress directed us to look under the supplemental emergency funding for

widening of that channel. So that's how and the reason why we did only widening at this point.

MR. ANDRE: So Congress said that's too much, we can't afford that?

MS. WALL: Actually it's -- the only authorized portion of the work is widening the channel. There's not been any authorization from Congress about deepening. So the supplemental is only to pay for the authorized project.

MR. ANDRE: Is that something that has been funded or will be funded?

MS. WALL: There were supplemental funds for the authorized projects on the Mississippi Coast.

MR. ANDRE: I'm just curious. I don't know. We all contribute to that, so I was just curious as to how that was decided that it was too expensive to make it deeper.

MS. WALL: There's, I think, a desire by probably the Gulfport Harbor folks to get some deepening. But we have to go through the whole feasibility study to get to that point.

MR. HILTON: The original deepening project approved and authorized by Congress was 36 feet, 400

feet on the outside channel and 300 on the inside. When they did the feasibility studies and the cost benefit analysis, they found out that Gulfport couldn't qualify. The cost benefit has to be one for every dollar they spend, they meet that dollar. That's the minimum. And we couldn't meet that to get the wider channel. So the powers that be at the time decided that we were desperate for deeper water and we would live with the original width. Now they've come back -- we've always wanted the width, but that was what we were -- Congress said we could have. And the Corps withheld it because the cost benefit, it wasn't -- you're shaking your head. But I was there. I know the Corps -- I say the Corps, but all they do is provide the numbers. I'm not trying to point fingers. I'm just -- the way it fell out historically was when they came up for our review and determination to find out if it was feasible, it was feasible to give us the deep water, but we couldn't -- the government or whatever couldn't justify widening it at that time because the business just wasn't there. Right or wrong, that's what happened.

MR. ANDRE: But this project is to widen and

not deepen?

MR. HILTON: This is to give us everything with the original project. That's why it's a supplemental environmental impact statement and all that stuff.

MR. ANDRE: All right. Well, I also have a comment about the proposed -- the proposal that is being considered to deposit the dredged material along the channel in the Mississippi Sound. This has been done traditionally for maintenance dredging to the detriment of the water depth to the point that in places, without proper attention being paid to what was being deposited where, they actually dredged an island just to the southwest of the mouth of the port. This was years ago, but it has occurred. But they have used the west side of the channel for dredged spoils for a long time historically over the last 30 or 40 years. And that water has always been shallow to the point that if you didn't know exactly where to cut through, you can't go from Gulfport to Long Beach without going out to the Intracoastal Waterway, which is halfway to Ship Island.

I would be opposed to any depositions being

made immediately outside the harbor, which is one of the areas that's shown in the flier that was circulated, and probably anything inside of the Intracoastal Waterway would well be put somewhere else.

Two reasons for that. One, it limits navigation of recreational craft, particularly sailboats that I'm interested in. And it doesn't seem reasonable to me to put those spoils immediately alongside of the channel because the strong eastward flowing tide would seem to me, from just a sailor's point of view, to push those spoils back into the channel. Further out, perhaps, they would be carried -- the spoils would tend to be carried southward as the flow of water that comes from Lake Warren and Lake Pontchartrain flowing eastward, it turns south and goes out through Ship Island Pass. So it would seem to me that spoils in that area were not likely to go back into the channel whereas those placed closer to shore inside of the Intracoastal Waterway would be redeposited back into the channel bottom. So I would like to see a study or perhaps it eliminated as a potential spoil deposition inside of the Intracoastal

Waterway on the east and the west side of the channel. You don't have to agree with it, but that's what I would like.

MR. SHORT: No. We're looking for comments. And we certainly appreciate that. Thanks.

MR. DONICOLA: I agree with him 100 percent.

MR. SHORT: What's that?

MR. DONICOLA: I agree with him 100 percent.

MR. SHORT: Yes, sir.

MR. HILTON: My name is Rusty Hilton. I'm a pilot. I work on the ships in and out of the Port of Gulfport.

One of the things that I'm concerned about about a new disposal site is the distance off the channel where the harbor dredges and stuff would be able to make -- to utilize it. I did a quick calculation, and from the first turn buoy 20 in the channel, which would use hopper dredges to dredge that, traditionally they've used hopper dredges, it's roughly 12 miles to your new disposal site. Assuming a dredge does 12 knots, that's an hour. It takes less than an hour to fill up a hopper dredge. So he's got to run two hours to dispose of the spoil that he's

taken up in less than an hour. And so that lengthens the time that it requires to dredge significantly, I would estimate three times. But, I mean, I'll give you that it could be two and a half or two times. And the Port of Gulfport is continually fighting this cost benefit stuff for new dredging and stuff like that because we have to pay a cost to that. And to drive the cost of the dredging up ahead of time seems to me to be shortsighted.

Now, I talked to Jennifer, and one of the considerations to mitigate that would be to mind the spoil sites that are already being used and dump them out in the new site and therefore -- and utilize the ones that are closer. That certainly, to my way of thinking, seems to be a more economically feasible way of doing it. But that is a serious issue. Not only is it a serious issue for the hopper dredges, but if we use that site for any kind of towboat/skow barge operation, you also have weather.

So I know that that's one of the things that y'all looked at in your criteria, but I would certainly suggest that more study -- not necessarily more study but a sharper look with regard to cost.

Because we've got -- in order to get a deeper channel or a wider channel, a new project, we've got to be able to justify the cost benefit, the cost benefit to us, the taxpayers, but also the cost benefit to the port. And anything that drives up the cost of the dredging has to be looked at with a very sharp eye.

MR. SHORT: Thank you. Yes, sir?

MR. BODDIE: My name is George Boddie. My family owns approximately 60 percent of Cat Island, probably. And I very much support the Port of Gulfport and Gulfport Ship Channel because I see the deepening and the widening as an opportunity for beneficial use. But the thing that concerns me about it is the fact that in 1984 the Corps of Engineers, Mobile District, did a general design memorandum and Environmental Impact Statement that was about that thick (indicating). And one of the things that was very clear throughout the EIS and the GDM was that the material in the water zone, which is typically one and a half miles north of Ship Island and one and a half miles south of Ship Island, would be beneficially placed in the literal zone southeast of Cat Island to sustain the system. That was one theme that was

consistent throughout both documents.

And the captain that just left pretty much verified, which is true, that since 1984, the methodology the Mobile District has used to maintain the barge channel has been the hopper dredge. The hopper dredge picks the material up, hauls it off and dumps it in a 45-foot hole. It takes a 27-foot wave to do that. It's basically gone. It's robbed from the literal system.

And in a post-Katrina world, I don't see how the Corps could even consider hauling that bar material offshore to basically waste it. We're in a different world and you're talking about benefits and costs. You've got a three-and-a-half-mile-wide cut in Ship Island right now that basically puts the City of Biloxi on the Gulf of Mexico. Now, how you could even consider wasting that material offshore is inconceivable to me.

The New Orleans District -- I work in Louisiana with builders who use -- they've done extensive work with the New Orleans District. But within their base cost, within their standard dredging cost, no supplemental funds, they pump material from

Mississippi Gulf Outlet to Breton Island, which is approximately three and a half miles. If you're in the Gulfport Ship Channel and you go three and a half miles east or west, you could have unbelievable opportunities for beneficial use. And your ratio -- not only do you need to consider the initial cost of dredging it, but you need to make sure you have enough money to beneficially use the material to sustain it throughout whatever the life of your project.

Dauphin Island property owners just recently settled a case in federal court. The Mobile District was at the table basically saying that we realize our sins, we're going to beneficially use the material from this point forward. And that's the reality here. I mean our islands are basically being starved to death by your methodology. It's got to change. It's going to change. Thank you.

MR. SHORT: Thanks. Any other comments? Yes, sir.

MR. SKRMETTA: I'm Louis Skrmetta with the Ship Island Excursion Boats in Gulfport. And we're in the business of working with the National Park Service, providing ferry service for Ship Island and

Fort Massachusetts. I just wanted to mirror what George said about utilization of that good sand, that quality sand that's out there near the barrier islands, specifically West Ship Island. I'd like to see if there's any way the Department of Interior can work with the Corps of Engineers to fill in the Ship Island cut at this point. Because it's gone from a quarter of a mile to 3.5 miles. Like he said, we're losing East Ship Island at this point. And it will probably disappear into the sound in the next ten years if we don't do something drastic. And I know the park service has some regulations and some policy against this type of activity. But I know in the past they have used the sand to restore Fort Massachusetts on the western tip of West Ship Island.

So I'd like the Corps and the National Park Service to get together to look at the possibility of doing something that would be possible or feasible and wouldn't be a problem environmentally or create diverse problems as far as transporting this material. I know it would probably be expensive to do this, but I think, like George said, in the long run, it's better than just dumping it offshore and losing

it forever or destroying these fishing grounds that Captain Becker mentioned earlier.

Also I'm very opposed to any more maintenance dredging spoil dumped anywhere near the area between the Intracoastal Waterway and the Ship Island -- pardon me -- the Port of Gulfport on the west side of the channel. For years our operation used that side of the channel to navigate. I draw about five and a half feet of water with our boats. At this point I don't go over there anymore. You can't go over there without going aground or hitting obstructions or logs. The maintenance dredging from the dredging companies has been deplorable. There are hot spots all around there where pipelines break and they dump -- create these sandbars. At this point we don't even go over there on the west side of the channel anymore. It's too bad because it was a once usable navigation area for boaters.

I'm definitely opposed to anything on the east side of the channel. Because when a ship comes down the Gulfport Ship Channel, which we use every day on our route, we have to get out of the channel for the ships. If I have to get outside the channel and

go into a spoil area that's four and a half feet deep, I'm going to have a problem. So I just want the Corps to look at that very carefully. I've seen boats go hard aground out there, tugboat traffic, I've heard them on the radio, shrimpboats going aground out there. The last time they dredged the channel, I think it was about 2000 -- I can't remember the last time they did the extensive dredging work out there. But I know personally captains that have gone aground out there. And we avoid it like the plague. And that's not good. I don't think the Corps should be creating hazards to navigation.

And I appreciate the comments today. I will be submitting some additional comments in writing. Thank you.

MR. SHORT: Thank you. Yes, sir?

MR. ANDRE: I would -- similar to what I said -- and I would like to endorse what he said, somewhat in opposition to the captain who works for the port. It may be more economical to dig the channel and dump it on the side. But if it takes that to make the port viable or to make the financing viable, then we just have to look at the whole thing

again. Because it's important that we have the port, but I don't think it should destroy the navigation and recreational potential of the Mississippi Sound by having sandbars between here and Ship Island on either side of the channel. And that has happened in the past, as Louis can attest in his daily trips to the island during the warm season, at least. And it needs to be eliminated as a possibility or as a consideration, in my opinion, of putting spoil or dredged materials along the east or west side of the channel.

MR. SHORT: Thank you. Other comments? Yes?

MS. GILLETTE My name is Becky Gillette. I'm with the Sierra Club. One concern I have is, from my understanding, most of the studies you did were in 2004 before Hurricane Katrina. I don't think that anybody knows for certain how much things have changed out there except to know that they have changed a lot. The pollution transport, how much pollution was transported in the storm, how much did things change as far as the particle size.

But the other thing that has changed a lot

is the need for this project. And I feel that you need to go back and look at how much traffic has decreased going into the Port of Gulfport right now and if this project can still be justified by the amount of traffic that's going in there. I was talking with Captain Becker earlier, and he was saying that over in Pascagoula, routinely you've got six or so ships there waiting to unload. And yet you're not proposing this sort of widening thing over in Pascagoula, to my knowledge.

And so I'm concerned by -- I mean 95 million cubic yards is a huge amount of sediment to move and put somewhere. And if it's not necessary at this point, I just think you need to go back and look at some of those root economic considerations.

MR. SHORT: Can I interrupt for a second? This is only talking about 3 to 4 million for the widening.

MS. GILLETTE: Pardon?

MR. SHORT: I said it's only 3 to 4 million for the widening.

MS. GILLETTE: Oh, okay. What was the 95 million? For deepening as well?

MR. SHORT: That's for the whole channel, widening and deepening.

MS. GILLETTE: But the other thing is that I would like to request that you look into the issue identified by Captain Becker about the previous stretch of spoil areas and why they are not supporting the fish life anymore. In order to better understand this process of what needs to be done now -- I think you said that if you went back a couple of years, you would look and see whether it was doing what you thought it should. I think that's pretty serious. So I think what he's identified there needs to be looked at.

And the other thing is I understand that the Corps of Engineers has received 10 million dollars to do a study of coastal erosion in Mississippi. I would hope that you would coordinate with whoever has been hired to do that study and consider the comments made here for beneficial use of dredged spoils. In combining this with whatever the program is -- I believe that Governor Barbour has asked for -- is it either 6 or 10 billion dollars to do coastal armory and coastal restoration projects. And again, it would

make no sense to do this project and basically throw away the sand or the sediment and then come back in and throw billions of dollars at a problem that might be solved -- best solved or at least beginning to be addressed through this project.

And I guess I would just like to say when I first saw the pictures of the barrier islands that they have at the Park Service over there, the Davis Bayou Headquarters, you see that throughout the last couple of hundred years these islands have moved a lot. And I just have a continuing concern that these navigation channels will basically -- if left unchecked, basically one day these islands will disappear. So I don't agree with the Park Service in not allowing something to be done to compensate for the fact that you're cutting off the ends of -- the west ends of these islands with the shipping channel and you're not allowing it to naturally grow. So my long-term concern is that we could lose some islands if something isn't done. And of course, we know they're critical for hurricane protection, they're critical for habitat in the Mississippi Sound if not the Gulf of Mexico. So I hope you would look at the

long-term impacts of the channel alignments and what that does as far as not allowing the islands to naturally grow to the west.

MR. SHORT: Thank you. Yes, sir?

MR. ANDRE: What is the budget for the overall -- the environmental impact study for this channel project in Gulfport?

MS. JACOBSON: For what?

MR. ANDRE: From when you started, whenever you started, until it's completed.

MS. JACOBSON: I don't think I have that with me.

MR. ANDRE: Do you have it to the nearest $500,000?

MS. JACOBSON: Probably, I would say, between one and a half to two million.

MR. ANDRE: Okay. That's fine.

MS. JACOBSON: And that's for both EISes.

MR. ANDRE: One and a half to two million dollars for the study?

MS. JACOBSON: And that's for both EISes.

MR. ANDRE: I didn't know about the 10 million dollars for the coastal erosion that has been

proposed. And I was just wondering how much this study cost as compared to the 10 million.

MS. JACOBSON: The 10 million dollar study, it looks at saltwater intrusion, fish and wildlife aspects, coastal erosion. There's several different entities that it's looking at. And it covers all three coastal counties.

MR. ANDRE: Okay. And I presume out beyond the barrier islands also?

MS. JACOBSON: We cover the barrier islands.

MR. ANDRE: Because that is a source of concern to me. And I'm a proponent of using dredged spoils to put those islands back. I was disappointed when I heard the Natural Park Service's position that, oh, it's nature, it will take care of itself. East Ship Island is pitiful. All of the pine trees are dead. There's very little green out there anymore. And it's just a small island compared to what it used to be. Of course, since Camille, it has diminished and diminished, and I was on my most recent visit really shocked by its small footprint.

And historically there have been islands

that just disappeared, as the Isle of Capri did, which was on that same line of islands. Between Horn Island and Ship Island there used to be another island called the Isle of Capri that completely disappeared. There's no longer any trace of it. And it seems to me that West Ship Island is going that same way.

I can appreciate the philosophy of, well, it's nature taking its course. But an analogy may be if you fell off of your roof and you broke your leg and the bone was poking out, you could say: Oh, well, it's just an act of nature, we'll let nature take its course.

What's happened to Ship Island have been two catastrophic storms, being Camille and Katrina. And it seems to me that it might be well to look at using these dredged spoils to put those barrier islands back. Otherwise we may not -- we may become a Gulf front community that we never have been before.

MR. SHORT: Thank you. Yes?

MS. POWELL: Stephanie Powell. I'm an outreach associate with the Gulf Restoration Network. We're based in New Orleans. We're community members across the Gulf states on protecting and restoring

valuable resources of the Gulf of Mexico.

I want to echo a lot of the concerns of the community members here today and urge the Corps to consider -- I think it was great that you brought up beneficial uses and options, looking at what we can do to help the coast with dredged spoils, especially when we're having a lot of other problems with wetlands destruction and leaving our communities open to even greater dangers. And a lot of these dangers were brought to light in Katrina. So urging the Corps to definitely look into situations where we can be protecting our communities and rebuilding the economy of the Gulf Coast in a positive way.

And then I also just had a quick question. Going back to the toxicity studies, I was just wondering if you could clarify what exactly acceptable is?

MR. SHORT: Sure. This is going to get pretty technical. In the laboratory studies you run a series of replicates. And you compare those replicates and survivals in the replicates to a reference station. So you take sediment from a reference station and you run the same kinds of

studies that you do with the sediment from the shipping channel and you compare survivability. And if the results come out that there's not a statistical difference in survivability, then that's considered acceptable.

MS. POWELL: And we'll look forward to looking at the draft EIS and commenting.

MR. SHORT: Good. Thanks for your comments. Yes?

MS. GILLETTE: I just had one other comment. Becky Gillette with the Sierra Club. And that is that we have been told that there has been a lot of resistance to the use of dredged spoils because of the Gulf sturgeon issue. And Robert Weigel (phonetic), who's a local environmental attorney, tells me that -- who actually litigated the endangered species case involving the Gulf sturgeon, he said that's ridiculous, there's no reason why beneficial use done properly should be stopped because of the Gulf sturgeon.

I would just like to offer if you do run into any problems with some of the other agencies on that issue, please talk to us or talk to Robert

Weigel. We'll weigh in on your side on this thing.

And I have -- one of the nicest days I spent all year long was July 4th out on the east end of Deer Island where there was a beneficial use of dredged spoil project out there. And I have never in my life seen such incredible density and variety of bird life. And it's just an incredibly beautiful place. Everybody else was zipping past us to get out to the islands. And we were sitting out there and it was the most beautiful wildlife habitat that I've ever been in. And I would just say that that was my personal testimony about beneficial use of dredged spoils. Because I used to run aground there all the time in my boat because it was so shallow there right on the east end of Deer Island. But now there's a beautiful marsh in there and it's incredibly productive.

And so, again, that's just my, again, support for beneficial use. If we're going to make such huge big changes in our marine ecosystem, let's be smart about it and restore some wetlands and some marshes and compensate for some of the damage that we've done.

MR. SHORT: Thank you. Other comments?

MR. DONICOLA: I'd like to comment on the Gulfport Harbor. My name is Donicola. Since Camille knocked all the warehouses down on the east pier, all we've got out there is foundations standing. And they've been there since Camille. Why in the world we haven't taken the dredged spoils and filled in those walls that was surrounding the bases for the warehouses -- and they're self-retaining walls that are standing there and been there since Camille. It behooves me to think that they made Mud Island out there, and they could have pumped it right up there on that span and made land out of it and been useful. And why we've let it sit there all these years and pumped this sand away and not used it is being stupid, in my estimation. I might be wrong.

But he mentioned awhile ago pump in Ship Island, Camille cut. That would be a wise thing to do, knowing what's happened down there and what he just told us has happened on the recent trip.

We're beating ourselves to death in doing the wrong thing with what we're doing, throwing these spoils away. There is use for them if they find a way and use them.

MR. SHORT: Thank you. Any other comments?

(NO RESPONSE.)

MR. SHORT: Has everybody signed in? We certainly would appreciate it to make sure you have. But once again, thanks a lot for coming tonight. We appreciate your comments. Like I mentioned, those will become part of the administrative record. That information will be used in preparing the draft document that will be released in December. And we look forward to additional comments from you. Thank you.

(THE PUBLIC HEARING CONCLUDED AT 6:34 P.M.)

C E R T I F I C A T E

STATE OF ALABAMA)

COUNTY OF BALDWIN)

I do hereby certify that the above and foregoing transcript of testimony in the matter aforementioned was taken down by me in machine shorthand and transcribed under my supervision and that the foregoing represents a true and correct transcript of the proceedings had upon said hearing.

Debra Amos Isbell 11-01-06

DEBRA AMOS ISBELL, CSR,RDR,CRR
COURT REPORTER, NOTARY PUBLIC
STATE OF ALABAMA AT LARGE

My Commission Expires: 6/23/2008

US Army Corps of Engineers ®
Mobile District

Supplemental Environmental Impact Statement for the Proposed Construction to Authorized Dimensions for the Gulfport Harbor Navigation Channel, Harrison County, Mississippi

Newsletter 2 • March 2007

Project Background

This is the second in a series of newsletters intended to inform you of progress in the preparation of the Supplemental Environmental Impact Statement (SEIS) for the Proposed Construction to Authorized Depths for Gulfport Harbor Navigation Channel, Harrison County, Mississippi.

The Port of Gulfport has offered deep water access for the shipping industry since the early 1900s. Over the years, port operations have expanded. The larger and deeper draft container ships, as well as roll-on/roll-off operations at the port, have created the need to widen and deepen the channel. The U.S. Army Corps of Engineers determined changes were required in the existing Federal Gulfport Navigation Channel to provide for safe and unrestricted navigation into and out of Gulfport Harbor.

Public Workshop and Hearing

The public is invited to participate in a workshop and hearing, March 8 at the 19th Street Community Center, 3319 19th Street, Gulfport, Miss., concerning two studies: the expansion of the Gulfport Harbor Navigation Channel, and an associated study, the Offshore Ocean Dredged Material Disposal Site (ODMDS) designation. The informal public workshop begins at 5 p.m., and the hearing will follow at 6:30 p.m.

The corps will host the workshop and hearing for the two projects. The informal 5 p.m. workshop will allow the public to view illustrations of the two project areas and boundaries, as well as potentially affected areas and to discuss the projects with corps team members. Handouts with project descriptions and maps will also be available. The 6:30 p.m. hearing will include a presentation followed by a public comment period. A court reporter will be present to record the meeting and to collect public comments.

Public involvement is a vital part of the SEIS process. It provides stakeholders (fisherman, local residents, business owners, and concerned citizens) an opportunity to view and comment on federal projects that could affect them. During the NEPA process, the public has 45 days in which to comment on the Draft SEIS.

Where Can I Obtain a Copy of the Draft SEIS for this project?

The Draft SEIS was released February 7. The 45-day comment period ends April 2. The Draft SEIS is available at Gulfport area libraries, on the project's web site (www.usacegulfportnavigationeis.net), or by contacting the U.S. Army Corps of Engineers directly.

As part of the public outreach program of NEPA, the U.S. Army Corps of Engineers invites you to attend a public workshop and hearing regarding the Gulfport Navigation SEIS project. The workshop and hearing will be held:

Thursday, March 8, 2007
5 p.m. - Workshop
6:30 p.m. - Hearing
19th Street Community Center
3319 19th St.
Gulfport, Mississippi

Critical Issues

Many areas are being studied for the Gulfport navigation channel SEIS. These include environmental concerns for threatened and endangered species, such as the gulf sturgeon, evaluation of the sediments to be dredged and disposal options. Disposal options that will be considered are littoral disposal, existing disposal sites or the proposed Gulfport Offshore ODMDS site. Beneficial uses of dredged materials will also be considered. Beneficial uses for coastal Mississippi include beach nourishment and island creation or enhancement. All of these issues will be addressed and evaluated in the Draft SEIS.

How Can I Get More Information?

If you are unable to attend the meeting and want to learn more about each project or provide comments, please visit the Gulfport navigation channel SEIS web site at www.usacegulfportnavigationeis.net or the Gulfport ODMDS EIS web site at www.usacegulfportoceaneis.net. Visitors can find the draft SEIS, EIS, and related information on the two websites, including information about the SEIS and EIS processes, bibliography, newsletters, press releases, a copy of the presentation from March 8, 2007, and links to other web sites. You can also contact the corps EIS and SEIS Project Managers directly:

Jennifer Jacobson
251-690-2724
jennifer.l.jacobson@usace.army.mil

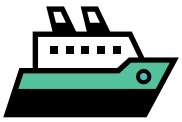
Linda Brown
251-694-3786
linda.t. brown@usace.army.mil

or

U.S. Army Corps of Engineers
Planning & Environmental Division
Coastal Environment Team
P.O. Box 2288
Mobile, AL 36628-0001

US Army Corps of Engineers ®
Mobile District

Planning & Environmental Division
P.O. Box 2288
Mobile, AL 36628-0001



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www.usacegulfportnavigationeis.net

Notice of Availability, Public Hearing, and Workshop

The U.S. Army Corps of Engineers, Mobile District, and the U.S. Environmental Protection Agency will co-host a joint public workshop and hearing for the Environmental Impact Statements for the Gulfport Harbor Construction to the Federally Authorized Navigation Project, Harrison County, Miss., and the Gulfport Offshore Ocean Dredged Material Disposal Site Designation, Harrison County, Miss. The hearing and workshop will be Thursday, March 8, at the 19th Street Community Center, 3319 19th Street, Gulfport, Miss. An informal public workshop will begin at 5 p.m. and the public hearing will begin at 6:30 p.m. For additional information, contact Jennifer Jacobson at (251) 690-2724 or via e-mail at Jennifer.L.Jacobson@sam.usace.army.mil, or Linda Brown at (251) 694-3786 or via email at Linda.T. Brown @sam.usace.army.mil. The Draft EIS for each project and additional information can be found online at www.usacegulfportoceaneis.net, and www.usacegulfportnavigationeis.net.

Notice of Availability, Public Hearing, and Workshop

The U.S. Army Corps of Engineers, Mobile District, and the U.S. Environmental Protection Agency will co-host a joint public workshop and hearing for the Environmental Impact Statements for the Gulfport Harbor Construction to the Federally Authorized Navigation Project, Harrison County, Miss., and the Gulfport Offshore Ocean Dredged Material Disposal Site Designation, Harrison County, Miss. The hearing and workshop will be Thursday, March 8, at the 19th Street Community Center, 3319 19th Street, Gulfport, Miss. An informal public workshop will begin at 5 p.m. and the public hearing will begin at 6:30 p.m. For additional information, contact Jennifer Jacobson at (251) 690-2724 or via e-mail at Jennifer.L.Jacobson@sam.usace.army.mil, or Linda Brown at (251) 694-3786 or via email at Linda.T. Brown @sam.usace.army.mil. The Draft EIS for each project and additional information can be found online at www.usacegulfportoceaneis.net, and www.usacegulfportnavigationeis.net.

Press-Register
February 15, 2007

Notice of Availability, Public Hearing, and Workshop

The U.S. Army Corps of Engineers, Mobile District, and the U.S. Environmental Protection Agency will co-host a joint public workshop and hearing for the Environmental Impact Statements for the Gulfport Harbor Construction to the Federally Authorized Navigation Project, Harrison County, Miss., and the Gulfport Offshore Ocean Dredged Material Disposal Site Designation, Harrison County, Miss. The hearing and workshop will be Thursday, March 8, at the 19th Street Community Center, 3319 19th Street, Gulfport, Miss. An informal public workshop will begin at 5 p.m. and the public hearing will begin at 6:30 p.m. For additional information, contact Jennifer Jacobson at (251) 690-2724 or via e-mail at Jennifer.L.Jacobson@sam.usace.army.mil, or Linda Brown at (251) 694-3786 or via email at Linda.T. Brown @sam.usace.army.mil. The Draft EIS for each project and additional information can be found online at www.usacegulfportoceaneis.net, and www.usacegulfportnavigationeis.net.

The Mississippi Press
February 15, 2007

Condition and Trend, Lost River and Challis Ranger Districts, Salmon-Challis National Forest, Butte, Clark, Custer and Lemhi Counties, ID

Summary: EPA expressed environmental concerns about the potential for adverse impacts to streams that are currently 303(d) listed for temperature, sediment and other water quality criteria. Rating EC2.

EIS No. 20060486, ERP No. D–NPS–D65038–MD, White-Tailed Deer Management Plan, Implementation, Catoctin Mountain Park, Frederick and Washington Counties, MD

Summary: EPA does not object to the proposed action. Rating LO.

EIS No. 20060274, ERP No. DD–AFS–L65155–00, Northern Spotted Owl Management Plan, Removal or the Modification to the Survey and Manage Mitigation Measures, Standards and Guidelines (to the Northwest Forest Plan) New Information to Address Three Deficiencies in Final Supplemental EIS (2004), Northwest Forest Plan, OR, WA, and CA

Summary: The analysis in EIS provides adequate support for the decision to add individual species to the agencies' Special Status Species Program (SSSP) lists, and provides important information for developing future land management and species conservation decisions. EPA encourages the agencies to fully support and regularly update the SSSP programs, and consider the importance of the current network of late successional forests in late-successional species' persistence and viability. Rating LO.

EIS No. 20060307, ERP No. DS–FHW–L40222–WA, WA–99 Alaskan Way Viaduct and Seawall Replacement Project, Additional Information and Evaluation of Construction Plan, Provide Transportation Facility and Seawall with Improved Earthquake Resistence, U.S. Army COE Section 10 and 404 Permits, Seattle, WA

Summary: EPA expressed environmental concerns about impacts to air quality and human health during construction, and recommends the development of an air quality construction mitigation plan. Rating EC2.

FINAL EISs

EIS No. 20060451, ERP No. F–CGD–B03015–MA, Neptune Liquefied Natural Gas (LNG), Construction and Operation, Deepwater Port License Application, (Docket Number USCG–2004–22611) Massachusetts Bay, Gloucester and Boston, MA

Summary: EPA does not object to the proposed action, but offered comments that can be addressed in the Record of Decision and the remainder of the licensing process.

EIS No. 20060495, ERP No. F–FHW–L40226–WA, WA–28

Eastside Corridor Project, Proposal to Improve WA–28 (Sunset Highway) Corridor from WA–2–97 (Ocdabashian Bridge) to 9th Street NE. in East Wenatcheee, City of East Wenatchee, Douglas County, WA

Summary: EPA continues to express environmental concerns about the preferred alternative's (3B) impacts on air quality and wetlands.

EIS No. 20060515, ERP No. F–FHW–C40161–NY, NY–17 Parksville/SH–5223, Liberty-County Line, Part 1 Construction and Reconstruction to Interstate Standards, Funding and U.S. Army COE Permit Issuance, Town of Liberty, Sullivan County, NY

Summary: EPA does not object to the preferred alternative.

EIS No. 20060531, ERP No. F–FRC–L05236–0R, Clackamas River Hydroelectric Project, Application for Relicensing of an Existing 173 megawatt(MS) Project, (FERC No. 2195–011) Clackamas River Basin, Clackamas County, OR

Summary: EPA continues to express environmental concerns about temperature and dissolved oxygen impacts and recommends that FERC work with ODEQ to assure water quality standards will be met.

EIS No. 20060545, ERP No. F–FTA–G40191–TX, Southeast Corridor Project, Proposed Fixed-Guideway Transit System, Funding, Metropolitan Transit Authority (METRO) of Harris County, Houston, Harris County, TX

Summary: EPA does not object to the proposed project.

EIS No. 20070002, ERP No. F–FHW–F40420–MN, I–94/TH–10 Interregional Connection from St. Cloud to Becker Transportation Improvements, Funding and U.S. Army COE Section 404 Permit, Sherurne, Stearns, and Wright Counties, MN

Summary: EPA continues to have environmental concerns about impacts to water quality, wetlands, wildlife and wildlife habitat, and floodplains as well as potential cumulative impacts to the Mississippi Riverway.

EIS No. 20070005, ERP No. F–IBR–K39082–AZ, Welton-Mohawk Title Transfer Project, Transfer of the Facilities, Works, and Lands of the Welton Mohawk Division of the Gila Project, Welton-Mohawk Irrigation and Drainage District, Yuma County, AZ

Summary: No formal comment letter was sent to the preparing agency.

EIS No. 20070009, ERP No. F–AFS–K65317–CA, Antelope-Pardee 500kV Transmission Project, Construct, Operate and Maintain a New 25.6 mile 500kV Transmission Line, Right-of-Way Permit and Special Use Authorization, Angeles National Forest, Los Angeles County, CA

Summary: No formal comment letter was sent to the preparing agency.

Dated: February 12, 2007.

Robert W. Hargrove,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. E7–2734 Filed 2–15–07; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–6684–1]

Environmental Impacts Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7167 or

http://www.epa.gov/compliance/nepa/ Weekly receipt of Environmental Impact Statements Filed 02/05/2007 through 02/09/2007 Pursuant to 40 CFR 1506.9.

EIS No. 20070038, Draft EIS, BLM, WY, Pinedale Resource Management Plan (RMP), Implementation of Public Lands Administered, Sublette and Lincoln Counties, WY, Comment Period Ends: 05/17/2007, Contact: Kellie Roadifer 307–367–5309.

EIS No. 20070039, Draft EIS, WPA, CA, Trinity Public Utilities District Direct Interconnection Project, Construct and Operate a 16-mile Long 60-Kilovolt Power Transmission Facilities, (DOE/EIS–0389, Trinity County, CA, Comment Period Ends: 04/02/2007, Contact: Mark Wieringa 7200–962–7448.

EIS No. 20070040, Final EIS, DOD, 00, Programmatic—Missile Defense Agency, To Incrementally Develop, Test, Deploy, and Plan for Decommissioning of the Ballistic Missile Defense System (BMDS), Wait Period Ends: 03/19/2007, Contact: Martin Duke 703–697–4248.

EIS No. 20070041, Draft EIS, AFS, OR, Five Buttes Project, Conduct Vegetation Management Activities, Implementation, Deschutes National Forest, Cresent Ranger District, Deschutes County, OR, Comment Period Ends: 04/02/2007, Contact: Marcy Boehme 541–433–3200.

EIS No. 20070042, Draft EIS, BLM, CA, Truckhaven Geothermal Leasing Area, Addresses Leasing of Geothermal Resources, El Centro Field Office, Imperial County, CA, Comment

Period Ends: 04/17/2007, Contact: John Dalton 951–697–5311.
EIS No. 20070043, Final EIS, AFS, CA, Commercial Park Stock Permit Reissuance for the Sierra National Forest and Trail Management Plan for the Dinkey Lakes Wilderness, Application Reissuance Special-Use-Permit, Mariposa, Madera and Fresno Counties, CA, Wait Period Ends: 03/19/2007 Contact: Kim-Sorini-Wilson 559–855–5355 Ext. 3328.
EIS No. 20070044, Draft EIS, AFS, NM, Surface Management of Gas Leasing and Development, Proposes to Amend the Forest Plan include Standard and Guidelines Related to Gas Leasing and Development in the Jicarilla Ranger District, Carson National Forest, Rio Arriba County, NM, Comment Period Ends: 04/02/2007, Contact: Audrey Kuykendall 505–758–6212.
EIS No. 20070045, Final EIS, FHW, UT, Riverdale Road Project (UT–26), Improvement Mobility and Safety between 1900 West in Roy, UT and U.S. Highway 89 (Washington Boulevard) in Odgen, UT, Cities of Roy, Riverdale, South Ogden and Ogden, Weber County, UT, Wait Period Ends: 03/19/2007, Contact: Gregory S. Punske 801–963–0182.
EIS No. 20070046, Draft EIS, BLM, CO, Little Snake Resource Management Plan, Implementation, Moffat, Routt and Rio Blanco Counties, Craig CO, Comment Period Ends: 05/17/2007, Contact: Jeremy Casterson 970–826–5071. This document is available on the Internet at: *http://www.co.blm.gov/lsra/rmp/rmp-docs.htm#DEIS.*
EIS No. 20070047, Draft EIS, COE, MN, Minnesota Steel Project, Construction and Operation of an Open Pit Taconite Mine Facilities, Concentrator, Pellet Plant, Direct Reduced Iron Plant and Steel Mill Project, located west of Nashwauk, Itasca County, MN, Comment Period Ends: 04/02/2007, Contact: Jon K. Ahlness 651–290–5381.
EIS No. 20070048, Draft EIS, NOA, 00, Programmatic—Steller Sea Lion and Northern Fur Seal Research, Proposal to Disburse Fund and Issue Permit for Research, AK, WA, OR and CA, Comment Period Ends: 04/02/2007, Contact: P. Michael Payne 301–713–2289. This document is available on the Internet at: *http://www.nmfs.noaa.gov/pr/permits/eis/steller.htm.*
EIS No. 20070049, Second Draft Supplement, FTA, CA, South Sacramento Corridor Phase 2, Improve Transit Service and Enhance Regional Connectivity, Funding, in the City and County Sacramento, CA, Comment Period Ends: 04/02/2007, Contact: Jerome Wiggins 415–744–3116.
EIS No. 20070050, Draft EIS, FRC, 00, East Texas to Mississippi Expansion Project, Construction and Operation of 243.3 miles Natural Gas Pipeline to Transport Natural Gas from Production Fields in eastern Texas to Markets in the Gulf Coast, Midwestern, Northeastern and Southeastern United States, Comment Period Ends: 04/02/2007, Contact: Andy Black 1–866–209–3372.
EIS No. 20070051, Draft Supplement, COE, MS, Gulfport Harbor Navigation Channel Project, Updated Information on Providing Safe and Unrestricted Navigation into and out of Gulfport Harbor, Harrison County, MS, Comment Period Ends: 04/02/2007, Contact: Linda T. Brown 251–694–3786.

Dated: February 13, 2007.

Robert W. Hargrove,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. E7–2733 Filed 2–15–07; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2007-0098; FRL–8115–4]

Full Tribal Pesticide Program Council (TPPC); Notice of Public Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Tribal Pesticide Program Council (TPPC) will hold a 2 and ½ day meeting, beginning on March 7 and ending on March 9, 2007. This notice announces the location and times for the meeting, and sets forth the tentative agenda topics. The TPPC Tribal Caucus meeting on March 7, 10:30 until noon and the March 9, ½ day meeting from 9 a.m. to noon are scheduled for the TPPC members only.

DATES: The meeting will be held on March 7 and 8, 2007 from 9 a.m. to 5 p.m.

ADDRESSES: The meeting will be held at 2777 South Crystal Dr., One Potomac Yards (South Bldg.) 4th Floor Conference Center/South, Arlington, VA.

FOR FURTHER INFORMATION CONTACT: Georgia A. McDuffie, Field and External Affairs Division, Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: (703) 605-0195; fax number: (703) 308-1850; e-mail address: *mcduffie.georgia@epa.gov* or Lillian Wilmore, TPPC Facilitator, P.O. Box 470829 Brookline Village, MA 02447-0829; Telephone number (617) 277-1656; e-mail address: *naecology@aol.com.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this action if you [are interested in TPPC's information exchange relationship with EPA regarding important issues related to human health, environmental exposure to pesticides, and insight into EPA's decision-making process. All parties are invited and encourage you to attend the meetings and participate as appropriate.'' Potentially affected entities may include, but are not limited to: Those persons who are or may be required to conduct testing of chemical substances under the Federal Food, Drug, and Cosmetic Act (FFDCA), or the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Since other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action. If you have any questions regarding the application of this action to a particular entity, consult either person listed under **FOR FURTHER INFORMATION CONTACT**

B. How Can I Get Copies of this Document and Other Related Information?

1. *Docket.* EPA has established a docket for this action under docket identification (ID) number EPA-HQ-OPPT-2006-0098. Publicly available docket materials are available either in the electronic docket at *http://www.regulations.gov*, or, if only available in hard copy, at the Office of Pesticide Programs (OPP) Regulatory Public Docket in Rm. S-4400, One Potomac Yard (South Bldg.), 2777 S. Crystal Drive Arlington, VA. The hours of operation of this Docket Facility are from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The Docket telephone number is (703) 305-5805.

2. *Electronic access.* You may access this **Federal Register** document electronically through the EPA Internet under the ''**Federal Register**'' listings at *http://www.epa.gov/fedrgstr.*

II. Tentative Agenda

1. TPPC State of the Council Report
2. EPA/OPP, OECA and Region Update/Report

ORIGINAL

DRAFT ENVIRONMENTAL IMPACT STATEMENTS

GULFPORT ODMDS AND HARBOR CONSTRUCTION

GULFPORT HARBOR

HARRISON COUNTY, MISSISSIPPI

PUBLIC ~~SCOPING~~ Hearing MEETING

HELD AT THE

19TH STREET COMMUNITY CENTER

GULFPORT, MISSISSIPPI

MARCH 8, 2007; 6:30 P.M.

APPEARANCES:

Russ Short (CH2M Hill)

Elizabeth Calvit (CH2M Hill)

Jennifer Jacobson, Corps of Engineers

Linda Brown, Corps of Engineers

Paul Bradley, Corps of Engineers

John Crane, Corps of Engineers - Project manager

John Webb, Gulfport Harbor

I N D E X

P R O C E E D I N G S

MS. JACOBSON: Hi. I'm Jenny Jacobson with the Corps of Engineers, Mobile District. I'm the departmental lead for the draft EIS for the ocean dredged material disposal site. Linda Brown is also in the audience, and she is the lead on the draft EIS for the Gulf --

A MAN: I can't hear you.

THE REPORTER: I wonder if they can turn the air-conditioning off.

MR. SHORT: I just asked them to.

MS. JACOBSON: I'll just talk up a little bit, too. Can you hear me now? Okay. I have a very soft voice.

Linda Brown is also in the audience with the Corps of Engineers. She is the lead on the draft EIS for the Gulfport Harbor deepening to authorized project dimensions.

I wanted to thank you guys for coming here tonight. What we're planning on doing is giving a background on both EISes. And we've got a court reporter to get those comments that you guys have. And we'll take them down. We also have sheets in the

back where you can write down your comments.

And what I'm going to do now is I'll turn it over to our contractor, CH2M Hill, Russell Short, and he's going to give a presentation on this.

Oh, and one other thing. We've got Paul Bradley from the Corps of Engineers, Mobile District, and then John Crane, he's the project manager. And then we also have John Webb with the Gulfport Harbor.

MR. SHORT: Okay. There goes the air-conditioner. I guess that's better. Can you hear me? Do I need to use the microphone? Okay.

What I'd like to do is just kind of run through a series of slides right now, as Jenny had mentioned, to talk about both the navigational channel EIS as well as the ODMDS EIS. And this is the agenda. And once again we're mentioning we're going to take comments at the end of the presentation on both projects.

The two projects -- the Corps of Engineers is the lead government agency for the Gulfport Harbor Federal Navigation Project, and the designation of the Gulfport Offshore ODMDS project is led by the USEPA.

This figure here just kind of gives you a

general perspective on the layout of the navigational channel, the proposed ODMDS disposal site, as well as the existing disposal site sitting parallel to the existing channel. The offshore proposed ODMDS is about 25 miles offshore of the harbor.

The Gulfport Harbor Navigational Channel Project has been ongoing for a number of years. And in 1976 the Corps of Engineers conducted a feasibility study to figure out what needed to be done in terms of changes to the navigational channel. There was a lot of interest by the port to increase the number of vessels that were arriving there, and there were different demands on the depth and the width. And so they conducted the feasibility study. And the recommendation that came out of it was to deepen the channel to 36 feet by 300 feet wide in the Mississippi Sound and to deepen the channel to 38 feet by 400 feet wide in Ship Island Pass. The channel improvements were authorized by Congress through legislation in 1985, which was the Supplemental Appropriations Act. And then in 1986 the Water Resources Development Act was passed.

In recent -- in the early 2000s there was

additional interest to make changes in the navigational channel as a result of the Panama Canal expansion. And we've all heard about the Panamax vessels of what the characteristics of those might look like and the demands that they might have on the channel and the widths and the depths.

And so in 2003, USA, the Corps of Engineers, conducted a re-evaluation report. And they looked at 15 different options of channel widening and deepening. There were five depth alternatives that were considered ranging from 36 feet to 46 feet and there were three channel width alternatives ranging from 300 feet to 600 feet. Those different alternatives could generate upwards of 89 million cubic yards of new dredged material.

In this figure I've just identified a couple of key characteristics that we'll talk about. The sound channel, probably most of you know what that is, the Mississippi Sound, and then the bar channel. The Safety Fairway is located south of Ship Island.

And in this table we identify the authorized dimensions of the bar channel and the sound channel. The authorized dimensions for the bar channel are 400

feet in width and 38 feet in depth. The existing dimensions are 300 feet wide to 38 feet deep. The proposed action is to increase the width to 400 feet. In the sound channel, for the width, the authorized dimensions are 300 feet and the depth is 36 feet. The existing dimensions are 220 feet wide and 36 feet deep. So the proposed action is to increase the width to 300 feet.

And what does that mean? That means the change in Mississippi Sound is going to increase the width by 80 feet for approximately 11 miles. That's going to require dredging of about 107 acres of existing undisturbed bottom.

For the changes in the Ship Island Pass, it's going to increase the width by 100 feet for approximately ten miles. And that will dredge about 97 acres of currently undisturbed bottom. And as a result of those channel improvements, it will generate approximately 3.8 million cubic yards of new dredged material.

The dredging methodologies that are planned for the proposed action include the hopper dredge, hydraulic dredge and mechanical dredge. And those

will be applied depending upon the requirements of the different areas and the materials that are encountered.

The disposal areas that are envisioned for placement of the material is the littoral zone southeast of Cat Island. And if you remember that one figure, that was just adjacent to Ship Island, just west of Ship Island on the other side of the channel and southeast of the island itself. The open disposal areas are going to be used for maintenance material, and the proposed new Gulfport Offshore ODMDS is considered for placement of new material as well.

Evaluation of the dredged material must comply with 40 CFR part 230. And that really identifies 404(b)(1) guidelines for specification of dredged material, sites for dredge and fill. There are several special conditions that must be met by the material to make sure that you don't cause or contribute to a violation of state water quality standards, you don't violate toxic effluent standards, you don't jeopardize continued existence of species listed as endangered or threatened species under the Endangered Species Act, and you don't violate

requirements of the Secretary of Commerce for protection of marine sanctuaries.

To do that, the Corps of Engineers has identified a series of precharacterization studies. The characterization studies were performed in 2005. And there's a series of guidance documents and standard procedures that must be complied with during performance of those studies. Those are identified in the Inland Testing Manual; the Ocean Testing Manual; Quality Assurance/Quality Control Guidance for Dredged Material Evaluations; and Methods for Collection, Storage and Manipulation of Sediment for Chemical and Toxicological Analyses.

The characterization studies along the Gulfport Navigational Channel include collection of sediment core samples from 15 locations from the harbor area out to Ship Island Pass. A spud barge was used to collect the samples, and sediments were collected from five to 28 feet below the sediment/water interface. And what that means is where the water meets the bottom itself. It's the boundary layer there.

A variety of samples were analyzed which

included chemical analysis on the water and the sediment samples. There was chemical analysis on elutriate samples. And elutriate samples are prepared by taking a sediment sample, shaking it in water from the site, which would be the Gulfport Navigational Channel area, and then analyzing the water that is the result of that process. That's to find out what chemicals might have been released from the sediments.

There's also a series of toxicity tests that are conducted, a sediment test using sediment itself, placing it in test chambers, exposing it to a variety of different test organisms, polychaetes and amphipods. And there's a series of water tests that are run as well which includes fish, it includes purple sea urchin larvae, and it includes amphipods as well.

And then there's performance of bioaccumulation studies. And those studies involve taking a chunk of the bottom sediment, placing it in a test chamber and putting test organisms in there and letting them live in there for about a 28-day time frame to find out what chemicals they might pick up from the sediments that are present in that test

chamber.

So what were the findings of all of these characterization studies? The bulk sediment chemistry, all results were acceptable based on sediment quality criteria and a comparison with the reference stations which are located near shore and away from the navigation channel.

The elutriate testing, all chemicals detected in the elutriate samples were at acceptable levels.

Toxicity testing, all water column and sediment testing achieved acceptable results based upon EPA acceptance criteria. And they specify the total number of organisms that must be alive at the end of the tests. And there's a series of controls and references that you run. And then you do a series of statistical analyses to see if there's a difference.

And the bioaccumulation study, all uptake ratios for inorganic and organic chemicals were consistent with the reference station results with the exception of selenium which occurred at one location near the harbor.

These results were incorporated into the Environmental Impact Statement. And based upon those findings, the conclusions that were drawn were that the dredging operation would not cause or contribute to violation of state or water quality standards, they would not violate toxic effluent standards, would not jeopardize continued existence of endangered or threatened species, and it would not violate requirements to protect marine sanctuaries.

During preparation of the Environmental Impact Statement, there were other key resource issues that were reviewed. Some of the ones in particular were the cultural resources. We wanted to figure out were there any ship wrecks along the channel that could be impacted by the dredging operation, especially since you're increasing the width of the channel. And also we looked at potential impacts on Ship Island itself, which is an historic site. We looked at impacts on submerged aquatic vegetation that provides key habitat for nursery areas, for fish and shrimp and crabs. We also looked at salinity changes that might take place as a result of increasing the width of the dredge channel. We looked at impacts on

essential fish habit. Essential fish habitat are designated by the Gulf of Mexico Fishery Management Council. They're responsible for managing the fishery resources of the Gulf Coast area. And they've identified certain areas that they need to maintain to ensure that the stocks of fish are sustainable over time. We also looked at commercial and recreational fishery impacts.

The conclusions in the EIS indicate that all impacts would be minor and short term. There would be approximately 204 acres of previously undisturbed bottom that would be dredged. The dredged area overlaps with essential fish habitat and habitat of the Gulf sturgeon. The Gulf sturgeon is a federally listed threatened species. And the Army Corps of Engineers and NOAA Fisheries are currently discussing those impacts to the Gulf sturgeon and resolving any issues that are associated with that.

Now I'd like to talk briefly about designation of the ocean dredged material disposal site. The process involves both the Corps of Engineers and EPA. And it's defined by 40 CFR 220 through 229. The Army Corps of Engineers identifies

prospective areas, it evaluates the environmental conditions, and it makes recommendations on what areas are considered suitable areas for disposal of the material.

EPA reviews the findings and recommendations, and it's their responsibility to designate the site.

The Army Corps of Engineers initiated the Gulfport ODMDS site identification process in 2003.

Selection and designation requires environmental studies at each site and regions adjacent to the site and on historical knowledge of impacts of dredged material disposal on areas similar to such sites in physical, chemical and biological characteristics.

And that means that when you go out there and you're looking at an area that you want to designate for the disposal of material, you have to understand what the nature of the environment is. So when you look at an area that you're going to remove material, you have to make sure that that material, when you place it in the ODMDS, it has similar conditions and it won't necessarily upset the

environmental balance.

The Army Corps of Engineers developed procedures for completion of the designation surveys.

For the dredge widening that we're talking about right now, the area that was under consideration had to be within ten miles of the end of the channel entrance and it had to be capable of handling upwards of 89 million cubic yards, even though we're only talking about 3.8 million for the widening project right now. And also it needed to maintain adequate water column over the disposal area.

There's a series of general and specific screening criteria that are used to identify where prospective areas for ocean dredged material disposal sites might be located. These include navigational restrictions; political boundaries; locations of fishing, recreation, shipping and mineral extraction; distance to the continental shelf; feasibility of surveilling and monitoring the ocean-dredged material disposal site; operation and transport cost to get the material out there; and other factors, including dredging requirements, water depth and biological resources.

I'm sure you've seen one of the posters that we have over there. And this just identifies the zone of siting feasibility that was performed to identify prospective areas that could be considered for designation as an ocean dredged material disposal site. And there were two key areas that we were able to consider, area A and area B. Area A is located north of the Safety Fairway and area B virtually directly south of it on the south side of the Safety Fairway.

Area B was considered the best option. There were two data collection surveys that were conducted, one in March in 2004 and the other one in October of 2004. And I'm sure that you all know that that kind of sandwiched Hurricane Ivan. And it was interesting to see some of the changes that took place in the western end of the ODMDS as a result of it. There was definitely a lot of vegetation that we wound up sampling after the hurricane. In fact, one of my biologists out there even identified a freshwater beetle that we pulled out of one of the samples, which kind of surprised us when we were 25 miles out to sea. It was like where did that thing come from? So

it was pretty curious.

But in the site investigation we looked at the physical, chemical and biological parameters, which included the water quality, bathymetry, sediment quality and biota, the infauna and the epifauna. The infauna are those animals that actually live in the sediments itself, and the epifauna are animals that live on the top and the bottom. And we took two types of samples to characterize that. One sample actually took a bite out of the bottom. And those samples were preserved with formalin, and we sent that off to a specialty subcontractor whose primary responsibility is identifying those kinds of organisms. That's Vittor & Associates in Mobile, Alabama. They do a lot of work up and down the whole Gulf Coast area.

And then the epifauna, we dragged a beam trawl, it's a two-meter beam trawl across the bottom, and it rode right on the bottom itself, and anything that was on the bottom was captured. And we brought that up onboard and we put that into a tray and we identified the organisms right there on ship at that point in time. And the results of all those investigations are included in the report.

One of the things that we had to do was to evaluate the disposal activities to make sure that the changes in the bathymetry and the sediment movement were going to be acceptable. To do that we ran two different types of models. The models were obtained from the Vicksburg office of the Corps of Engineers coastal hydraulics lab. One of them is the MPFATE, which is called multiple placement fate. And that represented placing a whole different bunch of barge dumps in the area and seeing what took place over the course of a six-month or a one-year time frame. And then the other one was a long-term fate which simulated placement of the material there and identifying what would happen over a much longer period of time.

To run those evaluations, we looked at the coastal hydraulic -- the information that's available from some of the NOAA buoys. And there's a series of data bases that were available to really identify the different currents that were represented by wave and tide parameters. And those were all incorporated into the modeling efforts as well as a description of the particle size distribution of the dredged material so

we can understand the dynamics of what would happen as it fell through the water, how far would it move and what would the mound look like after a given period of time.

So we assessed the short-term outcome of multiple placements in the ODMDS on an annual basis and we assessed the long-term dredged material mound. And we have a couple of drawings around. It's this one on the end here. I don't know if you've had a chance to look at those, but that kind of gives you an idea that the material will move in sort of a southeast or east-southeast pattern away from the mound site.

So the findings of the investigation indicated from the field investigations that there were no unique physical, chemical or biological features in the area, there was no perceived threat to endangered or threatened species or cultural resources, and that there was no indication of water quality or sediment quality issues associated with the disposal.

So the findings of the computer modeling simulations indicated that all dredged material could

be accommodated within the proposed site. The sediment movement tends towards the southeast as a result of the currents and seasonal weather patterns.

The Army Corps of Engineers prepared a Draft Environmental Impact Statement. EPA is performing a detailed review on it right now. And on the basis of the comments from the EPA as well as comments that are received this evening, the document will be updated and will be available at a later date.

So this kind of concludes the talk for this evening. Right now we're going to open it up for comments. There's a couple of different ways you can provide comments. As you can see here, the comment period ends for both EISes on April 2nd. You can provide comments tonight. We have a court reporter here who can take your verbal statements. There are comments sheets that are provided here at the back table. You can fill them out now and leave them with us. Or you can take those home, you can fill them out and you can mail them to the address on the back, you can fax them to the number or you can scan them and e-mail. There are also two websites that you can provide written comments on. And then, once again,

our two contacts are Jenny Jacobson and Linda Brown.

With that, that concludes my talk, and we'll open it up for comments.

Yes, sir?

MR. BODDIE: My name is George Boddie and my family owns approximately 60 percent of Cat Island.

I submitted a fairly extensive letter that y'all received today concerning the proposed new ODMDS. And I want to make sure that the letter together with all the comments are part of the official record. I don't know whether that has to be read in or whether or not y'all can make sure that the letter together with all the attachments are part of the record.

MS. JACOBSON: They will be.

MR. BODDIE: Okay. And I enjoy and appreciate the conversations that we had in the workshop portion of this, because I think everybody is pretty much in agreement how the system south of our Mississippi Gulf Coast works. You know, we have a string of barrier islands that have suffered damage from recent hurricanes. But it's a fairly simple system. The sand moves east to west in the littoral

system along the barrier islands. Wherever you have a navigation channel, the material falls off in the navigational channel.

Now, the history with the Corps' dredging practices is that this material has always or for the most part been picked up and taken offshore to one of these offshore disposal areas where the water depths are too great to allow material to be moved back into the system. That's a basic coastal engineering 101 principle.

The draft EIS that's proposed allows the Corps the option of moving the good quality sand sediment that is in the Ship Island Pass reach of the Gulfport Ship Channel and allows them to remove it and place it in a 45-foot deep hole 12 miles south of Ship Island where it will never come back to the system. And the result of that is that there will be a net deficit of material in the downdrift system, which is Cat Island. This scientific coastal fact, whatever you want to call it, is supported by some of the most highly respected coastal engineers and coastal geomorphologists and scientists in the country. Dr. Ervin Otvos of the Gulf Coast Research Lab has an

extensive paper that's attached as part of my official comments. Dr. Bob Dean, who is one of the foremost internationally respected coastal engineers from the University of Florida, has a letter basically saying that the current practice of disposing of the material, good quality sand material offshore, is environmentally insensitive, to put it politely.

The Woods Hole Group has submitted comments on my behalf to previous dredging cycles in which materials have been taken offshore. They fully support the position that once the material is removed from the system, it's not coming back, and there is a net deficit to the downdrift barrier islands. This is true whether it's downdrift from the Gulfport Ship Channel for Cat Island or downdrift from the Pascagoula Ship Channel.

I think the Corps in a post-Katrina world, I think that you should revisit the wisdom of removing 95 million cubic yards from our coastal waterways and placing it in a 45-foot deep hole where it will never come back. Our barrier islands are being starved by your maintenance of our ship channels. I fully support the expansion of the Port of Gulfport. I

think it provides an opportunity. But unless it's done properly, it's going to have a net deficit to the barrier islands that protect our coast in hurricanes. And it's got to change. Thank you.

MR. SHORT: Thank you.

MR. BODDIE: Excuse me. I have plenty of copies of this if you need anymore together with all of the attachments.

MR. SHORT: Thanks.

Other comments?

MR. ECKHOFF: Oscar Eckhoff, E-C-K-H-O-F-F. If the sediments are going east, now, where are they going east from? Is that everywhere in the area or is it just the disposal -- the stuff in green there in the sound or off the barrier island?

MR. SHORT: This is the figure that I was talking about. And this was modeling that was conducted for the proposed area. And it was simulating placement of material at two different times. This was a five-year cycle and what it looked like after six months and this is five years after --

MR. ECKHOFF: Where is that area?

MR. SHORT: This is the area -- let me back

up here. That's this area down in here. That's this area outlined by this purple right here. That's the proposed area. (Indicating.) So that's where, on the basis of that, the computer modeling was run. It looked at the currents and the wave patterns and the seasonal hydrology in the area. And so when materials would be placed in here, it would tend to drift in that direction.

MR. ECKHOFF: I think that is not the area where that wave height instrument was on the bottom of the ocean and recorded, what, 95-foot or 90-foot wave height during Hurricane Ivan, I think it was?

MR. SHORT: That's correct; it's not.

MR. ECKHOFF: It's not?

MR. SHORT: Correct.

MR. ECKHOFF: Now, do you know anything about any clay layers that are below the bottom and how deep they are below the bottom that might cause a landslide, resulting tsunami, from what we would hope are the pile of dredged material being put in various places instead of just spread out evenly over the whole area? Has anybody dredged or cored the sediments to see if there are any clay layers down

there?

MR. SHORT: In which area?

MR. ECKHOFF: I'm not sure where. But I would guess anywhere where the dredged material is going to be put. Or anywhere close to that.

MR. SHORT: To my knowledge, there's not been any coring done in the area where the ODMDS is proposed. There's been surface grab samples but no sediment coring.

MR. ECKHOFF: And have y'all taken account of possible -- it is -- sea level rise in any of y'all's calculations? We don't know how much it's going to rise in the next 30 years, but it's certainly going to rise in the next 50 years or whatever significantly.

MR. SHORT: No, I don't believe there's been any adjustments.

MR. ECKHOFF: Could you take that dredged material to Louisiana, as the Sun Herald Newspaper said today? Louisiana needs it.

MR. BODDIE: So do we.

MR. ECKHOFF: I agree. If you take that dredged material, no matter what you do with it,

you're going to change the shape of the islands or the existence of the islands. And I'm just wondering if any of these artificial reefs that have been put up are also going to change the barrier islands out there.

I think that's all my comments.

MR. SHORT: Thanks. Anybody else?

(NO RESPONSE.)

MR. SHORT: Well, if there's no additional comments, then that concludes our public hearing. Once again, I want to extend our thanks to you for coming and participating this evening. All the comments you've provided are going to be taken into account. And we certainly appreciate that. Because we don't have all the answers. We have questions as well. And the support that you provide and the comments that you've provided will help improve the quality of the document. Thanks a lot.

(THE PUBLIC HEARING WAS CONCLUDED AT 7:08 P.M.)

C E R T I F I C A T E

STATE OF ALABAMA)

COUNTY OF BALDWIN)

I do hereby certify that the above and foregoing transcript of testimony in the matter aforementioned was taken down by me in machine shorthand and transcribed under my supervision and that the foregoing represents a true and correct transcript of the proceedings had upon said hearing.

Debra Amos Isbell 3-9-07

DEBRA AMOS ISBELL, CSR,RDR,CRR
COURT REPORTER, NOTARY PUBLIC
STATE OF ALABAMA AT LARGE

My Commission Expires: 6/23/2008

APPENDIX D

Agency and Public Correspondence and Responses

George R. Boddie
4443 Garland Lane
Pass Christian, Ms. 39571

November 20, 2006

Ms. Jenny Jacobson
U.S. Army Corps of Engineers,
Mobile District Planning and Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602

RE: Gulfport Harbor Supplemental Environmental Impact Statement

Federal Express

Dear Ms. Jacobson:

The requested supplemental Environmental Impact Statement seeks to widen the Gulfport Ship Channel and create and clear a new 95,000,000 cubic yard Offshore Ocean Dredge Material Disposal Site (ODMDS). It is unfortunate that the emergency supplemental Congressional appropriation used to fund this new ODMDS was not used to investigate how the material can be beneficially used to enhance and sustain the barrier island system that protects coastal Mississippi. The historical dredging methodology for the Ship Island Pass reach of the channel indicates the Corps' preference for hauling the material to the ODMDS rather than placing it in the down drift littoral zone. It appears that based on the fact that the capacity of the proposed ODMDS is many times greater than the proposed littoral zoned disposal area, the Corps is planning to utilize the ODMDS for the majority of the material in the widening, future deepening, and long-term maintenance for the Gulfport Ship Channel. This enlargement of the channel will cause tens of millions of yards of virgin cut material to be removed, and it is imperative that the material be beneficially placed on, or immediately adjacent to, our islands to offset the historical damaged caused by past dredging practices and natural disasters.

There is a finite budget of sand in Mississippi's littoral zone and utilization of the proposed ODMDS for placement of sand from the ship channel at Ship Island Pass (littoral zone) will create a net deficit of down drift coastal reaches (i.e., Cat Island). The Corps has previously recognized this coastal processes and the importance of utilizing the littoral sand transport system for the Mississippi Barrier Islands. In fact, the USACE recommended that dredged material associated with the previous realignment and maintenance of the Ship Island Pass be placed southeast of Cat Island "so as to maintain the natural littoral drift patterns". This is consistent with the findings of a study conducted by the USACE Coastal Engineering Research Center (Technical Report

CERC-89-1) for the Ship Island Pass Area. Unfortunately, due to economic limitations, the vast majority of the material from previous dredging cycles has been removed from the system and placed in the original ODMDS, which apparently is now at capacity, i.e., the need for the requested new disposal area.

The Corps' has clearly acknowledged the coastal processes and the need to keep the material in the littoral system. Additionally, comments submitted to you on previous maintenance dredging cycles from some of the countries most highly respected coastal scientists and engineers including Dr. Robert Dean, Dr. Ervin Outvos, and the Wood Hole Group, have clearly stated that placing maintenance material from the Ship Island Pass bar channel in offshore disposal areas rather that the littoral zone, will have adverse impacts to Cat Island. These letters are part of the Corps' original project's history; however, I have attached copies as part of my comments for your review.

Another important aspect of your proposed widening project is the potential for increased salinity levels within the Mississippi Sound. Camille Cut on Ship Island is now over 3-miles wide and Goose Point on the southernmost end of Cat Island is gone. These losses coupled with the proposed increase in width of the Gulfport ship Channel will certainly increase the tidal exchange and salinity levels within the Mississippi Sound. Your 1989 Gulfport Harbor EIS on page EIS-19 accurately described this dynamic process in the following paragraph:

"The Mississippi Sound receives both high saline waters from the Gulf of Mexico and freshwater from the streams which drain some 20,000 square miles of land area. Major streams which contribute inflows are the Pascagoula River, the Pearl River, and to some degree the Mobile River. Gulf waters enter the sound through deep passes between the barrier islands with the help of tidal forces. This mixing of freshwater runoff and saline waters has created a dynamic estuarine environment."

Since higher saline water is located at deeper depths, the wider deeper channel will certainly bring in more and higher salinity water into the Sound. This impact wasn't properly considered in the widening study, but could be offset, to some extent, by utilizing the new cut and maintenance material from the channel to sustain and enhance the barrier islands adjacent to the Passes.

Secondary impacts should consider the benefits a healthy barrier island system would provide coastal Mississippi. A healthy stable barrier island system provides protection to the Mississippi Coast by potentially reducing storm surges and velocities. The federal government has expended billions of dollars in recovery effort on the Mississippi Coast. The small additional incremental costs of beneficially using the dredge material to enhance and sustain our barrier island system are secondary benefits that have not been properly evaluated post-Katrina. The Corps the dredging methodology should not further diminish the natural protection our barrier island system provides to the Mississippi Coast.

As a final issue, the American Society of Civil Engineers (ASCE) recently adopted a Beneficial Use of Dredged Material Policy on April 27, 2006 which is attached to this letter as part of my comments. The Corps' request for a new 95,000,000 cubic yard offshore disposal area is inconsistent with this ASCE policy, nationally recognized coastal scientists and engineers, as well as your own previously published documents and studies which recognize the need for bypass dredging and beneficial use.

Thank you for the opportunity to comment on this project. I hope we can reach a consensus that will provide the Port of Gulfport their improved access while insuring that our barrier island system and the protection it affords our Mississippi Gulf Coast is protected.

Sincerely,

George R. Boddie, P.E.

Attachments

cc: Mr. Chris LaGarde, Representative for Congressman Gene Taylor
Mr. John Webb, Port of Gulfport
Mr. John Colbert
Mr. Dan Blackburn
Mr. Jerry Eubanks
Mr. Louis Skrmetta

BENEFICIAL USE OF DREDGED MATERIAL

Approved by the Coasts, Oceans, Ports, and Rivers Institute on March 14, 2006
Approved by the National Energy, Environment and Water Policy Committee on March 30, 2006
Approved by the Policy Review Committee on March 31, 2006
Adopted by the Board of Direction on April 27, 2006

Policy

The American Society of Civil Engineers (ASCE) supports the beneficial use of dredged material. It recommends the following as policy guidance for the beneficial use of dredged material in the United States:

- All dredged sediment should be used beneficially unless it is clearly impractical to do so;
- The federal government should revise its methodology for economic analysis of dredging costs, where applicable, to reflect both gaining the benefits of using dredged material for coastal protection and avoiding disposal costs ;
- Government and private entities that develop and execute projects requiring dredging should be stewards for the beneficial use of dredged material;
- Dredged material should be managed as a resource using life-cycle dredged material management plans that consider regional sediment management needs; dredging frequencies, locations, and quantities; as well as landscape use and change;
- Contaminated sediments, considering the contaminant and degree of contamination, should be evaluated for selected beneficial uses.
- ASCE, in collaboration with its Institutes and sister organizations, should enact a system of technological exchange to ensure that best practices and lessons learned in the beneficial use of dredged material can be leveraged in future dredging activities.

Issue

Sediment must be dredged for construction and maintenance of developments such as navigation channels, ports and harbors, and placed in designated locations according to existing laws, regulations, and guidelines.

Many confined dredged material disposal sites are at or near capacity. Development of new sites is expensive and can create environmental impacts. Use of the dredged material in these sites as well as alternative sites specifically designed for beneficial purposes provides a valuable resource, as well as capacity for future dredge disposal activities.

There is an imbalance of sediment throughout the United States that is causing coastal land loss at the same time the Federal government dredges about 250,000,000 cubic yards of sediment annually. Dredged sediment is an invaluable resource that can be used to address sediment imbalances and to mitigate coastal land loss, and its coincident economic, environmental and safety consequences. Dredged sediment should not be wasted. It should be beneficially used as a routine method of business.

Rationale

Beneficial use of dredged material has been a topic of discussion for years but has not received the emphasis needed to change national dredging practice. As a nation, we need to establish a new federal policy on the beneficial use of dredged material as the standard practice for federally sponsored dredging projects. Establishing its own policy is one way ASCE can encourage and assist the development of effective national policy. Beneficial use of dredged material makes economic and environmental sense. ASCE should promote it, with a strong educational and promotional initiative, for all dredging and disposal activities as a sound business practice and as national policy.

Woods Hole Group
TM

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April 14, 1997

Mr. George R. Boddie
1542 Ingleside Drive
Baton Rouge, LA 70808

Dear Mr. Boddie:

I have reviewed the information you sent me on March 19, 1997 regarding dredging activities in the Ship Island Pass Channel and expansion at the Mississippi State Port in Gulfport. This includes page D-2-25 from the 1990 General Design Memorandum for the realignment of the Ship Island Pass channel; a letter you sent to Mr. Glade Woods (MS Department of Marine Resources) on February 27, 1997; a letter you sent to Mr. John McFadyen (USACE, Mobile District) on March 13, 1997; Plate 6 from the GDM showing recommended channel alignments and disposal sites; Public Notice No. FP91-GU05-4 Addendum (dated September 13, 1991; USACE, Mobile District); and Public Notice No. MS96-02828-U (dated August 22, 1996; USACE, Mobile District). The following is a summary of thoughts regarding these documents relative to your concerns as a landowner on Cat Island.

My knowledge of coastal processes and shoreline response along the coast of Mississippi stems from years of research conducted in the area while I was a Research Professor at Louisiana State University. I recently left that position and am presently a Senior Coastal Scientist at the Woods Hole Group, Aubrey Consulting, Inc., in Massachusetts. The studies I conducted in Mississippi were funded by FEMA. The primary purpose of this work was to develop standards for mapping historical shoreline position change for erosion hazards analyses. All existing shoreline position data were compiled using strict adherence to accuracy standards, and a quantitative evaluation of shoreline change was completed for the period 1848 to 1992. We mapped the most recent shoreline using differential Global Positioning System (GPS) methods, which provided an opportunity to observe the processes and coastal features on Ship and Cat Islands. The observations I present are based on these experiences.

General coastal processes producing change along the outer coast are relatively straightforward. Longshore sand transport from east to west produces laterally migrating barrier island systems, and storms can significantly alter island morphology (and habitat) and cross-shore transport. These observations have been well documented in USACE reports and scientific publications (see enclosure). The purpose for realigning the ship channel at Ship Island Pass was to reduce maintenance dredging associated with east-west island migration along West Ship Island. Recognizing the importance of this process for maintenance of the littoral sand transport system for the Mississippi barrier islands, the USACE recommended that dredged material associated with new work and maintenance

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at Ship Island Pass be placed southeast of Cat Island "so as to maintain the natural littoral drift patterns". This statement is consistent with the findings of a study conducted by the USACE Coastal Engineering Research Center (Technical Report CERC-89-1) for the Ship Island Pass area.

The fact that a portion of the material (approximately 641,000 cy) dredged from Ship Island Pass during channel realignment was not placed in the stated disposal area is potentially a concern for shore response along Cat Island. Although the potential impact of this activity can not be accurately quantified without further study, the implied impact is clear in a number of reports documenting the historical transport pathways along the islands (including USACE reports). As such, mitigation of potential impacts to shore erosion along Cat Island should be requested if further sand removal is to take place.

With regards to the new proposal for Port expansion at Gulfport, material from the Ship Island Pass channel has not been identified as a source of fill for the project. However, given the past record of dependence on sand from the ship channel for fill at the Port, it is likely that this will be the most cost effective and feasible source of foundation material for the proposed Port expansion(s). As such, the issue of mitigation for coastal erosion along Cat Island should be as much an issue in this new request as mitigation for destruction of bottom habitat due to filling 84 acres of water bottom. The budget of sand in the littoral zone is finite. Permanent removal of sand from the ship channel at Ship Island Pass out of the littoral zone means a net deficit to downdrift coastal reaches (i.e., Cat Island, Chandeleur Island). As stated earlier, while the consequences of sand removal from channel can not be quantified at this time, published reports indicate consequences will exist.

My recommendation is that you request a mitigation plan for potential erosion hazards resulting from dredged material removal from the littoral zone of the Ship Island-Cat Island barrier system, if the existing disposal site (southeast of Cat Island) is not used. If you have any questions regarding my evaluation, please call at (508) 563-5030.

Sincerely,

Mark R. Byrnes

Mark R. Byrnes, Ph.D.
Senior Coastal Scientist

Consultant in Coastal and Ocean Engineering
R.G. Dean

July 8, 1997

District Engineer
U. S. Army Corps of Engineers
Mobile District
P.(O. Box 2288
Mobile, Alabama 36628-0001

Dear Sir:

This letter is in reference to Public Notice FP97-GU05-9 which pertains to "Proposed Dredging and Placement of Dredged Material, Gulfport Harbor Project; Harrison County, Mississippi". As an advance summary of this letter, I strongly recommend placement of all good quality material back into the natural sediment transport system so as to minimize adverse impacts on natural processes. Rationale for this recommendation is presented in the following paragraphs.

The net longshore sediment transport in the general area of the islands to the south of Mississippi Sound has been established clearly from the east to the west. Islands to the west of natural channels are dependent on and in approximate balance with this natural transport system from the east. Navigational channels which are deeper than natural interrupt this flow of sand and result in erosion of the islands located to the west. Likewise, if maintenance dredging from these channels is not placed on the downdrift shores, erosion of the downdrift islands results. The only effective approach to reasonable maintenance of the natural system is to ensure that all sand dredged from the artificially deepened channels is placed within the active downdrift littoral system. If this approach is not followed, the downdrift islands will erode at an abnormally high rate as a result of the interference with the natural system. In areas such as Cat Island, good quality sand is a valuable natural resource and to place this sand in an offshore disposal site or to use it for fill material results in an increase in the erosion of the downdrift island, in this case, Cat Island.

The adverse effects of not placing the sand within the active littoral system were recognized in Appendix D of the General Design Memorandum on Page D-2-16 where it is stated that "Material from the Ship Island Channel would be placed southeast of Cat Island in a manner for it to be incorporated into the littoral drift..." This recognition is again evident on Page D-2-23 where it is stated "Both new work and maintenance material from the Ship Island Pass Channel would also be deposited southeast of Cat Island in a location that would situate the material within the natural littoral drift. This placement is intended to maintain the natural shoreline processes."

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The placement of sand outside the limits of active sediment transport is neither consistent with our modern understanding of coastal sediment transport and causes of erosion of coastal systems nor with our ethics of conservation of sand, a valuable natural resource. There are several bases for this statement. Some of the more progressive states concerned with conservation of limited sand resources have related policies. For example, Statute 161.142 of the State of Florida reads:

> **"Declaration of public policy respecting improved navigation inlets.-- The Legislature hereby recognizes the need for maintaining navigation inlets to promote commercial and recreational uses of our coastal waters and their resources. The Legislature further recognizes that inlets alter the natural drift of beach-quality sand resources, which often results in these sand resources being deposited around shallow outer-bar areas instead of providing natural nourishment to the downdrift beaches.**
>
> **(1) All construction and maintenance dredgings of beach-quality sand should be placed on the downdrift beaches; or, if placed elsewhere, an equivalent quality and quantity of sand from an alternate location should be placed on the downdrift beaches at no cost to the state at a location acceptable to the department.**
>
> **(2) On an average annual basis, a quantity of sand should be placed on the downdrift beaches equal to the natural net annual longshore sediment transport. This sand shall be placed at no cost to the state. The placement location and quantities based on natural net annual longshore transport shall be established by the department, and the sand quality must be acceptable to the department.**
>
> **Note: in the above, "department' refers to the Florida Department of Natural Resources."**

I understand that the State of South Carolina has adopted this wording, essentially verbatim, in either its statutes or as a coastal policy. I am currently participating with the Chief's Office of the Corps of Engineers and with the Coastal Engineering Research Center in developing a Corps' coastal sediment management policy which was discussed at the 65th Meeting of the Coastal Engineering Research Board in Chicago during the week of June 23-27, 1997. This sediment management policy has as its centerpiece, the conservation of sand in the littoral system. I believe that to not place all good quality dredged sediment back in the littoral system would both adversely impact the natural system and would reflect unfavorably on the environmental sensitivity of the Corps of Engineers.

In some cases, there is the opportunity for engineering measures to improve the natural system and/or to compensate for past inappropriate practices, It appears that the forthcoming project is such a case. It is my understanding that in 1991 some of the maintenance material dredged was used as a portion of a fill. Thus, it seems reasonable that in addition to placing all maintenance material within the littoral system, it is appropriate to place that portion of the new dredging material that is of good quality and compatible with the existing sediments in the vicinity of Cat Island.

I am enclosing a paper which expands on the rationale and need for appropriate sediment management practices and policies. If you wish to discuss the basis for my recommendation that all good quality sediment be placed within the natural system, please feel free to call me.

Best regards.

Sincerely yours,

Robert G. Dean

Robert G. Dean
Consultant

cc: Mr. George R. Boddie ✓

July 10, 1997

COMMENTS ON PROPOSED DREDGING AND PLACEMENT OF DREDGED MATERIAL, GULFPORT HARBOR PROJECT, HARRISON COUNTY, MISSISSIPPI

(Public Notice No. FP97-GUO 5-9, June 12, 1997)

SUMMARY

(1) Due to natural and man-made factors, the entire Mississippi-Alabama barrier island chain in historic times experienced significant area reduction. Four islands lost a total of 2655 acres between 1850-1986 (Oivanki and others, 1993). Thus, while growing 5 km westward, Petit Bois Island's east end was reduced by 14 km, Horn Island by 6 km (Byrnes and others, 1991). At one time in the 18th century Dauphin and Petit Bois Islands formed one continuous island. Under natural conditions, the islands have grown steadily westward, while periodically eroding on their eastern end. The mainland-island distances remained essentially unchanged.

(2) The main factors that influence island reduction since their original formation include: prehistoric geographic and sea-level changes in the growth and reduction of coastal water and land areas, and reduction of offshore sand sources, tropical storm activity. Navigational channel construction off the western island ends and removal of sand that would be used by nature mostly for island construction through dredging activities is a major contributing factor according to the US Corps of Engineers.

(3) In historic times, Cat Island suffered especially ~~great~~ high rates of area reduction. Between 1848-1973 the east-west length of the island was shortened by 3800 ft, the north-south length of the double spits that grew to the N, respectively S from the east island end was reduced by 7600 feet (Waller and Malbrough, 1976). This trend continues.

(4) The reasons why land loss on Cat Island is especially severe and of great concern include:

(a) In contrast with the other Mississippi islands immediately to the east: the absence of a "conveyor belt" of sand shoals, shallow bars, and ebb-tidal deltas that facilitates littoral and sublittoral drift in Ship Island Pass between West Ship and Cat Islands. This allows easier, less interrupted sand flow between the islands. The relatively deep (13-to-20 ft) Pass is underlain mostly by sandy muds and muddy sands (Fig. 1), indicating the difficulty in resupplying Cat Island with appropriate grain-sized, well sorted littoral sands. This littoral drift-blocking action led to sand starvation. This may be the reason for the Island's prehistoric N-S-oriented double spits and the steady

westward shift of the spit's position with ongoing erosion of the eastern island end.

(b) In contrast with its geological past when the island chain continued into the New Orleans, LA, area, Cat Island presently is the western end member of the Mississippi-Alabama island chain. Sand, transported westward along and across passes between the islands suffers natural and man-made (navigational channel-related) "leakages" in offshore and Sound-ward direction and the sand volume in transit appears to decline steadily between eastern Dauphin Island, AL, and Cat Island.

(c) Navigational channel dredging, including recent channel relocation deprived Cat Island of sand that would be transmitted by shallow waves from West Ship to the eastern Cat Island across Ship Island Pass. The island needs this sand source even more critically than the other barrier islands to the east do. Corps of Engineers design memorandum data in 1990 indicated that while between 1848-1917 the west end of Ship Island has added 150,000 cu yards per year, by the 1968-86 period the volumetric change declined to 41,000 cu yd/year. The long term-trend of reduction is due to dredging, removal of sand from the system. These figures are only partial. They do not account for all the sand lost in the deeper sublittoral zone to the navigational channel just southwest of West Ship Island.

(5) To remedy this situation, the Corps of Engineers correctly proposed the establishment of littoral zone disposal site southeast of Cat Island. The proposed site location plan has improved considerably between the 1990 Memorandum and the June 12, 1997 Public Notice. The first plan calls for disposal in deeper waters and muddier bottoms in a large area at depths between 19-to-23 ft. The second plan selected shallower (more wave-accessible) and sandier bottoms (14-to-18 ft), considerably closer to Cat Island and thus in a better position to transmit sand to the long N-S spit (Figs. 3-4).

These large sand volumes thus would not be lost to deeper Gulf waters either through the navigational channel or from the two planned deeper and more distant littoral disposal sites.

(6) We urge the Corps of Engineers to use only this littoral disposal site and not - proposed (partial or complete) alternatives; the ODMDS disposal areas (EPA Gulf Disposal Sites East and West) in the Gulf, off the Ship Island navigational channel, south of Ship Island. These are in 20-to-30 ft water and without any chance that wave-transported sands from these sites could reach Cat Island. The sand that could be used to nourish Cat Island east beach, instead would be wasted and irretrievably lost to deep Gulf waters. Indeed, due to the dominant northwest-directed swell approach directions, dredged material from the eastern EPA disposal site would wind up refilling the navigation channel.

We respectfully request therefore that plans for the EPA disposal sites be discontinued and all dredge material be deposited in the northern littoral disposal site, as outlined in the 1997 Public Notice. Natural sediment transport from this site toward Cat Island would provide both sand for the Island's eroding and retreating east beach and, by providing sediment buildup at the same time in littoral waters off Cat Island's eastern and south shores would, by diminishing wave (including occasional storm wave) erosion, "cushion" the island on the long run against by access by heavier and steeper, erosive storm waves.

GENERAL GEOLOGY AND HYDROLOGY OF MISSISSIPPI-ALABAMA BARRIER ISLAND CHAIN AREA

The present 66 mi long island chain separates the 5-to-18 ft deep, 81 mi long, 6.8-to-15 mi wide Mississippi Sound from the Gulf. In the prehistoric past this chain extended into the present New Orleans area and Cat Island was only one link, not the end member in the littoral transfer of sand. The narrow islands range in length from 2.5 mi to 14 mi (Dauphin Is.)and are separated by deep passes of varying widths. The island and pass configurations have been strongly influenced by the frequency, landfall location and intensity of tropical storms. In historical times Dauphin Island and Petit Bois formed one continuous island and as recently as prior to 1969 (and before that, also prior to 1947) Ship Island has also been a single island. The islands are surrounded by sandy shoals on which, especially after hurricane destruction of adjacent islands, new, small islets occasionally emerge (Figs. 1, 2; Otvos, 1985).

The barrier island chain performs an essential function in protecting and improving fisheries grounds, recreational, and other economic resources; the submerged animal and plant life of the Mississippi Sound and also forms a barrier to shield and buffers the mainland shore against erosion and storm destruction. Widening passes by hurricane destruction of the islands would allow the full brunt of the storm tides from the Gulf to the mainland shore. The maintenance of the islands by any avaialble means therefore is a crucial, ongoing task of the Corps of Enbgineers.

Island growth/loss trends are also determined by the dominant wave approach direction from the southwest. This results in a net westward littoral drift, mostly along the Gulf beaches of the islands. Sand between the islands travels across the underwater ebb-tidal deltas, located south of the inter-island passes. By far the largest of these crescentic shoals is located east-southeast of Dauphin Island, off the mouth of Mobile Bay. This is where the island chain receives its major sand supply from the Alabama mainland and Mobile Bay. Onland-directed sand transport from the Gulf to the individual islands is another source of the island sands.

Navigational channel construction and dredging and sediment removal outside the active island chain sediment transfer system has been interfering with the flow of sand and resulted in the reduction of islands (Petit Bois, Horn and West Ship) both by curtailing westward growth and by diminishing sand transfer to the island neighbors to the west.

CAT ISLAND AND ORIGINS OF ITS SAND BUDGET PROBLEMS

Cat Island is being especially severly impacted by the failure to receive sand from its eastern neighbor. One indication is the T (or anchor-) shaped island outline, due to severe erosion of the east island end and formation of two, steadily westward-shifting, north- and south-directed barrier spit arms. Sand shoals are largely missing between West Ship and Cat and the intervening, mostly muddy-sandy, sandy- mud bottoms of Ship Island Pass is also deeper than the other inter-island passes (Figs. 3-5). Between 1850 and 1986 Cat Island lost 783 acres in land area, almost as much as the largest loser, Petit Bois Island. Oivanki and others (1993), who calculated this figure also contend that channel dredging after 1917 was the main culprit in the land loss.

Concentration and westward transfer of sand toward Cat Island in Ship Island Pass presently is much less efficient than elsewhere in the island chain. To add gravely to the problem, Corps of Engineers documentation shows the drastic reduction in West Ship Island's accretion rate, westward growth, and further westward sand transfer due to maintenance dredging in the Gulfport navigational channel. That channel passed just west of West Ships's western tip (see Summary, above) and required the instituted channel realignment.

Clearly because there is only a limited and apparently diminishing volume of sand available for littoral drift in the Alabama-Mississippi island system, there is a burning need to utilize as much of it as possible for island maintenance; to prevent sand waste; loss to deep Gulf bottom area.

The Corps has also recognized that only recycling of dredged material, to benefit Cat Island's negative sand budget could mitigate the critical situation. The second littoral zone disposal site (LZDS), just SE of Cat Island, proposed in the Corp's 1997 announcement is more favorable than the first, more distant and deeper water littoral site from which substantial sand transfer by northwest, west-northwest directed shoaling waves and wave drift would be less intensive (Figs. 3-5)

The Corps's suggested two EPA disposal sites south of Ship Island would be too distant to influence natural oceanic sand transfer to Cat Island. Due to the dominant northeast-directed waves, sediment from the eastern site would soon start to fill in the channel. Except in the case of sediments intended for toxic

disposal sites, all available dredged sediment should be utilized at the closest possible location southeast and east of Cat island's east beach. Otherwise, dredged sandy deposits that should be used to lengthen the life span of Cat Island and its protection of the mainland shore would be irretrievably wasted and lost.

ILLUSTRATIONS

Fig. 1. Sandy and sandy mud bottoms, Ship Island Pass, between West Ship and Cat islands. Sandy bottoms shown in yellow.

Fig.2. Underwater sand shoals, sand bars and ebb-tidal deltas in Mississippi-Alabama barrier chain, direction of littoral drift.

Fig. 3. Littoral Zone Disposal Area southeast of Cat Island, according to US Corps of Engineers Design Memorandum No. 1 (1990).

Fig.4. Littoral Zone Disposal Area according to Public Notice, June 12, 1997.

Fig. 5. Comparison of the northern littoral zone disposal areas near Cat Island, 1990 and 1997 Corps of Engineers documents. Littoral sand transfer routes to Cat Island indicated by arrows.

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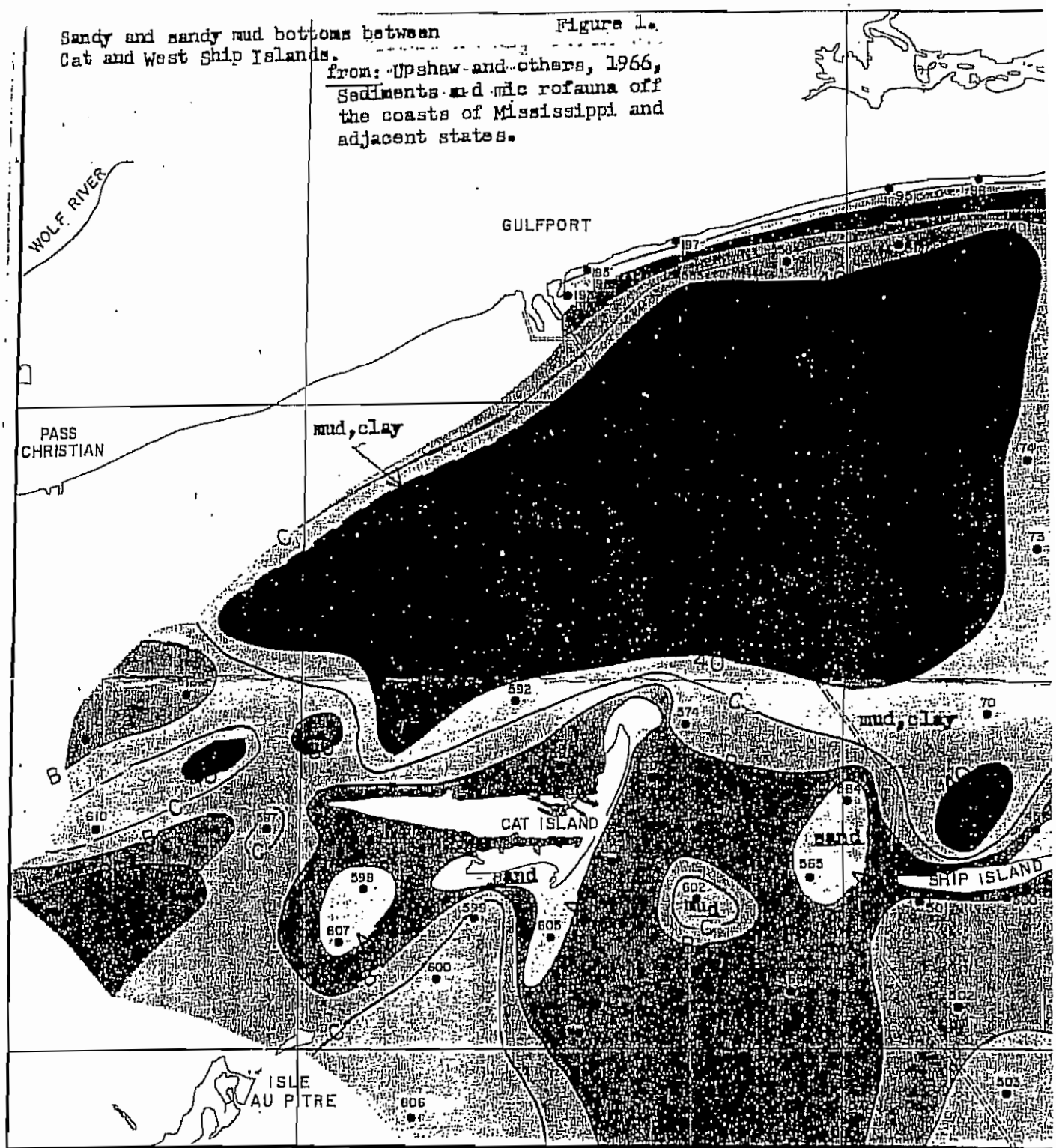
Ervin G. Otvos, Ph. D.
Consulting Geologist

Sandy and sandy mud bottoms between Cat and West Ship Islands.

Figure 1.

from: Upshaw and others, 1966, Sediments and mic rofauna off the coasts of Mississippi and adjacent states.



(DETAILS OF OPEN GULF AREAS ON PLATE 3)

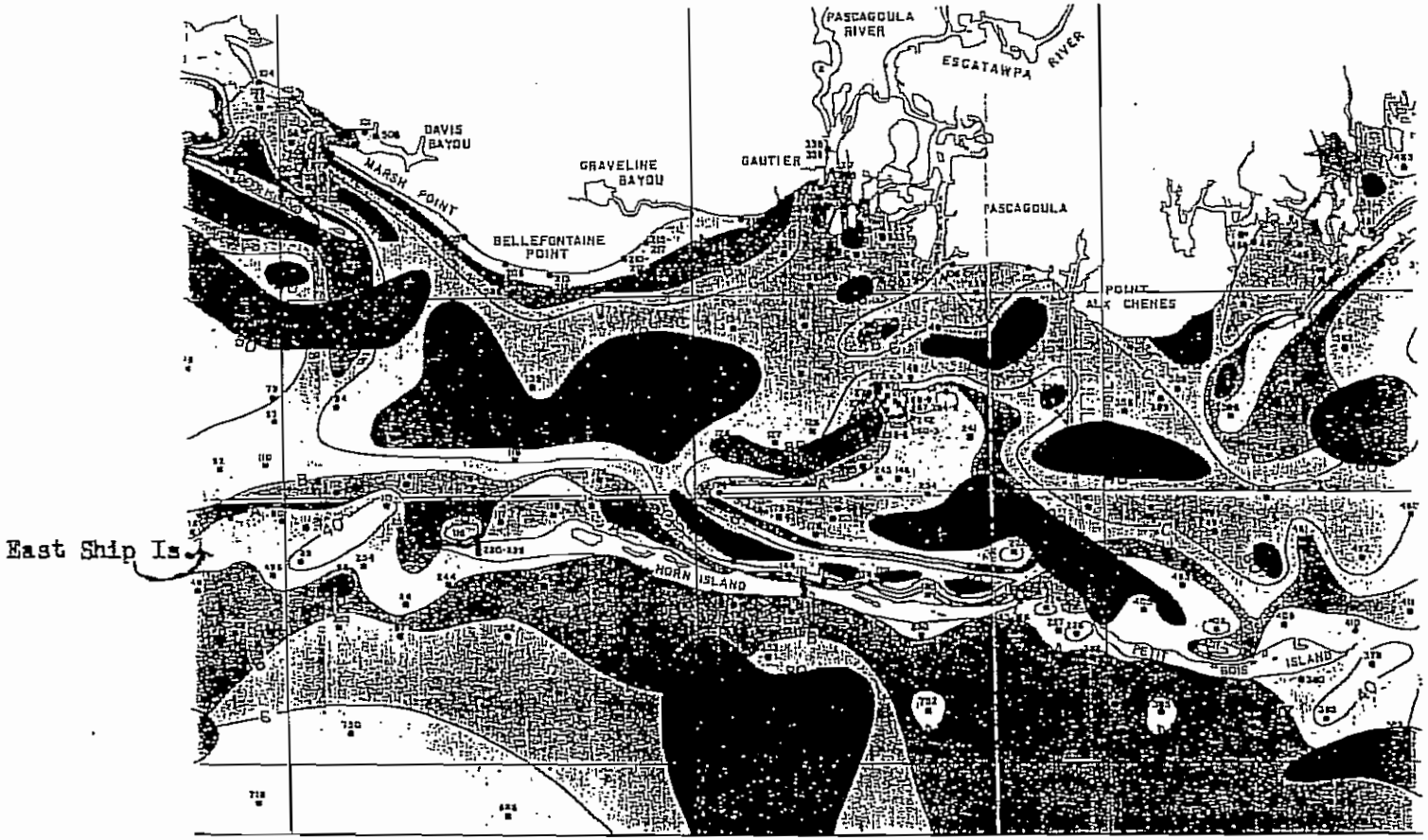


Figure 2.

Underwater sand bars/shoals/ebb tidal deltas (yellow) between Mississippi barrier islands: transit path of litteral drift.

Net drift direction: west.

Figure 4. Littoral Zone Disposal Area according to Public Notice June 12, 1997

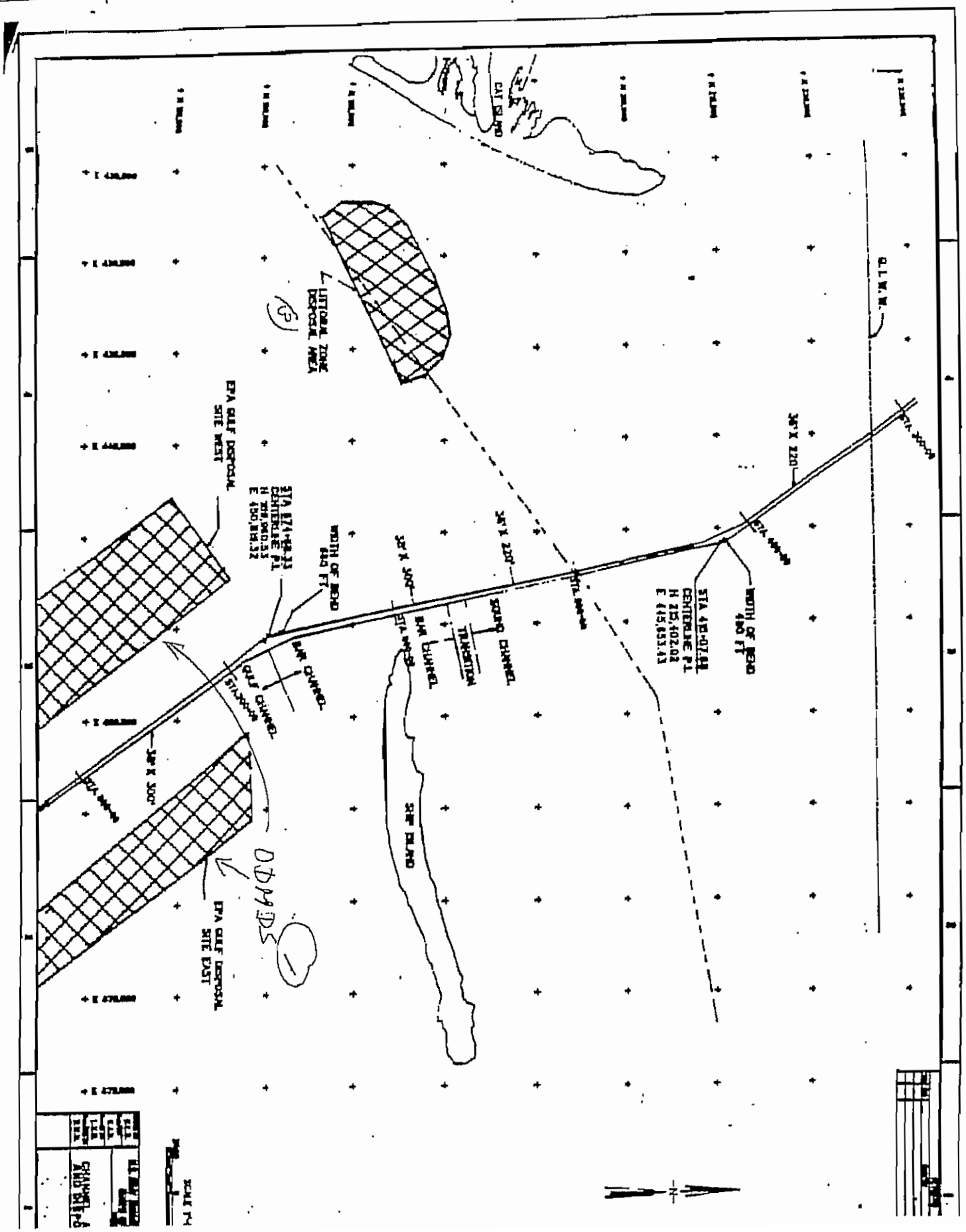
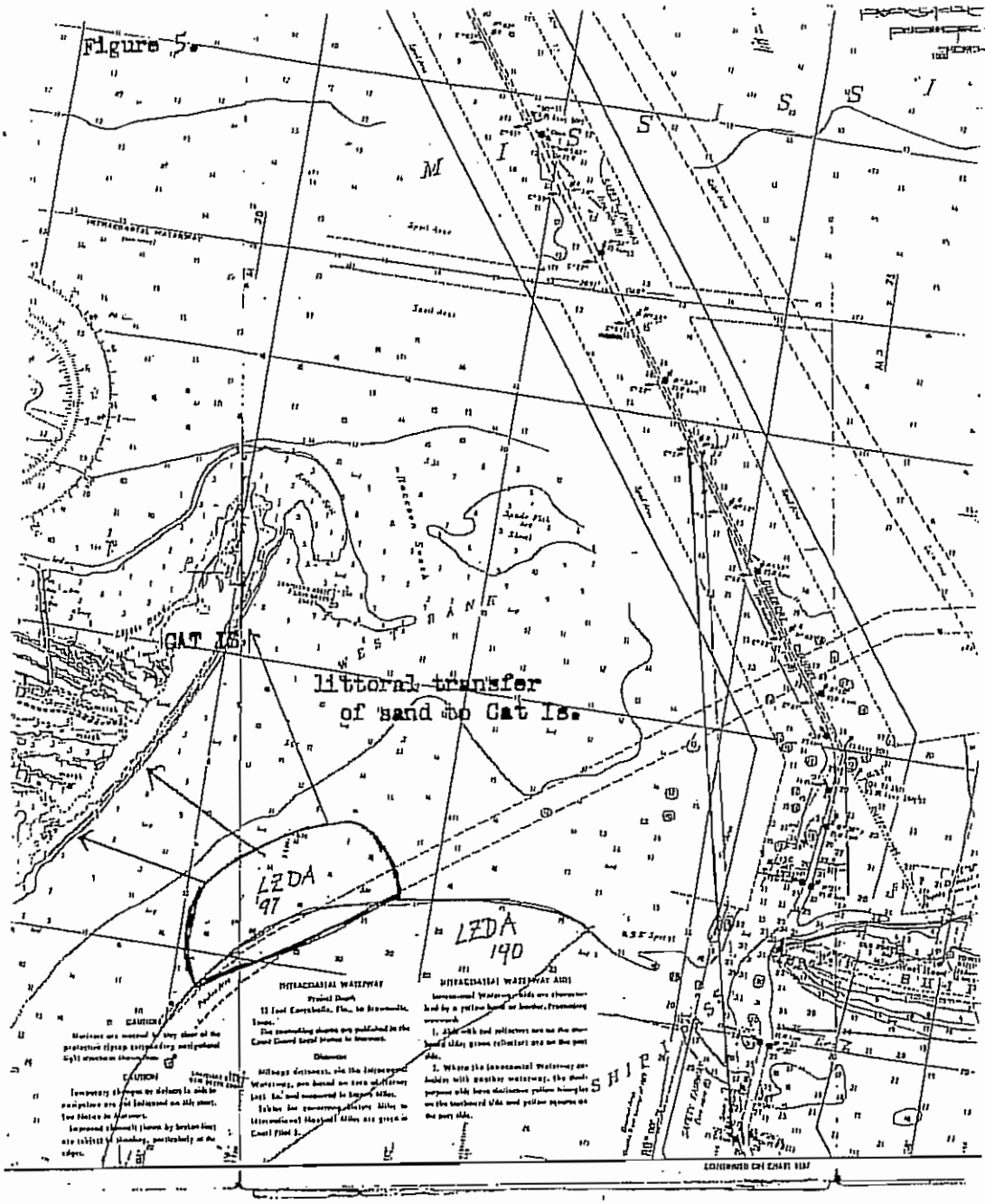


Figure 5.



Changed design location for LZDA (Littoral Zone Disposal Areas), SE of Cat Island (190 and 1997)

George R. Boddie
4443 Garland Lane
Pass Christian, Ms. 39571

March 6, 2007

Ms. Jenny L. Jacobson
U.S. Army Corps of Engineers,
Mobile District Planning and Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602

RE: Gulfport Harbor Supplemental Environmental Impact Statement (ODMDS)

Federal Express
Hand Delivered Corps' at Public Hearing March 8, 2007

Dear Ms. Jacobson:

The referenced Environmental Impact Statement (EIS) is inadequate as it fails to address the impacts associated with the disposal options that are being considered in the document. Specifically the impacts associated with the disposal option allowing the Corps to remove material from the Ship Island Pass reach of the Gulfport Ship Channel and place it in the proposed new 95,000,000 cubic yard Offshore Disposal Material Disposal Site (ODMDS). The Ship Island Pass Bar Reach of the channel contains the littoral zone material that sustains our barrier island system, specifically, Cat Island, which is located down drift of the proposed activity. While the document identifies disposal of material in the Cat Island Littoral zone as an option, the historical dredging practices in this reach, together with the enormous 95,000,000 cubic yard capacity of the proposed offshore disposal area, suggest that the Corps intends to continue removing this material from our barrier island system, and placing it in deep water offshore.

The coastal processes in the vicinity of the Gulfport Ship channel are not adequately addressed in this document,

but are fairly straightforward. Longshore sand transport from east to west produces and sustains the laterally migrating barrier island system. This process is well documented and accepted by the coastal scientist, engineers, and the USACE in previous published documents. It is also an accepted principal that westward migrating material that moves into the Gulfport Ship Channel in the Bar Channel reach, needs to be hydraulically dredged and placed on the west side of the channel to prevent a net deficit of material to the downdrift reach, i.e., Cat Island. The Corps' original Environmental Impact Statement on the 1990 channel realignment project recommended that new work and maintenance material associated with the previous realignment and maintenance of the Ship Island Pass be placed southeast of Cat Island "so as to maintain the natural littoral drift patterns". This is consistent with the findings of a study conducted by the Corps' Coastal Engineering Research Center (Technical Report CERC-89-1) for the Ship Island Pass Area. While it is unfortunate that the Corps has not conducted previous maintenance activities consistent with their statement of maintaining the natural drift patterns, it is clear that the Gulfport Ship Channel interrupts these natural littoral drift patterns, and the Corps historical and proposed policy of disposing of material in deep water offshore sites assures that there will be a net deficit of material in the down drift reach.

As part of my comments, I have attached a letter written to you in 1997 from Dr Ervin G. Otvos, chief coastal geologist with the Mississippi Gulf Coast Research Lab, clearly outlining the coastal processes and the detrimental effects of removing material from the Ship Island Pass reach of the channel for placement in the ODMDS. Previous letters to you from Dr. Robert Dean and the Woods Hole Group have supported this basic coastal process and discussed the negative impacts associated with disposing of material from the this reach of the Gulfport Channel in the deepwater ODMDS. In addressing the Gulfport Channel, Dr. Dean wrote to you that "The placement of sand outside the limits of active sediment transport is neither consistent with our modern understanding of coastal sediment transport and the causes of erosion of coastal systems nor with our ethics of conservation of sand, a valuable natural resource." He further states that "not to place all good quality dredged sediment back in the littoral system would both adversely impact the natural

system and would reflect unfavorably on the environmental sensitivity of the Corps of Engineers." These letters should be part of your project file; however, I have attached additional copies as part of my comments for review.

Dr Otvos, in the attached paper describes how the coastal processes of the 66 mi long island chain from Dauphin to Cat are all part of the same littoral system, interrupted by the Mobile, Pascagoula, and Gulfport Ship Channels. Interestingly, on July 11, 2006, a Federal Judge Bohdan A. Futey signed an opinion and order addressing the Corps' dredging practices in the Mobile Ship Channel located just east of Dauphin Island. The factual background and judge's findings can be found at www.dipoa.com/Newsletter/courtorder.pdf, however, under the terms of the settlement, the Corps has agreed to modify its dredging disposal practices of placing material in offshore disposal sites, and will dispose of future material in two Littoral Zone disposal areas near the shores of Dauphin Island. These new dredging practices are already in place. A second phase of the settlement will involve some form of mitigation to offset previous damage caused by past dredging practices. It is unclear why the Mobile District has agreed to modify its dredging practices for the Mobile Channel, while developing an environmental impact document that totally disregards the very same coastal processes in their maintenance of the Gulfport Ship Channel.

The Proposed Action (3.2.1) identifies three types of dredges that may be used to enlarge and maintain the channel. The hopper dredge, the mechanical dredge and the hydraulic cutter head Dredge. Of these, only the hydraulic cutter head is capable of placing material from the bar channel in the littoral zone southeast of Cat Island. In describing the water depths, the Bathymetry Section of the proposed EIS states that "the islands are separated by about 5 miles of open water, which overlie a fairly shallow sand bottom or bar." This 'fairly shallow' bottom which contains the proposed Littoral Zone is too shallow for loaded hopper dredges to operate, thus preventing this disposal area from being utilized with this type of equipment. Presently the Corps is advertising a Joint Public Notice number (No. FP07-GU01-02) concerning a current maintenance cycle for the Ship Island Pass reach of the Gulfport Ship Channel. The Description of the Proposed Action states that "Approximately 750,000 cubic yards of

maintenance material dredged from the Ship Island Pass Channel will be placed in the littoral zone site southeast of Cat Island or the two EPA-designated ODMDSs at Gulfport." This 750,000 cubic yards that has migrated into the channel from the east needs to be placed westward of the channel to maintain a balance in the system. It will be interesting to see if they choose to hydraulically dredge this material and discharge it through a pipeline to actually place it in the littoral zone or dredge it with a hopper and utilize the existing ODMDS.

At the request of Congress, the Corps is conducting a separate study addressing restoration of some of Mississippi's Barrier Islands. The most financially efficient opportunity to restore and sustain the barrier island system is during the ongoing annual maintenance of our ship channels. It makes no sense to seek approval to haul 95,000,000 cubic yards to a deep water disposal area twelve miles south of the barrier islands at the same time you are conducting a study to restore the islands. Restoration of the barrier islands will require medium to fine grain sands for the beach and silts and clays for the restoration of the marsh habitat. All of these materials are located in the Mississippi Sound and Ship Island Pass Reach of the Gulfport Ship Channel.

As a final issue, the American Society of Civil Engineers (ASCE) recently adopted a Beneficial Use of Dredged Material Policy on April 27, 2006 which is attached to this letter as part of my comments. The Corps' request for a new 95,000,000 cubic yard offshore disposal area is inconsistent with this ASCE policy, nationally recognized coastal scientists and engineers, U.S. Justice Department, as well as your own previously published documents and studies which recognize the need for bypass dredging and beneficial use. The coastal process and environmental impacts of interrupting this process should certainly be included as one of the major sections of this Environmental Impact Statement.

Please make sure that this letter, together with all of the attachments listed below are included in the official comments for this draft EIS and for the project record. Thank you for the opportunity to comment on this draft EIS. I hope we can reach a consensus that will provide the Port of Gulfport their improved access while

insuring that our barrier island system and the protection it affords our Mississippi Gulf Coast is protected.

Sincerely,

George R. Boddie, P.E.

Attachments:
Ervin Otvos Letter
Robert Dean Letter
Federal Court Order
ASCE Dredging Policy

cc: Mr. Chris LaGarde, Representative for Congressman Gene Taylor
Dr. William Walker, MDMR
Mr. John Webb, P.E., Port of Gulfport
Mr. John Colbert, Stone Pigman
Dr. Ervin Otvos
Mr. Dan Blackburn
Mr. Jerry Eubanks, NPS
EPA Region 4

Received by the Mobile Corps of Engineers: July 10, 1997 - E.G.O.

July 10, 1997

District Engineer, US Corps of Engineers
Mobile District
Attn: CESAM-PD-EC
Mobile, Alabama 36628-0001

Re: COMMENTS ON PROPOSED DREDGING AND PLACEMENT OF DREDGED MATERIAL, GULFPORT HARBOR PROJECT, HARRISON COUNTY, MISSISSIPPI (Public Notice No. FP97-GUO 5-9, June 12, 1997)

Dear Sir:

In the following I am submitting to the Corps of Engineers comments on the above titled Proposal. They are based on the review of Corps documents as well as geological-hydrological data and information pertinent to the proposal. These comments are submitted on behalf of the Boddie Family, the present owner of Cat Island, Mississippi. They are seriously concerned about how the proposed spoil disposal aspects of the dredging project will be executed. The following comments have been discussed with and approved by Mr. George R. Boddie, who represents the family and who, a civil engineer himself, is very much interested and involved in coastal restoration in general.

SUMMARY

(1) Due to natural and man-made factors, the entire Mississippi-Alabama barrier island chain in historic times experienced significant area reduction. Four islands lost a total of 2655 acres between 1850-1986 (Oivanki and others, 1993). Thus, while growing 5 km westward, Petit Bois Island's east end was reduced by 14 km, Horn Island by 6 km (Byrnes and others, 1991). At one time in the 18th century Dauphin and Petit Bois Islands formed one continuous island. Under natural conditions, the islands have grown steadily westward, while periodically eroding on their eastern end. The mainland-island distances remained essentially unchanged.

(2) The main factors that influence island reduction since their original formation include: prehistoric geographic and sea-level changes in the growth and reduction of coastal water and land areas, and reduction of offshore sand sources, tropical storm activity. Navigational channel construction off the western island ends and removal of sand that would be used by nature mostly for island construction through dredging activities is a

major contributing factor according to the US Corps of Engineers.

(3) In historic times, Cat Island suffered especially great rates of area reduction. Between 1848-1973 the east-west length of the island was shortened by 3800 ft, the north-south length of the double spits that grew to the N, respectively S from the east island end was reduced by 7600 feet . The fact that the rate of retreat of the Island's eastern shore in the 1917-1958 interval alone, during a time of intensive navigation channel dredging equalled or even considerably exceeded that of the 1848-1917 period (Waller and Malbrough, 1976, Figs. 28, 29) is significant when attributing island loss to man's activities. One should not forget that this time interval has seen only few and relatively weak storms in the Cat island vicinity and it excludes the impact of such severe hurricanes as the 1965 Betsy and Camille in 1969.

(4) The reasons why land loss on Cat Island is especially severe and of great concern include:

(a) In contrast with its geological past when the island chain continued into the New Orleans, LA, area, Cat Island presently is the western end member of the Mississippi-Alabama island chain. Sand, transported westward along and across passes between the islands suffers natural and man-made (navigational channel-related) "leakages" in offshore and Sound-ward direction and the sand volume in transit appears to decline steadily between eastern Dauphin Island, AL, and Cat Island.

(b) Navigational channel dredging, including recent channel relocation deprived Cat Island of sand that would be transmitted by shallow waves from West Ship to the eastern Cat Island across Ship Island Pass. The island needs this sand source even more critically than the other barrier islands to the east do. Corps of Engineers design memorandum data in 1990 indicated that while between 1848-1917 the west end of Ship Island has added 150,000 cu yards per year, by the 1968-86 period the volumetric change declined to 41,000 cu yd/year. The long term-trend of reduction is due to dredging, removal of sand from the system. These figures are only partial. They do not account for all the sand lost in the deeper sublittoral zone to the navigational channel just southwest of West Ship Island.

(5) To remedy this situation the Corps of Engineers correctly proposed the establishment of littoral zone disposal site southeast of Cat Island. The proposed site location plan has improved considerably between the 1990 Memorandum and the June 12, 1997 Public Notice. The first plan calls for disposal in deeper waters and muddier bottoms in a large area at depths between 19-to-23 ft. The second plan selected shallower (more wave-accessible) and sandier bottoms (14-to-18 ft), considerably closer to Cat Island and thus in a better position to transmit

sand to the long N-S spit (Figs. 3-5).

These large sand volumes thus would not be lost to deeper Gulf waters either through the navigational channel or from the two planned deeper and more distant littoral disposal sites.

(6) We urge the Corps of Engineers to use only this littoral disposal site and not any proposed (partial or complete) alternatives, the ODMDS disposal areas (EPA Gulf Disposal Sites East and West) in the Gulf, off the Ship Island navigational channel, south of Ship Island. These are in 20-to-30 ft water and without any chance that wave-transported sands from these sites could reach Cat Island. The sand that could be used to nourish Cat Island east beach, instead would be wasted and irretrievably lost to deep Gulf waters. Indeed, due to the dominant northwest-directed swell approach directions, dredged material from the eastern EPA disposal site would wind up refilling the navigation channel.

We respectfully request therefore that plans for the EPA disposal sites be discontinued and all dredge material be deposited in the northern littoral disposal site, as outlined in the 1997 Public Notice. Natural sediment transport from this site toward Cat Island would provide both sand for the Island's eroding and retreating east beach and, by providing sediment buildup at the same time in littoral waters off Cat Island's eastern and south shores would, by diminishing wave (including occasional storm wave) erosion, "cushion" the island on the long run against by access by heavier and steeper, erosive storm waves.

GENERAL GEOLOGY AND HYDROLOGY OF MISSISSIPPI-ALABAMA BARRIER ISLAND CHAIN AREA

The present 66 mi long island chain separates the 5-to-18 ft deep, 81 mi long, 6.8-to-15 mi wide Mississippi Sound from the Gulf. In the prehistoric past this chain extended into the present New Orleans area and Cat Island was only one link, not the end member in the littoral transfer of sand. The narrow islands range in length from 2.5 mi to 14 mi (Dauphin Is.)and are separated by deep passes of varying width. The island and pass configurations have been strongly influenced by the frequency, landfall location and intensity of tropical storms. In historical times Dauphin Island and Petit Bois formed one continuous island and as recently as prior to 1969 (and before that, also prior to 1947) Ship Island has also been a single island. The islands are surrounded by sandy shoals on which, especially after hurricane destruction of adjacent islands, new, small islets occasionally emerge (Figs. 1, 2; Otvos, 1985).

The barrier island chain performs an essential function in protecting and improving fisheries grounds, recreational, and other economic resources; the submerged animal and plant life of

the Mississippi Sound and also form a barrier to shield and buffers the mainland shore against erosion and storm destruction. Widening passes by hurricane destruction of the islands would allow the full brunt of the storm tides from the Gulf to the mainland shore. The maintenance of the islands by any available means therefore is a crucial, ongoing task of the Corps of Engineers.

Island growth/loss trends are also determined by the dominant wave approach direction. It is from the southwest. This results in a net westward littoral drift, mostly along the Gulf beaches of the islands. Sand between the islands travels across the underwater ebb-tidal deltas, located south of the inter-island passes. By far the largest of these crescentic shoals is located east-southeast of Dauphin Island, off the mouth of Mobile Bay. This is where the island chain receives its major sand supply from the Alabama mainland and Mobile Bay. Onland-directed sand transport from the Gulf to the individual islands is another source of the island sands.

Navigational channel construction and dredging and sediment removal outside the active island chain sediment transfer system has been interfering with the flow of sand and resulted in the reduction of islands (Petit Bois, Horn and West Ship) both by curtailing westward growth and by diminishing sand transfer to the island neighbors to the west.

CAT ISLAND AND ORIGINS OF ITS SAND BUDGET PROBLEMS

Cat Island is being especially severely impacted by the failure to receive sand from its eastern neighbor. One indication is the T (or anchor-) shaped island outline, due to severe erosion of the east island end and formation of two, steadily westward-shifting, north- and south-directed barrier spit arms. Sand shoals are largely missing between West Ship and Cat and the intervening, mostly muddy-sandy, sandy- mud bottoms of Ship Island Pass is also deeper than the other inter-island passes (Figs. 3-5). Between 1850 and 1986 Cat Island lost 783 acres in land area, almost as much as the largest loser, Petit Bois Island. Oivanki and others (1993), who calculated this figure also contend that channel dredging after 1917 was the main culprit in the land loss.

Concentration and westward transfer of sand toward Cat Island in Ship Island Pass presently is much less efficient than elsewhere in the island chain. To seriously add to the problem, as the Corps of Engineers documentation shows the drastic reduction in West Ship Island's accretion rate, westward growth, and further westward sand transfer due to maintenance dredging in the Gulfport navigational channel. That channel passed just west of West Ships's western tip (see Summary, above) and required the instituted channel realignment.

Because there is only a limited and apparently diminishing volume of sand available for littoral drift in the Alabama-Mississippi island system, there is clearly a burning need to utilize as much of it as possible for island maintenance; to prevent sand waste; loss to deep Gulf bottom area.

The Corps has also recognized that only the recycling of dredged material to benefit Cat Island's negative sand budget could mitigate the critical situation. The second littoral zone disposal site (LZDS), just SE of Cat Island, proposed in the Corp's 1997 announcement is more favorable than the first, more distant and deeper water littoral site from which substantial sand transfer by northwest, west-northwest directed shoaling waves and wave drift would be less intensive (Figs. 3-5)

The Corps's suggested two EPA disposal sites south of Ship Island would be too distant to influence natural oceanic sand transfer to Cat Island. Due to the dominant northeast-directed waves, sediment from the eastern site would soon start to fill in the channel. Except in the case of sediments intended for toxic disposal sites, all available dredged sediment should be utilized at the closest possible location southeast and east of Cat island's east beach. Otherwise, dredged sandy deposits that should be used to lengthen the life span of Cat Island and its protection of the mainland shore would be irretrievably wasted and lost.

CONCLUSIONS

Based on the review of the Public Notice and pertinent geological and hydrological information, we request that in order to afford directly Cat Island and indirectly the adjacent mainland coast in its rear with the fullest protection feasible through selection of the proper littoral zone disposal site, the site from which sediment would reach Cat Island readily and most efficiently, be selected. This site would be the most logical choice: it would provide the best use of the valuable dredge material that otherwise would be wasted and lost to deeper Gulf areas from the two alternate "EPA disposal sites".

The site southeast of Cat Island therefore is proposed to be selected exclusively for all material dredged from the Ship Island Pass and the GOM entrance channels (see: Description of the Proposed Action in: Public Notice No. FP97-GUOS-9, p. 2). Therefore, it is respectfully requested that the two EPA- ODMDS littoral zone disposal sites, mentioned in the Notice as alternates to the Cat Island site should not be considered for dredge material disposal at all.

Ervin G. Otvos, Ph. D.
Consulting Geologist
336 Oakridge Circle
Biloxi, MS 39531

cc. Mr. George R. Boddie
1542 Ingleside Drive, Baton Rouge, La. 70808

ILLUSTRATIONS

Fig. 1. Sandy and sandy mud bottoms, Ship Island Pass, between West Ship and Cat islands. Sandy bottoms shown in yellow.

Fig.2. Underwater sand shoals, sand bars and ebb-tidal deltas in Mississippi-Alabama barrier chain, direction of littoral drift.

Fig. 3. Littoral Zone Disposal Area southeast of Cat Island, according to US Corps of Engineers Design Memorandum No. 1 (1990).

Fig.4. Littoral Zone Disposal Area according to Public Notice, June 12, 1997.

Fig. 5. Comparison of the northern littoral zone disposal areas near Cat Island, 1990 and 1997 Corps of Engineers documents. Littoral sand transfer routes to Cat Island indicated by arrows.

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Otvos, E. G., 1985, Coastal Evolution - Louisiana to Northwest Florida, Guidebook: American Assoc. Petroleum Geologists-New Orleans Geological Society, 91 p.

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U.S. Corps of Engineers, Mobile District, 1989 and 1990, General Design Memorandum No. 1, Gulfport Harbor, Mississippi

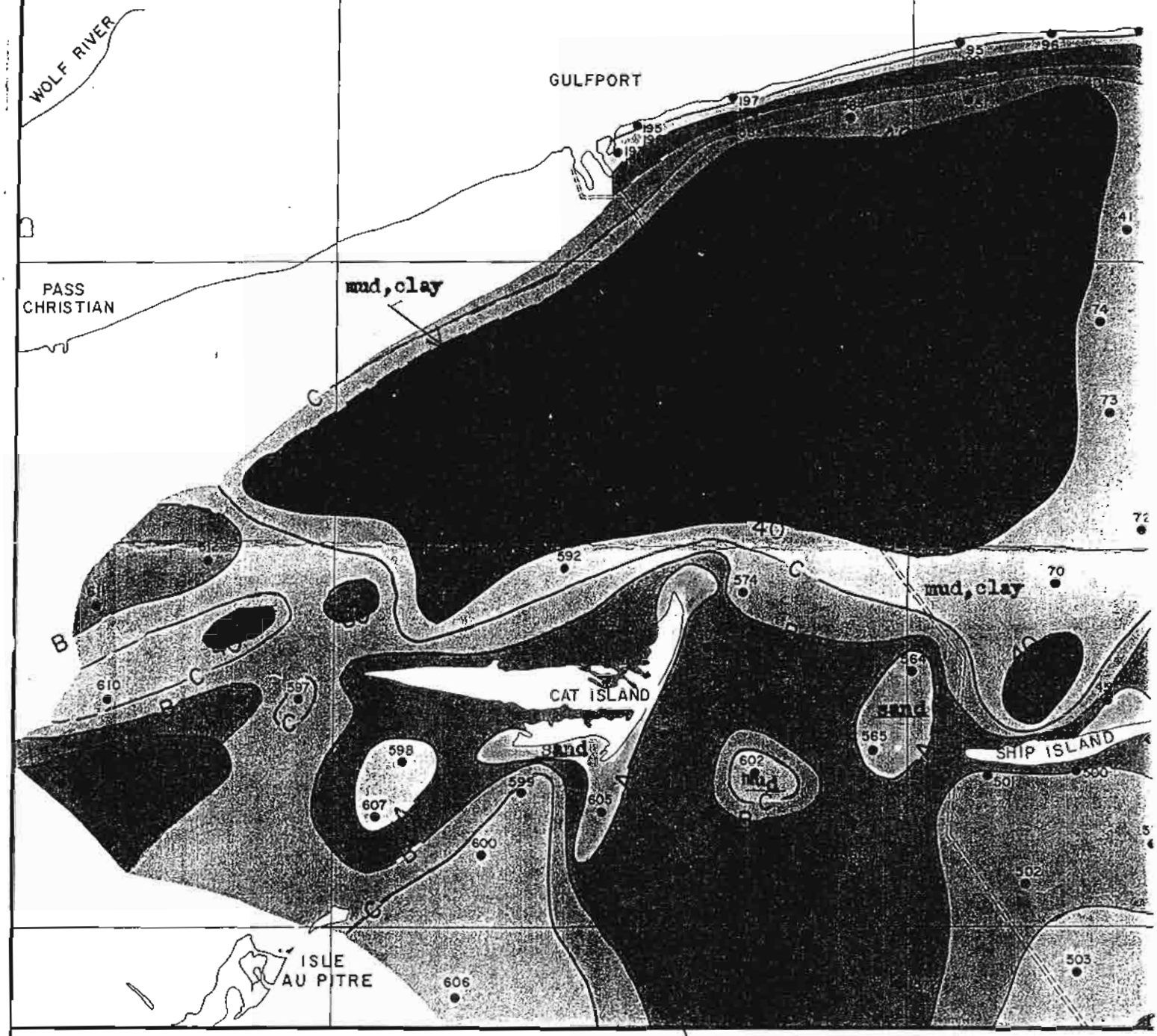
U.S. Corps of Engineers. Mobile District, 1997, Joint Public Notice US Army Corps of Engineers and Mississippi Department of Environmental Quality, FP97-GU05-9. Proposed Dredging and Placement of Dredged Material Gulfport harbor project, Harrison County, Mississippi.

Waller, T. W. and Malbrough, L. P., 1996, Temporal changes in the offshore islands of Mississippi: Water Resources Research Institute, Mississippi State University, MS, 109 p.

Sandy and sandy mud bottoms between Cat and West Ship Islands.

Figure 1.

from: Upshaw-and-others, 1966, Sediments and mic rofauna off the coasts of Mississippi and adjacent states.



(DETAILS OF OPEN GULF AREAS ON PLATE 3)

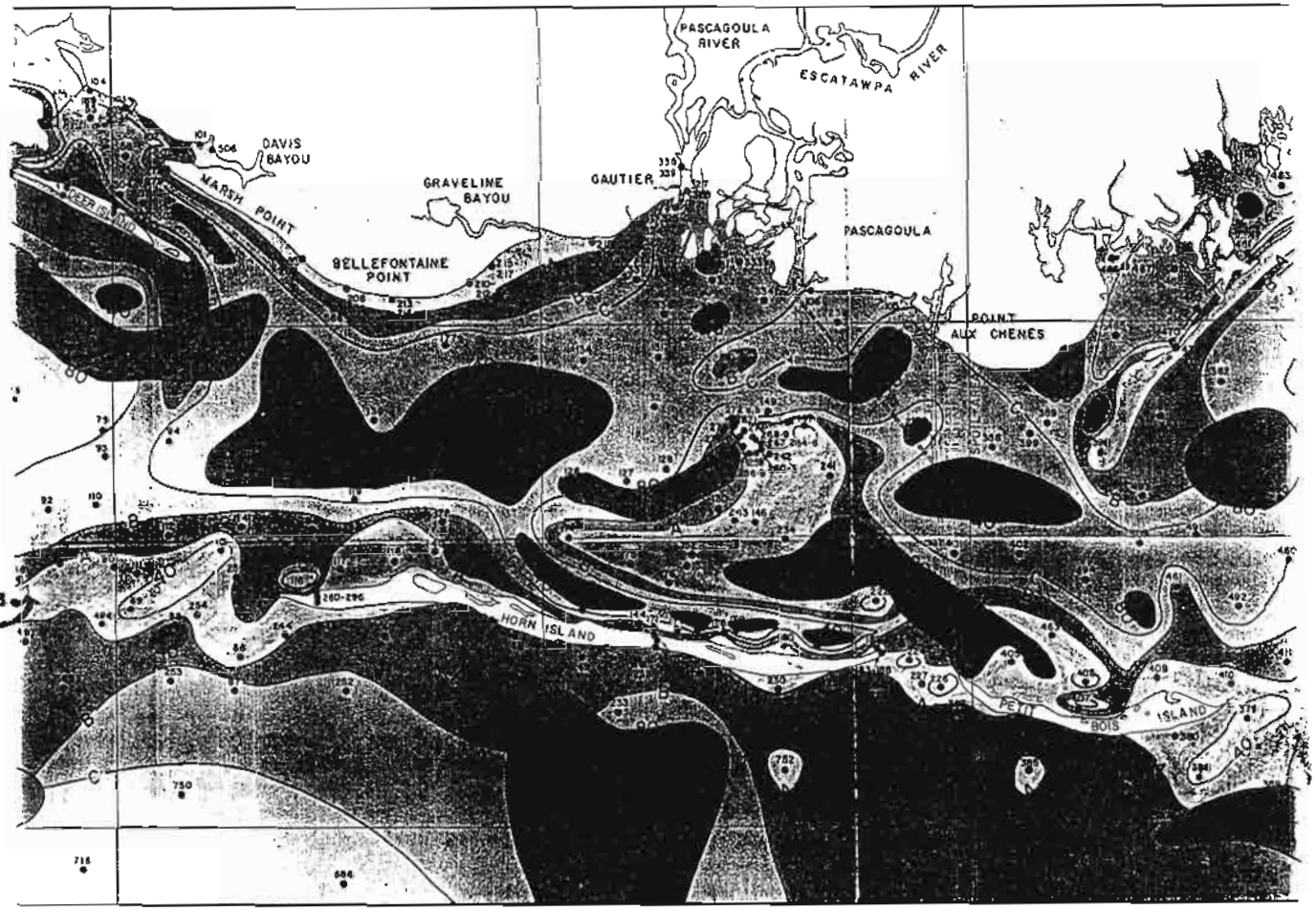


Figure 2.

Underwater sand bars/shoals/ebb tidal deltas (yellow) between Mississippi barrier islands: transit path of litteral drift.

Net drift direction: west.

Littoral Zone Disposal Site in Design Memorandum No. 1, 1990
Figure 3.

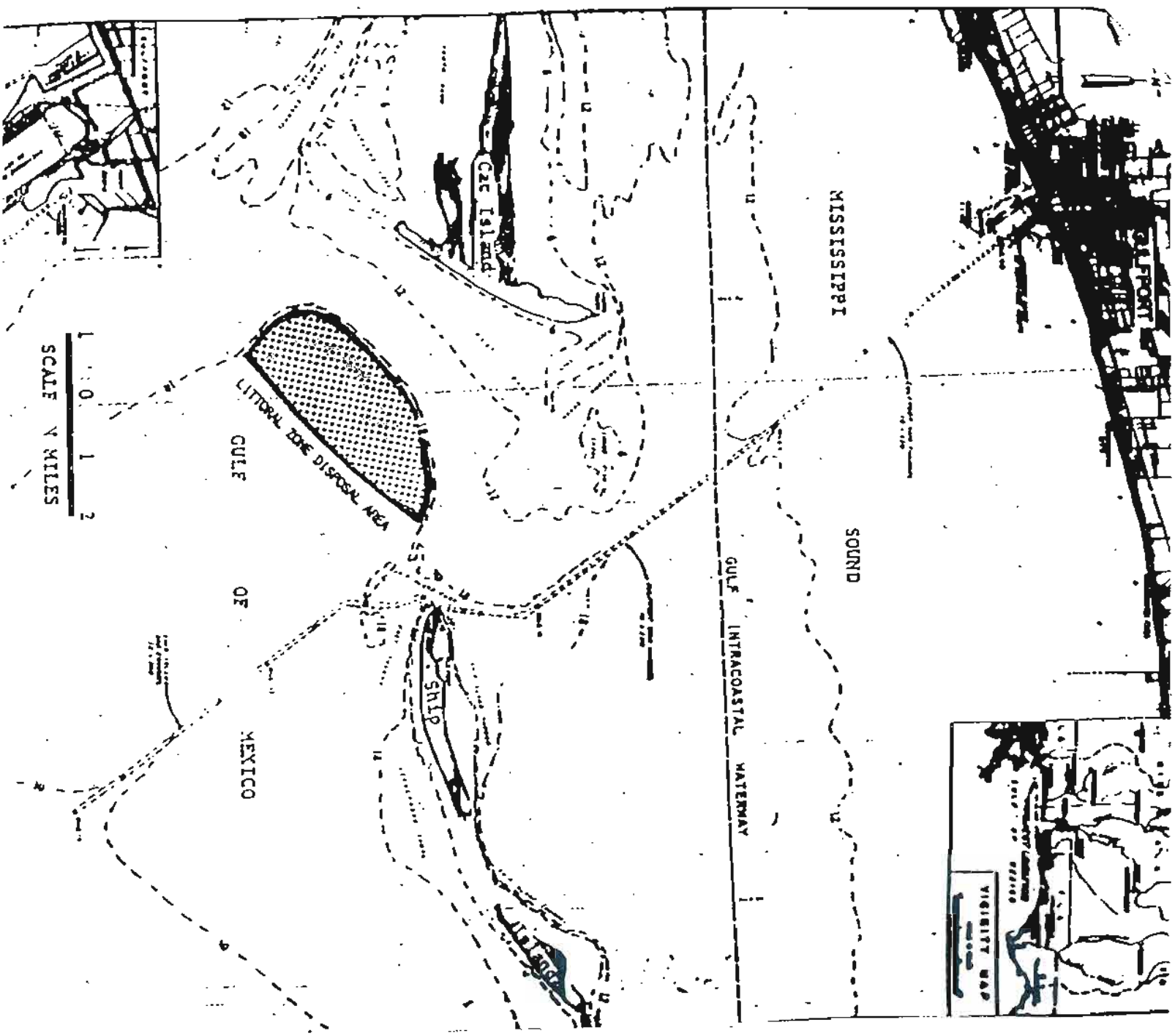


Figure 4. Littoral Zone Disposal Area according to Public Notice June 12, 1997

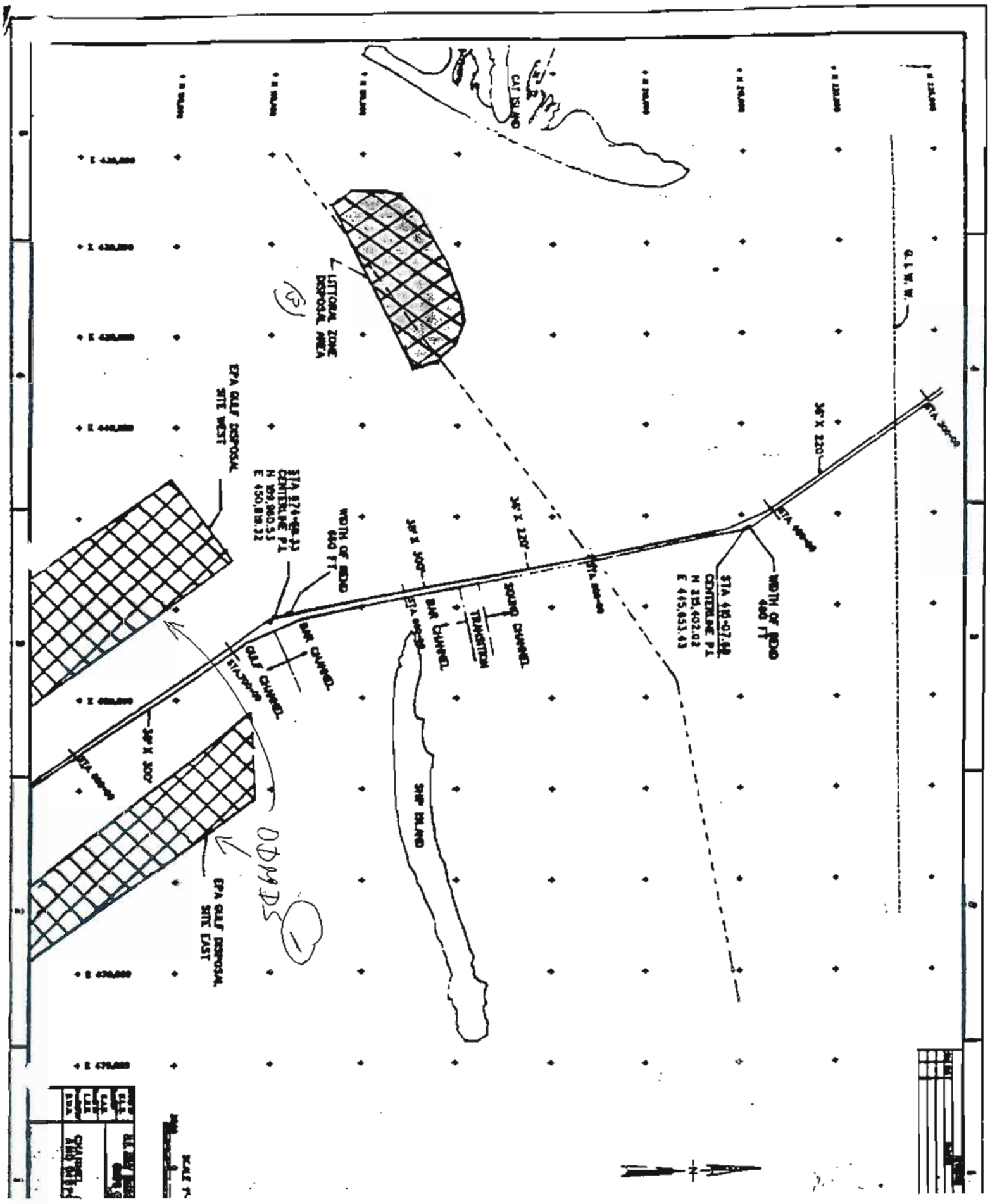
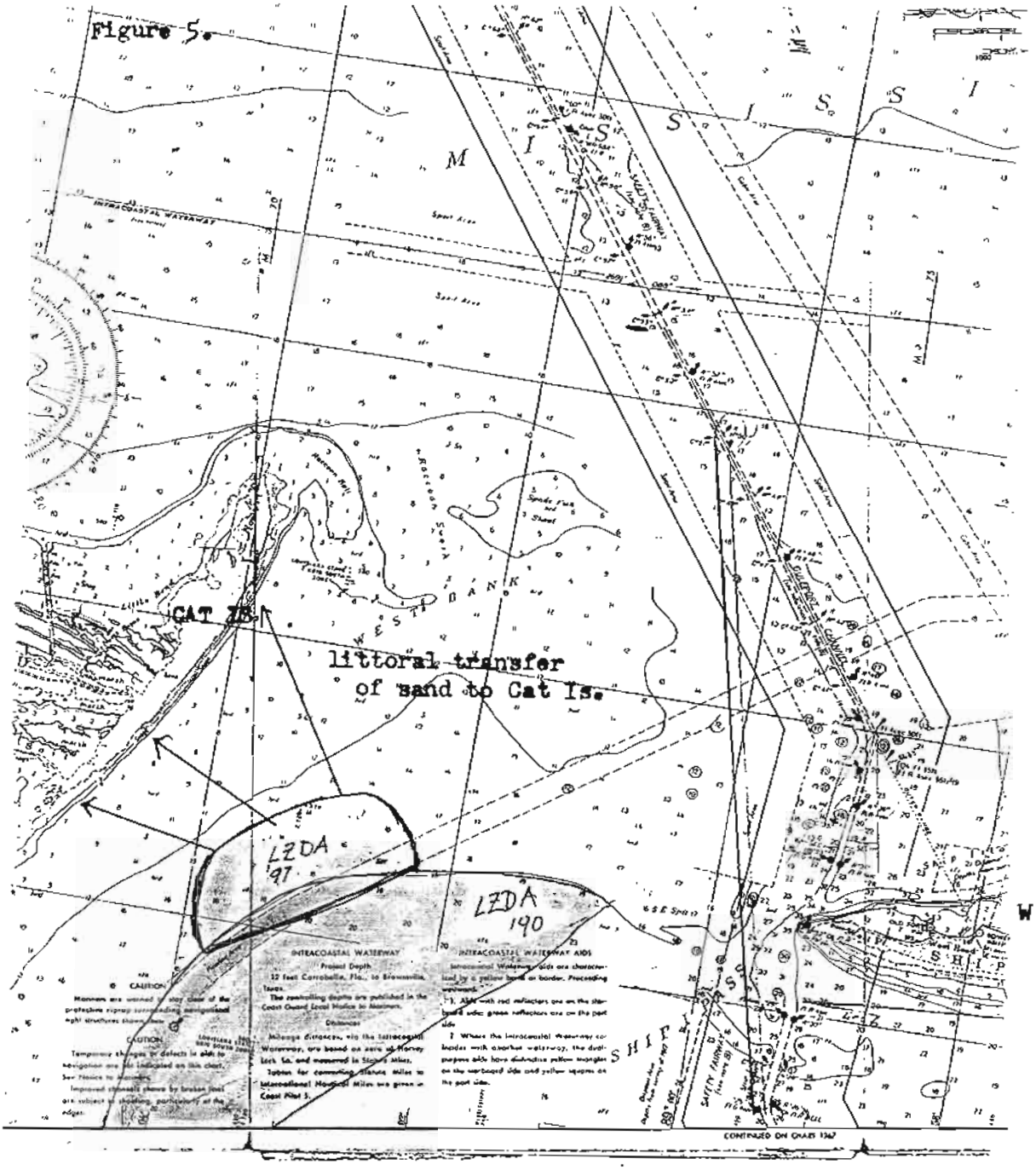


Figure 5.



Changed design location for LZDA (Littoral Zone Disposal Areas), SE of Cat Island (190 and 1997)

Consultant in Coastal and Ocean Engineering
R.G. Dean

July 8, 1997

District Engineer
U. S. Army Corps of Engineers
Mobile District
P.(O. Box 2288
Mobile, Alabama 36628-0001

Dear Sir:

This letter is in reference to Public Notice FP97-GU05-9 which pertains to "Proposed Dredging and Placement of Dredged Material, Gulfport Harbor Project; Harrison County, Mississippi". As an advance summary of this letter, I strongly recommend placement of all good quality material back into the natural sediment transport system so as to minimize adverse impacts on natural processes. Rationale for this recommendation is presented in the following paragraphs.

The net longshore sediment transport in the general area of the islands to the south of Mississippi Sound has been established clearly from the east to the west. Islands to the west of natural channels are dependent on and in approximate balance with this natural transport system from the east. Navigational channels which are deeper than natural interrupt this flow of sand and result in erosion of the islands located to the west. Likewise, if maintenance dredging from these channels is not placed on the downdrift shores, erosion of the downdrift islands results. The only effective approach to reasonable maintenance of the natural system is to ensure that all sand dredged from the artificially deepened channels is placed within the active downdrift littoral system. If this approach is not followed, the downdrift islands will erode at an abnormally high rate as a result of the interference with the natural system. In areas such as Cat Island, good quality sand is a valuable natural resource and to place this sand in an offshore disposal site or to use it for fill material results in an increase in the erosion of the downdrift island, in this case, Cat Island.

The adverse effects of not placing the sand within the active littoral system were recognized in Appendix D of the General Design Memorandum on Page D-2-16 where it is stated that "Material from the Ship Island Channel would be placed southeast of Cat Island in a manner for it to be incorporated into the littoral drift..." This recognition is again evident on Page D-2-23 where it is stated "Both new work and maintenance material from the Ship Island Pass Channel would also be deposited southeast of Cat Island in a location that would situate the material within the natural littoral drift. This placement is intended to maintain the natural shoreline processes."

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The placement of sand outside the limits of active sediment transport is neither consistent with our modern understanding of coastal sediment transport and causes of erosion of coastal systems nor with our ethics of conservation of sand, a valuable natural resource. There are several bases for this statement. Some of the more progressive states concerned with conservation of limited sand resources have related policies. For example, Statute 161.142 of the State of Florida reads:

> **"Declaration of public policy respecting improved navigation inlets.-- The Legislature hereby recognizes the need for maintaining navigation inlets to promote commercial and recreational uses of our coastal waters and their resources. The Legislature further recognizes that inlets alter the natural drift of beach-quality sand resources, which often results in these sand resources being deposited around shallow outer-bar areas instead of providing natural nourishment to the downdrift beaches.**
>
> **(1) All construction and maintenance dredgings of beach-quality sand should be placed on the downdrift beaches; or, if placed elsewhere, an equivalent quality and quantity of sand from an alternate location should be placed on the downdrift beaches at no cost to the state at a location acceptable to the department.**
>
> **(2) On an average annual basis, a quantity of sand should be placed on the downdrift beaches equal to the natural net annual longshore sediment transport. This sand shall be placed at no cost to the state. The placement location and quantities based on natural net annual longshore transport shall be established by the department, and the sand quality must be acceptable to the department.**
>
> **Note: in the above, 'department' refers to the Florida Department of Natural Resources."**

I understand that the State of South Carolina has adopted this wording, essentially verbatim, in either its statutes or as a coastal policy. I am currently participating with the Chief's Office of the Corps of Engineers and with the Coastal Engineering Research Center in developing a Corps' coastal sediment management policy which was discussed at the 65th Meeting of the Coastal Engineering Research Board in Chicago during the week of June 23-27, 1997. This sediment management policy has as its centerpiece, the conservation of sand in the littoral system. I believe that to not place all good quality dredged sediment back in the littoral system would both adversely impact the natural system and would reflect unfavorably on the environmental sensitivity of the Corps of Engineers.

In some cases, there is the opportunity for engineering measures to improve the natural system and/or to compensate for past inappropriate practices, It appears that the forthcoming project is such a case. It is my understanding that in 1991 some of the maintenance material dredged was used as a portion of a fill. Thus, it seems reasonable that in addition to placing all maintenance material within the littoral system, it is appropriate to place that portion of the new dredging material that is of good quality and compatible with the existing sediments in the vicinity of Cat Island.

I am enclosing a paper which expands on the rationale and need for appropriate sediment management practices and policies. If you wish to discuss the basis for my recommendation that all good quality sediment be placed within the natural system, please feel free to call me.

Best regards.

Sincerely yours,

Robert G. Dean

Robert G. Dean
Consultant

cc: Mr. George R. Boddie ✓

In the United States Court of Federal Claims

No. 00-115L

NOT FOR PUBLICATION

(Filed September 5, 2006)

* *

DAUPHIN ISLAND PROPERTY OWNERS ASSOCIATION, INC. a non-profit corporation; and JAMES W. HARTMAN,

Plaintiffs,

v.

THE UNITED STATES,

Defendant.

* *

Daniel Grant Blackburn, Bay Minette, AL, attorney of record for plaintiffs, Dauphin Island Property Owners Association, Inc. and James W. Hartman, and ***Lewis S. Wiener, Richard Davis*** and ***Joseph Steadman***, Washington, D.C., of counsel.

Gary A. Moore, U.S. Attorney's Office, Southern District of Alabama, and ***James E. Brookshire***, Washington, D.C., of counsel.

AMENDED OPINION AND ORDER

Futey, Judge.

This takings case comes before the court on the parties' joint motion for final approval of the settlement agreement among the United States, the State of Alabama, the Dauphin Island Property Owners Association ("the Association"), and James Hartman (as representative of the plaintiff class). On July 11, 2006, a fairness hearing was conducted in Mobile, Alabama. For the reasons stated below, the settlement on behalf of the class is approved.

Factual Background

A. Summary of the Litigation and Negotiations

Plaintiffs are owners of property on Dauphin Island, located in Mobile County, Alabama, on or adjacent to the Gulf of Mexico. The Association, which is comprised of "persons, firms, or entities which own property situated on Dauphin Island," owns certain lands on the island in fee, including stretches of beachfront property. Directly east of the island, the Army Corps of Engineers ("the Corps") maintains the Mobile Pass Channel ("the Channel"), which provides a navigable waterway to the Port of Mobile. Periodically, the Corps has dredged and deepened the Channel, removing material from the sea floor near the island.

On March 6, 2000, plaintiffs filed the instant case alleging that the Corps' dredging practices caused significant shoreline erosion of plaintiffs' property. Plaintiffs further claimed that this amounted to an uncompensated taking of their property, contrary to the Fifth Amendment. After over five years of negotiations, a proposed settlement was filed with the court on July 19, 2005, ("the Settlement") which included a joint motion for certification of the class. The case was certified as a class action on January 11, 2006. On July 11, 2006, a fairness hearing was conducted in Mobile, Alabama to determine the appropriateness of the settlement and to hear any objections of the class.

B. Summary of the Major Terms of the Settlement

Rather than providing a monetary remedy to class members, the Settlement contemplates studying the causes of the erosion and, if the Corps' construction or maintenance practices are determined to have caused erosion, to then implement measures aimed to replenish the beachfront and prevent further wearing away of the shoreline. Upon certain conditions, the Corps has agreed to modify its dredging disposal practices. Instead of disposing of the dredged material from the Channel into the historically designated locations in the Gulf of Mexico south of Dauphin Island, the Corps will dispose of the material in two areas nearer the shores of Dauphin Island. Naturally occurring conditions and currents of the Gulf Coast may, according to at least one theory, move or transport the material to the shores of Dauphin Island. In addition, the placement of this dredged material in these areas nearer the shore may help diffuse the energy of waves, both ordinary and those produced by hurricanes, that would normally hit Dauphin Island. This may help lessen and could perhaps prevent further erosion of the shoreline. The Corps may be temporarily relieved from this obligation to use nearer shore disposal sites when shallow draft equipment is not available when the work is advertised for bid, in emergency channel shoaling situations, and certain other circumstances justifying

such relief. These new dredging practices are already in place. Any benefit to the shoreline from this change in dredging practices is expected to occur over a lengthy term, and is subject to scientific study and confirmation.

The second component of the Settlement was the principal topic of the negotiation. All of the parties to the agreement have conferred and agreed upon a team of four highly qualified engineers to perform an "impact study." This study will attempt to discover if there is a measurable impact on the Dauphin Island shoreline which can be attributed to the Corps' dredging practices. The study will proceed in stages. The entire impacts study will be completed within twelve months of the execution of a feasibility cost sharing agreement.[1]

If the study shows that the Corps' dredging practices had no effect on Dauphin Island (a finding of negative impact), plaintiffs will dismiss the litigation with prejudice, subject to a provision that allows the parties to participate in alternative dispute resolution ("ADR"). The ADR process requires a heightened burden of proof. If the plaintiffs do not, in this circumstance, succeed in the ADR process, they will dismiss the litigation with prejudice. Notwithstanding a study result of negative impact, the Corps may in its own discretion declare the results inconclusive. In the latter instance, the process will move into the feasibility study phase.

If the impact study finding is positive, the Corps will, through the next phase of the process (called the feasibility study), formulate a project within eighteen months of that finding to mitigate the prior and prevent future erosion. If the Corps identifies and selects a mitigation project that falls with Section 111's statutory limit of $7,692,302.69, the Corps must begin construction of the project within 24 months. If the selected project is not achievable within that funding limit and (a) if Congress does not approve and appropriate funds for the selected plan within 36 months after the Corps' selection of it, or, alternatively, (b) if Congress does appropriate funds for the plan but the Corps fails to begin construction within 24 months of Congress' approval and funding, plaintiffs may reactivate the litigation.

---

[1] This type of settlement is contemplated under 33 U.S.C. § 426i, more commonly known as Section 111, which authorizes the Corps to undertake studies and implement measures to prevent or mitigate shore damages caused by projects such as the dredging of the Channel. *See* 33 U.S.C. § 426i. A requirement of Section 111, is that a local entity, such as the State of Alabama in this case, share the costs of the study and implementation. *See* 33 U.S.C. § 426i(b). This type of agreement is commonly referred to as a feasibility cost sharing agreement. Because of recent changes in legislation, Congressional approval is needed for this agreement. By letter dated August 7, 2006, defendant informed the court that this approval has been gained by both chambers of Congress.

There are circumstances and events contained in the settlement agreement that allow plaintiffs to petition the court to reactivate the litigation and, under several identified circumstances, the right to reactivate the litigation is subject to an agreed upon cap or limit of any monetary recovery to not greater than $7,692,302.69. As with regard to other aspects of this summary, the settlement agreement itself controls.

The settlement agreement also specifically reserves to the defendant the defense of statute of limitations if this litigation is reactivated. In the event that the statute of limitations defense fails and if the original finding of the impact study was positive, then the impact study's Final Report will be binding upon the defendant and the trial process would move to the issue of quantum, subject to the settlement agreement.

C. Attorneys' Fees

Defendant has agreed to pay stipulated litigation costs of $485,522.68 for fees and costs incurred up to April 1, 2005. Defendant has also agreed to pay fees and costs incurred after April 1, 2005 up to a total maximum of $417,480. This will be split among the four law firms representing the class in this case. The fees will not count against the feasibility cap mentioned above. In addition, the fees will not be paid unless the team of engineers determines the Minimum Measurable Quantity of loss of beachfront, which is defined generally as the loss of beachfront (if any) attributable to the Corps' construction, operation and maintenance dredging practices of and at the Channel – alone and singly, not in combination with any other causes. This determination will be made not later than four months of the effective date of the feasibility cost sharing agreement.

Discussion

Under Rule 23(e) of the Rules of the United States Court of Federal Claims "[a] class action shall not be dismissed or compromised without the approval of the court . . .." R.C.F.C. 23(e). The court must determine if the "proposed settlement is 'fair, reasonable and adequate' in order to approve it." *Berkley v. U.S.*, 59 Fed. Cl. 675, 681 (Fed. Cl. 2004) (quoting *In re Prudential Ins. Co. Of America Sales Practices Litigation*, 148 F.3d 283, 316 (3d Cir. 1998)). Many courts have considered the following five factors in determining the fairness of a class settlement:

> (1) The relative strengths of plaintiffs' case in comparison to the proposed settlement, which necessarily takes into account:
>
> > (a) The complexity, expense and likely duration of the litigation; (b) the risks of establishing liability; (c) the risks of establishing damages; (d) the risks of maintaining the class

> action through trial; (e) the reasonableness of the settlement fund in light of the best possible recovery; (f) the reasonableness of the settlement fund to a possible recovery in light of all the attendant risks of litigation; (g) the stage of the proceedings and the amount of discovery completed; (h) the risks of maintaining the class action through trial;
>
> (2) Class counsels' recommendation of the proposed settlement, taking into account the adequacy of class counsels' representation of the class;
>
> (3) The reaction of the class members to the proposed settlement, taking into account the adequacy of notice to the class members of the settlement terms;
>
> (4) The fairness of the settlement to the entire class;
>
> (5) The fairness of the provision for attorney fees;
>
> (6) The ability of the defendants to withstand a greater judgment, taking into account whether the defendant is a governmental actor or a private entity.

Berkley, 59 Fed. Cl. at 681-682 (citations omitted).

After a careful review of the settlement, all parties' counsels' comments, and the class members' comments, it is clear to the court that the settlement is fair, reasonable, and adequate by all measures.

First, the plaintiffs have strong claims, however, determining the extent and causes of the erosion without cooperation between all of the parties would be nearly impossible. The extent and complexity of the litigation as well as the risks of establishing liability and damages would be very high, as evidenced by the massive investigation that will proceed under the settlement and the time it will take to complete all aspects of the settlement. Furthermore, the risks of maintaining a class through trial would be considerable in that property ownership may turn over repeatedly during the course of litigation, potentially causing confusion over class membership or requiring repeated consents from potential class members. Defendant asserted the affirmative defense of statute of limitations raising the issue of whether plaintiffs waited too long to file this litigation. The Defendant has reserved this defense in the settlement agreement. Overall, the complicated nature of the claim and the class, the recovery under the settlement, including the cost of the studies required, easily balance out the strengths of plaintiffs' claims.

Second, class counsel's competency and acceptance of the settlement weigh heavily in favor of approval. Each member of the class' legal team has excellent qualifications and experience that are more than adequate to litigate this case. Further, class counsel conducted extensive negotiations with the government, and have worked diligently to inform the class members of the terms of the settlement. There have been a number of site visits to Dauphin Island and presentations to the class members and it is, therefore, clear to the court that the lawyers are well informed of the state of affairs on Dauphin Island. Accordingly, plaintiffs' counsels' acceptance of the settlement certainly points the court towards a finding of fairness.

The class members clearly support the settlement. Many members made positive statements about the settlement on their opt-in forms. At the fairness hearing, no objections were made to the settlement. The notice to the class was more than adequate as evidenced by the high number of replies to class counsels' mailings to the potential class members. In addition, the settlement is definitely fair to the entire class. The ultimate goal of the agreement is to scientifically determine to what extent, if any, the Corps' dredging practices affected the shoreline. If there is such a scientific finding, the Corps will complete a study to determine the most feasible way to repair damage done to the entire island and to prevent further erosion in the future. Although any remedial measures would help the beachfront property owners more directly because they will regain land, the entire island will benefit from the mitigation and prevention of further erosion. The lack of dissension within the class and the clear benefit to the class as a whole heavily favors approving the settlement.

The provision for attorneys' fees seems more than fair because any payment will not count against the limit of $7,692,302.69. In addition, the attorneys will not receive any fees unless it is determined that the study can proceed. This factor, therefore, certainly weighs in favor of approving the settlement.

Finally, the government's ability to withstand a greater judgment has little relevance here. Although the government could theoretically "always withstand greater judgment because of Congress's ability to tax" it would ultimately fall to the taxpayers to provide the necessary funds. *Berkley*, 59 Fed. Cl. at 713. In addition, if the case at hand went to trial and the plaintiff class prevailed, the court could only award monetary damages. *Bowen v. Massachusetts*, 487 U.S. 879, 914 (1988). This settlement provides for specific relief instead, which would likely be far more useful to each member of the class than his or her portion of the judgment. Considering the size of the class, each individual's share of a judgment would be small and inadequate to undertake a study and formulate a plan that would allow a reclamation of his or her property and prevention of future erosion. Therefore, it appears that all of the factors weigh in favor of the approval of the class settlement.

Conclusion

For the reasons discussed above, the court finds the Settlement Agreement among the United States, the State of Alabama, and the plaintiff class to be fair, adequate, and reasonable. The court hereby approves the Settlement Agreement as proposed by the parties.

The parties shall file a joint status report indicating progress in the implementation of the Settlement Agreement at intervals of 90 days. The first report shall be filed on Tuesday, November 14, 2006.

IT IS SO ORDERED.

s/Bohdan A. Futey
BOHDAN A. FUTEY
Judge

BENEFICIAL USE OF DREDGED MATERIAL

Approved by the Coasts, Oceans, Ports, and Rivers Institute on March 14, 2006
Approved by the National Energy, Environment and Water Policy Committee on March 30, 2006
Approved by the Policy Review Committee on March 31, 2006
Adopted by the Board of Direction on April 27, 2006

Policy

The American Society of Civil Engineers (ASCE) supports the beneficial use of dredged material. It recommends the following as policy guidance for the beneficial use of dredged material in the United States:

- All dredged sediment should be used beneficially unless it is clearly impractical to do so;
- The federal government should revise its methodology for economic analysis of dredging costs, where applicable, to reflect both gaining the benefits of using dredged material for coastal protection and avoiding disposal costs ;
- Government and private entities that develop and execute projects requiring dredging should be stewards for the beneficial use of dredged material;
- Dredged material should be managed as a resource using life-cycle dredged material management plans that consider regional sediment management needs; dredging frequencies, locations, and quantities; as well as landscape use and change;
- Contaminated sediments, considering the contaminant and degree of contamination, should be evaluated for selected beneficial uses.
- ASCE, in collaboration with its Institutes and sister organizations, should enact a system of technological exchange to ensure that best practices and lessons learned in the beneficial use of dredged material can be leveraged in future dredging activities.

Issue

Sediment must be dredged for construction and maintenance of developments such as navigation channels, ports and harbors, and placed in designated locations according to existing laws, regulations, and guidelines.

Many confined dredged material disposal sites are at or near capacity. Development of new sites is expensive and can create environmental impacts. Use of the dredged material in these sites as well as alternative sites specifically designed for beneficial purposes provides a valuable resource, as well as capacity for future dredge disposal activities.

There is an imbalance of sediment throughout the United States that is causing coastal land loss at the same time the Federal government dredges about 250,000,000 cubic yards of sediment annually. Dredged sediment is an invaluable resource that can be used to address sediment imbalances and to mitigate coastal land loss, and its coincident economic, environmental and safety consequences. Dredged sediment should not be wasted. It should be beneficially used as a routine method of business.

Rationale

Beneficial use of dredged material has been a topic of discussion for years but has not received the emphasis needed to change national dredging practice. As a nation, we need to establish a new federal policy on the beneficial use of dredged material as the standard practice for federally sponsored dredging projects. Establishing its own policy is one way ASCE can encourage and assist the development of effective national policy. Beneficial use of dredged material makes economic and environmental sense. ASCE should promote it, with a strong educational and promotional initiative, for all dredging and disposal activities as a sound business practice and as national policy.

US Army Corps of Engineers
Mobile District

GULFPORT ODMDS ENVIRONMENTAL IMPACT STATEMENT (EIS)

19TH STREET COMMUNITY CENTER, GULFPORT, MS
PUBLIC HEARING

THURSDAY MARCH 8, 2007

Public involvement is a vital part of the EIS process. We invite your comments on this project as it affects your interests. You may place them in the "Written Comments" box at this workshop session or mail them to:

Ms. Jennifer Jacobson or Ms. Linda T. Brown
US Army Corps of Engineers
Planning and Environmental Division
Coastal Environment Team
PO Box 2288
Mobile, AL 36628-0001
Fax: (251) 690-2727
www.usacegulfportoceaneis.net

Comments:

Where do the sediments go east from?
How much below the bottom is and are clay layers that could cause a slump/landslide and, therefore, a tsunami when dredge material is deposited or disposed of?
What happens as sea level rises - 1. to the deposited material and 2. to the built (above low tide and below low tide) port facilities.
You could take the dredged material to → **(continue on back if necessary)**

Name/organization/contact information: Oscar B. Eckhoff
2301 Atkinson Rd. Apt. 1C, Biloxi, Miss. 39531
(228) 388-5719

(In an effort to make all communications about this project as timely, efficient and environmentally-friendly as possible, we would prefer to send them electronically. If you have an e-mail address, providing us with it will greatly assist us in these efforts. Thank you!)

Louisiana to fill in some of their marshes. (See World Section of today's March 8 Sun Herald newspaper.)

How does the sediments in disposal site effect to shape of barrier islands?

GULFPORT NOI

SUPPLEMENTARY INFORMATION:

1. *Proposed Action:* The Alaskan Way Seawall extends for a distance of approximately 7900 feet along Seattle's central waterfront, between Washington Street to the south and Bay Street to the north. The proposed action would involve an extensive structural rebuild or replacement of the seawall in order to reduce damage resulting from storms and erosion. The proposed action is closely related to the proposed replacement of the State Route (SR) 99 Alaskan Way Viaduct, which runs parallel to a portion of the seawall. The SR 99 Alaskan Way Viaduct and Seawall Replacement Project Draft Environmental Impact Statement (AWVSRP DEIS) was issued by the U.S. Department of Transportation Federal Highway Administration (FHWA), Washington State Department of Transportation (WSDOT), and City of Seattle on April 9, 2004 (69 FR 18898). The AWVSRP DEIS evaluated the rebuilding of the Alaskan Way Seawall because it is essential to the function of transportation facilities and is at risk of collapsing in a large earthquake. The geographic area covered in the AWVSRP DEIS is virtually the same as the Corps study area. However, the Corps' EIS will evaluate the seawall from a storm damage reduction perspective; the seawall will be the primary focus of the analysis rather than a secondary project element, as in the AMVSRP DEIS. The Corps is reviewing the existing body of work and coordinating closely with the city of Seattle, FHWA, and WSDOT to incorporate all relevant material from their NEPA efforts, share information, and reduce duplication of efforts.

2. *Alternatives:* There are currently four alternatives which will receive consideration in the EIS: (1) The no action alternative; (2) construction of a vertical face wall with structural frame; (3) construction of a drilled shaft wall with soil improvements; and (4) replacing the portion of the seawall adjacent to the Alaskan Way viaduct with the outer wall of the new tunnel identified as the preferred alternative for the AWVSRP. These alternatives are the same as the rebuild, frame, and tunnel wall seawall alternatives evaluated in the AWVSRP DEIS. The development of seawall study alternatives has been and will continue to be closely coordinated with the AWVSRP through the City of Seattle, WSDOT, and FHWA. The selection of the Corps tunnel wall alternative could not occur unless FHWA signed a record of decision for the AWVSRP selecting the tunnel alternative. Opportunities will be sought to incorporate measures for improvement of habitat values, as well as recreation and public access. Public input is specifically invited regarding the reasonableness of the build alternatives and whether any additional alternatives are appropriate for consideration.

3. *Scoping and Public Involvement:* This notice of intent formally commences the scoping process under NEPA. As part of the scoping process, all affected Federal, State and local agencies, Native American Tribes, private organizations, and the public are invited to comment on the scope of the EIS. To date, the following issues of concern have been identified for in depth analysis in the draft EIS: (1) Construction impacts, particularly those related to noise, water quality, transportation, and effects to businesses and residences within/adjacent to the construction zone; (2) impacts associated with potential deviation of the existing seawall alignment; and (3) potential impacts to historical properties.

4. *Scoping Meetings:* Two public Scoping meetings will be held to identify issues of major concern, identify studies that might be needed in order to analyze and evaluate impacts, and obtain public input on the range and acceptability of alternatives. Both meetings will be conducted on April 18, 2006 in the Lopez Room at Seattle Center, 305 Harrison Street, Seattle, WA 98109. The first meeting will be held from 1 to 3:30 p.m. An informal open house will be held between 1 and 2 p.m. A brief presentation will be made between 2 and 2:30 p.m. Then testimony will be taken between 2:30 and 3:30 p.m. The second meeting will be held from 4:30 to 7 p.m. Another informal open house will be held between 4:30 and 5:30 p.m. The presentation will be made again between 5:30 and 6 p.m. Then testimony will be taken between 6 and 7 p.m. Verbal or written comments will be accepted at the Scoping meetings, or written comments may be sent by regular or electronic mail to Aimee Kinney (see ADDRESSES). Ongoing communication with agencies, Native American tribes, public interest groups, and interested citizens will take place throughout the EIS development through the use of public meetings, mailings, and the Internet. Additional meetings will be scheduled upon completion of the DEIS.

5. *Other Environmental Review, Coordination and Permit Requirements:* The environmental review process will be comprehensive and will integrate and satisfy the requirements of NEPA, and other relevant Federal, State and local environmental laws. Other environmental review, coordination, and permit requirements may include preparation of a Clean Water Act, Section 404 evaluation by the Corps.

Dated: March 17, 2006.

Debra M. Lewis,

Colonel, Corps of Engineers, District Commander.

[FR Doc. 06–3140 Filed 3–30–06; 8:45 am]

BILLING CODE 3710–ER–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare a Draft Supplement to the Environmental Impact Statement To Evaluate Construction of Authorized Improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Mobile District, U.S. Army Corps of Engineers (Corps), intends to prepare a Draft Supplement to the Environmental Impact Statement (DSEIS) to address the potential impacts associated with construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS. The DSEIS will be used as a basis for ensuring compliance with the National Environmental Policy Act (NEPA) and evaluating the following two alternative plans: "No Action" and widening to the authorized project dimensions. Gulfport Harbor is authorized to (a) A channel 38 feet deep by 400 feet wide and about 8 miles long across Ship Island Bar; (b) a channel 36 feet deep by 300 feet wide and about 12 miles long through Mississippi Sound; and (c) a stepped anchorage basin at Gulfport Harbor 32 to 36 feet deep by 1,120 feet wide and 2,640 feet long.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and the DSEIS should be addressed to Dr. Susan Ivester Rees, Coastal Environment Team, Mobile District, U.S. Army Corps of Engineers, P.O. Box 2288, Mobile, AL 36628 by telephone (251) 694–4141 or e-mail her at *susan.i.rees@sam.usace.army.mil.*

SUPPLEMENTARY INFORMATION:

1. Gulfport Harbor is located in Harrison County, MS, on Mississippi Sound about equidistant (80 miles) from New Orleans, LA, and Mobile, AL. The existing project was adopted by the River and Harbor Act approved July 3, 1930 (House Document Number 692, 69th. Congress, 2nd. Session) and the

River and Harbor Act approved June 30, 1948 (House Document Number 112, 81st. Congress, 1st Session). Construction of the existing federal project commenced in 1932, and was completed in 1950. The River and Harbor Act approved July 3, 1958 (Senate Document Number 123, 84th. Congress, 2nd. Session) adopted the small boat harbor as part of the existing federal project. Deepening improvements to the existing Federal project at Gulfport Harbor was authorized in the Supplemental Appropriations Act of 1985 (Pub. L. 99–88), which was approved on August 15, 1985. The project was also authorized in the Water Resources Development Act of 1986 (Pub. L. 99–662), which was approved November 17, 1986, and provided for development to deepen and widen the existing ship channel 36 by 300 feet in Mississippi Sound, and 38 by 400 feet across the bar, with changes in the channel alignment and entrance to the anchorage basin for safe and unrestricted navigation.

The 1976 Feasibility Report considered a number of improvement plans, such as widening the Mississippi Sound channel to 300 feet at the existing 30-foot depth and deepening the channel in 2-foot increments to a maximum depth of 36 feet. In addition, widening the channel across the bar into the Gulf of Mexico to 400 feet at the existing 32-foot depth and deepening the channel in 2-foot increments to a maximum depth of 38 feet were also evaluated. The Corps analyzed realignment of the Ship Island channel, adjustment of the turning basin's width, and enlargement of the channel entrance into the turning basin. A number of disposal options were considered including: open-water alongside of the channels, island creation within Mississippi Sound, and use of specially designed equipment to transport the dredged material to sites within the Gulf of Mexico. The 1976 Feasibility Report recommended enlarging the Bar channel to 38 feet by 400 feet from the 38-foot depth contour in the Gulf of Mexico for a distance of about 9.1 miles to a point in Mississippi Sound near the western end of Ship Island; enlarging the channel through Mississippi Sound near the western end of Ship Island; and enlarging the Mississippi Sound channel to 36 feet by 300 feet for a distance of about 11.8 miles between the inner end of the Gulf Entrance channel and the turning basin at Gulfport; realigning the Bar channel through Ship Island Pass to a location generally parallel to and about 1,000 feet west of that presently authorized, with a deposition basin for littoral drift 38 feet deep, 300 feet wide and 2,000 feet long adjacent to the east side of the channel at the west end of Ship Island; and enlarging and adjusting the dimensions of the turning basin and channel entrance by extending the southern limits of the basin seaward about 1,180 feet along the west pier and 2,300 feet along the west side of the Ship channel, decreasing the width of the turning basin from 1,320 feet, as presently authorized, to 1,120 feet, and deepening the basin and adjusted channel approach to 36 feet. Improvements of the Gulfport Harbor navigation project was initially authorized by the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99–88) in accordance with the 1976 Feasibility Report. As a result of this authorization, studies were initiated relative to the island construction within the Sound and the impacts of thin-layer disposal of new work material. This initial authorization was subsequently modified by the Water Resources Development Act (WRDA) of 1986. A revised Draft Environmental Impact Statement (DEIS), circulated in 1988, considered widening and deepening the existing Gulfport Harbor navigation channel to the authorized dimensions. In addition, five alignments for the channel segment through Ship Island Pass were also considered. Material from the construction and maintenance of the project were to be disposed of in the ocean sites. The WRDA of 1988 further modified the authorized project to include disposing of construction material via thin-layer disposal in Mississippi Sound under a demonstration program. The maintenance material would be disposed of in Mississippi Sound under a plan developed by the Secretary and approved by the Administrator of the Environmental Project Agency. The Corps published an Environmental Impact Statement (EIS) in June 1989 evaluating deepening and widening Gulfport Harbor with subsequent placement via thin-layer and ocean disposal. The proposed Draft Supplemental Environmental Impact Statement (DSEIS) uses the 1989 EIS as a reference during its evaluation of constructing Gulfport Harbor to authorized project dimensions. The DSEIS will evaluate any new conditions that were not previously addressed in the 1989 EIS.

2. Alternative scenarios to be considered include the "No action" alternative and widening to the federally authorized dimension of 300 feet in the Mississippi Sound channel and 400 feet in the Bar channel. In addition, an array of disposal options are also being evaluated for the new work as well as for the maintenance material including island creation, littoral zone disposal, disposal in the existing Ocean Dredged Material Disposal Site (ODMDS), and disposal in a new ODMDS. Currently, the U.S. Environmental Protection Agency (EPA) is preparing an EIS for the "Designation of a New Gulfport Harbor Offshore ODMDS."

3. *Scoping:* a. The Corps invites full public participation to promote open communication on the issues surrounding the proposal. All Federal, State, and local agencies, and other persons or organizations that have an interest are urged to participate in the NEPA scoping process. Public meetings will be held to help identify significant issues and to receive public input and comment.

b. The DSEIS will analyze the potential social, economic, and environmental impacts to the local area resulting form construction of authorized improvements. Specifically, the following major issues will be analyzed in depth in the DSEIS: Hydrologic and hydraulic regimes, threatened and endangered species, essential fish habitat and other marine habitat, air quality, cultural resources, wastewater treatment capacities and discharges, drainage discharges, transportation systems, alternatives, secondary and cumulative impacts, socioeconomic impacts, environmental justice (effect on minorities and low-income groups) (Executive Order 12898), and protection of children (Executive Order 13045).

c. The Corps will serve as the lead Federal agency in the preparation of the DSEIS. It is anticipated that the following agencies will be invited and will accept cooperating agency status for the preparation of the DSEIS: U.S. Environmental Protection Agency, U.S. Department of the Interior—Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Department of Commerce—National Marine Fisheries Service, Mississippi Department of Environmental Quality, Mississippi Department of Marine Resources, Mississippi State Port Authority at Gulfport, City of Gulfport, and State Historic Preservation Officer.

4. It is anticipated that the first scoping meeting will be held in the April 2006 time frame in the local area. Actual time and place for the meeting and subsequent meetings or workshops will be announced by the Corps by

issuance of a public notice and/or notices in the local media.

5. It is anticipated that the DSEIS will be made available for public review in May 2006.

Curtis M. Flakes,

Chief, Planning and Environmental Division.

[FR Doc. 06–3146 Filed 3–30–06; 8:45 am]

BILLING CODE 3710–CR–M

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Notice of Intent To Prepare a Joint Environmental Impact Statement/ Environmental Impact Report for the Proposed BNSF Cajon Subdivision Third Main Track Project Keenbrook to Summit, San Bernardino County, CA

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of Intent.

SUMMARY: The Los Angeles District intends to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to analyze the environmental effects of, and support the permit decision related to, the proposed construction of a third main track through a 15.9 mile section of the Cajon Subdivision, between Keenbrook (the southerly entrance to Cajon Pass) and Summit. The third track would be constructed on either the east or the west side of the existing tracks, depending on constraints at any given location, and would parallel the western/northern track alignment (Main Track 1), between Cajon and Summit. The purpose of the EIS/EIR is to evaluate alternative approaches to increase sustainable daily capacity of train movement along the portion of the mainline through Cajon Pass to meet demand for freight movement for the present and the future. The benefits of the additional third main track include increasing operational flexibility, increasing operational efficiency, reducing severe congestion during peak travel periods, and allowing for sufficiently frequent movements of trains and goods through the Cajon Pass. Alternatives include the addition of a third main track adjacent to the existing BNSF Main 1 through Cajon Pass with the installation of retaining walls and improvements to culverts and wildlife linkages; construction of a third main track within the existing BNSF right-of-way without environmentally sensitive design features; and the No Action/No Federal Action Alternative. The EIS/EIR will analyze the potential direct, indirect and cumulative impacts of the environmental range of alternatives, including the proposed project.

DATES: Submit comments on or before May 1, 2006.

ADDRESSES: Ms. Susan A. Meyer, Senior Project Manager, Regulatory Branch, U.S. Army Corps of Engineers, Los Angeles District, P.O. Box 532711, Los Angeles, CA 90053–2325.

FOR FURTHER INFORMATION CONTACT: Ms. Susan A. Meyer, (213) 452-3412; or e-mail: *susan.a.meyer@usace.army.mil.*

SUPPLEMENTARY INFORMATION: The U.S. Army Corps of Engineers intends to prepare a joint EIS/EIR to assess the environmental effects associated with the proposed BNSF Cajon Subdivision Third Main Track project Keenbrook to Summit, San Bernardino County, CA. Pursuant to the California Environmental Quality Act (CEQA), the County of San Bernardino is the state lead agency for the EIR pursuant to the California Environmental Quality Act (CEQA).

1. *Project Description.* The applicant, BNSF, now maintains two tracks that travel northerly from Keenbrook through Cajon Pass towards Barstow (Cajon Subdivision). The proposed third main track would be installed from Keenbrook to Summit, a distance of approximately 15.9 miles. Presently, there are three main tracks at Keenbrook and south the BNSF rail yards in San Bernardino. There are three main tracks at Summit and north for approximately 14,671 feet, or 2.77 miles. The applicant, BNSF, proposes to install the new track from Keenbrook to Summit on a 15-foot center (15 feet from the center line of the existing track to the center line of the new track), except for alignments on bridges. At bridges, the centerline would be set 25 feet from the centerline of the adjacent track. Most of the new track would be installed on either side of the existing tracks, depending on the existing right-of-way (ROW) and topographic constraints. Crossover points would be installed at Keenbrook, Cajon, Alray, and Silverwood/Summit. Most of the realignment would occur within the existing BNSF right-of-way on previously disturbed areas. The proposed project has been designed to minimize the footprint and minimize or avoid potential impacts to floodplains and wetlands, by using retaining wall structures along portions of the rail embankment.

Most of the new track alignment would follow existing cleared areas and maintenance roads. A new access road would be built adjacent to the new track for maintenance activities and to protect the track against rock fall and erosion. Existing maintenance roads would be maintained in areas where construction does not impact the current road, reestablished adjacent to the new track in impacted areas where possible, or eliminated where topography limits the footprint.

2. *Corps Action.* The U.S. Army Corps of Engineers has received an application from BNSF for a permit under Section 404 of the Clean Water Act. The proposed project includes activities (to widen existing culverts and some bridges), which are expected to result in the discharge of fill material into waters of the U.S. There are approximately 67 crossings subject to Section 404 jurisdiction included in the proposed project area. A number of these crossings are along Cajon Creek, which is a tributary to Lytle Creek, and which is a tributary to the Santa Ana River.

3. *Alternatives.* Three alternatives including the "No Action/No Federal Action" are currently being considered. The alternatives initially being considered for the proposed project include:

a. *Alternative 1 (Environmental Optimal).* Alternative 1 would be constructed from Summit (Milepost 55.82) to Keenbrook (Milepost 69.4), a distance of approximately 15.9 miles. BNSF is proposing to install the new track on a 15-foot center. The new track would be installed on either side of the existing Main Track 1 (west or east), depending upon the availability of the existing ROW and topographic constraints, including the 2.2% grade. Most of the realignment would occur within the existing BNSF ROW on previously disturbed areas. Retaining wall structures would be places in environmentally sensitive areas to reduce the footprint of disturbance to biological resources, including jurisdictional waters of the U.S. In addition, design features would be installed to enhance existing drainage structures for increased wildlife movement through existing linkages.

b. *Alternative 2 (Engineering Optimal).* The Engineering Optimal alternative would be similar in configuration to Alternative 1. However, optimal rail engineering and design methods would be utilized that do not include the more extensive, complex, and environmentally sensitive design features that are proposed with Alternative 1. Construction of the Engineering Optimal alternative would be less expensive and less difficult to implement than the Proposed Project, but would increase impacts to wetlands, floodplains, and other sensitive environmental resources. Alternative 2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213

January 25, 2007

Colonel Peter F. Taylor, Jr.
District Engineer
U.S. Army Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Taylor:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement (DEIS) for the Gulfport Offshore Ocean Dredged Material Disposal Site Designation and the Draft Supplemental EIS for the Gulfport Harbor Navigation Channel. The two EIS reports are independent of each other, but directly related. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e) and the Endangered Species Act (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.).

The listed species tables and related data appear to be in order. The Service has no comments regarding the two DEIS's. However, issues related to the Gulf Sturgeon should be coordinated with the National Marine Fisheries Service.

If you need additional information, please contact me at telephone: (228) 493-6631.

Sincerely,

Paul Necaise
Fish and Wildlife Biologist

cc:

Miss. Dept. of Environmental Quality, Jackson, MS
Miss. Dept. of Marine Resources, Biloxi, MS

Attn: Linda Brown
From: Paul Necaise

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

January 31, 2007

REPLY TO
ATTENTION OF

Coastal Environment Team
Planning and Environmental Division

Ms. Brenda Bowen
Army Federal Register Liaison Officer
U.S. Army Records Management & Declassification Agency
Casey Building, Room 102
7701 Telegraph Road
Alexandria, Virginia 22315-3860

Dear Ms. Bowen:

Enclosed are three signed Notice of Availability (NOA) copies to announce public release of the Draft Supplemental Environmental Impact Statement to evaluate construction of authorized improvements to the Gulfport Harbor Navigation Project in Harrison County, Mississippi. We would appreciate the publication of the NOA at the earliest possible date. Should you have questions, do not hesitate to contact me at (251) 694-4101.

Sincerely,

Kenneth P. Bradley
Chief, Environment and Resources
Branch

Enclosures

January 31, 2007

Coastal Environment Team
Planning and Environmental Division

Ms. Brenda Bowen
Army Federal Register Liaison Officer
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Sincerely,

C:MSWORD/NOALETTERTOBOWENGULFPORTHARBOREIS.DOC
BROWN/KL/PD-EC/3786
PD-EC
PD-E
CAMBPELL/PD

Kenneth P. Bradley
Chief, Environment and Resources
Branch

Enclosures

BILLING CODE: 3710-CR

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent to Prepare a Draft Supplemental Environmental Impact Statement to Evaluate Construction of Authorized Improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of availability.

SUMMARY: This notice of availability announces the public release of the Draft Supplemental Environmental Impact Statement (DSEIS) to evaluate construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS. The Mobile District, U.S. Army Corps of Engineers (Corps) published in the **Federal Register**, March 31, 2006, (71 FR 16294) a Notice of Intent to Prepare a DSEIS to address the potential impacts associated with construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS. The DSEIS was used as a basis to ensure compliance with the National Environmental Policy Act (NEPA) and for evaluating the following two alternative plans: "No Action" and widening to the authorized project dimensions. Gulfport Harbor is authorized to (a) a channel 38 feet deep by 400 feet wide and about 8 miles long across Ship Island Bar; (b) a channel 36 feet deep by 300 feet wide and about 12 miles long through Mississippi Sound; and (c) a stepped anchorage basin at Gulfport Harbor 32 to 36

feet deep by 1,120 feet wide and 2,640 feet long. The tentatively recommended alternative includes construction of the authorized project dimensions.

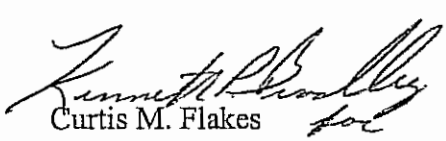
DATES: The public comment period for the DSEIS will extend through April 2, 2007.

ADDRESSES: To receive a copy of the DSEIS, or to submit comments, contact U.S. Army Corps of Engineers, Mobile District, Coastal Environment Team, P.O. Box 2288, Mobile, AL 36628-0001. A copy of the full document may also be viewed in the Mobile Public Library (Main Branch) or in the Mobile District.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and the DSEIS should be addressed to Ms. Linda T. Brown, Coastal Environment Team, phone (251) 694-3786, Mobile District, U.S. Army Corps of Engineers, P.O. Box 2288, Mobile, AL 36628 or e-mail address: *linda.t.brown@sam.usace.army.mil.*

SUPPLEMENTARY INFORMATION: Public comments can be submitted through a variety of methods. Written comments may be submitted to the Corps by mail, facsimile, or electronic methods. Additional comments (written or oral) may be presented at the public hearing on March 8, 2007 at the 19th Street Community Center, 3319 19th Street, Gulfport, MS. Additional information on the public hearing will be mailed in a public notice to the agencies and public and announced in news releases.

DATED: January 31, 2007



Curtis M. Flakes
Chief, Planning and Environmental Division

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF

CESAM-PD-EC **06 February 2007**

PUBLIC NOTICE NO. FP07-GU02-03

PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT

NOTICE OF AVAILABILITY OF THE

DESIGNATION OF A NEW OCEAN DREDGED MATERIAL DISPOSAL SITE DRAFT ENVIRONMENTAL IMPACT STATEMENT

AND THE

CONSTRUCTION OF AUTHORIZED IMPROVEMENTS TO THE FEDERAL GULFPORT HARBOR NAVIGATION PROJECT DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

HARRISON COUNTY, MISSISSIPPI

TO ALL INTERESTED PARTIES:

The U.S. Army Corps of Engineers, Mobile District (Corps) requests your review and comments on the Draft Environmental Impact Statement (DEIS) for the Designation of a New Offshore Gulfport Ocean Dredged Material Disposal Site (ODMDS), Harrison County, Mississippi and the Draft Supplemental Environmental Impact Statement (DSEIS) for the Construction of Authorized Improvements to the Federal Gulfport Harbor Navigation Project, Harrison County, Mississippi. Copies of the DEIS and the DSEIS are located at the following websites - http://www.usacegulfportnavigationeis.net/default.aspx and http://www.usacegulfportoceaneis.net/default.aspx, respectively. In addition, hardcopies of the DEIS and DSEIS are available upon request from the below contacts. These documents are being circulated to resource agencies and the public for a 45-day comment period. Two separate, but related, Environmental Impact Statements have been prepared.

The Designation of a New Offshore Gulfport ODMDS DEIS was jointly prepared by the U.S. Environmental Protection Agency (EPA), Region 4 and the Corps to fulfill the reporting requirements of the National Environmental Policy Act of 1969 (NEPA), as amended. The EPA,

CESAM-PD-EC **06 February 2007**
PUBLIC NOTICE NO. FP07-GU02-03

Region 4 is the lead federal agency for preparing the DEIS for Designation of a New Offshore Gulfport ODMDS. The Corps is designated as a cooperating agency. A Notice of Intent was published in the Federal Register on 08 February 2006.

Ongoing needs for ocean disposal of dredged material and the proposed improvements to the Federal Gulfport Harbor Navigation Channel have resulted in the need for the designation of a new ODMDS off Gulfport, Mississippi. Gulfport Harbor is located in Harrison County, Mississippi, on Mississippi Sound about equidistant (80 miles) from New Orleans, Louisiana, and Mobile, Alabama. There are currently two existing EPA-designated ODMDSs located east and west of the federal channel; however, these sites will not provide sufficient capacity to accommodate the anticipated disposal needs of the upcoming improvements at Gulfport Harbor.

The DEIS provides information necessary to evaluate need and alternatives to designate a new ODMDS pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. The DEIS identifies a preferred alternative as the designation of a new ODMDS approximately 21 miles from the City of Gulfport. Options for management of the site are contained in the Site Management and Monitoring Plan (SMMP) included in the DEIS as an appendix.

The Corps has prepared the DSEIS to evaluate construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. The Corps published the Notice of Intent in the Federal Register on 31 March 2006. Gulfport Harbor is authorized to (a) a channel 38 feet deep by 400 feet wide and about 8 miles long across Ship Island Bar; (b) a channel 36 feet deep by 300 feet wide and about 12 miles long through Mississippi Sound; and (c) a stepped anchorage basin at Gulfport Harbor 32 to 36 feet deep by 1,120 feet wide and 2,640 feet long. The purpose of the DSEIS is to address the potential impacts associated with construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. The DSEIS was used as a basis for evaluating the following two alternative plans: "No Action" and widening to the authorized project dimensions.

Public comments can be submitted through a variety of methods. Written comments may be submitted to the Corps by mail, facsimile, or electronic methods, comments (written or oral) may be presented at the public hearing on 08 March 2007 at the:

19th Street Community Center
3319 19th Street
Gulfport, Mississippi

Comments on the DEIS and ESEIS must be received at the address below within 45 days after the publication of the Notice of Availability in the Federal Register.

CESAM-PD-EC **06 February 2007**
PUBLIC NOTICE NO. FP07-GU02-03

For further information please contact the U.S. Environmental Protection Agency, Region 4, Attention: Mr. Wesley B. Crum, Coastal and Nonpoint Source Section, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, Georgia 30303 at (404) 562-9352 or the U.S. Army Corps of Engineers, Mobile District, CESAM-PD-EC, Attention: Ms. Jenny Jacobson or Ms. Linda Brown, 109 St. Joseph Street, Mobile, Alabama 36602 at (251) 690-2724 or(251) 694-3786.

CURTIS M. FLAKES
Chief, Planning and Environmental
Division

070523 (L) WI
Review

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF

CESAM-PD-EC

06 February 2007

PUBLIC NOTICE NO. FP07-GU02-03

PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS,
MOBILE DISTRICT

NOTICE OF AVAILABILITY
OF THE

DESIGNATION OF A NEW OCEAN DREDGED MATERIAL DISPOSAL SITE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

AND THE

CONSTRUCTION OF AUTHORIZED IMPROVEMENTS TO THE FEDERAL
GULFPORT HARBOR NAVIGATION PROJECT
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

HARRISON COUNTY, MISSISSIPPI

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The Designation of a New Offshore Gulfport ODMDS DEIS was jointly prepared by the U.S. Environmental Protection Agency (EPA), Region 4 and the Corps to fulfill the reporting requirements of the National Environmental Policy Act of 1969 (NEPA), as amended. The EPA,

CESAM-PD-EC 06 February 2007
PUBLIC NOTICE NO. FP07-GU02-03

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CURTIS M. FLAKES
Chief, Planning and Environmental
Division

February 8, 2007

Coastal Environment Team
Planning and Environmental Division

Director, Office of Environmental Policy and Compliance
Department of the Interior
Main Interior Building, MS2342
1849 C Street, NW
Washington, D.C. 20240

Dear Sir or Madam:

Enclosed are twelve copies of the Draft Supplemental Environmental Impact Statement (SEIS) for the proposed construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi (one bound hard copy and 11 CD based electronic versions). These copies are forwarded for filing in accordance with the President's Council on Environmental Quality Regulations for Implementing the Provisions of the National Environmental Policy Act (50CFR 1500-1508). It is expected that the U.S. Environment Protection Agency will publish Notice of Availability on February 16, 2007, beginning the official comment period. Copies of the Draft SEIS have been distributed to all State and Federal agencies, public libraries and interested public in the vicinity. In addition, a public notice is being released notifying the general public that the document is available for review.

For further information please contact Ms. Linda T. Brown at (251) 694-3786 or at e-mail linda.t.brown@sam.usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

EC SUBJECT FILE

February 8, 2007

Coastal Environmental Team
Planning and Environmental Division

U.S. Environmental Protection Agency
Office of Federal Activities, NEPA Compliance Division
EIS Filing Section, Ariel Rios Building (South Oval Lobby)
Mail Code 2252-A, Room 7241
1200 Pennsylvania Avenue, NW
Washington, D.C. 20044

Dear Sir or Madam:

Enclosed are five copies of the Draft Supplemental Environmental Impact Statement for the proposed construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. These copies are forwarded for filing in accordance with the President's Council on Environmental Quality Regulations for Implementing the Provisions of the National Environmental Policy Act (50CFR 1500-1508). Copies of the Draft Supplemental Environmental Impact Statement have been distributed to all State and Federal agencies, public libraries and interested public in the vicinity. In addition, a public notice is being released notifying the general public that the documents are available for review.

For further information, please contact Ms. Linda T. Brown at (251) 694-3786 or at e-mail at linda.t.brown@sam.usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

PD-EC/Brown
PD-E/Bradley
PD/Campbell
PD/Flakes

Environmental Impacts Statements; Notice of Availability

[Federal Register: February 16, 2007 (Volume 72, Number 32)]
[Notices]
[Page 7652-7653]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr16fe07-85]

ENVIRONMENTAL PROTECTION AGENCY
[ER-FRL-6684-1]

Environmental Impacts Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7167 or http://www.epa.gov/compliance/nepa/ Weekly receipt of Environmental Impact Statements Filed 02/05/2007 through 02/09/2007 Pursuant to 40 CFR 1506.9.

EIS No. 20070038, Draft EIS, BLM, WY, Pinedale Resource Management Plan (RMP), Implementation of Public Lands Administered, Sublette and Lincoln Counties, WY, Comment Period Ends: 05/17/2007, Contact: Kellie Roadifer 307-367-5309.
EIS No. 20070039, Draft EIS, WPA, CA, Trinity Public Utilities District Direct Interconnection Project, Construct and Operate a 16-mile Long 60-Kilovolt Power Transmission Facilities, (DOE/EIS-0389, Trinity County, CA, Comment Period Ends: 04/02/2007, Contact: Mark Wieringa 7200-962-7448.
EIS No. 20070040, Final EIS, DOD, 00, Programmatic--Missile Defense Agency, To Incrementally Develop, Test, Deploy, and Plan for Decommissioning of the Ballistic Missile Defense System (BMDS), Wait Period Ends: 03/19/2007, Contact: Martin Duke 703-697-4248.
EIS No. 20070041, Draft EIS, AFS, OR, Five Buttes Project, Conduct Vegetation Management Activities, Implementation, Deschutes National Forest, Cresent Ranger District, Deschutes County, OR, Comment Period Ends: 04/02/2007, Contact: Marcy Boehme 541-433-3200.
EIS No. 20070042, Draft EIS, BLM, CA, Truckhaven Geothermal Leasing Area, Addresses Leasing of Geothermal Resources, El Centro Field Office, Imperial County, CA, Comment

[[Page 7653]]

Period Ends: 04/17/2007, Contact: John Dalton 951-697-5311.
EIS No. 20070043, Final EIS, AFS, CA, Commercial Park Stock Permit Reissuance for the Sierra National Forest and Trail Management Plan for

the Dinkey Lakes Wilderness, Application Reissuance Special-Use-Permit, Mariposa, Madera and Fresno Counties, CA, Wait Period Ends: 03/19/2007 Contact: Kim-Sorini-Wilson 559-855-5355 Ext. 3328.
EIS No. 20070044, Draft EIS, AFS, NM, Surface Management of Gas Leasing and Development, Proposes to Amend the Forest Plan include Standard and Guidelines Related to Gas Leasing and Development in the Jicarilla Ranger District, Carson National Forest, Rio Arriba County, NM, Comment Period Ends: 04/02/2007, Contact: Audrey Kuykendall 505-758-6212.
EIS No. 20070045, Final EIS, FHW, UT, Riverdale Road Project (UT-26), Improvement Mobility and Safety between 1900 West in Roy, UT and U.S. Highway 89 (Washington Boulevard) in Odgen, UT, Cities of Roy, Riverdale, South Ogden and Ogden, Weber County, UT, Wait Period Ends: 03/19/2007, Contact: Gregory S. Punske 801-963-0182.
EIS No. 20070046, Draft EIS, BLM, CO, Little Snake Resource Management Plan, Implementation, Moffat, Routt and Rio Blanco Counties, Craig CO, Comment Period Ends: 05/17/2007, Contact: Jeremy Casterson 970-826-5071. This document is available on the Internet at: http://www.co.blm.gov/lsra/rmp/rmp-docs.htm#DEIS.
EIS No. 20070047, Draft EIS, COE, MN, Minnesota Steel Project, Construction and Operation of an Open Pit Taconite Mine Facilities, Concentrator, Pellet Plant, Direct Reduced Iron Plant and Steel Mill Project, located west of Nashwauk, Itasca County, MN, Comment Period Ends: 04/02/2007, Contact: Jon K. Ahlness 651-290-5381.
EIS No. 20070048, Draft EIS, NOA, 00, Programmatic--Steller Sea Lion and Northern Fur Seal Research, Proposal to Disburse Fund and Issue Permit for Research, AK, WA, OR and CA, Comment Period Ends: 04/02/2007, Contact: P. Michael Payne 301-713-2289. This document is available on the Internet at: http://www.nmfs.noaa.gov/pr/permits/eis/steller.htm.
EIS No. 20070049, Second Draft Supplement, FTA, CA, South Sacramento Corridor Phase 2, Improve Transit Service and Enhance Regional Connectivity, Funding, in the City and County Sacramento, CA, Comment Period Ends: 04/02/2007, Contact: Jerome Wiggins 415-744-3116.
EIS No. 20070050, Draft EIS, FRC, 00, East Texas to Mississippi Expansion Project, Construction and Operation of 243.3 miles Natural Gas Pipeline to Transport Natural Gas from Production Fields in eastern Texas to Markets in the Gulf Coast, Midwestern, Northeastern and Southeastern United States, Comment Period Ends: 04/02/2007, Contact: Andy Black 1-866-209-3372.
EIS No. 20070051, Draft Supplement, COE, MS, Gulfport Harbor Navigation Channel Project, Updated Information on Providing Safe and Unrestricted Navigation into and out of Gulfport Harbor, Harrison County, MS, Comment Period Ends: 04/02/2007, Contact: Linda T. Brown 251-694-3786.

D.C. Week Long Mtg Greenbook Review

Dated: February 13, 2007.
Robert W. Hargrove,
Director, NEPA Compliance Division, Office of Federal Activities.
[FR Doc. E7-2733 Filed 2-15-07; 8:45 am]
BILLING CODE 6560-50-P

Working on Documentation → RA Calender

Week After Next Schedule

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

March 6, 2007

Dr. Susan I. Rees
U.S. Army Corps of Engineers, Mobile District
Planning and Environmental Section
P. O. Box 2
Mobile, Alabama 36682

RE: **C20070100,** Coastal Zone Consistency
USEPA
Direct Federal Action
Draft Supplemental Environmental Impact Statement (DSEIS) for Gulfport Harbor Navigation Channel, **St. Bernard Parish, Louisiana**

Dear Dr. Rees:

We have received the DSEIS of the proposed Gulfport Navigation Channel widening project, and request a Consistency Determination for the proposed activity, as required by NOAA Consistency Regulations found at 15 CFR 930.32 Subpart C. It would appear that the dredged material could be used beneficially to create marsh on the back side of the Chandeleur Islands and/or similar placement on the back side of Cat Island. We believe direct placement of material on the islands should be suitable for back barrier island marsh creation of great value to fish and wildlife habitat, compared to loss of the material to deeper Gulf areas.

If you have any questions concerning this information request, please contact Brian Marcks of the Consistency Section at (225)342-7939 or 1-800-267-4019.

Sincerely,

Jim Rives
Acting Administrator

JR/JH//bgm
cc: Douglas Johnson USEPA
Jack Bohannon, USFWS, Lacombe
George Boddie, CRD
Charles Reppel, St. Bernard Parish

PD-EC

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

9043.1
ER 07/135

March 27, 2007

Mr. Curtis M. Flakes
Chief, Planning and Environmental Division
Mobile District
Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

RE: Draft Supplemental Environmental Impact Statement for the Federal Gulfport Harbor Navigation Project, Harrison County, Mississippi

Dear Mr. Flakes:

The Department of the Interior (Department) reviewed the draft Supplemental Environmental Impact Statement (SEIS) and has the following comments to provide for your consideration.

General Comments

The Department highly recommends that the Corps of Engineers incorporate seasonal timing of construction activities into project planning to avoid and minimize impacts to the natural resources and processes identified. Dredging and sediment disposal have a significant potential to impact many of the animal communities on and around the National Park Service (NPS) Gulf Islands National Seashore (GUIS) if the dredge activities are not timed correctly to avoid periods of high or seasonal animal activity. In order to avoid substantial disturbances to nesting sea turtles, nesting shorebirds, and other wildlife, as well as to minimize project affects on the visiting public, construction activities within the Ship Island Bar Channel should be limited to the months of November through February. Limiting activities to these months will provide significant protection to most GUIS wildlife populations and reduce the need to take mitigation actions.

All suitable island sediments should be retained within the natural transport system. No beach quality sand should be disposed of in offshore areas. Disposal of island sediments offshore is detrimental to a system already in a sand-deficit situation and only continues the interruption of the natural sand supply resulting in receding beaches and reduction in island width and elevation. Acceptable disposal alternatives for beach quality sand include: beach nourishment, near shore placement (littoral zone), and by-pass.

Littoral zone disposal should be redefined as shallow areas of 12' or less and should be used for disposal of all beach quality sand not otherwise deposited directly on the barrier islands. The currently designated littoral disposal area (14' to 25' depths) is too deep to adequately supply sand to the shore as it places the sediment outside of the beach system. In depths greater than 12', the sediment can not be properly reworked and distributed along the downdrift island. Disposal Areas #7 and #9 as depicted in Figure 2.2 reveals suitable depths for littoral disposal to the east of Cat Island. These disposal areas should be utilized in lieu of the designated littoral disposal area.

Specific Comments

3.1.1 Littoral Zone Disposal

Suitable material removed from within the Bar Channel segment should be kept within the littoral system as proposed and not deposited offshore where it becomes unavailable for beach processes. However, the currently designated littoral disposal area (14' to 25' depths) is too deep to adequately supply sand to the shore. The current practice of sediment disposal between the 14' and 20'+ contours places the sediment outside of the beach system. At these depths, the sediment can not be properly reworked and distributed along the downdrift island. According to studies conducted by Dr. Robert Dean in the nearshore and offshore of Perdido Key, FL (Dean et al., *Perdido Key Beach Nourishment Project: A Synthesis of Findings and Recommendations for Future Nourishments*, May 1995), sediment placed deeper than 12' will not move back onto the shore. Littoral zone disposal needs to be redefined as shallow areas of 12' or less and should be used for disposal of all beach quality sand not deposited directly on the barrier islands.

Figure 2.2 reveals suitable depths for littoral disposal to the east of Cat Island, specifically Disposal Areas #7 and #9. Figure 2.2 also indicates water depths between 14' and 25' in the Littoral Disposal Area.

3.1.2 Existing ODMDS Disposal Areas/3.1.3 New ODMDS Disposal Area

In terms of barrier island function, disposal of island sediments offshore is detrimental to a system already in a sand-deficit situation. Routine removal of sediment from the natural transport system only continues the interruption of the natural sand source and results in receding beaches and reductions in island width and elevation. Sediment disposal must make use of the most effective placement in order to provide maximum benefit to adjacent areas. If spoil material is of sufficient quality, there should be no offshore disposal. Placement within the littoral zone, as described above, or on adjacent islands is the only acceptable disposal method.

3.2.3.2 Beneficial Use Alternatives - Beach Nourishment

Placement of beach quality sediments on the north side shoreline of West Ship Island, in the vicinity of Fort Massachusetts, should be included in those sites being evaluated for beach placement. Fort Massachusetts, a National Historic Register site and a focal point of visitor use activity within the Mississippi District of Gulf Islands National Seashore, is threatened by a continuing cycle of shoreline erosion. At various times in the recent past, erosion has caused the

fort to be bordered by waters of Mississippi Sound and in jeopardy of structural damage from wave action. Monitoring data indicates the average rate of shoreline retreat in the vicinity of the fort to be approximately 40' per year. All placement of dredged sediment within the boundaries of Gulf Islands National Seashore would be contingent upon tests that show the sediments are free from contaminants and are compatible in grain size, composition, and color with the existing beach and nearshore sediments.

5.2.9 Marine and Coastal Birds

The draft SEIS states "the significance criterion for marine and coastal birds would be a permanent loss or modification of habitat critical for life history requirements of a species or loss of an age cohort of a species of marine or coastal birds; or substantial interference with the movement of native resident or migratory marine and coastal birds." Given the substantial use of the west end of West Ship Island by nesting shorebirds, including threatened species, "significance criterion" should include disruption of the nesting process. Disturbance to nesting shorebirds can result in continual and periodic flushing of the parent birds whereas the eggs and/or chicks are left exposed to predators and/or heat fatality. Continued disturbance can lead to the complete abandonment of a nest or colony, even after eggs are deposited in the nest.

5.2.9.1 Marine and Coastal Birds - Proposed Action

Table ES-1, Summary of Impacts, states a "possible disruption to birds roosting on the western end of Ship Island during nearby dredging activities." This disruption would also be applicable to nesting birds and given the large numbers of shorebirds nesting on the west end of West Ship Island, disruption could be substantial.

Table ES-1 also states that "activity would return to normal following completion of dredging." Whereas that might be true for "roosting" birds, the impact to the nesting process, specifically the possible mortality of eggs and chicks, occurs during the disturbance and can not return to normal. In addition, continual or periodic flushing of the parent birds requires a significant amount of energy expenditure that the birds need to put towards egg production and chick rearing. It is unknown just how much the loss of this energy affects nesting success.

It is further stated that "....these [foraging] birds are not dependent upon the site for survival...." For nesting birds, once the nesting process has begun (i.e., egg deposition, incubation, and early chick rearing) they are absolutely dependent upon that particular site. Continued disturbance, leading to the complete abandonment of a nest or an entire colony, can not be considered "temporary and negligible."

5.2.10.1 Threatened and Endangered Species - Proposed Action

The least tern (*Sterna antillarum*) is a colonial nester that nests on the west end of West Ship Island and could be impacted by dredging operations. Disturbance, leading to the complete abandonment of a nest or an entire colony, can not be considered "temporary and negligible" for this threatened species. If the disturbance level is of sufficient magnitude to result in the abandonment of the entire colony, the reproductive loss of the colony would be significant and unacceptable. We recommend the Corps of Engineers contact the Fish and Wildlife Service,

Daphne Field Office, 251-441-5871, for consultation requirements under the Endangered Species Act.

5.3.2.1 Bathymetry - Proposed Action - Disposal in Littoral Zone

The currently designated littoral disposal area (14' to 25' depths) is too deep to adequately supply sand to the shore. Placement of sediment in depths greater than 12' places the sediment outside of the beach system. At these depths, the sediment can not be properly reworked and distributed along the downdrift island. According to studies conducted by Dr. Robert Dean in the nearshore and offshore of Perdido Key, FL (Dean et al., *Perdido Key Beach Nourishment Project: A Synthesis of Findings and Recommendations for Future Nourishments*, May 1995), sediment placed deeper than 12' will not move back onto the shore. Littoral zone disposal should be redefined as shallow areas of 12' or less and should be used for disposal of all beach quality sand not otherwise deposited directly on the barrier islands.

Figure 2.2 reveals suitable depths for littoral disposal to the east of Cat Island, specifically Disposal Areas #7 and #9. Figure 2.2 also indicates water depths between 14' and 25' in the Littoral Disposal Area.

5.3.2.1 Bathymetry - Proposed Action - Disposal in New ODMDS/Disposal in Existing ODMDS

It is imperative that all suitable island sediments be retained within the natural transport system and not disposed of in offshore areas. Placed correctly, these sediments will continually provide a sand source for the barrier islands. Disposal of island sediments offshore is detrimental to a system already in a sand-deficit situation. Removal of sediment from the littoral system only continues the interruption of the natural sand source and results in receding beaches and reductions in island width and elevation. Sediment disposal must make use of the most effective placement in order to provide maximum benefit to adjacent areas. If spoil material is of sufficient quality, there should be no offshore disposal. Acceptable disposal alternatives for beach quality sand include: beach nourishment, near shore placement (littoral zone), and by-pass.

5.9.1.1 Noise - Proposed Action - Surface Noise

The draft SEIS states that "....the noise from the dredging operation would not be likely to affect bird populations nearshore." As discussed in sections 5.2.9, 5.2.9.1, and 5.2.10.1 above, this statement is inaccurate when evaluating the affects of noise on nesting shorebirds. Noise disturbance to nesting shorebirds can result in continual and periodic flushing of the parent birds whereas the eggs and/or chicks are left exposed to predators and/or heat fatality. Continued disturbance can lead to the complete abandonment of a nest or colony, even after eggs are deposited in the nest. Disturbance, leading to the abandonment of a nest or colony, can not be considered "temporary and negligible" for these species. In the case of the threatened least tern, if the disturbance level is of sufficient magnitude to result in the abandonment of the colony, the reproductive loss would be significant and unacceptable.

We appreciate the opportunity to review this draft SEIS. If you should have any questions, concerning these comments you can reach me at 404-331-4524.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
NPS, GUIS
NPS, SERO
OEPC, WASO

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5317; Fax 824-5300
http://sero.nmfs.noaa.gov

March 28, 2007 F/SER46:MT/mt

Colonel Peter F. Taylor
District Engineer, Mobile District
Planning and Environmental Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Taylor:

NOAA's National Marine Fisheries Service, Habitat Conservation Division (NMFS-HCD) has received the Draft Supplemental Environmental Impact Statement (DSEIS) dated February 2007 for the Gulfport Harbor Navigation Channel in Mississippi Sound and the Gulf of Mexico, Harrison County, Mississippi. The DSEIS addresses the potential impacts associated with the proposed widening of the 21-mile long channel extending from the Gulf of Mexico into Gulfport Harbor. Pursuant to the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the DSEIS identifies and assesses impacts to EFH within the project boundary.

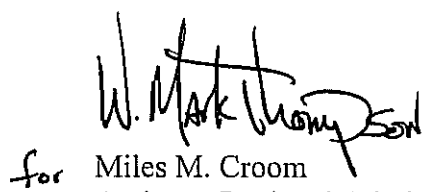
The natural sand and mud bottoms of the Mississippi Sound and the Gulf of Mexico support a benthic infaunal population that contributes directly to the complex estuarine food web and provides important forage, spawning, and nursery areas for a variety of commercially and recreationally important fish and invertebrate species. The proposed project is located in an area identified as EFH for postlarval and juvenile red drum and pink, white and brown shrimp; juvenile lane and red snappers, juvenile and adult gray snapper, Spanish and king mackerels; greater and lesser amberjacks and cobia. Also, the area is EFH for several shark species, including the Atlantic sharpnose, blacktip, finetooth, bull, and bonnethead sharks. Categories of EFH in the project vicinity include mud and sand substrates and water column. Seagrasses exist along the north sides of the barrier islands. Detailed information on federally managed fisheries and their EFH is provided in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council. The generic amendment was prepared as required by the Magnuson-Stevens Act. Other economically important species could be impacted, including blue crab, oyster, gulf menhaden, spotted and sand seatrout, croaker, mullet, and flounder. Spanish mackerel, spotted seatrout, red drum, croaker, menhaden, shrimp, and blue crab are species identified pursuant to Section 906(e)(1) of the Water Resources Development Act of 1986 as being of "national economic importance."

The proposed plan would directly impact EFH by dredging approximately 215 acres of benthic habitat with disposal of about 6.7 million cubic yards of maintenance and new work material in the littoral zone of Cat Island and in the existing and new Ocean Dredged Material Disposal Sites in the Gulf of Mexico. The NMFS-HCD has no EFH conservation recommendations to offer on the proposed plan and find the analysis presented in the DSEIS adequate.

The DSEIS does not address future maintenance of the new channel, however, by a separate letter dated February 28, 2007, the Corps of Engineers (COE) initiated EFH consultation for the continued maintenance dredging of the project. We do have concerns with the COE's proposed 5-year maintenance dredging plan, as identified in our March 19, 2007, response letter. This plan includes the unconfined disposal of nearly 4 million cubic yards of dredged material in Mississippi Sound. Because of the magnitude of the potential adverse impacts to NMFS-trust resources, we have requested that an expanded EFH consultation be initiated and a comprehensive EFH assessment be prepared and coordinated with the NMFS-HCD.

We appreciate the opportunity to review and comment on the DSEIS and are available to continue consultation on the issues identified herein. If you have questions regarding these comments, please contact Mark Thompson at our Panama City office at (850) 234-5061.

Sincerely,



for Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
F/SER4
F/SER3
GMFMC

cc: email
FWS-Jackson
EPA-Atl
MS DMR-Biloxi
GSMFC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 2, 2007

District Engineer, Mobile District, Corps of Engineer
P.O. Box 2288
Mobile, AL 36628-0001

Attention: Ms. Jennifer Jacobson - Project Manager

Subject: EPA Comments on the Draft Supplemental Environmental Impact Statement (Draft SEIS) for the Proposed Gulfport Harbor Navigation Channel, Harrison County, MS; CEQ #: 20070051, ERP #: COE-E32070-MS.

Dear Ms. Jacobson:

Pursuant to Section 309 of the Clean Air and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA, Region 4 has reviewed the subject document. The project evaluates the consequences of the US Army Corps of Engineers (USACE) proposal to widen Gulfport Harbor Navigation Channel from 220 to 300 feet in the Mississippi Sound and from 300 to 400 feet in the bar channel for a distance of 10 and 11 miles, respectively. The purpose of the widening is to provide for safe and unrestricted navigation into and out of Gulfport Harbor. Prior improvements to the harbor included deepening the channel to 38 feet.

Two alternatives are examined in the DSEIS, including a no-action and action alternative (i.e. enlarging the Harbor). Enlarging Gulfport Harbor requires dredging and disposal of approximately 6.7 million cubic yards of material [3.8 M of new work material and 2.9 M of maintenance material]. The sediment will be removed using various dredging methods including mechanical dredging and hydraulic cutter head and hopper dredging. Three disposal options for the dredged material are examined in the Draft SEIS – Littoral disposal area SE of Cat Island, use of existing Ocean Dredged Materials Disposal Site (ODMDS) located on the west side of the project, and Placement in new Gulfport Offshore ODMDS south of Safety fairway and east of Chandeleur Islands.

Based on the information in the SDEIS, EPA has the following comments for the USACE's consideration on the proposed action:

Section 2.2: Need for Proposed Action

1. The need for the proposed action is not substantiated in the SDEIS with data. The document states that pre-Hurricane Katrina documentation shows frequent "waiting at anchor" status of many vessels entering the Port and that vessels often have to wait in Port while inbound vessel navigate through the channel. There is no discussion regarding the percentage, numbers, or types of vessels that have to wait, average wait times, and or level of congestion in Gulfport Harbor. The FEIS needs to supply more specific information on issues such as the "frequent waiting at anchor" status of vessels. A small table of number of vessels/month would be useful.

Section 3.1: Channel Widening Alternatives

1. The DSEIS indicates that the project will generate 3,804,600 yd^3 of new work, and 2,919,000 yd^3 of maintenance material. It does not include projections (30 year) of annual estimated maintenance volumes. The final EIS should include 30 year projections for annual estimated maintenance volumes?

2. The DSEIS states that "Any suitable material removed from the Bar Channel segment will be placed in the existing disposal site located southeast of Cat Island in order to remain in the littoral system." Is the "existing disposal site" the area identified on Figure 2-2 as the "Littoral Disposal Area?" What volume of material is anticipated to meet the "Any suitable material" criteria? What is the criterion for "suitable?" This information should be incorporated into the final EIS.

Section 3.3.3 Alternatives Not Carried Forward

1. In general, this section of the DSEIS needs additional information, and does not provide specific and or a substantiated rationale for the alternatives that are deemed non-viable. The FEIS should provide additional information on this issue.

2. 3.2.3.1 Thin-Layer Disposal - This section states that "It is anticipated the new work material located within the Mississippi Sound segment of the channel would consist of packed clays not conducive to this type of disposal, as clays would not spread throughout the open-water sites;"... Hasn't the proposed new work material been sampled, tested and characterized? (Section 4.4.5?) Why is it "anticipated" that the material would consist of packed clays? If the material has not been tested it cannot go to an ODMDS. If the material has not been tested yet, when will it be tested? The FEIS should indicate when and how the USACE would know whether the disposed material is conducive to thin-layer disposal?

3. 3.2.3.2 Beneficial Use Alternatives Beach Nourishment - same comment as above. The DSEIS does not mention maintenance material being used for environmental enhancements such as beach nourishment. The FEIS should discuss the probability of using the dredged material from the proposed project for beneficial uses. It should also discuss the potential volumes of materials that will be available for this use.

4. Wetland Creation – The DSEIS does not mention of potential for new work and maintenance materials being evaluated for wetland creation. This information should be discussed in the FEIS.

Section 4.4.5 Sediment Characteristics:

1. EPA has not received a copy of USACE, 2006b document entitled, "*Final Sediment Quality Characterization of the Gulfport Harbor Federal Navigation Channel," Gulfport Harbor, Mississippi*, prepared by EA Engineering, Science, and Technology, Inc. January 2006. This document should be included with the final EIS for our review.

2. The FEIS needs to include a table of Polychlorinated Biphenyls (PCBs) values in sediments

3. A complete, separate, *Marine Protection, Research, and Sanctuary Act (MPRSA) Section 103 Evaluation, Sediment Testing Report*, associated documentation, package and a letter from Mobile District stating their determination that the proposed material meets the Ocean Dumping Criteria, and requesting EPA's concurrence, must be submitted to EPA Region 4 in order for the proposed material to be considered for disposal in any of the ODMDSs available for disposal.

4. Toxicity Testing: Based on the water column test results using larval development and survival rates, the material from the navigation channel may not be suitable for disposal in the existing Gulfport West ODMDS. However, detailed information should be provided during the MPRSA 103 evaluation.

5. The actual data for the bioaccumulation test results that are designed to evaluate the survival rates of benthic organisms and the potential for bioaccumulation of contaminants of concern within the organisms' tissues should be submitted to EPA in conjunction with the final EIS for MPRSA 103 review. (See item 2 above).

Section 4.3 - Biological Resources

1. Relocation of some of the noted aquatic species before spawning and into sections of the river which closely approximate their original habitat should be conducted. The DSEIS states that sea turtles will be removed prior to hopper dredging operations. EPA notes that other species such as the Gulf Sturgeon will also be removed via relocation trawling. The actual relocation should be overseen by a professional with proven experience in this type of operation.

2. To accomplish the proposed upgrades, a number of biologically important communities (seagrass, and essential fish habitat) will be adversely affected by the dredging activities. The DSEIS indicates that the project will result in temporary adverse affects to Essential Fish Habitat and temporarily disrupt mature fish and shrimp communities in the vicinity of dredging materials. We recommend continued coordination with the National Oceanic and Atmospheric Administration (NOAA) and commercial and residential fishermen dependant on these resources. In addition, the FEIS should define what temporary impacts mean (time frame and frequency).

Section 5.2.10.1 Threatened and Endangered Species

1. The DSEIS states that the USACE is required to comply with an RBO for hopper dredging impacts on sea turtles. The FEIS should discuss how the "Screening of 100 percent of dredged material with a 4-inch by 4-inch screen" will be accomplished? EPA recommends continued coordination with NOAA on these issues.

Section 5.3.4.1 - Disposal in New Gulfport Offshore ODMDS

1. This section discusses USEPA modeling of the proposed ODMDS and references USEPA, 2005. The reference listed Section 8.0 References is USEPA. 2005. *Water Quality Study of Bays in Coastal Mississippi Water Quality Report, Project #05-0926*. We are not familiar with this

report above, and not sure that this is the actual intended citation. Please verity this citation and indicate where it can be found.

Based on our review of this project, we have assigned a rating of EC-2 (environmental concerns, additional information requested) to the SDEIS. Every effort should be made to minimize the environmental impacts to biological resources, find beneficial uses to the extent practicable for the disposal material and provide EPA with the *MPRSA Section 103 Evaluation, Sediment Testing Report* to ensure that the disposal material meets the Ocean Dumping Criteria.

We appreciate your coordination with us. The EPA technical contact will be Doug Johnson (404/562-9386) located in our Water Division, while our NEPA contact will be Ntale Kajumba (404/562-9620) of my staff in the EPA Atlanta regional office.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Brown, Linda T SAM

From: Rees, Susan I SAM
Sent: Monday, April 02, 2007 12:49 PM
To: Brown, Linda T SAM
Subject: FW: MS Coast Dredging

-----Original Message-----
From: Charles Reppel [mailto:creppel@sbpg.net]
Sent: Monday, April 02, 2007 10:02 AM
To: Rees, Susan I SAM
Subject: RE: MS Coast Dredging

Susan,

Regarding the plan to widen the Gulfport navigation channel and the material to be "dumped" south of Gulfport and east of Chandelier Island.

We were wondering if you could "look into" building the Chandelier Island by placing the material on the Island, then making this area the first line of Hurricane defense.

Please advise.

Regards,

Charles Reppel
Chief of Staff
St. Bernard Parish
Cell # 504-442-1452
Email-creppel@sbpg.net

-----Original Message-----
From: Rees, Susan I SAM [mailto:Susan.I.Rees@sam.usace.army.mil]
Sent: Friday, March 30, 2007 10:16 AM
To: Russo, Edmond J ERDC-CHL-MS ; Poiroux, Duane B SAM
Cc: Charles Reppel
Subject: RE: MS Coast Dredging

Will do

-----Original Message-----
From: Russo, Edmond J ERDC-CHL-MS
Sent: Friday, March 30, 2007 10:15 AM
To: Rees, Susan I SAM; Poiroux, Duane B SAM
Cc: Reppel, Charles
Subject: MS Coast Dredging

Duane/Susan,

Please contact Mr. Charlie Reppel with St. Bernard Parish Gov't regarding dredging on a project in MS gulf coast and point him to who could answer his questions at Mobile District about the project. His cell number is
(504)
442-1452. Sorry I don't have more info on this for you.

Thx,

EJR

Linda -
PD-EC

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701
(727) 824-5312, FAX (727) 824-5309
http://sero.nmfs.noaa.gov

MAY - 7 2007

F/SER31:MCB

Mr. Kenneth P. Bradley
Mobile District, U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

Dear Mr. Bradley:

This responds to your March 9, 2007, letter to the National Marine Fisheries Service (NMFS) regarding the Corps of Engineers' (COE) request for Endangered Species Act (ESA) section 7 consultation for the proposed Gulfport Harbor Navigation Project. You determined the proposed action is not likely to adversely affect green, loggerhead, Kemp's ridley, and hawksbill sea turtles, and Gulf sturgeon, and is not likely to result in the destruction or adverse modification of [Gulf sturgeon] critical habitat; however, you requested initiation of formal consultation to evaluate the effects of the proposed project on listed species and critical habitat.

The project is located along a channel extending from Gulfport, Harrison County, Mississippi, through Mississippi Sound and into the Gulf of Mexico. Widening of the entrance and bar channels will be accomplished with hopper, mechanical, and/or hydraulic cutterhead dredges. Dredged material produced by the project would be disposed of at designated Ocean Dredged Material Disposal Sites in the Gulf of Mexico (i.e., not in Gulf sturgeon critical habitat), as well as a littoral zone disposal site off Cat Island.

Gulfport Harbor channels are identified in NMFS' November 19, 2003, Regional Biological Opinion (GMRBO) to the COE's Gulf of Mexico districts on hopper dredging of navigation channels and borrow areas. The GMRBO analyzes and accounts for the effects of maintenance dredging, as well as channel widening and deepening "to previously authorized dimensions," on listed species. Thus, any effects to sea turtles or Gulf sturgeon from the proposed project have been analyzed in the GMRBO, are included in that opinion's incidental take statement, and are subject to the terms and conditions of that opinion. In addition, since channels encompassed by the proposed Gulfport Harbor Navigation Project are considered major shipping channels and are identified on standard navigation charts, they are excluded from, and not considered as part of, Gulf sturgeon critical habitat, as specified by 50 CFR §226.214(h)(2). However, the GMRBO requires separate consultation on dredging or disposal of dredged materials in Gulf sturgeon critical habitat.

The present project proposes the disposal of approximately 650,000 cubic yards of material in a littoral zone disposal site in Gulf sturgeon critical habitat unit 8 near Cat Island. This material

would be dredged from the bar channel and would consist entirely of sand and silty-sand sediments. The following analysis considers potential impacts to critical habitat from the disposal of the bar channel dredged materials in Gulf sturgeon critical habitat unit 8.

Critical habitat unit 8 contains four primary constituent elements (PCEs) that may be affected by the proposed disposal of dredged material off Cat Island: water quality, migratory pathways, sediment quality, and abundant prey items. Potential impacts on those PCEs are analyzed below.

Impacts on water quality:
Impacts from sediment disturbance as a result of disposal are expected to be temporary and minimal, with suspended particles settling out within a short time frame without measurable effects on water quality (or on listed species directly). No changes in temperature, salinity, pH, hardness, oxygen content, and other chemical characteristics are expected. NMFS expects impacts to Gulf sturgeon critical habitat as a result of water quality impacts related to this project will be insignificant.

Impacts on migratory pathways:
Within unit 8, subadult and adult Gulf sturgeon move from the rivers through estuarine and marine areas to feeding areas. Unit 8 is known to support migratory pathways for Gulf sturgeon from two sub-populations (Pascagoula and Pearl Rivers), as groups of individuals from these sub-populations have been located by telemetry on numerous occasions throughout the unit. Due to the nature of the action (i.e., disposal of silty-sand sediments in the littoral zone off Cat Island such that no physical barrier to migration will be created), NMFS believes that the proposed project will not affect the ability of critical habitat unit 8 to provide a migratory pathway for Gulf sturgeon.

Impacts on sediment quality:
The proposed action will directly impact the benthos by the placement of dredged material into the littoral zone; however, the dredged materials to be placed off Cat Island are similar in composition (i.e., sand and silty sand) to existing littoral zone sediments. Therefore, NMFS concludes the proposed project's effects on the sediment quality of critical habitat unit 8 will be insignificant.

Impacts on Gulf sturgeon prey abundance:
The disposal of silty-sand sediments in the littoral zone off Cat Island may result in the burial of potential Gulf sturgeon prey species, thus reducing the availability of Gulf sturgeon prey. However, the material will be disposed in a shallow water (i.e., minimal depth of 14 feet), high-energy environment where it will be redistributed quickly, and the placed material is similar to the *in situ* material, so re-colonization by a similar assemblage of benthic prey species is expected; therefore, prey species' resilience to the action should be considered. Recovery of the existing macrobenthic assemblages is expected to be rapid as sediment composition pre- and post-construction at the disposal site will be similar, and littoral zone benthic assemblages are known to recover relatively quickly from physical disturbance. While habitat known to support prey will be impacted, there are no telemetry data to indicate that Gulf sturgeon selectively utilize the Cat Island disposal site area. It is likely that any Gulf sturgeon entering this area

following their fall migration will find appropriate and abundant prey in the areas adjacent to the Cat Island disposal site. Given that Gulf sturgeon forage opportunistically while benthic cruising, they can easily locate prey and fulfill nutritional requirements in areas adjacent to those impacted. Because the effects are just a temporary reduction of benthic prey availability (<1 year) and include only a small proportion (a fraction of one percent) of available bottom in critical habitat unit 8, the overall abundance of Gulf sturgeon prey items will not be discernibly changed. Thus, these effects are insignificant. Because none of the PCEs in critical habitat unit 8 are likely to be adversely affected, NMFS concludes the proposed action is not likely to adversely affect Gulf sturgeon critical habitat.

This concludes the COE's consultation responsibilities under the ESA for species under NMFS' purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. We have enclosed additional information on other statutory requirements that may apply to this action and on NMFS' Public Consultation Tracking System (PCTS) to allow you to track the status of ESA consultations.

Thank you for your continued cooperation in the conservation of threatened and endangered species. If you have any questions on this consultation or how to query and use PCTS, please contact Michael Barnette at (727) 551-5794, or by e-mail at michael.barnette@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

File: 1514-22 F.1.MS
Ref: T/SER/2007/01483

Additional Considerations for ESA Section 7 Consultations (Revised 12-6-2005)

Marine Mammal Protection Act (MMPA) Recommendations: The Endangered Species Act (ESA) section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Contact Ken Hollingshead of our NMFS Headquarters' Protected Resources staff at (301) 713-2323 for more information on MMPA permitting procedures.

Essential Fish Habitat (EFH) Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division (PRD) pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's (MSA) requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system allowing federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants to track the status of NMFS consultations under ESA section 7 and under MSA sections 305(b)2 and 305(b)(4): Essential Fish Habitat. Access PCTS via: www.nmfs.noaa.gov/pcts. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The Corps Permit Site allows COE permit applicants the ability to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted an ESA section 7 consultation with the COE since the beginning of the 2001 fiscal year (no password needed).

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros (e.g., SAJ-2005-123, SAJ-2005-1234, SAJ-2005-12345).

For inquiries regarding applications processed by Corps districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits (e.g., AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401). PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to April Wolstencroft at PCTSUsersupport@noaa.gov.

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

June 19, 2007

Dr. William W. Walker
Executive Director
Mississippi Department of Marine Resources
1141 Bayview Avenue
Biloxi, MS 39530

Dear Dr. Walker:

We appreciate your assistance in our recent efforts to find beneficial use opportunities for material dredged in the Gulfport Ship Channel widening project, and its long-term maintenance. Because the project has progressed so far through the design and public comment phases, we realize how much effort must be expended to make changes at this late date, and we would like to again express our appreciation for the cooperation of your staff and the Corps of Engineers-Mobile District.

Two changes to the disposal plans were discussed at the June 11, 2007, meeting in your offices. The first was to expand and place additional material from the Mississippi Sound and bar reaches into the far western portion of the 'Littoral Disposal' site south of Cat Island. Expanding the disposal site as far to the west and north as possible given funding constraints would be our request. Material placed in this expanded site should help to minimize the water depths in the Pass that separates the southern spit of Cat Island from Isle au Pitre. As you are probably aware, this Pass is one of the major conduits that fills Lake Pontchartrain in storm events, and recent storm events has increased both the size and depth of the Pass. Using this strategy could lessen long term disposal costs as future operation and maintenance dredging could utilize the eastern portions of the disposal area as well as increasing the overall capacity of the area.

The second proposed change was to place material destined for the proposed Ocean Dredged Material Disposal Site into a new disposal site, designated by Corps authority under Water Resources Development Act Section 404. The new site would be located east of the Chandeleur Islands and as far south as possible in water depths approaching 25 ft., and in Louisiana state waters. Neither of these changes is anticipated to increase the cost of the project and may even result in a small savings. If there is any savings perhaps the COE could use any savings to pump out the scows allowing them to be offloaded in shallower waters closer to the islands.

P. O. BOX 44487 • BATON ROUGE, LA 70804-4487 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802
PHONE (225) 342-3583 • FAX (225) 342-1377 • WEB http://www.dnr.state.la.us
AN EQUAL OPPORTUNITY EMPLOYER

A critical element of the latter proposal is its justification as a beneficial use of dredged material site. With the finalization of plans being imminent, there is little time for Louisiana to fully evaluate the potential costs and benefits of this option, however, my technical staff has done a preliminary assessment and offered the following opinions:

- Disposal of the material in water depths greater than about 15 feet will make it highly unlikely that the sediment will be incorporated into the littoral system by natural processes.

- By the same token, the material is likely to remain relatively stable over time, absent a major storm in the near vicinity. It will therefore be available for mining at a future date, for beneficial purposes.

- Material placed in shallow waters will tend to act as a storm buffer, protecting both the northern end of the Chandeleurs, the southern end of Cat Island while minimizing cross-sectional area of the passes.

With these preliminary observations, Louisiana is prepared at this time to earnestly investigate the possibility of a dredging project to mine the material for the purpose of helping to rebuild the Chandeleur Islands. There are some potential opportunities to implement a mining project through various other authorities or programs such as the Coastal Wetlands Planning, Protection and Restoration Act, the Coastal Impact Assistance Plan (CIAP), the Louisiana Coastal Area Ecosystem Restoration, or by State funding, however, these might take some time to implement. In that the additional costs for analysis of these proposals will be insignificant, we would appreciate your endorsement of these changes to the disposal plans so that the Corps of Engineers can proceed with the necessary changes to their planning documents.

We thank you again for your assistance in this matter. If you should have any questions on this matter, please contact Mr. Gregory J. DuCote of my staff at (225) 342-5052.

Sincerely,

Gerald M. Duszynski
Acting Assistant Secretary

GMD:pso
cc: John Crane, COE Mobile District
Linda T. Brown, COE Mobile District
Ken Lutzenberg, US Fish and Wildlife Service
Doug Johnson, EPA

Susan

STATE OF MISSISSIPPI
Haley Barbour
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
William W. Walker, Ph.D., Executive Director

June 29, 2007

Col. Peter F. Taylor
U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

Dear ~~Colonel~~ Taylor: Pete

Please reference the letter (attached) submitted by Mr. Gerald M. Duszynski of Louisiana Department of Natural Resources in which Louisiana requests the U.S. Army Corps of Engineers (Corps), Mobile District, consider beneficially using dredged material from its Federal Gulfport Harbor Navigation Project to nourish Chandeleur Islands and Cat Island.

The State of Mississippi is continually looking for opportunities to place dredged material beneficially and continues to work alongside your staff in identifying potential projects of this nature. We respectfully request your consideration of the State of Louisiana's request as we believe the natural system will benefit by the added sediments.

The State of Mississippi endorses the possible placement of dredged materials beneficially from the widening project at Gulfport Harbor within the vicinity of Chandeleur Islands and Cat Island by appropriate methods determined by your staff.

I appreciate your past and continuing efforts in working with Mississippi to find beneficial ways to use dredged materials, and I look forward to working with you and your staff to make this plan to nourish Chandeleur and Cat Islands a reality. Please do not hesitate to contact me for further information.

Sincerely,

Bill

William Walker, Ph.D.
Executive Director

cc: Linda Brown
Susan Rees
Gerald Duszynski
Gregory DuCote

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

June 19, 2007

Dr. William W. Walker
Executive Director
Mississippi Department of Marine Resources
1141 Bayview Avenue
Biloxi, MS 39530

Dear Dr. Walker:

We appreciate your assistance in our recent efforts to find beneficial use opportunities for material dredged in the Gulfport Ship Channel widening project, and its long-term maintenance. Because the project has progressed so far through the design and public comment phases, we realize how much effort must be expended to make changes at this late date, and we would like to again express our appreciation for the cooperation of your staff and the Corps of Engineers-Mobile District.

Two changes to the disposal plans were discussed at the June 11, 2007, meeting in your offices. The first was to expand and place additional material from the Mississippi Sound and bar reaches into the far western portion of the 'Littoral Disposal' site south of Cat Island. Expanding the disposal site as far to the west and north as possible given funding constraints would be our request. Material placed in this expanded site should help to minimize the water depths in the Pass that separates the southern spit of Cat Island from Isle au Pitre. As you are probably aware, this Pass is one of the major conduits that fills Lake Pontchartrain in storm events, and recent storm events has increased both the size and depth of the Pass. Using this strategy could lessen long term disposal costs as future operation and maintenance dredging could utilize the eastern portions of the disposal area as well as increasing the overall capacity of the area.

The second proposed change was to place material destined for the proposed Ocean Dredged Material Disposal Site into a new disposal site, designated by Corps authority under Water Resources Development Act Section 404. The new site would be located east of the Chandeleur Islands and as far south as possible in water depths approaching 25 ft., and in Louisiana state waters. Neither of these changes is anticipated to increase the cost of the project and may even result in a small savings. If there is any savings perhaps the COE could use any savings to pump out the scows allowing them to be offloaded in shallower waters closer to the islands.

P. O. BOX 44487 • BATON ROUGE, LA 70804-4487 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802
PHONE (225) 342-3583 • FAX (225) 342-1377 • WEB http://www.dnr.state.la.us
AN EQUAL OPPORTUNITY EMPLOYER

A critical element of the latter proposal is its justification as a beneficial use of dredged material site. With the finalization of plans being imminent, there is little time for Louisiana to fully evaluate the potential costs and benefits of this option, however, my technical staff has done a preliminary assessment and offered the following opinions:

- Disposal of the material in water depths greater than about 15 feet will make it highly unlikely that the sediment will be incorporated into the littoral system by natural processes.

- By the same token, the material is likely to remain relatively stable over time, absent a major storm in the near vicinity. It will therefore be available for mining at a future date, for beneficial purposes.

- Material placed in shallow waters will tend to act as a storm buffer, protecting both the northern end of the Chandeleurs, the southern end of Cat Island while minimizing cross-sectional area of the passes.

With these preliminary observations, Louisiana is prepared at this time to earnestly investigate the possibility of a dredging project to mine the material for the purpose of helping to rebuild the Chandeleur Islands. There are some potential opportunities to implement a mining project through various other authorities or programs such as the Coastal Wetlands Planning, Protection and Restoration Act, the Coastal Impact Assistance Plan (CIAP), the Louisiana Coastal Area Ecosystem Restoration, or by State funding, however, these might take some time to implement. In that the additional costs for analysis of these proposals will be insignificant, we would appreciate your endorsement of these changes to the disposal plans so that the Corps of Engineers can proceed with the necessary changes to their planning documents.

We thank you again for your assistance in this matter. If you should have any questions on this matter, please contact Mr. Gregory J. DuCote of my staff at (225) 342-5052.

Sincerely,

Gerald M. Duszynski
Acting Assistant Secretary

GMD:pso
cc: John Crane, COE Mobile District
Linda T. Brown, COE Mobile District
Ken Lutzenberg, US Fish and Wildlife Service
Doug Johnson, EPA

State of Louisiana

KATHLEEN BABINEAUX BLANCO
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DEPARTMENT OF NATURAL RESOURCES
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Acting Assistant Secretary

GMD:pso
cc: John Crane, COE Mobile District
Linda T. Brown, COE Mobile District
Ken Lutzenberg, US Fish and Wildlife Service
Doug Johnson, EPA

July 18, 2007

Coastal Environment Team
Planning and Environmental Division

Dr. William W. Walker
Executive Director
Mississippi Department of Marine Resources
1141 Bayview Avenue
Biloxi, Mississippi 39530

Dear Dr. Walker:

Please reference your letter of June 29, 2007, in which you request the Corps of Engineers (Corps), Mobile District to consider beneficially using dredged material from the construction of Gulfport Harbor to its authorized dimensions for replenishment of the Chandeleur Islands and Cat Island as requested by Louisiana Department of Natural Resources (DNR). Copies are enclosed for your easy reference.

The Corps has investigated the use of the two sites as delineated by Louisiana DNR technical staff, one being east of Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of maintenance material dredged from within the Ship Island Pass. Based on earlier conversations with you and findings of our environmental and engineering project delivery team, the Corps intends to list the site adjacent to Chandeleur Islands as submitted by Louisiana DNR as an option being considered in our Final Supplemental Environmental Impact Statement (EIS). In our draft EIS, Mobile District proposes disposal of new work material dredged from within Ship Island Pass to be disposed in the littoral zone disposal area. These two disposal options are being incorporated into the Proposed Action and will be fully evaluated.

The Proposed Action being carried forward as part of the ongoing Supplemental EIS includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass (littoral zone) would be placed in the existing littoral zone disposal area into water depths between 14 feet and 18 feet as shown on the enclosed drawings.

Unfortunately, the Corps cannot specify material to be placed in shallower depths of water due to equipment access, additional construction costs, and current funding constraints. Should additional funding be acquired by the States of Mississippi or Louisiana that would aid in placement of the dredged material into shallower water depths, we would be more than willing to work with you in any way to help facilitate this.

The Corps intends to submit a formal request to the Louisiana, DNR for their concurrence of our coastal zone consistency determination and for issuance of 401 Water Quality Certification for the project. I am forwarding a copy of this letter to Mr. Gerald M. Duszynski, Louisiana DNR. Please contact us should you need additional information or should current funding situations change.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

Copy for:
Mr. Gerald M. Duszynski
Louisiana Department of Natural Resources
Acting Assistant Secretary
P. O. Box 44487
Baton Rouge, LA 70804-4487

LH 7.18.07
PD-EC/Brown
PD-EC/Jacobson
PD-E/Leonard
PD-E/Bradley
PD/Campbell
PD/Flakes

DKR
PM-C

STATE OF MISSISSIPPI
Haley Barbour
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
William W. Walker, Ph.D., Executive Director

June 29, 2007

Col. Peter F. Taylor
U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

Dear ~~Colonel~~ Taylor: Pete

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Bill

William Walker, Ph.D.
Executive Director

cc: Linda Brown
Susan Rees
Gerald Duszynski
Gregory DuCote

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

July 18, 2007

REPLY TO
ATTENTION OF

Coastal Environment Team
Planning and Environmental Division

Dr. William W. Walker
Executive Director
Mississippi Department of Marine Resources
1141 Bayview Avenue
Biloxi, Mississippi 39530

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Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

August 22, 2007

REPLY TO
ATTENTION OF
Coastal Environment Team
Planning and Environmental Division

Mr. Greg DuCote
Louisiana Department of Natural Resources
Post Office Box 44487
Baton Rouge, Louisiana 70804

Dear Mr. DuCote:

The U.S. Army Corps of Engineers (Corps), Mobile District, on February 9, 2007, publicly released the Draft Supplemental Environmental Impact Statement (SEIS) to evaluate construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. During the public comment period, we received requests from Louisiana Department of Natural Resources (DNR), the Mississippi Department of Marine Resources (MDMR), and St. Bernard Parish to consider the possible placement of dredged material beneficially within the vicinity of Chandeleur and Cat Islands from the widening project at Gulfport Harbor. The Corps participated in subsequent discussions during a meeting with Louisiana DNR and MDMR and through follow-up correspondence. The Corps has investigated the use of the two sites as delineated by Louisiana DNR technical staff, one being east of Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of maintenance material. The Corps' proposed action includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass would be placed in the existing littoral zone disposal area into water depths between -14 feet and -18 feet as shown on the enclosed drawings. These two disposal options are being incorporated into the proposed action and will be fully evaluated in the Final SEIS.

A copy of the Draft SEIS and subsequent addendum are available for your review and comment upon request. We are currently coordinating the new disposal option with the appropriate National Marine Fisheries Service and U.S. Fish and Wildlife Service offices and based on our initial conversations, we anticipate there will be no unresolved issues. Additionally, we are requesting water quality certification for the project from Louisiana Department of Environmental Quality and anticipate issuance of the state permit.

In view of the above, we request your concurrence with our determination that the newly proposed disposal area is in accordance with the State of Louisiana Coastal Zone Management Plan. If you have any questions or need additional information, please contact Ms. Linda T. Brown at (251) 694-3786 or email linda.t.brown@usace.army.mil.

Sincerely,

Michael J. Eubanks
Acting Chief, Environmental and Resources Branch

Enclosure

August 22, 2007

Coastal Environment Team
Planning and Environmental Division

Mr. Greg DuCote
Louisiana Department of Natural Resources
Post Office Box 44487
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Linda –

PD-EC SUBJECT FILE COPY

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Sincerely,

C:MSWORD/LADNRCOORDLTR.DOC
BROWN/KL/PD-EC/3786
PD-EC
CAMPBELL/PD
~~PD-E~~

Michael J. Eubanks
Acting Chief, Environmental and Resources
Branch

Enclosure

August 22, 2007

Coastal Environment Team
Planning and Environmental Division

Mr. Jim Boggs
U.S. Fish and Wildlife Service
Louisiana Field Office
646 Cajun Dome Boulevard, Suite 400
Lafayette, Louisiana 70506

Dear Mr. Boggs:

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By this letter and its information therein, we request concurrence with our determination that no adverse impacts would occur to any federally listed threatened and/or endangered species as a result of beneficially placing dredged material in the potential new disposal site adjacent to the Chandeleur Islands. The Corps is also coordinating with the appropriate National Marine Fisheries Service (NMFS) office for their concurrence with our no adverse impact determination for Essential Fish Habitat within the area surrounding the potential new disposal site. The local Mississippi offices of the U. S. Fish and Wildlife Service (USFWS) and NMFS are cooperating agencies of our SEIS preparation and have provided their review and comments during this process.

Under Section 7 coordination of the Endangered Species Act, the Corps requests your concurrence. The USFWS lists the following species as either threatened and/or endangered that may occur within state waters in the vicinity of the Chandeleur Islands: West Indian manatee (*Trichechus manatus*), Brown pelican (*Pelecanus occidentalis*), Piping plover (*Charadrius melodus*), Gulf sturgeon (*Acipenser oxyrhynchus desotoi*), Pallid sturgeon (*Scaphirhynchus albus*), Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Caretta caretta*), and Kemp's ridley sea turtle (*Lepidochelys kempii*).

Federally protected species, such as the West Indian manatee, Brown pelican, and Piping plover would not be adversely impacted by the proposed project because these species would avoid the area during construction activities. The project would utilize a hydraulic cutter head dredge, mechanical bucket dredge, hopper dredge, or some combination of the three. The hydraulic cutter head dredge or mechanical bucket dredge typically does not result in direct impacts to marine turtles, mammals or sturgeon. A hopper dredge may be used and are known to adversely impact federally-listed species (i.e. sea turtles and Gulf sturgeon) by entrainment in the suction dragheads. To reduce the possibility of protected species interactions, the Corps intends to have the dredge dragheads equipped with sea turtle deflectors devices. In addition, 100% of the material dredged will pass through 4-inch screening boxes where it will be screened by a NMFS approved observer for evidence of protected species interactions. There will be 100% observer coverage aboard the dredge (i.e. two observers). Considering the lack of potential effects by a hydraulic dredge and the precautionary steps taken when utilizing a hopper dredge, the proposed project will not jeopardize the continued existence of these species during dredging operations and placement activities.

The Corps has recently coordinated with NMFS under Section 7 for potential impacts to sea turtles and the Gulf sturgeon including its critical habitat for the project. If you have any questions or require additional information, please call Ms. Linda Brown at (251) 694-3786 or e-mail at linda.t.brown@sam.usace.army.mil.

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MOBILE DISTRICT, CORPS OF ENGINEERS
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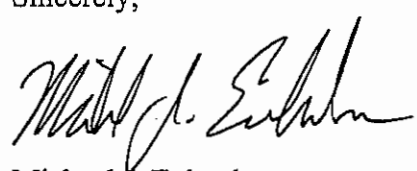


Michael J. Eubanks
Acting Chief, Environment and Resources Branch

September 4, 2007

Coastal Environment Team
Planning and Environmental Division

Mr. Richard Hartman
National Marine Fisheries Service,
Habitat Conservation Division
c/o Louisiana State University
Baton Route, Louisiana 70803-7535

Dear Mr. Hartman:

The U.S. Army Corps of Engineers (Corps), Mobile District on February 9, 2007, publicly released the Draft Supplemental Environmental Impact Statement (SEIS) to evaluate construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. During the public comment period, we received requests from the States of Louisiana Department of Natural Resources (DNR) and Mississippi Department of Marine Resources, and St. Bernard Parish to consider the possible placement of dredged material beneficially within the vicinity of Chandeleur and Cat Islands from the widening project at Gulfport Harbor. The Corps participated in subsequent discussions during a meeting with the state agencies and follow-up correspondence. The Corps has investigated the use of the two sites as delineated by Louisiana DNR technical staff, one being east of Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of maintenance material. The Corps proposed action includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass would be placed in the existing littoral zone disposal area into water depths between -14 feet and -18 feet as shown on the enclosed drawings. These two disposal options are being incorporated into the proposed action and will be fully evaluated in the Final SEIS.

By this letter and its information therein, we request concurrence with our determination that no adverse impacts would occur to any Essential Fish Habitat (EFH) as a result of beneficially placing dredged material in the potential new disposal site adjacent to the Chandeleur Islands. The Corps is also coordinating with the Panama City, Florida National Marine Fisheries Service (NMFS) office for their concurrence with our no adverse impacts on EFH determination within the area surrounding the potential new disposal site. The local Mississippi offices of the U.S. Fish and Wildlife Service and NMFS are cooperating agencies of our SEIS preparation and have provided their review and comments during their process.

Analysis of Effects:

Congress defines EFH as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity," the designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine areas, such as estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. In addition, marine areas, such as the water column, vegetated and non-vegetated bottoms, artificial and coral reefs, geologic features, continental shelf features, and the Mississippi shelf, have also been identified. The enclosed Table 1 lists the species managed by the Gulf of Mexico Fishery Management Council.

The open-water and the estuarine marshes provide habitat for various species of invertebrates and vertebrates. Epibenthic crustaceans and infaunal polychaetes dominate the diets of higher trophic levels, such as flounder, catfish, croaker, porgy, and drum. The fish species composition of the estuarine and offshore area along the northern Gulf of Mexico is of a high diversity due to the variety of environmental conditions, which exist within the area. The major fisheries landed along the Mississippi and Alabama Gulf coast are menhaden (*Brevoortia patronus*), mullet (*Mugil cephalus*), croaker (*Micropogonias undulatus* and *Leiostomus xanthurus*), shrimp (*Penaeus aztecus*, *P. setiferus*, and *P. duorarum*), blue crab (*Callinectes sapidus*), and oyster (*Crassostrea virginica*).

Improvements to the navigation channel will result in approximately 3.6 million cubic yards of new work material being removed. The composition of that dredged material consists mostly of silts and clays with some sandy mixture. The material removed from within the Horn Island Pass consists predominantly of sandy material. Although the dredging portion of this improvement project (i.e. widening of the navigation project) is outside of your agency's project area jurisdiction, the Corps anticipates that it will impact epibenthic crustaceans and infaunal polychaetes within the navigation channel. However, the impacts are primarily short-term in nature and consist of a temporary loss of benthic invertebrate populations in the areas of dredging. The area will remain a shallow-water (defined as depths shallower than 46 feet) neritic zone that can support sublittoral benthic biota. Therefore, because similar habitat, in terms of both sediment composition and depth will be present pre- and post dredging, the benthic biota in the dredging areas will recover and recolonize. Recovery of the macrobenthic assemblages is expected to be rapid as sediment composition pre- and post-dredging in both the channel and the disposal sites will be similar.

Placement of dredged material from the Gulfport Harbor Navigation Channel at the Chandeleur Islands would greatly benefit EFH habitat. The Chandeluer Islands were impacted from several storms (i.e. Ivan, Katrina, and Rita) over the years. The islands have almost eroded completely away. Saline marshes in coastal Louisiana are dominated by black needlerush

(*S. patens*), big cordgrass (*S. cynosuroides*), olneyi rush (*Scirpus olneyi*), saltmarsh bulrush (*Scirpus robustus*), sea lavender (*Limonium carolinianum*), and sea marsh aster (*Aster tenuifolius*). This habitat provides nursery grounds for many managed EFH species. Furthermore, epibenthic crustaceans and infaunal polychaetes dominate the diets of higher trophic levels, such as flounder, catfish, croaker, porgy, and drum. The major fisheries landed along the Gulf coast are menhaden (*Brevoortia patronus*), mullet (*Mugil cephalus*), croaker (*Micropogonias undulatus* and *Leiostomus xanthurus*), shrimp (*Penaeus axetecus*, *P. setiferus*, and *P. duorarum*), blue crab (*Callinectes sapidus*), and oyster (*Crassostrea virginica*).

Placement of dredged material adjacent to the islands would allow for the westward migration of this material which would supplement the natural rebuilding of the Chandeluer Islands and Cat Island. This proposed renourishment project would provide habitat that has been lost due to coastal erosion. This re-establishment of marsh habitat at the Chandeleur Islands would benefit many of the juvenile and larval stages listed by NMFS as managed species. As a result, it is anticipated that providing a nursery ground for juvenile fish and crustaceans would enhance EFH. In addition, indirectly, re-establishment of the islands is anticipated to increase nutrient processing through plant detrital mass influx. Transfer of this nutrient supply to higher trophic levels would further benefit the described managed species.

Although, placement of this material at the identified placement sites would result in the temporary disruption of the aquatic community, non-motile benthic fauna within the area should repopulate within several months after the completion of the activities. Some of the motile benthic and pelagic fauna, such as crab, shrimp, and fish, are able to avoid the disturbed area and should return shortly after the activity is completed. The long-term benefits gained by these organisms are anticipated to outweigh the short-term impact.

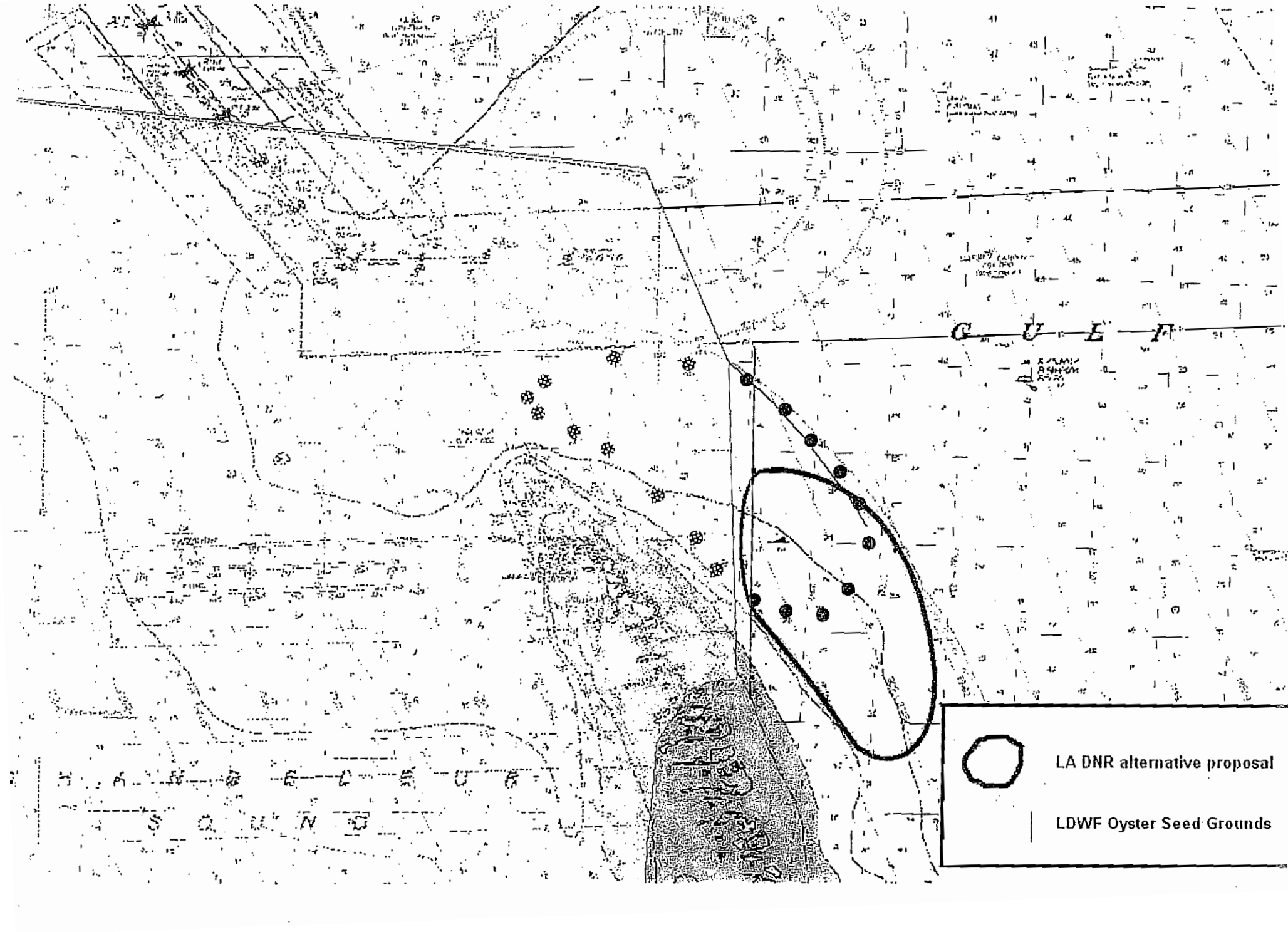
We do not anticipate any adverse impacts to occur to EFH as a result of placement of dredged materials beneficially from the Gulfport Harbor Federal Navigation Project. If you have any questions or if you need additional information, please call Ms. Linda Brown at (251) 694-3786 or e-mail at linda.t.brown@usace.army.mil.

Sincerely,

C:MSWORD/LAEFHCONSULATIONDRAFTLETTERTONMFSGULFPORTEIS.DOC
BROWN/KL/PD-EC/3786
PD-EC
CAMPBELL/PD
PD-E

Michael J. Eubanks
Acting Chief, Environment and Resources Branch

Enclosure


G U E F
LA DNR alternative proposal
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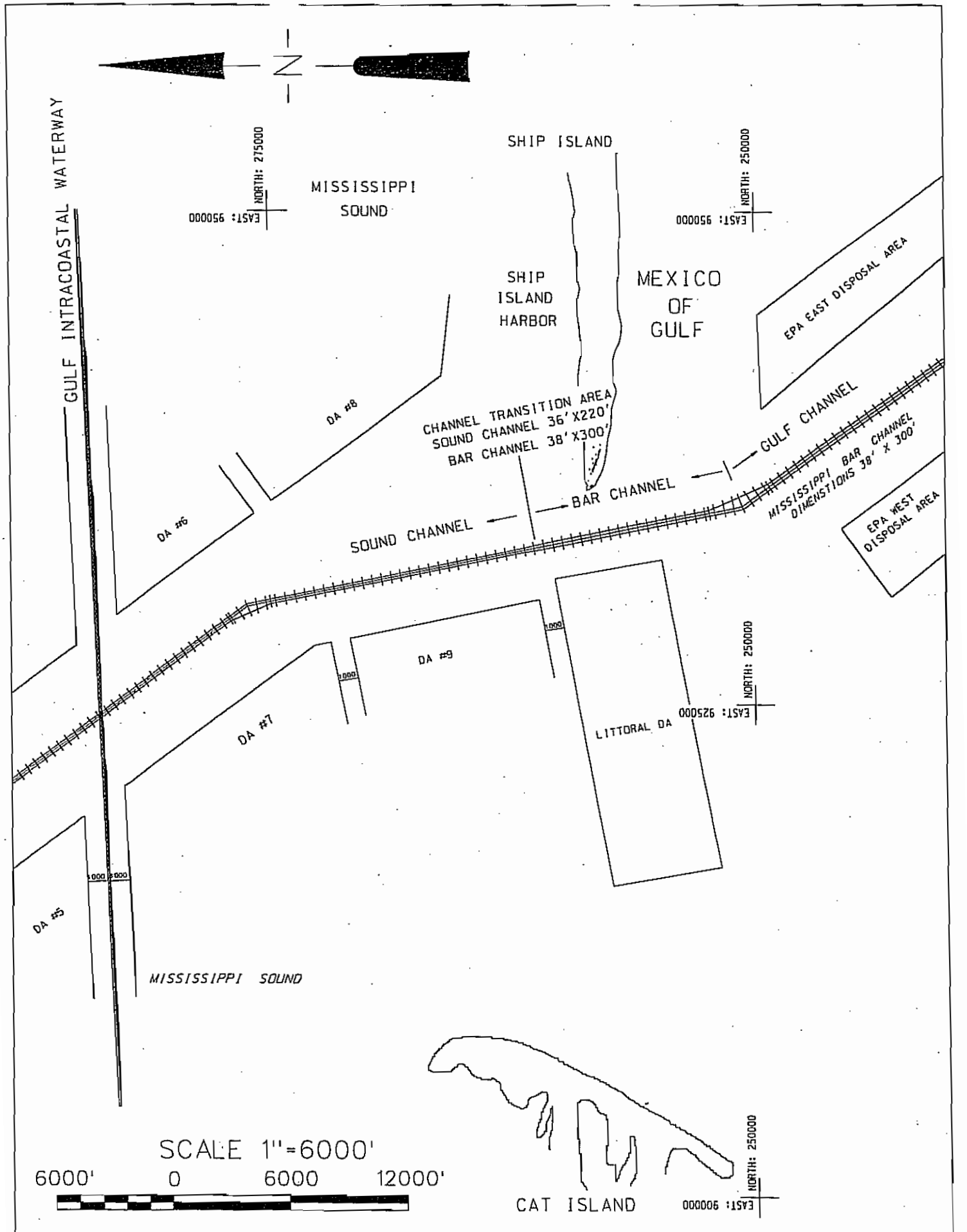
N
GULF INTRACOASTAL WATERWAY
NORTH: 275000
EAST: 950000
MISSISSIPPI SOUND
SHIP ISLAND
NORTH: 250000
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DA #6
SOUND CHANNEL
EPA WEST DISPOSAL AREA
DA #9
NORTH: 250000
EAST: 925000
LITTORAL DA
DA #7
DA #5
MISSISSIPPI SOUND
SCALE 1"=6000'
6000' 0 6000 12000'
CAT ISLAND
NORTH: 250000
EAST: 900000

Table 1:

Fishery Management Plans and Managed Species for the Gulf of Mexico. (NMFS 1999)

Shrimp Fishery Management Plan
- Brown shrimp (*Penaeus aztecus*)
- Pink shrimp (*P. duorarum*)
- Royal Red Shrimp (*Pleoticus robustus*)
- White Shrimp (*P. setiferus*)

Red Drum Fishery Management Plan
- Red drum (*Sciaenops oellatus*)

Stone Crab Fishery Management Plan
- Stone crab (*Menippe spp.*)

Reef Fish Fishery Management Plan
- Black grouper (*Mycteroperca bonaci*)
- Gray snapper (*Lutjanus griseus*)
- Greater amberjack (*Seriola dumerili*)
- Lesser amberjack (*S. fasciata*)
- Red snapper (*L. campechanus*)
- Tilefish (*Lopholatilus chamaeleonticeps*)
- Vermillion snapper (*Rhomboplites aurorubens*)
- Gag grouper (*M. microlepis*)
- Gray triggerfish (*Balistes capriscus*)
- Lane snapper (*L. synagris*)
- Red grouper (*Epinephelus morio)*
- Scamp grouper (*M. phenax*)
- Yellowtail snapper (*Ocyurus chrysurus*)

Coastal Migratory Pelagics Fishery Management Plan
- Bluefish (*Pomatomus saltatrix*)
- Dolphin (*Coryphaena hippurus*)
- Cobia (*Rachycentron canadum*)
- King mackerel (*Scomberomorus cavalla*)
- Little tunny (*Euthynnus alleteratus*)
- Spanish mackerel (*S. maculatus*)

Spiny Lobster Fishery Management Plan
- Spiny lobster (*Panulirus argus*)

Coral and Coral Reef Fishery Management Plan
- Varied coral species and coral reed communities
- Comprised of several hundred species

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

September 4, 2007

REPLY TO
ATTENTION OF
Coastal Environment Team
Planning and Environmental Division

Mr. Richard Hartman
National Marine Fisheries Service,
Habitat Conservation Division
c/o Louisiana State University
Baton Route, Louisiana 70803-7535

Dear Mr. Hartman:

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(*Juncus roemerianus*). Smooth cordgrass (*Spartina alterniflora*) is locally abundant also in the intertidal zone of the saline marsh. Other common species include marsh-hay cordgrass (*S. patens*), big cordgrass (*S. cynosuroides*), olneyi rush (*Scirpus olneyi*), saltmarsh bulrush (*Scirpus robustus*), sea lavender (*Limonium carolinianum*), and sea marsh aster (*Aster tenuifolius*). This habitat provides nursery grounds for many managed EFH species. Furthermore, epibenthic crustaceans and infaunal polychaetes dominate the diets of higher trophic levels, such as flounder, catfish, croaker, porgy, and drum.

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Sincerely,

Michael J. Eubanks
Acting Chief, Environment and Resources Branch

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

September 6, 2007

REPLY TO
ATTENTION OF
Coastal Environment Team
Planning and Environmental Division

Mr. Tom Griggs
Louisiana Department of Environmental Quality
Post Office Box 4313
Baton Route, Louisiana 70821-4313

Dear Mr. Griggs:

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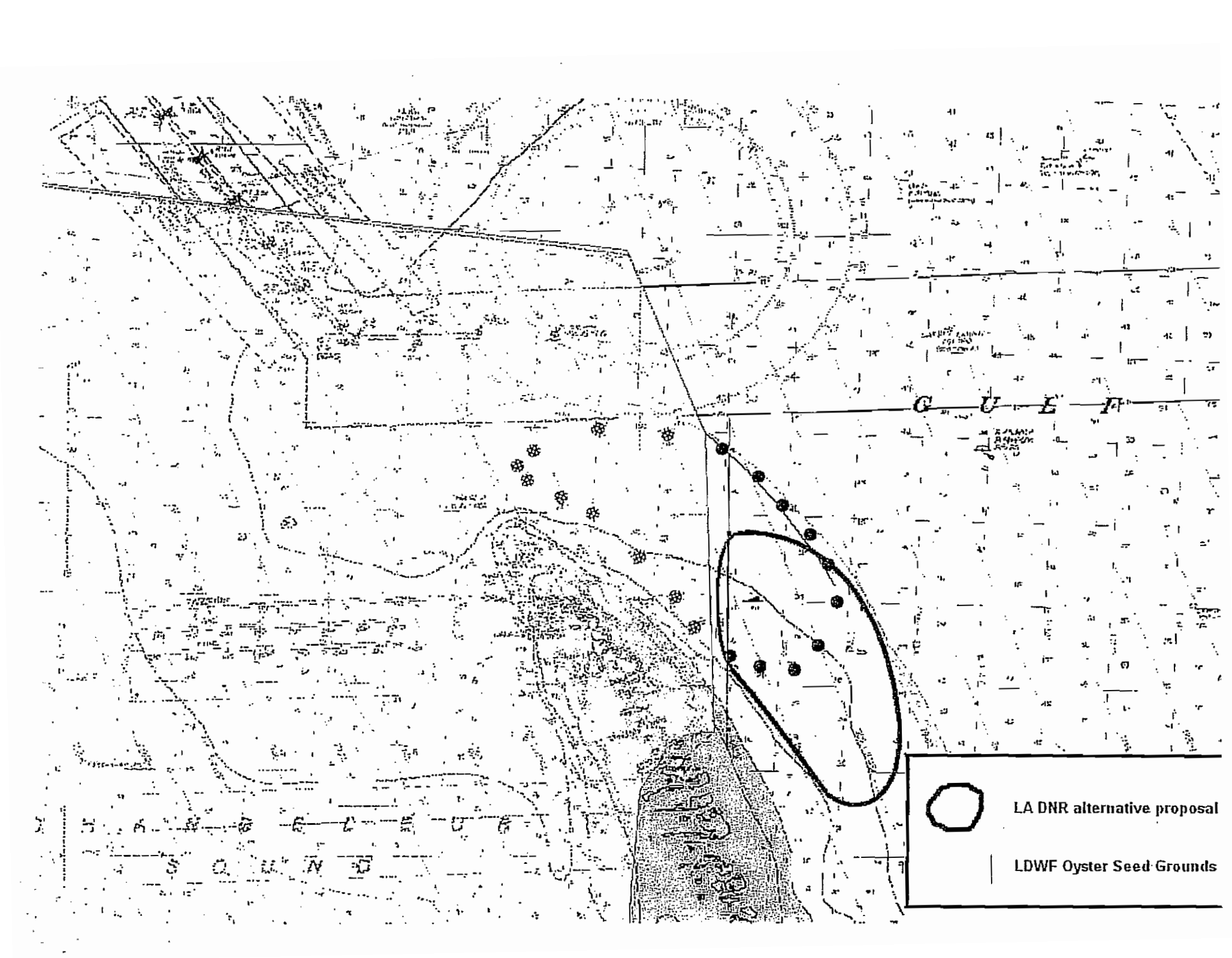
A copy of the Draft SEIS and subsequent addendum are available for your review and comment upon request. We are currently coordinating the new disposal option with the appropriate National Marine Fisheries Service and U.S. Fish and Wildlife Service offices and based on our initial conversations, we anticipate there will be no unresolved issues. Additionally, we are providing our consistency determination to Louisiana DNR and have been assured the beneficial use project will be consistent with the state coastal zone management plan.

In view of the above, we would appreciate your consideration of final certification of the newly proposed disposal area east of the Chandeleur Islands. If you have any questions or require additional information please contact Ms. Linda T. Brown at (251) 694-3786, or email linda.t.brown@usace.army.mil.

Sincerely,

Michael J. Eubanks
Acting Chief, Environment and Resources Branch

Enclosures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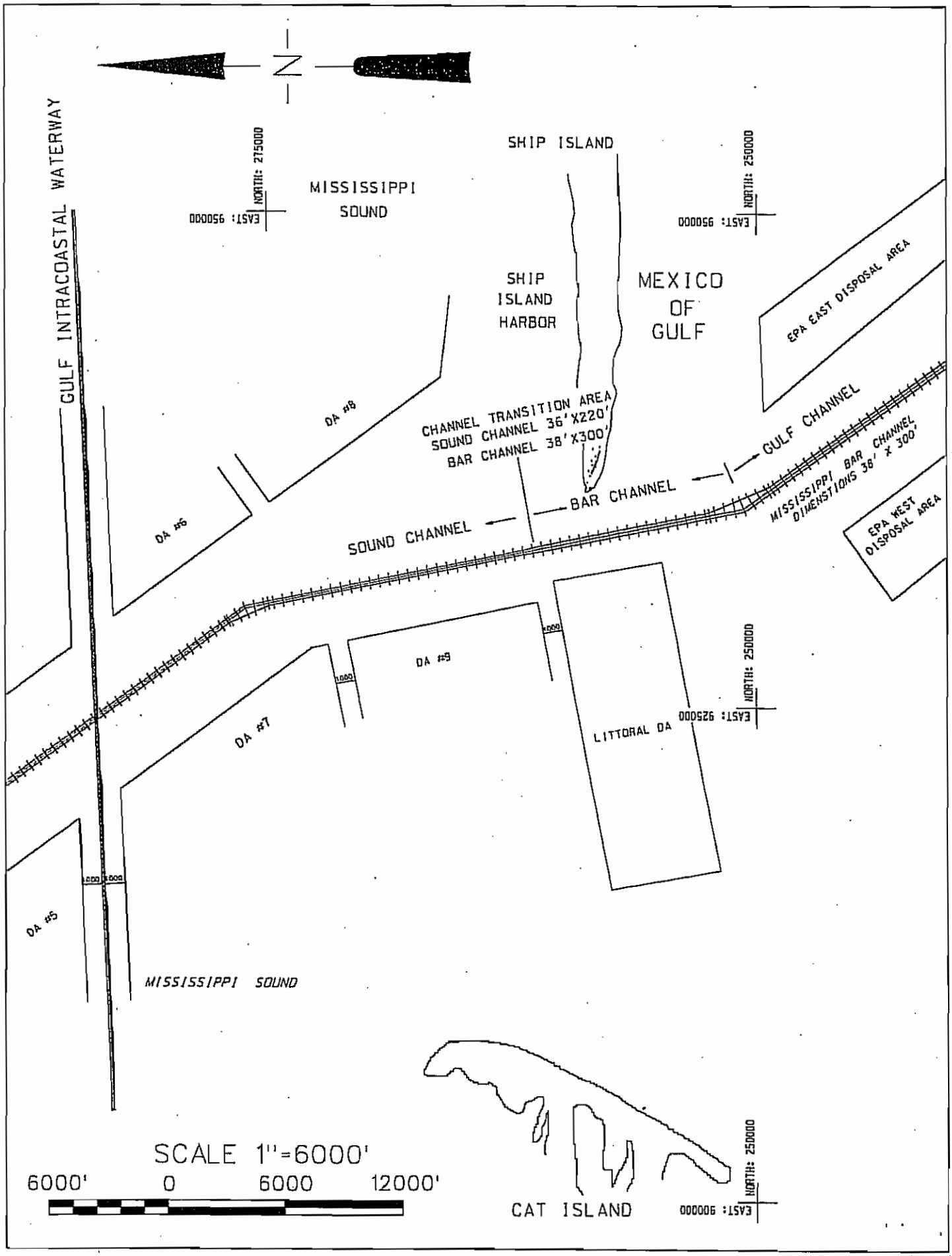
N
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LITTORAL DA
DA #7
DA #5
MISSISSIPPI SOUND
SCALE 1"=6000'
6000' 0 6000 12000'
NORTH: 250000
EAST: 900000
CAT ISLAND

September 6, 2007

Coastal Environment Team
Planning and Environmental Division

Mr. Tom Griggs
Louisiana Department of Environmental Quality
Post Office Box 4313
Baton Route, Louisiana 70821-4313

Dear Mr. Griggs:

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In view of the above, we would appreciate your consideration of final certification of the newly proposed disposal area east of the Chandeleur Islands. If you have any questions or require additional information please contact Ms. Linda T. Brown at (251) 694-3786, or email linda.t.brown@usace.army.mil.

Sincerely,

C:MSWORD/LADEQREQUESTFORWQC9-5-07.DOC
BROWN/KL/PD-EC/3786
PD-EC
CAMPBELL/PD
PD-E

Michael J. Eubanks
Acting Chief, Environment and Resources
Branch

Enclosures

PD-EC/ Jacobsen

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue, South
St. Petersburg, Florida 33701

September 18, 2007 F/SER46/RH:jk
225/389-0508

Mr. Michael J. Eubanks, Acting Chief
Environment and Resources Branch
Mobile District
Department of the Army, Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628

Dear Mr. Eubanks:

NOAA's National Marine Fisheries Service (NMFS) has reviewed your letter dated September 4, 2007, regarding the proposed deposition of sediment dredged from the Gulfport Harbor Navigation Channel widening project into the vicinity of the Chandeleur Islands and Cat Islands. The sediment would be placed into water depths greater than –14 feet and it is envisioned that the dredged material would be transported by tidal currents and assist in the renourishment and natural rebuilding of these important barrier islands.

Staff from the Baton Rouge office of NMFS participated in the meeting referenced in your letter regarding the proposed deposition of sediment from this project. Considering the depth proposed for deposition, it is unlikely that the proposed work would adversely impact submerged aquatic vegetation in the vicinity of the Chandeleur Islands. In addition, because this sediment could help renourish these barrier islands that do serve as essential fish habitat and that help protect sea grass beds behind the islands from erosional forces, NMFS concurs with the determination that the proposed work would benefit EFH. As such, NMFS supports the proposed deposition of sediment in littoral areas adjacent to the Chandeleur Islands and Cat Island and has no comments to provide on the public notice.

We appreciate the opportunity to review and comment on this project.

Sincerely,

for Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
FWS, Lafayette
EPA, Dallas
LA DNR, Consistency
F/SER46, Ruebsamen
Files

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

September 26, 2007

Mr. Michael J. Eubanks
Acting Chief, Environment and Resources Branch
U.S. Department of the Army, Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Eubanks:

Please reference your August 22, 2007, letter (received in this office on August 27, 2007) requesting our concurrence with the Corps of Engineers' (Corps) determination that implementation of the proposed Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi, is not likely to adversely affect the endangered West Indian manatee (*Trichechus manatus*), endangered brown pelican (*Pelecanus occidentalis*), threatened piping plover (*Charadrius melodus*) and its designated critical habitat, and endangered pallid sturgeon (*Scaphirhynchus albus*), in Louisiana. The Corps' proposed action includes beneficial deposition of dredged material into water depths of 25 feet or greater east of the Chandeleur Islands in Plaquemines Parish, Louisiana, or into water depths between 14 and 18 feet southeast of Cat Island, at the State line, near the existing littoral zone disposal site currently used for such activities. The U.S. Fish and Wildlife Service's (Service) Lafayette, Louisiana, Field Office has reviewed the information you provided, and offers the following comments on the beneficial deposition of dredged material in Louisiana, in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Manatees occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). Manatees have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana. They have also been occasionally observed elsewhere along the Louisiana Gulf coast. The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

All contract personnel associated with the project should be informed of the potential presence of manatees and the need to avoid collisions with manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. All construction personnel are responsible for observing water-related activities for the presence of manatee(s). Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should

be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels shall operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed. Any manatee sighting in Louisiana should be immediately reported to the Service's Lafayette, Louisiana, Field Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821).

Brown pelicans are currently known to nest on Raccoon Point on Isles Dernieres, as well as Queen Bess Island, Plover Island (Baptiste Collette), Wine Island, Rabbit Island in Calcasieu Lake, and islands in the Chandeleur chain. Pelicans change nesting sites as habitat changes occur; thus, they may also be found nesting on mud lumps at the mouth of South Pass (Mississippi River Delta) and on small islands in St. Bernard Parish. In spring and summer, nests are built in mangrove trees or other shrubby vegetation, although occasional ground nesting may occur. Brown pelicans feed along the Louisiana coast in shallow estuarine waters, using sand spits and offshore sand bars as rest and roost areas. Major threats to this species include chemical pollutants, colony site erosion, disease, and human disturbance.

The piping plover, as well as its designated critical habitat, occur along the Louisiana coast. Piping plovers winter in Louisiana, and may be present for 8 to 10 months annually. They arrive from the breeding grounds as early as late July and remain until late March or April. Piping plovers feed extensively on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation; they also require unvegetated or sparsely vegetated areas for roosting. Roosting areas may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependant on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile-long area. On July 10, 2001, the U.S. Fish and Wildlife Service designated critical habitat for wintering piping plovers (Federal Register Volume 66, No. 132). Their designated critical habitat identifies specific areas that are essential to the conservation of the species. The primary constituent elements (PCEs) for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Designated habitat in proximity to the project area includes all of the Chandeleur Islands and Breton Island where PCEs occur to mean low low water.

The pallid sturgeon is found in both the Mississippi and Atchafalaya Rivers (with known concentrations in the vicinity of the Old River Control Structure Complex); it is possibly found in the Red River as well. The pallid sturgeon is adapted to large, free-flowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant state of change. Detailed habitat requirements of this fish are not known, but it is believed to spawn in Louisiana. Habitat loss through river channelization and dams has adversely affected this species throughout its range.

According to your letter, the above-listed species would not be adversely impacted by the proposed project because the proposed activities would be located approximately 1 mile away from the islands, the above-listed species would likely avoid the area during construction activities, and no deposition of material would occur directly on the islands. Most of the suitable nesting habitat for brown pelicans occurs on the southern portions of the Chandeleur Island chain; therefore, the proposed project area would not be located in proximity to pelican nesting areas. Because all of the proposed activities in Louisiana would occur within water depths of 14 feet or greater, it is unlikely that the proposed action would adversely affect designated piping plover critical habitat. In addition, the pallid sturgeon is unlikely to be found in the project area due to its preferred riverine habitats. Accordingly, the Service's Lafayette, Louisiana, Field Office concurs with the Corps' determination that disposal of dredged material offshore of the Chandeleur Islands or Cat Island in Louisiana is not likely to adversely affect the manatee, brown pelican, piping plover and its designated critical habitat, or pallid sturgeon.

No further ESA consultation with the Service's Lafayette, Louisiana, Field Office would be required for the proposed action unless there are changes in the scope or location of the project elements, or the project has not been initiated within one year. If the proposed action has not been initiated within one year, follow-up consultation should be accomplished with the Service prior to making expenditures to ensure that the threatened and endangered species information is up-to-date. If the scope or location of the proposed action is changed, re-initiation of consultation should occur as soon as such changes are made.

We appreciate the Corps' cooperation in the conservation of endangered and threatened species, and their designated critical habitat. If you have any questions or require additional information, please contact Brigette Firmin (337/291-3108) of this office.

Sincerely,

James F. Boggs
Acting Supervisor
Louisiana Field Office

cc: FWS, Jackson, MS
LDNR, Coastal Management Division, Baton Rouge, LA
LDWF, Natural Heritage Program, Baton Rouge, LA

PD-EC

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

November 7, 2007

Michael J. Eubanks
Acting Chief, Environmental and Resources Branch
U.S. Army Corps of Engineers, Mobile District
Planning and Environmental Section
P. O. Box 2288
Mobile, Alabama 36682

RE: **C20070100,** Coastal Zone Consistency
Corps of Engineers, Mobile District
Direct Federal Action
Improvements to the Gulfport Harbor Navigation Project, Harrison County, Mississippi, and **St. Bernard Parish, Louisiana**

Dear Mr. Eubanks:

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in the application, is consistent with the LCRP.

If you have any questions concerning this information request, please contact Jeff Harris of the Consistency Section at (225)342-7949 or 1-800-267-4019.

Sincerely yours,

Jim Rives
Administrator

JR/JH//bgm
cc: Linda Brown, Mobile COE
Bren Hasse, CRD
Jack Bohannon, USFWS, Lacombe
Charles Reppel, St. Bernard Parish
Venise Ortego, LDWF
William Walker, Miss. Dept Marine Resources

Wednesday, November 28, 2007

Transaction Type:	Payment	Customer Type:	Commercial Busn
Transaction Number:		Account Number:	60443
Effective Date:		Phone Number:	2516944101
Ad Number:	0000183620	Customer Name:	U.S. ARMY CORPS OF ENGINEERS MOBILE
Apply to Current Order:	Yes	Customer Address:	109 ST. JOSEPH ST. MOBILE, AL 36602
Payment Method:	Credit Card	Charge to Company:	The Times-Picayune
Credit Card Number:	XXXXXXXXXXXX4721 - Visa	Category:	Classified
Credit Card Expire Date:	August 2009	Credit to Transaction Number:	
Payment Amount:	$16.12	Invoice Text:	
Amount Due:	$0.00	Invoice Notes:	
Reference Number:		Bad Debt:	
Check Number:			
Routing Number:			

bill -

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CAPITAL CITY PRESS

Publisher of
THE ADVOCATE

PROOF OF PUBLICATION

The hereto attached notice was
published in THE ADVOCATE,
a daily newspaper of general circulation
published in Baton Rouge, Louisiana,
and the official Journal
of the State of Louisiana,
the City of Baton Rouge,
and the Parish of East Baton Rouge,
in the following issues:

11/30/07

Susan A. Bush, Public Notices Clerk

Sworn and subscribed before me by the
person whose signature appears above:

November 30, 2007

Pegeen Singley, Notary Public, #66565
My Commission Expires: Indefinite
Baton Rouge, Louisiana

PUBLIC NOTICES

Notice is hereby given that the U.S. Army Corp of Engineers, Mobile District, is proposing a project for the beneficial use of dredged material from the Federal Gulfport Navigation Project in Harrison County, Mississippi. The spoil material will be deposited in water with a depth of twenty-five feet or greater east of the Chandler Islands in Louisiana. Additionally, material dredged from the Ship Island Pass will be placed in the existing littoral zone disposal area into water depths between fourteen and eight feet. The applicant is applying to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with the statutory authority contained in LAC 33:IX.1507 and provisions of section 401 of the Clean Water Act.

Comments concerning this application can be filed with the Registrations and Certifications Section within ten days of this notice by referencing WW 071029-01/AI 154253 to the following address:

Louisiana Department of Environmental Quality
Water Quality
Certifications
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Win Webb
(225) 219-3464

A copy of the application materials is available for inspection and review at the LDEQ Public Records Center, on the first floor of the Galvez Building, Room 127 at 602 North Fifth Street, Baton Rouge, LA. Viewing hours are from 8:00 a.m. to 4:30 p.m., Monday through Friday (except holidays).

Persons wishing to be included on the LDEQ permit public notice mailing list for other public participation related questions should contact the Public Participation Group in writing at LDEQ, P.O. Box 4313, Baton Rouge, LA 70821-4313, by email at mailtestrequest@ldep.org or contact the LDEQ Customer Service Center at (225) 219-LDEQ (219-5337).

3772207-nov 30-1t

US ARMY COE - MOBILE 3772207
LINDA BROWN
109 ST JOSEPH ST
MOBILE AL 36602

CAPITAL CITY PRESS

Publisher of
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3772207 nov 30-1t

US ARMY COE - MOBILE 3772207
LINDA BROWN
109 ST JOSEPH ST
MOBILE AL 36602

The Times-Picayune

3800 HOWARD AVENUE, NEW ORLEANS, LOUISIANA 70140-1097 TELEPHONE (504) 826-3206

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o [illegible] he
T [illegible] these dates.

State of Louisiana

Parish of Orleans

City of New Orleans

Personally appeared before me, a Notary in and for the parish of Orleans, Robert J. Chiasson who deposes and says that he is the Accounts Receivable Manager, of The Times-Picayune Publishing Corporation, a Louisiana Corporation, Publishers of The Times-Picayune, Daily and Sunday, of general circulation; doing business in the City of New Orleans and the State of Louisiana, and that the attached AUCTION

Re:Notice that the U.S. Army Corp. of Engineers Mobile District for use of dredged material Federal Gulfport

Advertisement of U.S. Army Corps Of Engineers

Mobile/109 St. Joseph St.
Mobile,AL. 36602

Was published in The Times Picayune

3800 Howard Ave.
New Orleans, La. 70125

On the following dates November 30, 2007

Robert J. Chiasson

Sworn to and subscribed before me this

9th Day of January, 2008

Notary Public

My commission expires at my death.

Charles A. Ferguson, Jr.

Notary identification number 23492

DEPARTMENT OF ENVIRONMENTAL QUALITY
KATHLEEN BABINEAUX BLANCO
GOVERNOR
MIKE D. McDANIEL, Ph.D.
SECRETARY

January 15, 2008

U.S. Army Corps of Engineers, Mobile District
Coastal Environmental Team
Planning and Environmental Division
P.O. Box 2288
Mobile, AL 36628-0001

Attention: Ms. Linda T. Brown

RE: Water Quality Certification (WW 071029-01/AI 154253/CER 20070001)
St. Bernard Parish

The Department has received your application for the beneficial use in Louisiana waters of material dredged as part of the Federal Gulfport Harbor Navigation Project in Harrison County Mississippi. It is proposed that the new-work dredged material be deposited for beneficial use in the vicinity of the Chandeleur Islands, which are within the waters of the State of Louisiana.

The requirements for Water Quality Certification have been met in accordance with LAC 33:IX.1507.A-E. Based on the information provided in your application, we have determined that the placement of the fill material will not violate the water quality standards of Louisiana provided for under LAC 33:IX.Chapter 11. Therefore, the Department has issued a Water Quality Certification.

Sincerely,

Thomas R. Griggs
Engineer Manager

TRG/cww

ENVIRONMENTAL SERVICES
: PO BOX 4313, BATON ROUGE, LA 70821-4313
P:225-219-3181 F:225-219-3309
WWW.DEQ.LOUISIANA.GOV

March 5, 2008

Coastal Environment Team
Planning and Environmental Division

Mr. Robert Seyfarth
Mississippi Department of Environmental Quality
Office of Pollution Control
Post Office Box 10385
Jackson, Mississippi 39109

Dear Mr. Seyfarth:

This letter is in reference to construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. The proposed action would be implemented under the authority of the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99-98), in accordance with the 1976 Feasibility Report and modified by the Water Resources Development Act (WRDA) of 1986. The proposed action is described in the Draft Supplemental Environmental Impact Statement (DEIS) previously provided.

Additionally, during the public comment period, we received requests from the States of Louisiana Department of Natural Resources (DNR) and Mississippi Department of Marine Resources, and St. Bernard Parish to consider the possible placement of dredged material beneficially within the vicinity of Chandeleur and Cat Islands from the widening project at Gulfport Harbor. The U.S. Army Corps of Engineers, Mobile District (Corps) participated in subsequent discussions during a meeting with the state agencies and follow-up correspondence. The Corps has investigated the use of the two sites as delineated by Louisiana DNR technical staff, one being east of Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of maintenance material. The Corps' proposed action includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass would be placed in the existing littoral zone disposal area into water depths between -14 feet and -18 feet as shown on the enclosed drawings. These two disposal options are being incorporated into the Proposed Action and will be fully evaluated in the Final SEIS.

We request your consideration of final certification of the project. If you have any questions or require additional information please contact Ms. Linda T. Brown at (251) 694.3786, or email linda.t.brown@usace.army.mil.

Sincerely,

PD-EC/BROWN

PD-EC/JACOBSON

PD-E/Edwards.

Jennifer L. Jacobson
Chief, Coastal Environment Team

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

March 5, 2008

REPLY TO
ATTENTION OF:

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Planning and Environmental Division

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Mississippi Department of Environmental Quality
Office of Pollution Control
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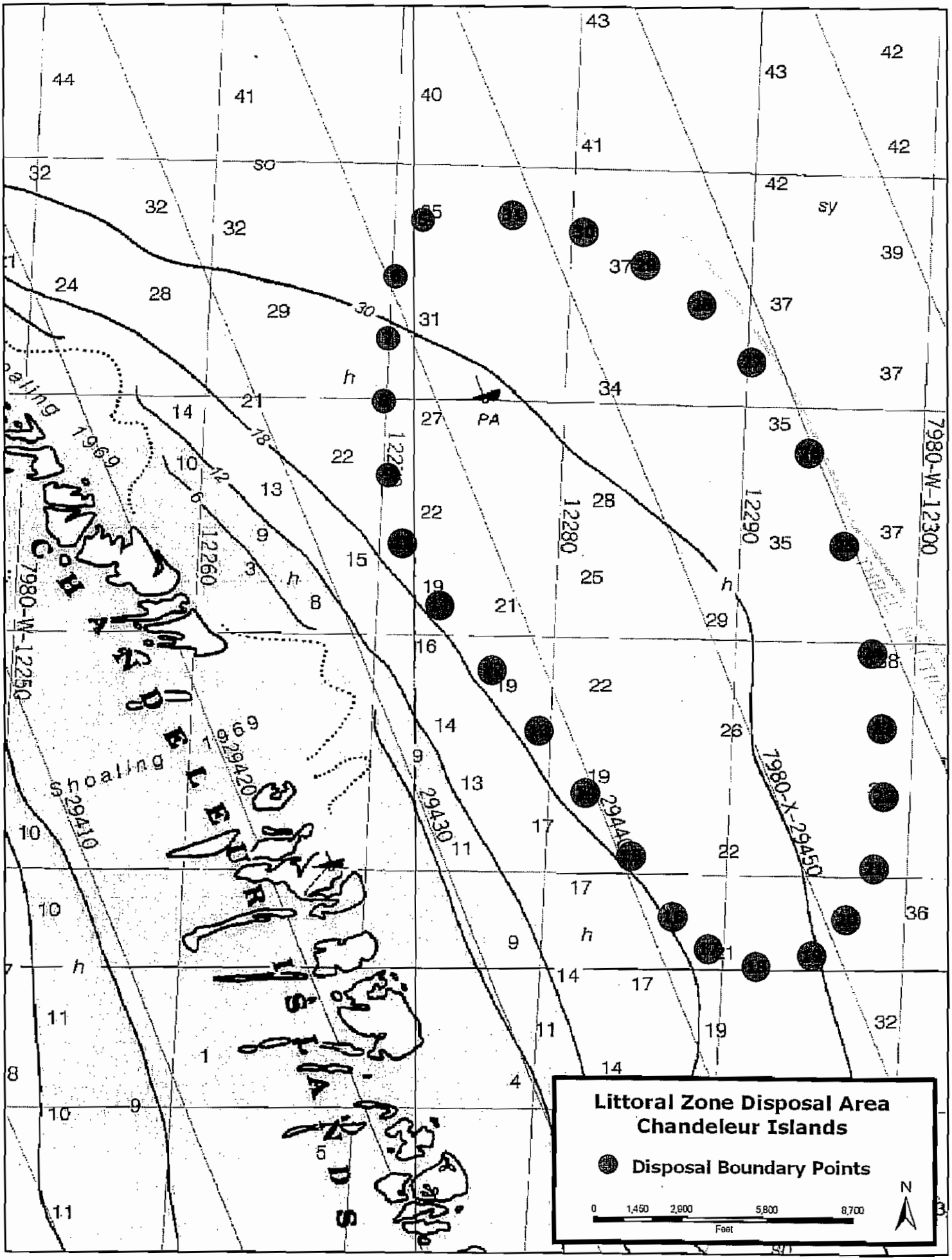
Littoral Zone Disposal Area
Chandeleur Islands
Disposal Boundary Points
0 1,450 2,900 5,800 8,700
Feet
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7980-W-12300
7980-W-12250
7980-X-29450
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29440
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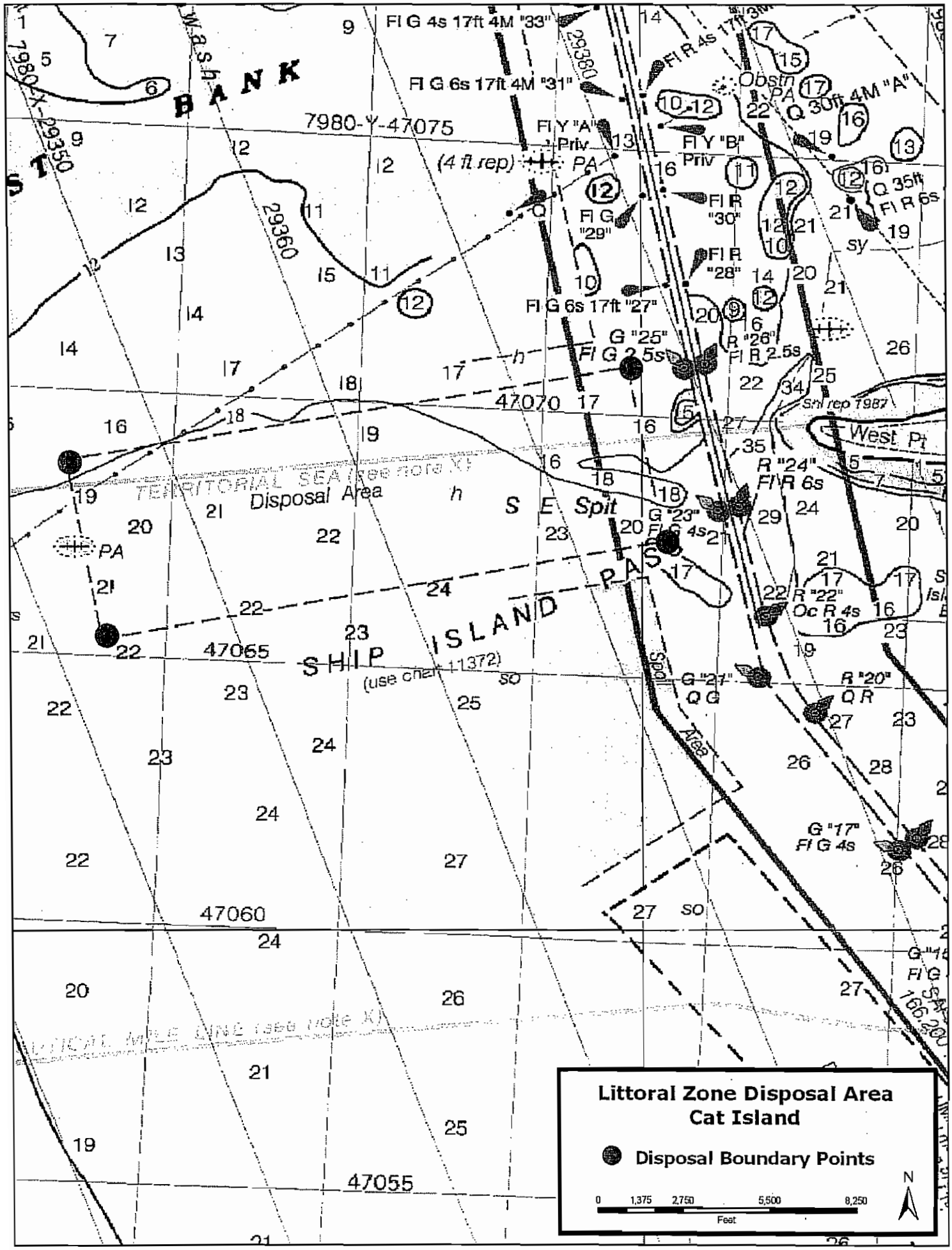
shoaling
CHANDELEUR ISLANDS


Littoral Zone Disposal Area
Cat Island
Disposal Boundary Points
0 1,375 2,750 5,500 8,250
Feet
N

070523 JD

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

March 5, 2008

Coastal Environment Team
Planning and Environmental Division

Mr. Jan Boyd
Mississippi Department of Marine Resources
1141 Bayview Avenue, Suite 101
Biloxi, Mississippi 39530

Dear Mr. Boyd:

This letter is in reference to construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. The proposed action would be implemented under the authority of the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99-98), in accordance with the 1976 Feasibility Report and modified by the Water Resources Development Act (WRDA) of 1986. The proposed action is described in the Final Supplemental Environmental Impact Statement (SEIS) previously provided.

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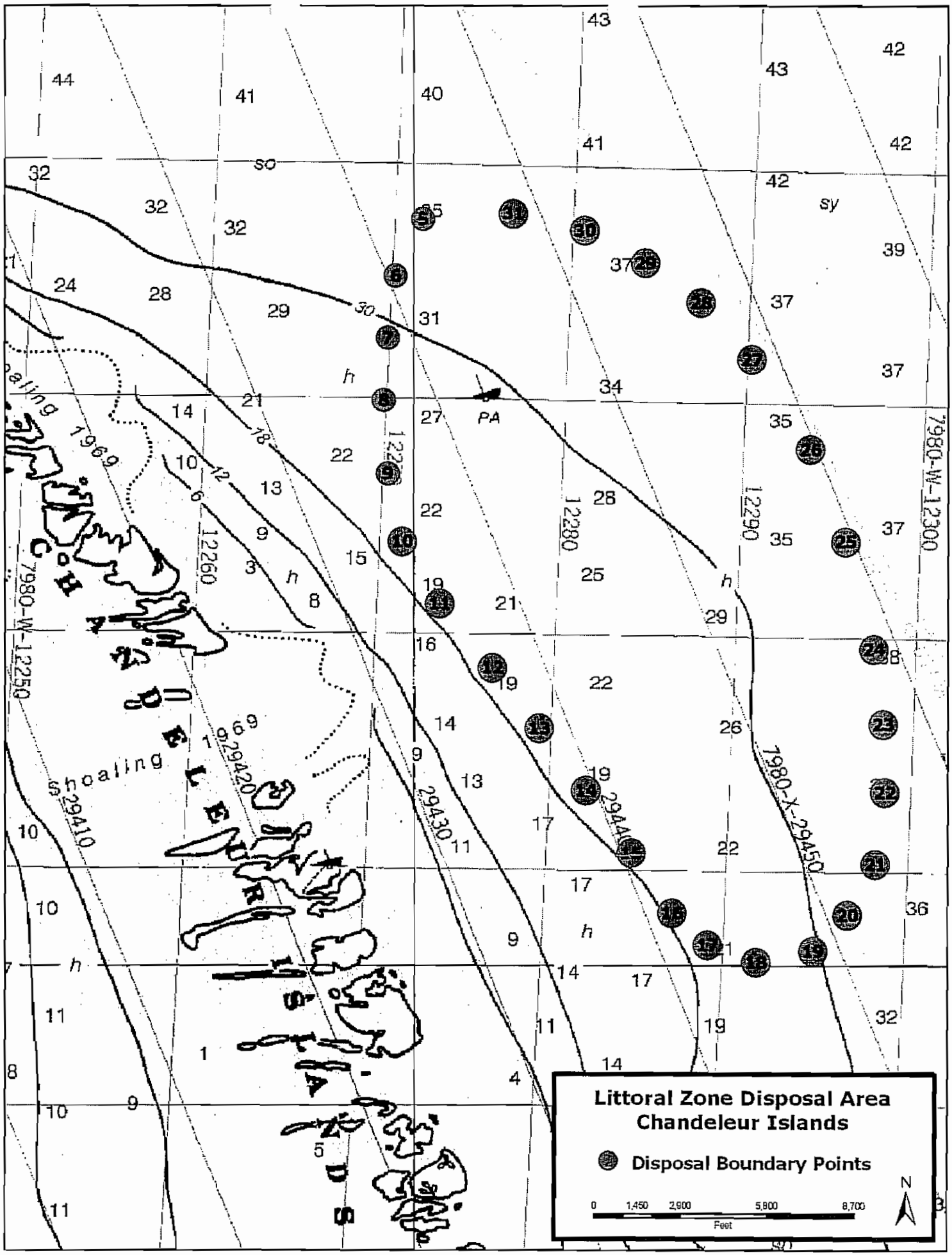
We request your determination of coastal zone consistency of the project. If you have any questions or require additional information please contact Ms. Linda T. Brown at (251) 694.3786, or email linda.t.brown@usace.army.mil.

Sincerely,

Jennifer L. Jacobson
Chief, Coastal Environmental Team

Enclosures


Littoral Zone Disposal Area
Chandeleur Islands
Disposal Boundary Points
0 1,450 2,900 5,800 8,700
Feet
N
CHANDELEUR ISLANDS
PA
7980-W-12300
7980-W-12250
7980-X-29450
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12280
12260
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29430
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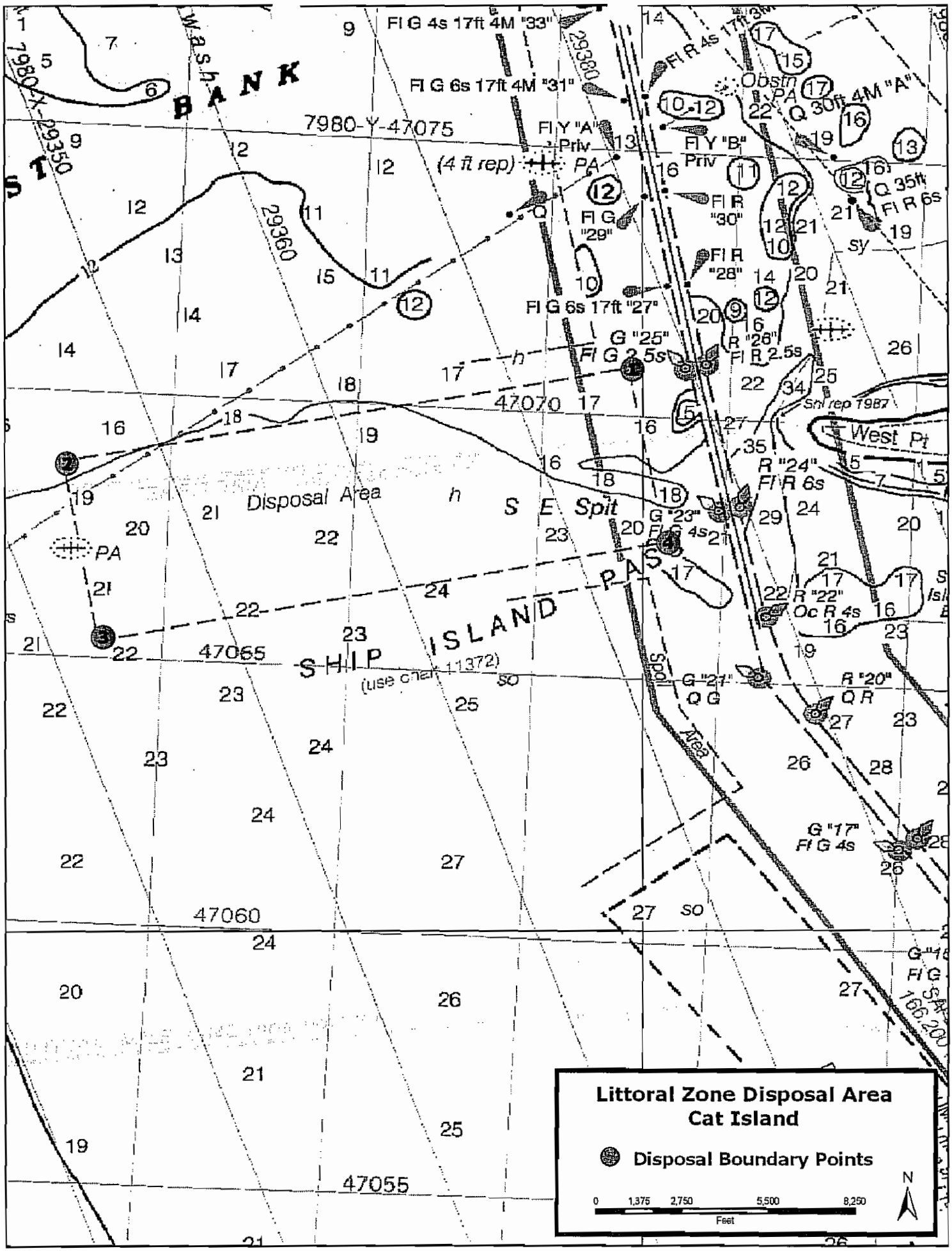
29410
shoaling
1969


Littoral Zone Disposal Area
Cat Island
Disposal Boundary Points
0 1,375 2,750 5,500 8,250
Feet
N
Disposal Area
SHIP ISLAND PASS
SE Spit
West Pt
BANK
Fl G 4s 17ft 4M "33"
Fl G 6s 17ft 4M "31"
Fl Y "A"
Priv
Fl Y "B"
Priv
Fl R "30"
Fl G "29"
Fl R "28"
Fl G 6s 17ft "27"
G "25"
Fl G 2.5s
R "26"
Fl R 2.5s
R "24"
Fl R 6s
G "23"
Fl G 4s
R "22"
Oc R 4s
G "21"
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R "20"
Q R
G "17"
Fl G 4s
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Q 35ft
Fl R 6s
(4 ft rep)
Str rep 1987
(use chart 11372)
7980-Y-47075
7980-X-29350
29360
29380
47070
47065
47060
47055

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PD-EC/BROWN

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Chief, Coastal Environmental Team

PD-EI/EUBANKS

PD-EC/JACOBSON

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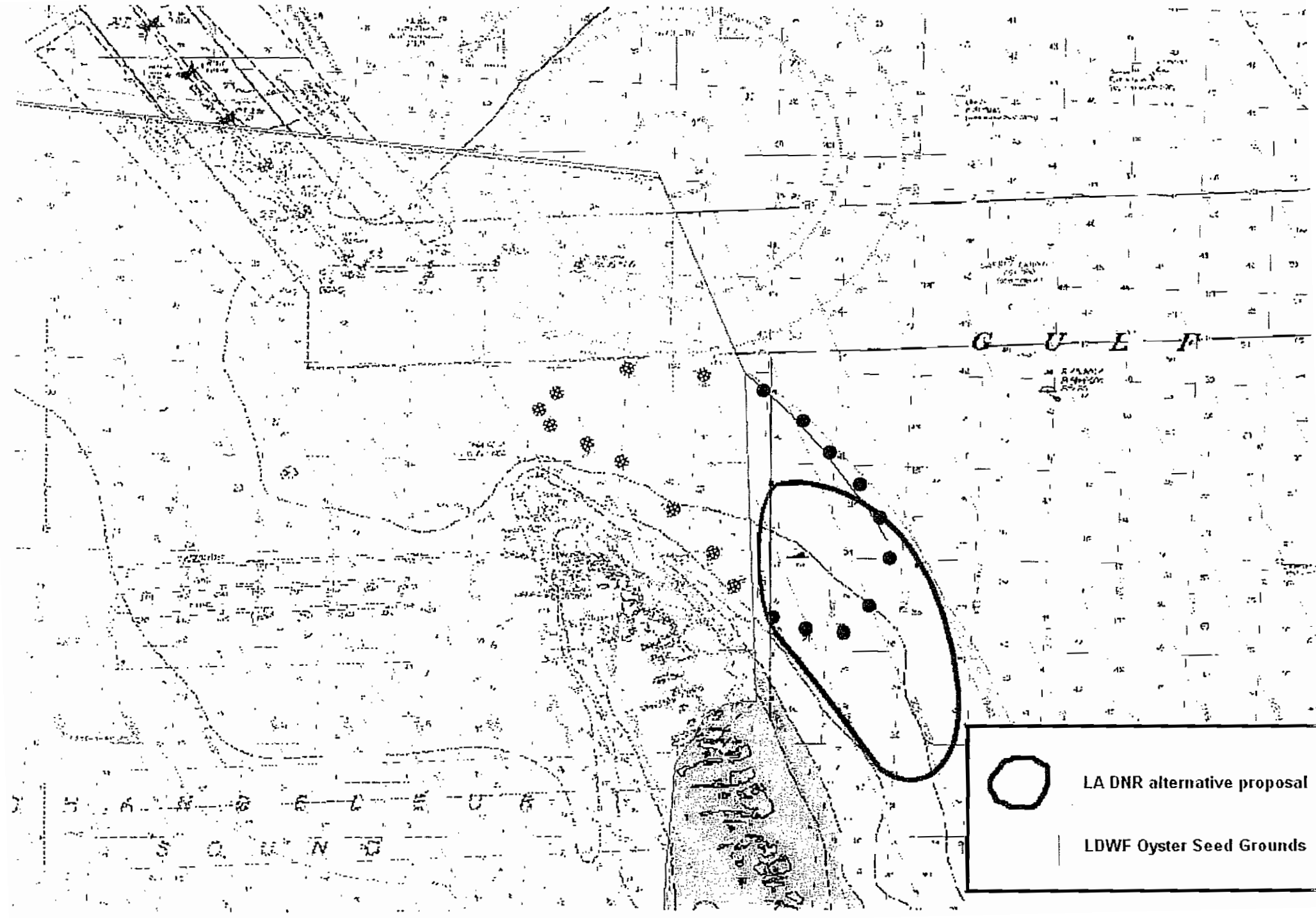
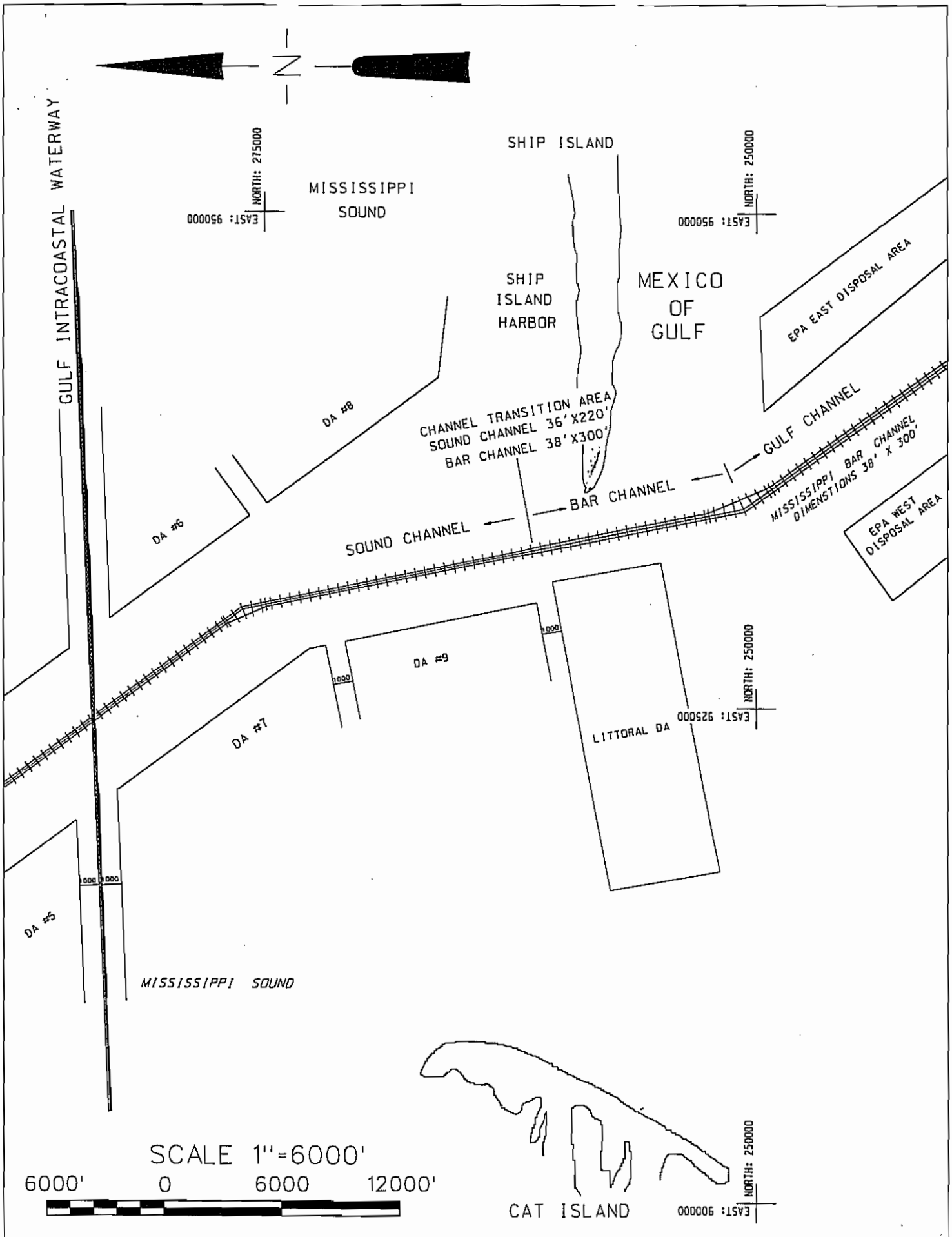

G U L F
LA DNR alternative proposal
LDWF Oyster Seed Grounds


GULF INTRACOASTAL WATERWAY
NORTH: 275000
EAST: 950000
MISSISSIPPI SOUND
SHIP ISLAND
NORTH: 250000
EAST: 950000
SHIP ISLAND HARBOR
MEXICO OF GULF
EPA EAST DISPOSAL AREA
DA #8
CHANNEL TRANSITION AREA
SOUND CHANNEL 36' X220'
BAR CHANNEL 38' X300'
GULF CHANNEL
MISSISSIPPI BAR CHANNEL DIMENSIONS 38' X 300'
BAR CHANNEL
DA #6
SOUND CHANNEL
EPA WEST DISPOSAL AREA
DA #9
NORTH: 250000
EAST: 925000
LITTORAL DA
DA #7
DA #5
MISSISSIPPI SOUND
SCALE 1"=6000'
6000' 0 6000 12000'
CAT ISLAND
NORTH: 250000
EAST: 900000

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

March 5, 2008

Coastal Environment Team
Planning and Environmental Division

Mr. Jan Boyd
Mississippi Department of Marine Resources
1141 Bayview Avenue, Suite 101
Biloxi, Mississippi 39530

Dear Mr. Boyd:

This letter is in reference to construction of authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, Mississippi. The proposed action would be implemented under the authority of the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99-98), in accordance with the 1976 Feasibility Report and modified by the Water Resources Development Act (WRDA) of 1986. The proposed action is described in the Final Supplemental Environmental Impact Statement (SEIS) previously provided.

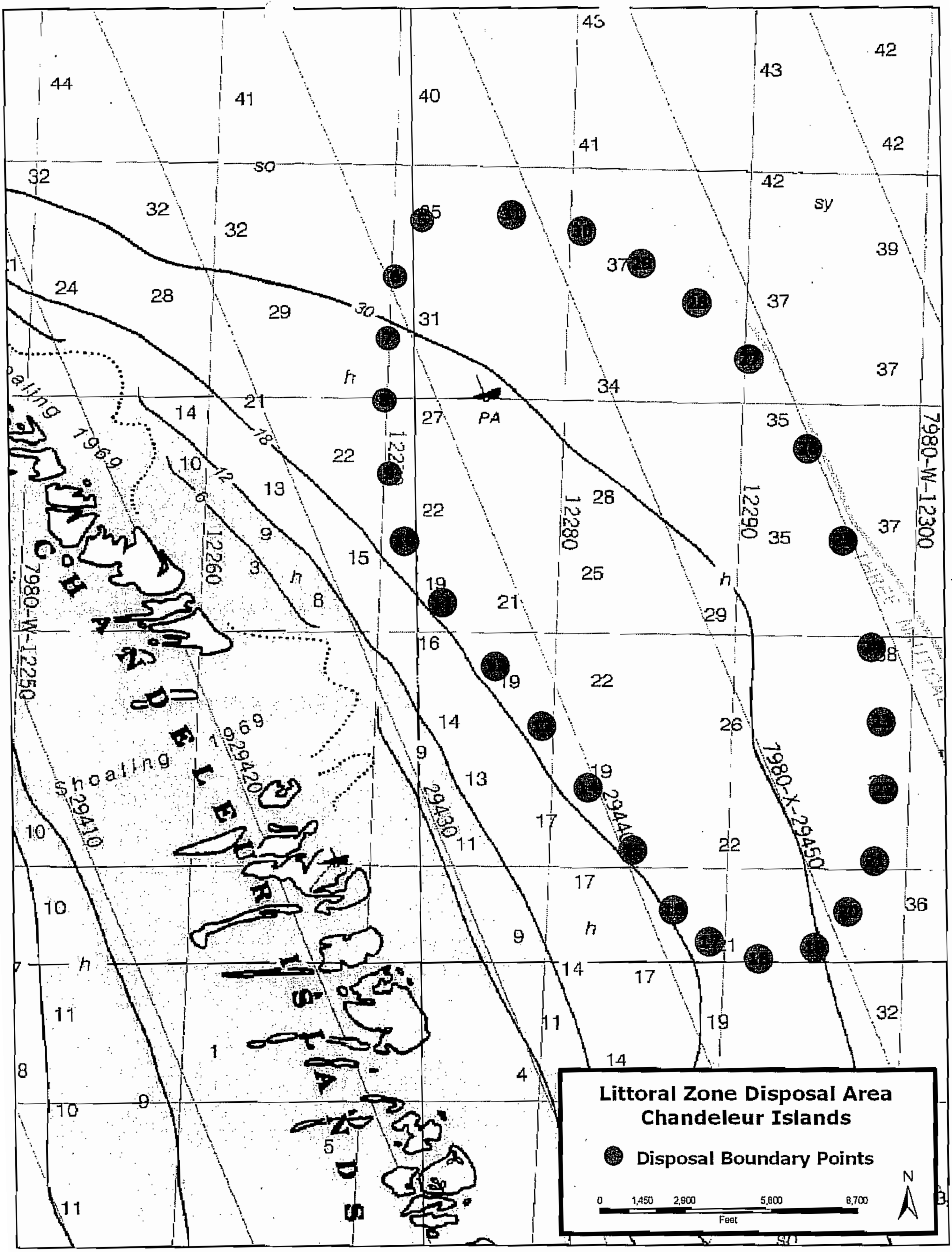
Additionally, during the public comment period, we received requests from the States of Louisiana Department of Natural Resources (DNR) and Mississippi Department of Marine Resources, and St. Bernard Parish to consider the possible placement of dredged material beneficially within the vicinity of Chandeleur and Cat Islands from the widening project at Gulfport Harbor. The U.S. Army Corps of Engineers, Mobile District (Corps) participated in subsequent discussions during a meeting with the state agencies and follow-up correspondence. The Corps has investigated the use of the two sites as delineated by Louisiana DNR technical staff, one being east of Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of maintenance material. The Corps' proposed action includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass would be placed in the existing littoral zone disposal area into water depths between -14 feet and -18 feet as shown on the enclosed drawings. These two disposal options are being incorporated into the Proposed Action and will be fully evaluated in the Final SEIS.

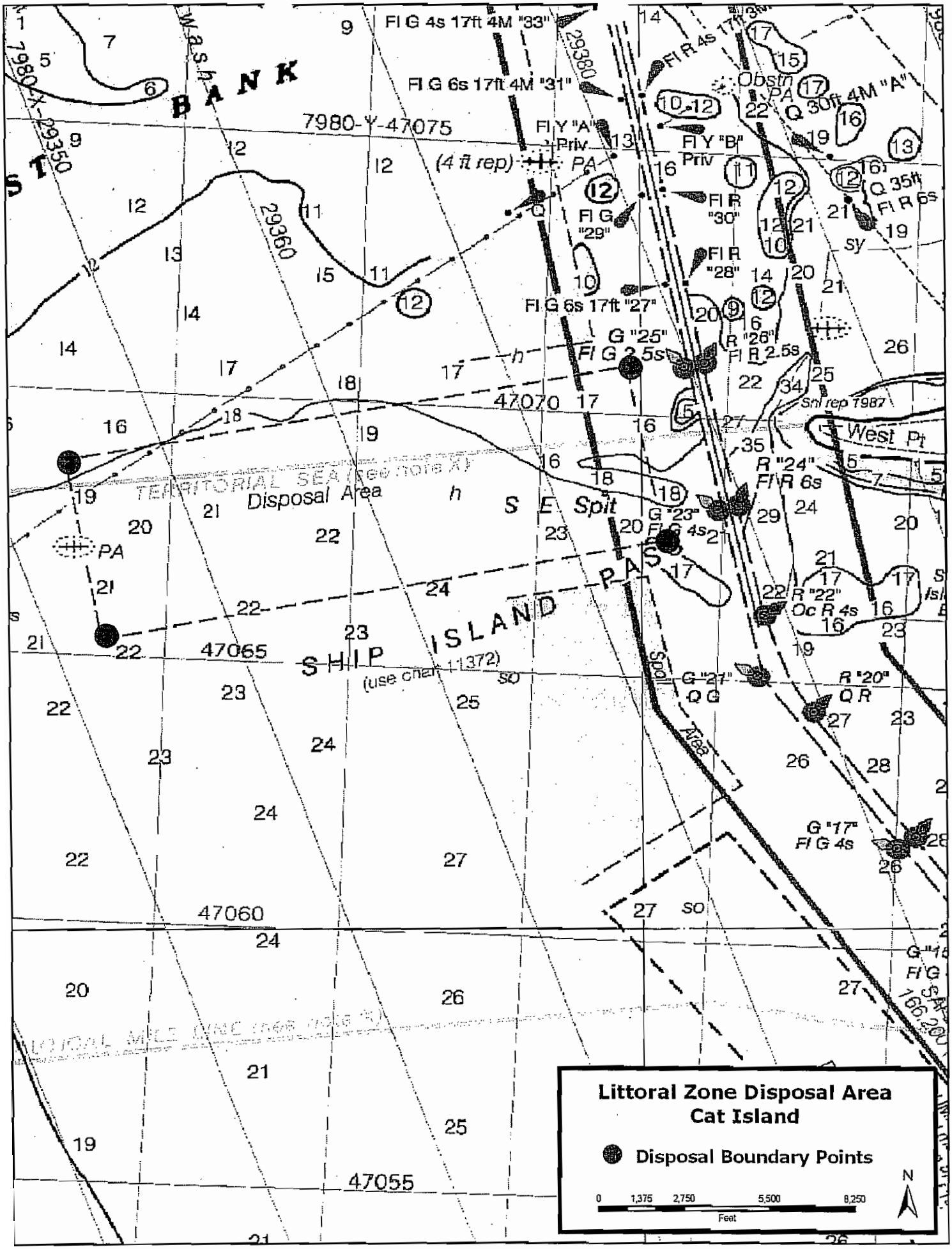
We request your determination of coastal zone consistency of the project. If you have any questions or require additional information please contact Ms. Linda T. Brown at (251) 694.3786, or email linda.t.brown@usace.army.mil.

Sincerely,

Jennifer L. Jacobson
Chief, Coastal Environmental Team

Enclosures


Littoral Zone Disposal Area
Chandeleur Islands
Disposal Boundary Points
0 1,450 2,900 5,800 8,700
Feet
N
CHANDELEUR ISLANDS
7980-W-12250
7980-W-12300
7980-X-29450
12260
12270
12280
12290
29410
29420
29430
29440
Shoaling 1969
PA


Littoral Zone Disposal Area
Cat Island
Disposal Boundary Points
N
0 1,375 2,750 5,500 8,250
Feet

MISSISSIPPI
DEPARTMENT OF MARINE RESOURCES

REQUEST FOR REVIEW OF APPLICATION

TO: Allison Felsher, Team Leader MS Coastal Branch,
USACE Regulatory Division, Mobile District
Office of Land and Water Resources
Department of Archives and History
Office of Pollution Control
Mississippi Wildlife Federation
Department of Wildlife, Fisheries and Parks
Secretary of State
Paul Necaise, U.S. Fish and Wildlife Service
Janet Riddell, Clearinghouse Officer

FROM: Department of Marine Resources
Bureau of Wetlands Permitting

SUBJECT: Request for Coastal Zone Consistency review by U.S. Army Corps of Engineers; DMR-070523

DATE: March 10, 2008

In accordance with the provisions of the Mississippi Coastal Program and the terms of the February, 1984 Memorandum of Understanding, we herewith enclose a copy of the request for Coastal Zone Consistency Review by the U.S. Army Corps of Engineers.

Please provide your comments in writing to our office by close of business on **March 31, 2008.**

If a coastal program agency has not commented within the allotted review time, its concurrence with the proposed activity will be assumed.

If you have any questions, please contact James Davis at 228-523-4115 or James.Davis@dmr.ms.gov.

cc: Linda T. Brown, USACE ✓

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

April 7, 2008

Date: 5-7-08
We concur that the proposed undertaking will have no adverse effect on historic properties. This effect determination could change should new information come to our attention.
Pam Breaux: Pam Breaux
State Historic Preservation Officer

Coastal Environment Team
Planning and Environmental Division

Ms. Pamela A. Breaux
State Historic Preservation Officer
Attention: Mr. Duke Rivet
Section 106 Review and Compliance
Department of Culture, Recreation and Tourism
Post Office Box 44247
Baton Rouge, Louisiana 70804

Dear Ms. Breaux:

The U.S. Army Corps of Engineers, Mobile District is proposing to widen the existing Gulfport Harbor Navigation Channel by dredging. The project is located south of Gulfport, in state waters within Harrison County, Mississippi. The widening project would bring the channel from its current width of 300 feet to its authorized width of 400 feet. During the planning stages of the project, a request was received from the Louisiana Department of Natural Resources (LDNR) for beneficial use of the dredged material. The proposal from LDNR is for disposal of material on the east side of the Chandeleur Islands in order to provide sediment for island replenishment. The proposed Chandeleur Islands replenishment through disposal would occur in state waters, Saint Bernard Parish, Louisiana (Enclosure 1).

As per requirements outlined in Section 106 of the National Historic Preservation Act, the Mobile District must consider the effects of the proposed action on historic properties. The Gulfport Harbor Navigation Channel widening was surveyed for cultural resources and consulted on with the Mississippi State Historic Preservation Officer (SHPO) in 1989. A determination of no historic properties affected was concurred on for the widening project. The Chandeleur Islands replenishment portion of the project is the purpose of this consultation with your office.

Background research and literature review revealed a single possible archaeological site within the general area of the proposed Chandeleur Islands disposal area. The site is a reported "eighteenth-century ballast pile site" that has not been given a state trinomial nor is there an exact location known at this time. The resource is considered unknown in terms of its National Register of Historic Places (NRHP) eligibility at this time. Due to the ambiguous nature of both the sites location and eligibility, the Mobile District, in consultation with your Chief

APR 10 2008

Archaeologist, Mr. Duke Rivet, will treat the site as potentially eligible for the NRHP and thus as an Historic Property. Based on the proposed nature of the project, the Mobile District finds that the material disposal would at worst have a beneficial effect to the site (afford protection from erosion, looting and damage from shrimp trawlers). Therefore, the Mobile District, as the lead Federal Agency has determined **no adverse effect to historic properties** as per 36 CFR 800.5(b).

I. Description of the Undertaking – The proposed undertaking consists of disposal of dredged material from the widening of the Gulfport Navigation Channel to an area east of the Chandeleur Islands. Specifically, the dredged material would be placed as closely as possible to the island in order to create the potential for replenishment of the shoreline. Enclosure 2 is a map with the proposed boundaries of the disposal area. For the purpose of Section 106 compliance, the Area of Potential Effect (APE) of the action is considered to include the entire disposal area. The APE is located in Saint Bernard Parish, Louisiana, within state waters.

The water depths in this area range from 19-35 feet. Due to restrictions associated with the size of the dredges, the material can not be placed directly on the islands, but will be deposited adjacent to them. It is expected that the material will drift westward, towards the islands and will serve as a buffer for future storm events. It is also assumed that the material would help lessen storm surges from the Gulf into Lake Pontchartrain. Enclosure 3 contains a detailed description of the project which includes engineering metrics.

II. Methodology and Reporting – A literature and background check for previously recorded cultural resource sites and surveys was made of the project area in June of 2007 by CH2MHill. This research focused on possible shipwreck sites. Investigations included records at the Mobile District office, the National Park Service, the NRHP, the Louisiana SHPO site files, the Mississippi Department of Archives and History site files, and the Automated Wreck and Obstruction Information System data base.

The study found that an intensive marine archaeological survey had been conducted within the area in 1989 by the Minerals Management Service, U.S. Department of the Interior (MMS 89-0092). The survey found a single possible archaeological site within the general area of the Chandeleur Islands. The site is a reported "eighteenth-century ballast pile." The site has not been given a state trinomial nor is there an exact location known at this time (personnel communication with Mr. Duke Rivet, April 2008). The site was first reported to the Louisiana SHPO in 1989. A team of archaeologists from Texas A&M University investigated the site. The site was found to be a debris field associated with ballast dumping. Debris included ballast stone and at least seven cannon. The cannon were all thought to be dysfunctional at the time of dumping and appear to have been used as ballast. One cannon was recovered and brought to College Station, Texas for conservation by electrolytic reduction (Mr. Joe Giliberti personnel communication).

A new team of investigators searched for the site under permit of the state of Louisiana in 2007. The site was reportedly not relocated during the one day field investigation (Mr. Duke Rivet, personnel communication April 2008). The team was also from Texas A&M University and was under the direction of Mr. Chris Horrel. The resource is consider unknown in terms of

its NRHP eligibility at this time. Due to the ambiguous nature of both the sites location and eligibility, the Mobile District, in consultation with your Chief Archaeologist, Mr. Duke Rivet, will treat the site as potentially eligible for the NRHP and thus as an historic property. No other historic properties are recorded within the proposed project area.

III. Resources Identified and Evaluated (Significance Criteria Considered) - The background research and previous field surveys located a single possible historic property near the project APE. The site, known as the "eighteenth-century ballast pile site," is considered potentially eligible for the NRHP for the purpose of this review. However, further information on the site is likely to find the site not eligible for the NRHP. This is due to several factors. First, the nature of the site as a ballast dump gives it only a marginal chance of being significant. Second, the location of the site has been known by locals for many years and it has undergone heavy looting. Finally, the site is also subject to damage from natural action and cultural destruction (damage from trawls).

IV. Effects Determination and Compliance Decision – Effects determinations are the responsibility of the lead Federal agency. The Mobile District has considered the nature of the undertaking and the presence of properties that may posses the qualities of integrity and meet at least one of the criteria necessary to be considered eligible for inclusion in the NRHP. Based on the background study and previous fieldwork, a single site that may be considered an historic property is located near the project APE. However, the nature of the proposed project and the nature and condition of the site are such that the Mobile District has determined that any effect from the action would be beneficial to the resource. Specifically, the dredged material would bury the existing site and protect it from "treasure hunters" and storms. Therefore, the Mobile District has determined **no adverse effect to historic properties** as per 36 CFR 800.5(b) by the proposed dredge disposal.

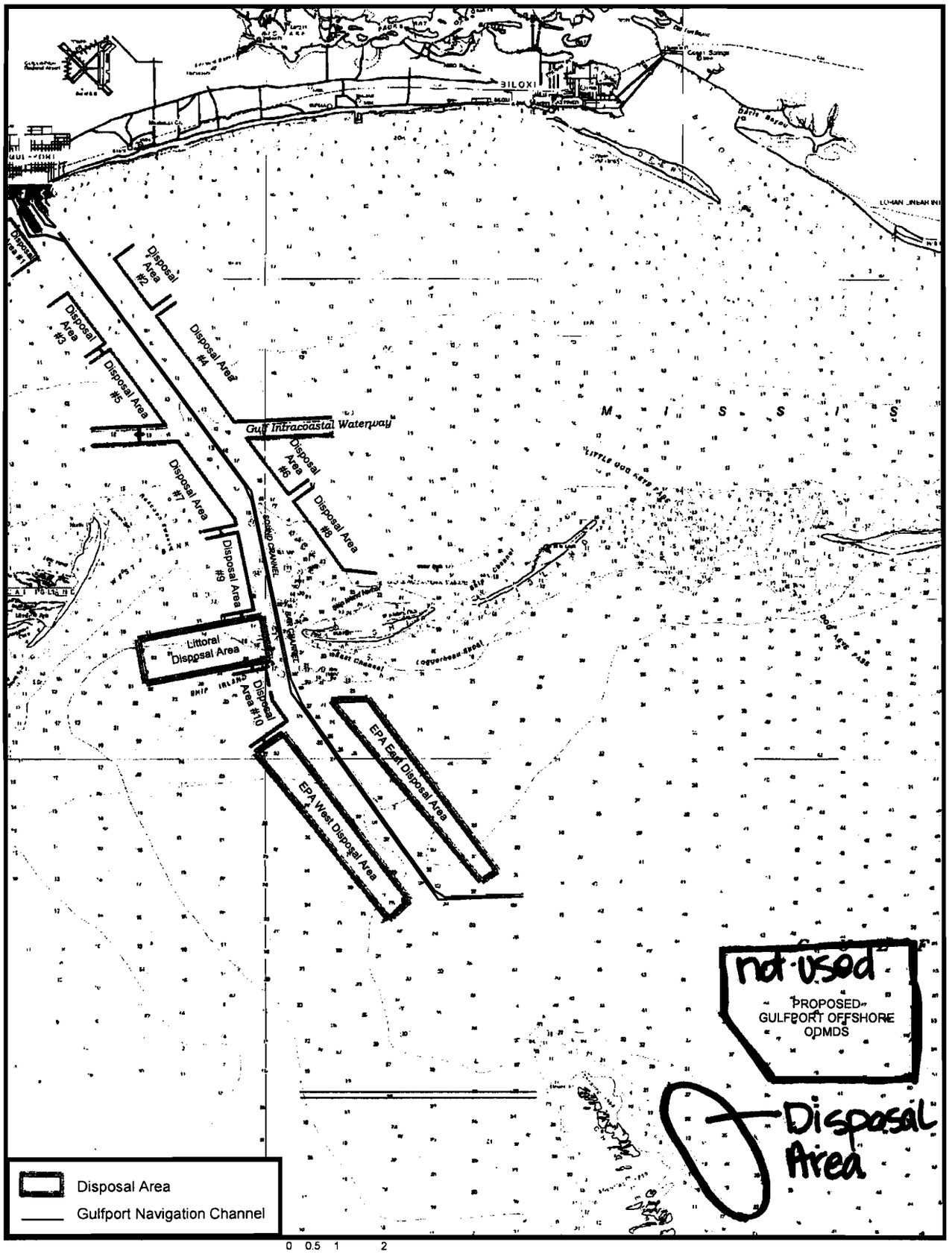
The Mobile District asks that you concur with our finding of **no adverse effect to historic properties** as per 36 CFR 800.5(b). If you have questions or require further information, please contact Mr. Joe Giliberti at (251) 694-4114 or via email at joseph.a.giliberti@sam.usace.army.mil.

Sincerely,

for

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures



Reference:
NOAA Chart Number 11373
Mississippi Sound, Chandeleur Islands, and Surrounding Area

Figure ES-2
Navigation Channels and Potential Disposal Sites
Gulfport Harbor Navigation Channel Draft Supplemental EIS

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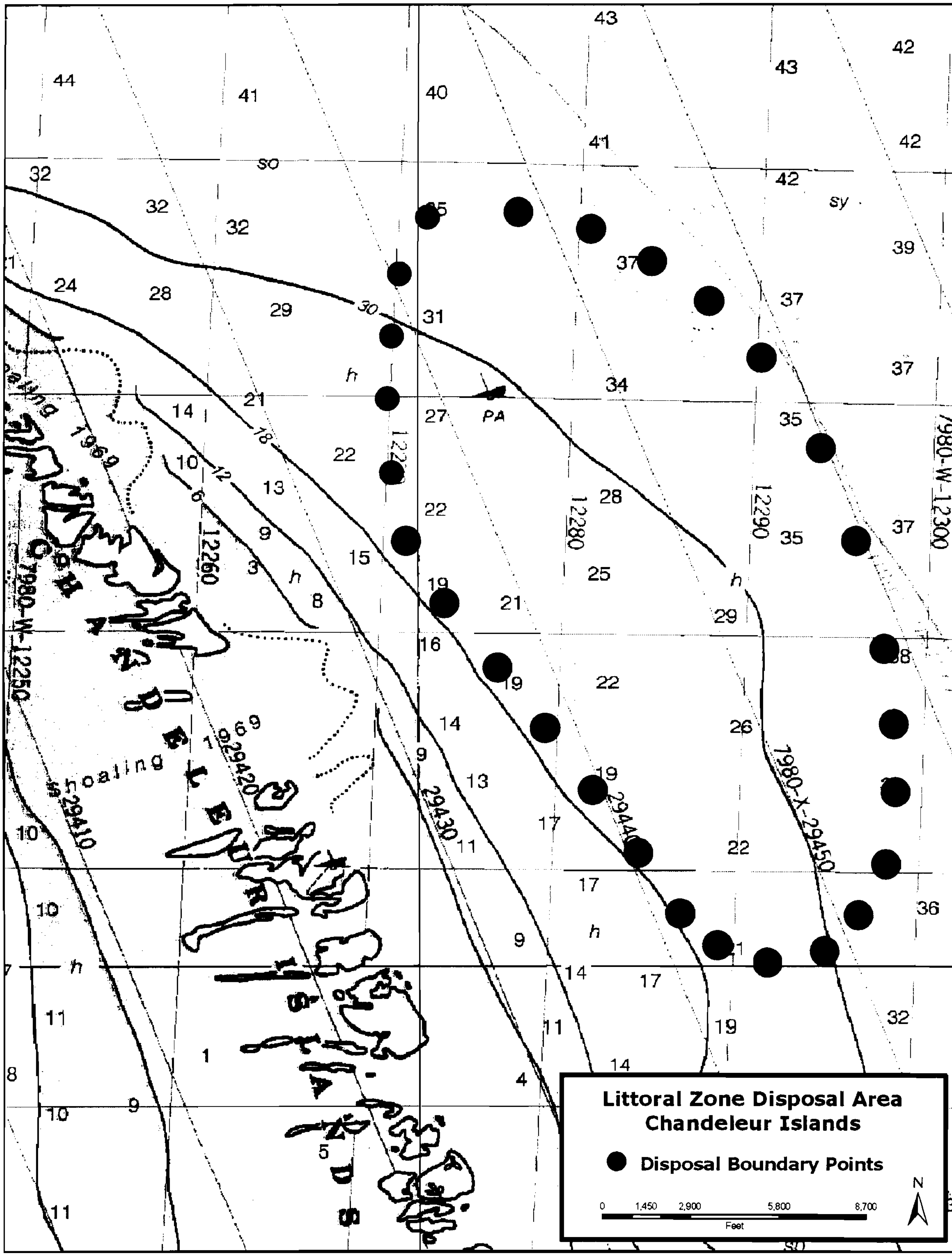

Littoral Zone Disposal Area
Chandeleur Islands
Disposal Boundary Points
0 1,450 2,900 5,800 8,700
Feet
N

Addendum

Gulfport Harbor Navigation Project
Construction to Authorized Dimensions
Final Supplemental Environmental Impact Statement (SEIS)

SUBJECT: Placement of Dredged Material as Sediment Source for Restoration of Chandeleur Islands

As a comment to the Draft SEIS, the U.S. Army Corps of Engineers (Corps), Mobile District received requests from the States of Louisiana Department of Natural Resources (DNR), dated June 19, 2007, and Mississippi Department of Marine Resources, dated June 29, 2007, and St. Bernard Parish, dated April 2, 2007, to consider the possible placement of new work dredged material beneficially within the vicinity of Chandeleur and Cat Islands from the widening project at Gulfport Harbor, Harrison County, Mississippi. A meeting was held in the office of Dr. William Walker, Director of Mississippi Department of Marine Resources on June 11, 2007. A list of participants is attached. The Corps, Mobile District participated in subsequent discussions during a meeting with the States and Federal agencies. The Corps, Mobile District has investigated the use of the two sites as delineated by Louisiana DNR engineering staff, one being east of the Chandeleur Islands, and the other being southeast of Cat Island near the existing littoral zone disposal site currently used for deposition of sandy maintenance material.

Based on these discussions, a new alternative is being evaluated in this addendum. This alternative is as follows:

The Corps, Mobile District's proposed action stated in the Gulfport Harbor Navigation Project Construction to Authorized Dimensions Final SEIS includes deposition of new work material into water depths of 25 feet or greater east of the Chandeleur Islands within the area depicted by Louisiana DNR engineering staff and as shown on the enclosed drawings. Additionally, new work material dredged from within the Ship Island Pass (littoral zone) would be placed in the existing littoral zone disposal area into water depths between 14 feet and 18 feet as shown on the enclosed drawings. These two disposal options have been incorporated into the Proposed Action and were fully evaluated in the Gulfport Harbor Navigation Project Construction to Authorized Dimensions Final SEIS which includes the amended and attached 404(b)(1) analysis.

Requests for Louisiana Water Quality Certification and Coastal Zone Management Consistency Determination have been submitted to Louisiana DNR and Environmental Quality. The state certifications have been issued, dated November 7, 2007, and January 15, 2008, respectively. Additional coordination with U.S. Fish and Wildlife Service, Lafayette Field Office, National Marine Fisheries Service, Baton Rouge Habitat Conservation Division in Baton Rouge and the Louisiana State Historic Preservation Office has been initiated and concurrence letters are expected stating support for the new disposal options.

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MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

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for

Curtis M. Flakes
Chief, Planning and Environmental
Division

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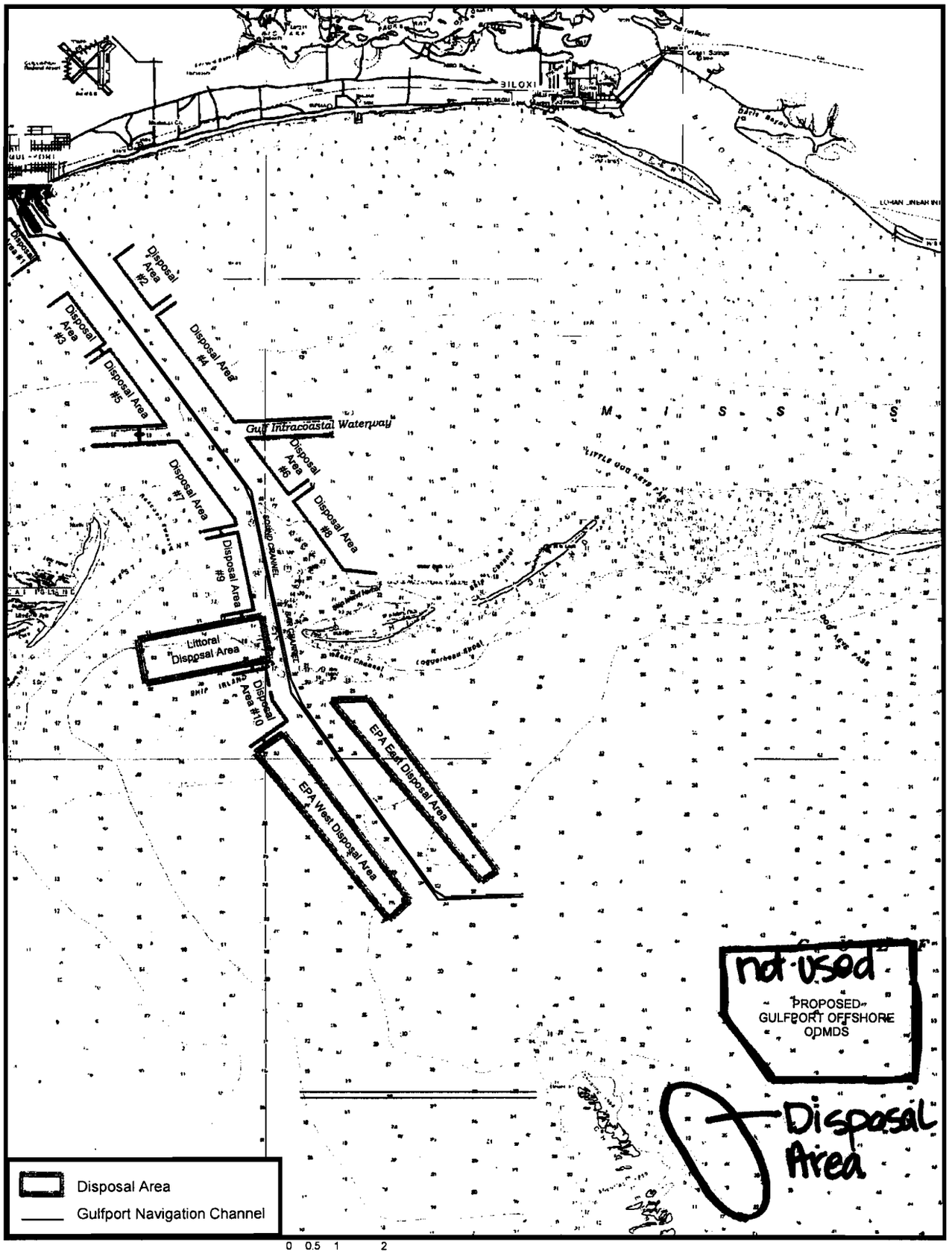

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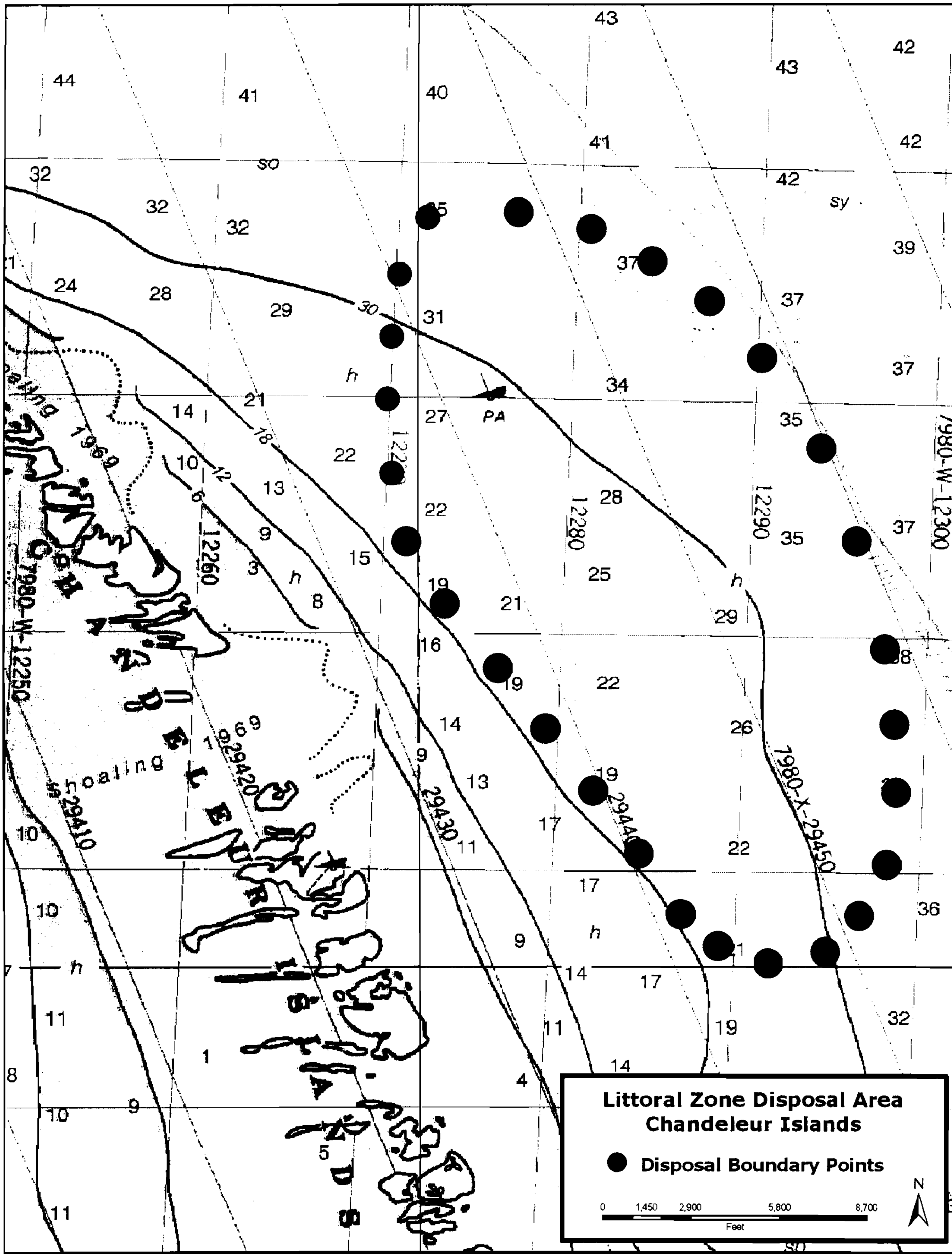

Littoral Zone Disposal Area
Chandeleur Islands
Disposal Boundary Points
0 1,450 2,900 5,800 8,700
Feet
N
CHANDELEUR ISLANDS
shoaling 1969
7980-W-12250
7980-W-12300
7980-X-29450

Addendum

Gulfport Harbor Navigation Project
Construction to Authorized Dimensions
Final Supplemental Environmental Impact Statement (SEIS)

SUBJECT: Placement of Dredged Material as Sediment Source for Restoration of Chandeleur Islands

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STATE OF MISSISSIPPI
Haley Barbour
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
William W. Walker, Ph.D., Executive Director

April 9, 2008

Mr. Jason Steele
Regulatory Division
U.S. Army Corps of Engineers
Mobile District
Regulatory Branch
P.O. Box 2288
Mobile, AL 36628

Re: DMR-070523; United States Army Corps of Engineers

Dear Mr. Steele:

The Department of Marine Resources (DMR) in cooperation with other state agencies is responsible under the Mississippi Coastal Program (MCP) for managing the coastal resources of Mississippi. Proposed activities in the coastal area are reviewed to ensure that the activities are in compliance with the MCP.

The applicant is requesting authorization to dredge approximately 6.724 million cubic yards of waterbottoms for the maintenance of navigational channels within the federal Gulfport Harbor Navigation Project, Gulfport, Harrison County, MS. The above activity has been reviewed based upon provisions of the Mississippi Coastal Program and Section 307 of the Coastal Zone Management Act of 1972 (as amended). The activity has been determined to be consistent to the maximum extent practicable with the Mississippi Coastal Program provided that the applicant adheres to the following conditions:

1. An area 10 miles in length and 400 feet in width shall be dredged to a depth of 38 feet below mean low water and an area 11 miles in length and 300 feet in width shall be dredged to a depth of 36 feet below mean low water. Approximately 6.724 million cubic yards of material shall be removed;

2. No dredging of wetlands, submerged aquatic vegetation or shellfish beds is authorized;

3. Vegetated wetlands shall not be impacted; and;

4. All dredged material shall be placed in an approved disposal area

If you have any questions regarding this letter, please contact James Davis with the Bureau of Wetlands Permitting at 228-523-4115.

Sincerely,

William W. Walker, Ph.D.
Executive Director

WWW/jdd

cc: Linda T. Brown, USACE Planning and Environmental Division

PROOF OF PUBLICATION

PUBLIC NOTICE OF APPLICATION FOR STATE WATER QUALITY CERTIFICATION OF ACTIVITIES REQUIRING A FEDERAL LICENSE OR PERMIT

U.S. Army Corps of Engineers, Mobile District; P. O. Box 2288; Mobile, Alabama 36628 hereby gives public notice of its application for water quality certification of a project located within Mississippi Sound, Gulfport, Harrison County, Mississippi.

The Applicant proposes to perform new work dredging of (a) the existing channel from 300 feet wide to 400 feet wide about 8 miles long across Ship Island Bar; and (b) the existing channel from 220 feet wide to 300 feet wide and about 12 miles long through Mississippi Sound removing approximately 4,851,700 cubic yards of material. Approximately 3,926,400 cubic yards of dredged material will be placed within the new beneficial use disposal area located east of the Chandeleur Islands and approximately 925,300 cubic yards of dredged material removed from within the littoral zone (Ship Island Bar) will be placed in the littoral zone disposal area located southeast of Cat Island.

The purpose of the Project is to construct the authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS.

There are no wetland impacts associated with the project.

In compliance with the requirements of Section 401 of the Federal Water Pollution Control Act (33 U.S.C. 1251, 1341), the Applicant has applied for certification from the Mississippi Environmental Quality Permit Board that the above mentioned activity will comply with applicable provisions of Section 301 (33 U.S.C. 1311), Section 302 (33 U.S.C. 1312), Section 303 (33 U.S.C. 1313), Section 306, (33 U.S.C. 1316), and Section 307 (33 U.S.C. 1317), of the federal Clean Water Act and appropriate requirements of State Law.

Persons wishing to comment upon this Application for certification are invited to submit comments in writing to Robert Seyfarth of the Mississippi Department of Environmental Quality, at P. O. Box 2261, Jackson, Mississippi, 39225, no later than August 29, 2008 (30 days from the date of notice). All comments received by this date will be considered in the formulation of final determinations regarding the application. A public hearing will be held if the Permit Board finds a significant degree of public interest in the proposed certification. The Permit Board is limited in the scope of its analysis to matters bearing on the Projects possible impacts on water quality. Any comments relative to zoning or economic and social impacts are within the jurisdiction of local zoning and planning authorities and should be addressed to them.

Additional details about the application are available by writing or calling Robert Seyfarth at the above Permit Board address and telephone number. This information is also available for review at the following location during normal business hours.

Mississippi Department of Environmental Quality
Office of Pollution Control
P. O. Box 2261
Jackson, MS 39225
(601) 961-5171

Please bring the foregoing to the attention of persons whom you believe will be interested.

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STATE OF MISSISSIPPI
COUNTY OF HARRISON

Before me, the undersigned Notary of Harrison County, Mississippi personally appeared Lisa Marlow who, being by me first duly sworn, did depose and say that she is a clerk of The Sun Herald, a newspaper published in the city Gulfport, in Harrison County, Mississippi, and the publication of the notice, a copy of which is hereto attached, has been made in said paper 1 times in the following numbers and on the following dates of such paper, viz:

Vol. 124 No., 301 dated 30 day of July, 20 08

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Vol. _____ No., _____ dated _____ day of _____, 20 _____

Affiant further states on oath that said newspaper has been established and published continuously in said country for a period of more than twelve months next prior to the first publication of said notice.

Clerk

Sworn to and subscribed before me this 8 day of September, A.D., 20 08

KANDI A. BERKLEY
Notary Public, State of Mississippi
Harrison County
My Commission Expires
April 05, 2010

Notary Public

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STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
TRUDY D. FISHER, EXECUTIVE DIRECTOR

September 16, 2008

Certified Mail No. 7004 1350 0001 1490 8944

Ms. Jenny Jacobson
U.S. Army Corps of Engineers, Mobile District
P.O. Box 2288
Mobile, Alabama 36628

Dear Ms. Jacobson:

Re: USACE, Mobile District,
Gulfport Harbor Widening
Harrison County
WQC No. WQC2008065

Pursuant to Section 401 of the Federal Water Pollution Control Act (33 U. S. C. 1251, 1341), the Office of Pollution Control (OPC) issues this Certification, after public notice and opportunity for public hearing, the U.S. Army Corps of Engineers Mobile District, an applicant for a Federal License or permit to conduct the following activity:

> USACE, Mobile District, Gulfport Harbor Widening: Proposed new work dredging of (a) the existing channel from 300 feet wide to 400 feet wide about 8 miles long across Ship Island Bar; and (b) the existing channel from 220 feet wide to 300 feet wide and about 12 miles long through Mississippi Sound removing approximately 4,851,700 cubic yards of material. Approximately 3,926,400 cubic yards of dredged material will be placed within the new beneficial use disposal area located east of the Chandeleur Islands and approximately 925,300 cubic yards of dredged material removed from within the littoral zone (Ship Island Bar) will be placed in the littoral zone disposal area located southeast of Cat Island. The purpose of the project is to construct the authorized improvements to the Federal Gulfport Harbor Navigation Project in Harrison County, MS. There are no wetland impacts associated with the project. [WQC2008065].

The Office of Pollution Control certifies that the above-described activity will be in compliance with the applicable provisions of Sections 301, 302, 303, 306, and 307 of

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the Federal Water Pollution Control Act and Section 49-17-29 of the Mississippi Code of 1972, if the applicant complies with the following conditions:

1. The channel depth shall gradually increase toward open water and shall not exceed the controlling navigational depth. No "sumps" shall be created by proposed dredging.

2. The excavated material shall be disposed in the contained upland disposal site and stabilized to prevent movement of sediment into adjacent drainage areas. No disposal is permitted into adjacent upland yard(s).

3. Dredged material shall be transported in lined and covered trucks to an approved diked upland site for final disposal.

4. Best management practices should be used at all times during construction to minimize turbidity at both the dredge and spoil disposal sites. The disposal sites shall be constructed and maintained in a manner that minimizes the discharge of turbid waters into waters of the State. Best management practices should include, but not limited to, the use of staked hay bales; staked filter cloth; sodding, seeding and mulching; staged construction; and the installation of turbidity screens around the immediate project site. Any effluent from the disposal area should be routed through a return swale system and filtered through a series of hay bales and silt fences so as to reduce the turbidity of the effluent.

5. Turbidity outside the limits of a 750-foot mixing zone shall not exceed the ambient turbidity by more than 50 Nephelometric Turbidity Units. The turbidity within the beneficial use disposal area located east of the Chandeleur Islands may reasonably exceed this turbidity standard for temporary periods of time and shall not result in permanent environmental harm.

6. No sewage, oil, refuse, or other pollutants shall be discharged into the watercourse.

The Office of Pollution Control also certifies that there are no limitations under Section 302 nor standards under Sections 306 and 307 of the Federal Water Pollution Control Act which are applicable to the applicant's above-described activity.

This certification is valid for the project as proposed. Any deviations without proper modifications and/or approvals may result in a violation of the 401 Water Quality Certification. If we can be of further assistance, please contact us.
If we can be of further assistance, please contact us.

Sincerely,

Harry M. Wilson III, P.E., DEE
Chief, Environmental Permits Division

HMW: cw

cc: Ms. Linda Brown , U.S. Army Corps of Engineers, Mobile District
Mr. Duncan Powell, Environmental Protection Agency
Ms. Janet Riddell, Office of Budget & Fund Management
Ms. Willa Brantley, Department of Marine Resources

Comment Response Matrix
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE GULFPORT HARBOR WIDENING PROJECT

Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
1	Not Specified	George Boddie 11/6/2006	The requested supplemental Environmental Impact Statement seeks to widen the Gulfport Ship Channel and create and clear a new 95,000,000 cubic yard Offshore Ocean Dredge Material Disposal Site (ODMDS). It is unfortunate that the emergency supplemental Congressional appropriation used to fund this new ODMDS was not used to investigate how the material can be beneficially used to enhance and sustain the barrier island system that protects coastal Mississippi. The historical dredging methodology for the Ship Island Pass reach of the channel indicates the Corps' preference for hauling the material to the ODMDS rather than placing it in the down drift littoral zone. This enlargement of the channel will cause tens of millions of virgin cut material to be removed, and it is imperative that the material be beneficially placed on or immediately adjacent to our islands to offset the historical damage caused by past dredging practices and natural disasters.	The quantity of material mentioned by the commenter (95,000,000 cubic yards) was a volume of material discussed in a separate Environmental Impact Statement to designate a new ODMDS. The quantity of material associated with the current project for construction to authorized dimensions is much lower and is estimated to be 6.6 million cubic yards. The larger volume estimate was arrived at to cover future needs for disposal of material than can not be placed in existing disposal locations or used beneficially. The proposed action, as described in Section 3.1, was changed to incorporate disposal of suitable material from new work and maintenance dredging in the littoral disposal zone southeast of Cat Island (approximately 925,300 yd^3) and disposal of new work material (approximately 3,926,400 yd^3) in the littoral zone east of the Chandeleur Islands.
2	Not Specified	George Boddie 11/6/2006	There is a finite budget of sand in Mississippi's littoral zone and utilization of the proposed ODMDS for placement of sand from the ship channel at Ship Island Pass (littoral zone) will create a net deficit of down drift coastal reaches (i.e. Cat Island). The Corps has previously recognized this coastal processes and the importance of utilizing the littoral sand transport system for the Mississippi Barrier Island.	The proposed action (Section 3.1) was changed to remove the proposed new ODMDS and to add disposal of suitable material from new work and maintenance dredging in the littoral zone southeast of Cat Island.
3	Not Specified	George Boddie 11/6/2006	The Corps' has clearly acknowledged the coastal processes and the need to keep the material in the littoral system. Additionally, comments submitted to you on previous maintenance dredging cycles from some of the countries most highly respected coastal scientists and	Comments noted and a change was made in the disposal option as discussed above. The materials provided by the commenter will be included as part of the comment record for the present Supplemental Environmental

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			engineers including Dr. Robert Dean, Dr. Ervin Outvos, and the Wood Hole Group, have clearly stated that placing maintenance material from the Ship Island Pass bar channel in offshore disposal areas rather that the littoral zone, will have adverse impacts to Cat Island. These letters are part of the Corps' original project's history; however, I have attached copies as part of my comments for your review.	Impact Statement.
4	Not Specified	George Boddie 11/6/2006	Another important aspect of your proposed widening project is the potential for increased salinity levels within the Mississippi Sound. Camille Cut on Ship Island is now over 3 miles wide and Goose Point on the southernmost end of Cat Island is gone. These loses coupled with the proposed increase in width of the Gulfport Ship Channel will certainly increase the tidal exchange and salinity levels within Mississippi Sound. Your 1989 Gulfport Harbor EIS on page EIS-19 accurately described this dynamic process in the following paragraph: "*The Mississippi Sound receives both high saline waters from the Gulf of Mexico and freshwater from streams which drain some 20,000 square miles of land area. Major streams which contribute inflows are the Pascagoula River, the Pearl River, and to some degree the Mobile River. Gulf waters enter the sound through deep passes between the barrier islands with the help of tidal forces. This mixing of freshwater run-off and saline waters has created a dynamic estuarine environment."* Since higher saline water is located at deeper depths, the wider deeper channel will certainly bring in more and higher saline water into the Sound. This impact wasn't properly considered in the widening study, but could be offset, to some extent, by utilizing new cut and maintenance material from the channel to sustain and	The salinity of the current navigation channel, Mississippi Sound, and the Ship Island pass are discussed in Section 4.5.1. Text in Section 5.4.1 notes that bottom salinities in the vicinity of the channel could increase following channel widening. Specifically, Section 4.5.1 notes that "Within the navigation channel, the general trend is for increasing salinity with depth (Figures 4-19 and 4-20). This results from the combination of (1) denser water from outside the Sound moving along the channel toward shore and (2) less dense freshwater overrunning at the surface." The section also states that "In 1994, the USACE surveyed at the ODMDS sites in Gulfport Harbor and found that salinities ranged from 29.2 to 34.0 ppt. The typical salinity gradient between the surface and bottom was 1.9 ppt. The USACE found bottom salinities lowest between Cat and Ship Islands, suggesting the influence of freshwater from Biloxi Bay. Surface salinities were low there and west of the disposal site, toward the Chandeleur Islands (USACE, 1994)." In addition, the section states "Previous studies of the Mississippi-Alabama shelf found that bottom salinity was relatively constant year-round (36 ppt) and surface salinity, measured at 36 ft (10.9 m), ranged from 33 to 36 ppt. Surface salinity is influenced by the discharge of freshwater from large rivers and is reduced during periods of higher flow in late spring and early summer (Thompson et al., 1999)."

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			enhance the barrier islands adjacent to the passes.	In Section 5.4.1 the text includes "Temperature, salinity, and density profiles would be affected as a result of water column mixing during dredging activities. Profiles would return to previous conditions following completion of dredging. Any impacts to profiles would be temporary and minor. Bottom salinity in the vicinity of the channel could increase following channel widening (USACE, 1975a; USACE, 1999)." Disposal of suitable material from new work and maintenance dredging in the littoral zone southeast of Cat Island was added to the proposed action.
5	Not Specified	George Boddie 11/6/2006	Secondary impacts should consider the benefits of a healthy stable barrier island system would provide coastal Mississippi. A healthy stable barrier island system provides protection to the Mississippi Coast by potentially reducing storm surges and velocities. The federal government has expended billions of dollars in recovery effort on the Mississippi Coast. The small additional incremental costs of beneficially using the dredge material to enhance and sustain our barrier island system are secondary benefits that have not been properly evaluated post Katrina. The Corps dredging methodology should not further diminish the natural protection our barrier island system provides the Mississippi Coast.	The proposed action was changed to include disposal of suitable material from new work and maintenance dredging in the littoral disposal zone southeast of Cat Island (approximately 925,300 yd^3) and disposal of new work material (approximately 3,926,400 yd^3) in the littoral zone east of the Chandeleur Islands. Other beneficial use alternatives that were considered and found not viable are described in Section 3.2.3.3. The options considered, but determined to be unfeasible for the proposed project include beach nourishment, wetland creation, and island creation. Text in Section 5.3.5.1 explains that the material would be reworked through wave and current action along the coast and into Mississippi Sound. Text in Section 5.6.1 notes the beneficial impacts to essential fish habitat near Cat Island and the Chandeleur Islands from littoral zone disposal.
6	Not Specified	George Boddie 3/6/2007	The referenced Environmental Impact Statement (EIS) is inadequate as it fails to address the impacts associated with the disposal options that are being considered in the document. Specifically the impacts associated with the	The proposed action (Section 3.1) was changed to remove the proposed new ODMDS as a disposal option for the widening and future maintenance of the Gulfport

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			disposal option allowing the Corps to remove material from the Ship Island Pass reach of the Gulfport Ship Channel and place it in the proposed new 95,000,000 cubic yard Offshore Disposal Material Disposal Site (ODMDS). The Ship Island Pass Bar Reach of the channel contains the littoral zone material that sustains our barrier island system, specifically, Cat Island, which is located down drift of the proposed activity. While the document identifies disposal of material in the Cat Island Littoral zone as an option, the historical dredging practices in this reach, together with the enormous 95,000,000 cubic yard capacity of the proposed offshore disposal area, suggest that the Corps intends to continue removing this material from our barrier island system, and placing it in deep water offshore.	Federal Navigation Channel. The proposed action was changed to incorporate disposal of suitable material from new work and maintenance dredging in the littoral disposal zone southeast of Cat Island (approximately 925,300 yd^3) and disposal of new work material (approximately 3,926,400 yd^3) in the littoral zone east of the Chandeleur Islands.
7	Not Specified	George Boddie 3/6/2007	The coastal processes in the vicinity of the Gulfport Ship Channel are not adequately addressed in this document, but are fairly straightforward. Longshore sand transport from east to west produces and sustains the laterally migrating barrier island system. This process is well documented and accepted by the coastal scientist, engineers, and the USACE in previous published documents. It is also an accepted principal that westward migrating material that moves into Gulfport Ship Channel in the Bar Channel reach, needs to be hydraulically dredged and placed on the west side of the channel to prevent a net deficit of material to the downdrift reach, i.e., Cat Island. The Corp's original Environmental Impact Statement on the 1990 channel realignment recommended that new work and maintenance material associated with the previous alignment and maintenance of the Ship Island Pass be placed southeast of Cat Island "so as to maintain the natural littoral drift patterns". This is consistent with the findings of a study conducted by the Corps' Coastal Engineering Research Center (Technical Report CERC-89-1) or the Ship Island Pass Area. While	Physical processes in Mississippi Sound, including the Ship Island pass are explained in Section 4.4. Text includes a description of bathymetry, including the natural westward movement of material, in Section 4.4.2 and an analysis of circulation and salinity near the Gulfport Federal Navigation Channel in Section 4.4.4.2.

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			it is unfortunate that the Corps has not conducted previous maintenance activities consistent with their statement of maintaining the natural drift patterns, it is clear that the Gulfport Ship Channel interrupts these natural littoral drift patterns, and the Corps historical and proposed policy of disposing of material in deep water offshore sites assures that there will be a net deficit of material in the down drift reach.	
8	Not Specified	George Boddie 3/6/2007	As part of my comments, I have attached a letter written to you in 1997 from Dr. Ervin G. Otvos, chief coastal geologist with the Mississippi Gulf Coast Research Lab, clearly outlining the coastal processes and the detrimental effects of removing material from the Ship Island Pass reach of the channel for placement in the ODMDS. Previous letters to you from Dr. Robert Dean and the Woods Hole Group have supported this basic coastal process and discussed the negative impacts associated with disposing of material from the this reach of the Gulfport Channel in the deepwater ODMDS. In addressing the Gulfport Channel, Dr. Dean wrote to you that "The placement of sand outside the limits of active sediment transport is neither consistent with our modern understanding of coastal systems nor with our ethics of conservation of sand, a valuable natural resource." He further states that "not to place all good quality dredged sediment back in the littoral system would both adversely impact the natural system and would reflect unfavorably on the environmental sensitivity of the Corps of Engineers." These letters should be part of your project file; however, I have attached additional copies as part of my comments for review.	Comments have been noted and a change was made in the disposal methodology. The written materials provided will be incorporated into the project files for the current Supplemental Environmental Impact Statement.
9	Not Specified	George Boddie 3/6/2007	It is unclear why the Mobile District has agreed to modify its dredging practices for the Mobile Channel, while developing an environmental impact document that totally disregards the very same coastal processes in their	The proposed action (Section 3.1) was changed to remove the proposed new ODMDS as a disposal option for the widening and future maintenance of the Gulfport

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			maintenance of the Gulfport Ship Channel.	Federal Navigation Channel. The proposed action was changed to incorporate disposal of suitable material from new work and maintenance dredging in the littoral disposal zone southeast of Cat Island (approximately 925,300 yd^3) and disposal of new work material (approximately 3,926,400 yd^3) in the littoral zone east of the Chandeleur Islands.
10	Not Specified	George Boddie 3/6/2007	The Proposed Action (3.2.1) identifies three types of dredges that may be used to enlarge and maintain the channel. The hopper dredge, the mechanical dredge, and the hydraulic cutter head dredge. Of these, only the hydraulic cutter head is capable of placing material from the bar channel in the littoral zone southeast of Cat Island…The "fairly shallow" bottom which contains the proposed Littoral Zone is too shallow for loaded hopper dredges to operate, thus preventing this disposal area from being used with this type of equipment.	The text in the proposed action (3.2.1) was updated to provide the disposal depths for the Cat Island littoral disposal area. The material will be placed between the 14-foot and 18-foot contour of that disposal area. A variety of dredge technologies can be used to place material in the littoral zone southeast of Cat Island including lightly loading hopper dredges and transporting for disposal in shallow waters.
11	Not Specified	George Boddie 3/6/2007	It makes no sense to seek approval to haul 95,000,000 cubic yards to a deep water disposal area twelve miles south of the barrier islands at the same time you are conducting a study to restore the islands	The proposed new ODMDS has been removed from the proposed action for disposal of new work and future maintenance material associated with widening of the Gulfport Federal Navigation Channel.
12	Not Specified	George Boddie 3/6/2007	The coastal process and environmental impacts of interrupting this process should certainly be included as one of the major sections of this Environmental Impact Statement.	Physical processes in Mississippi Sound, including the Ship Island pass are explained in Section 4.4. Text includes a description of bathymetry, including the natural westward movement of material, in Section 4.4.2 and an analysis of circulation and salinity near the Gulfport Federal Navigation Channel in Section 4.4.4.2. Impacts to the physical environment are described in Section 5.3. Impacts from the use of littoral disposal zones southeast of Cat Island and east of the Chandeleur

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
				Islands are noted in separate sub-headings.
13	Not Specified	George Boddie 3/6/2007	Please make sure that this letter, together with all of the attachments listed below are included in the official comments for this draft EIS and for the project record.	This letter and all attachments are included as part of the official comments and project record.
14	Not Specified	Oscar Eckhoff	What is the movement of sediments from the east?	This is discussed in section 4.4.1 of the SEIS.
15	Not Specified	Oscar Eckhoff	Could dredging clay layers causing slumping or a landslide?	Clay is highly consolidated and stable material and is unlikely to slump after dredging. The dredge cut slopes help control slumping. Movement of sediment after dredging typically results from loose unconsolidated sediment.
16	Not Specified	Oscar Eckhoff	What happens during sea level rise during dredging and disposal operations?	This is a negligible issue. Sediment is removed from the ocean and replaced.
17	Not Specified	Oscar Eckhoff	Can the dredged sediment be used to fill Marshes in Louisiana or the barrier islands?	Suitable dredged material will be placed southeast of Cat Island and east of the Chandeleur Islands. See section 3.1 of the SEIS.
18	Not Specified	Charles Reppel, Chief of Staff, Saint Bernard Parish, LA	Regarding the plan to widen the Gulfport navigation channel and the material to be dumped south of Gulfport and east of Chandeleur Island. We were wondering if you could look into building the Chandeleur Island by placing the material on the Island, then making this area the first line of hurricane defense.	The proposed action was changed to include placement of new work dredged material (approximately 3,926,400 yd^3) in a littoral disposal area near the Chandeleur Islands. In accordance with the Federal Standard, Mobile District cannot incur additional costs associated with the improvement project.
19	Not Specified	Roy Crabtree, Regional Administrator, National Marine Fisheries Service	The 2003 GMRBO analyzes and accounts for the effects of maintenance dredging, as well as channel widening and deepening "to previously authorized dimensions," on listed species. Thus any effects to sea turtles of Gulf sturgeon from the proposed project have been analyzed in the GMRBO, are included in that opinion's incidental take statement, and are subject to the terms and	The Regional Biological Opinion (RBO) developed by NMFS in consultation with the USACE (Mobile, New Orleans, Galveston, and Jacksonville Districts) will be followed to ensure that impacts to sea turtles and Gulf sturgeon will be minimized and less than significant.

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
			conditions of that opinion. In addition, since the channels are encompassed by the proposed Gulfport Harbor Navigation Project are considered major shipping channels and are identified on standard navigation charts, they are excluded from, and not considered as part of Gulf sturgeon critical habitat, as specified by 50 CFR 226.214(h) (2). However, the GMRBO requires separate consultation on dredging or disposal of dredged materials in Gulf Sturgeon critical habitat. Because none of the primary constituent elements in critical habitat unit 8 are likely to be adversely affected, NMFS concludes the proposed action is not likely to affect Gulf sturgeon critical habitat.	The requirements of the RBO are discussed in Sections 4.3.10.3, 4.3.10.4. Potential minor impacts to listed species are discussed in Section 5.10.2.1.
20	Section 2.2 Need for Proposed Action	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management	The need for the proposed action is not substantiated in the SDEIS with data. The document states that pre-Hurricane Katrina documentation shows frequent "waiting at anchor" status of many vessels entering the Port and that vessels often have to wait in Port while inbound vessel navigate through the channel. There is no discussion regarding the percentage, numbers, or types of vessels that have to wait, average wait times, and or level of congestion in Gulfport Harbor. The FEIS needs to supply more specific information on issues such as the "frequent waiting at anchor" status of vessels. A small table of number of vessels/month would be useful.	The purpose of the proposed action is to comply with the Supplemental Appropriations Act of 1985 (Public Law 99-88) and the WRDA of 1986 (Public Law 99-662). This is indicated in Sections 2.1 and 2.1.1. The information in Section 2.2 is provided as background.
21	Section 3.1: Channel Widening Alternatives	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management	The DSEIS indicates that the project will generate 3,804,600 yd^3 of new work and, 2,919,000 yd^3 of maintenance material. It does not include projections (30 years) of annual estimated maintenance volumes. The final EIS should include 30 year projections for annual estimated maintenance volumes.	Text was included in Section 3.1 explaining that the total maintenance material generated for the entire channel would be approximately 4 million yd3 per dredge cycle.
22	Section 3.1:	Heinz Mueller,	The DSEIS states that "Any suitable material removed	Text was added stating that approximately 925,300 yd3

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
	Channel Widening Alternatives	Chief NEPA Program Office, Office of Policy and Management, USEPA	from the Bar Channel segment will be placed in the existing disposal site located southeast of Cat Island in order to remain in the littoral system" Is the "existing disposal site" the area identified on Figure 2-2 as the "Littoral Disposal Area?" What volume of material is anticipated to meet the "Any suitable material" criteria? What is the criterion for "suitable?" This information should be incorporated into the final EIS.	of material would be disposed in the Cat Island littoral disposal area. Text was also added to 3.1.2.1 defining suitable material as sediments with a sand portion around 50 percent or greater.
23	Section 3.3.3 Alternatives Not Carried Forward	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	In general, this section of the DSEIS needs additional information, and does not provide specific and or a substantiated rationale for the alternatives that are deemed non-viable. The FEIS should provide additional information on this issue.	Text was added to (now) Section 3.2.3 better describing the alternatives eliminated and the rationale for elimination.
24	Section 3.3.3 Alternatives Not Carried Forward	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	3.2.3.1 Thin-Layer Disposal – This section states that "It is anticipated the new work material located within the Mississippi Sound segment of the channel would consist of packed clays not conducive to this type of disposal, as clays would not spread throughout the open-water sites;" Hasn't the proposed new work material been sampled, tested and characterized? (Section 4.4.5?) Why is it "anticipated" that the material would consist of packed clays? If the material has not been tested it cannot go to an ODMDS. If the material has not been tested yet, when will it be tested? The FEIS should indicate when and how the USACE would know whether the disposed material is conducive to thin-layer disposal?	Two data tables (Tables 3-2 and 3-3) present sediment characteristics. Text was changed in (now) Section 3.2.3.2 to state that the new work material located within the Mississippi Sound segment of the channel consists of packed clays and silts and is not conducive to this type of disposal.
25	Section 3.3.3 Alternatives Not Carried Forward 3.2.3.2	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	3.2.3.2 Beneficial Use Alternatives Beach Nourishment – same comment as above. The DSEIS does not mention maintenance material being used for environmental enhancements such as beach nourishment. The FEIS should discuss the probability of using dredged material from the proposed project for beneficial uses. It should also discuss the potential volumes of materials that will be available for this use.	Text was modified to reference Tables 3-2 and 3-3. Text in (now) Section 3.2.3.3 was changed to state that new work material would not be suitable for Beach Nourishment.

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
26	Section 3.3.3 Alternatives Not Carried Forward	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	Wetland Creation – The DSEIS does not mention of potential for new work and maintenance materials being evaluated for wetland creation. This information should be discussed in the FEIS.	Text was added to (now) Section 3.2.3.3 explaining that there is currently no identified location near Gulfport that identified for wetland creation.
27	Section 4.4.5 Sediment Characteristics	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	EPA has not received a copy of USACE, 2006b document entitled, "*Final Sediment Quality Characterization of the Gulfport Harbor Federal Navigation Channel*," Gulfport Harbor, Mississippi, prepared by EA Engineering, Science, and Technology, Inc. January 2006. This document should be included with the final EIS for our review.	The document will be included as part of the administrative record for the SEIS.
28	Section 4.4.5 Sediment Characteristics	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	The FEIS needs to include a table of Polychlorinated Biphenyls (PCBs) values in sediments.	A table with the congener concentrations for the sample with the highest PCB concentration (Table 4-11) was included in the text. In addition, the text identifies the two sampling stations that exceeded that TEL and their concentrations.
29	Section 4.4.5 Sediment Characteristics	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	A complete separate, Marine Protection, Research, and Sanctuary Act (MPRSA) Section 103 Evaluation, Sediment Testing Report, associated documentation, package and a letter from Mobile District stating their determination that the proposed material meets the Ocean Dumping Criteria, and requesting EPA's concurrence, must be submitted to EPA Region 4 in order for the proposed material to be considered for disposal in any of the ODMDSs available for disposal.	Comment noted.
30	Section 4.4.5 Sediment Characteristics	Heinz Mueller, Chief NEPA Program Office, Office of Policy and	Toxicity Testing: Based on the water column test results using larval development and survival rates, the material from the navigation channel may not be suitable for disposal in the existing Gulfport West ODMDS. However, detailed information should be provided during	Comment noted.

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
		Management, USEPA	the MPRSA 103 evaluation.	
31	Section 4.4.5 Sediment Characteristics	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	The actual data for the bioaccumulation test results that are designed to evaluate the survival rates of benthic organisms and the potential for bioaccumulation of contaminants of concern within the organisms' tissues should be submitted to EPA in conjunction with the final EIS for MPRSA 103 review. (See comment above)	Comment noted.
32	Section 4.3 Biological Resources	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	Relocation of some of the noted aquatic species before spawning and into sections of the river which closely approximate their original habitat should be conducted. The DSEIS states that sea turtles will be removed prior to hopper dredging operations. EPA notes that other species such as the Gulf Sturgeon will also be removed via relocation trawling. The actual relocation should be overseen by a professional with proven experience in this type of operation.	Text in Section 5.2.10.1 explains that all dredging work would comply with the NMFS regional biological opinion for sea turtles and sturgeon.
33	Section 4.3 Biological Resources	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	To accomplish the proposed upgrades, a number of biologically important communities (seagrass, and essential fish habitat) will be adversely affected by the dredging activities. The DSEIS indicates that the project will result in temporary adverse affects to Essential Fish Habitat and temporarily disrupt mature fish and shrimp communities in the vicinity of dredging materials. We recommend continued coordination with the National Oceanic and Atmospheric Administration (NOAA) and commercial and residential fishermen dependant on these resources. In addition, the FEIS should define what temporary impacts mean (time frame and frequency).	No submerged aquatic vegetation (SAV) is known to occur within the dredging footprint. Figure 4-1 shows known SAV distribution. Essential fish habitat (EFH), including individual species accounts, is described in detail in Section 4.7. Section 5.6.1 explains that a comprehensive EFH assessment has been prepared and that coordination with NMFS will continue to ensure any impacts to EFH are minimized. Section 5.2 discusses impacts to biological resources and includes text explaining the anticipated duration of impacts to resources.
34	Section 5.2.10.1 Threatened and Endangered Species	Heinz Mueller, Chief NEPA Program Office, Office of Policy	The DSEIS states that the USACE is required to comply with an RBO for hopper dredging impacts on sea turtles. The FEIS should discuss how the "Screening of 100 percent of dredged material with a 4-inch by 4-inch	The words "at dredge inflows" were added to help further explain how the dredge screens would be used during the process.

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Comment #	Section/Figure/ Table/Appendix	Commenter	Comment	Response
		and Management, USEPA	screen" will be accomplished? EPA recommends continued coordination with NOAA on these issues.	
35	Section 5.3.4.1 Disposal in New Gulfport Offshore ODMDS	Heinz Mueller, Chief NEPA Program Office, Office of Policy and Management, USEPA	This section discusses USEPA modeling of the proposed ODMDS and references USEPA, 2005. The reference listed Section 8.0 References is USEPA. 2005. *Water Quality Study of Bays in Coastal Mississippi Water Quality Report, Project #05-0926*. We are not familiar with this report above, and not sure that this is the actual intended citation. Please verify this citation and indicate where it can be found.	The proposed new Gulfport ODMDS has been removed as part of the proposed action. The citation was checked. It currently appears only in section 4.5.7 (Water Quality). A pdf of the document with that title and project number was obtained from the U.S. EPA Region 4 website (http://www.epa.gov/region4/sesd/reports/2005-0926.html).
36	Not Specified	Miles Croom, Assistant Regional Administrator, Habitat Conservation Division, NOAA	The DSEIS does not address future maintenance of the new channel, however by a separate letter dated February 28, 2007, the Corps of Engineers (COE) initiated EFH consultation for the continued maintenance dredging of the project. We do have concerns with the COE's proposed 5-year maintenance dredging plan, as identified in our March 19, 2007, response letter. This plan includes the unconfined disposal of nearly 4 million cubic yards of dredged material in Mississippi Sound. Because of the magnitude of the potential adverse impacts to NMFS-trust resources, we have requested that an expanded EFH consultation be initiated and a comprehensive EFH assessment to be prepared and coordinated with the NMFS-HCD.	Text was added to Section 3.1 stating that the existing ODMDS located on the western side of the navigation project and existing open water disposal areas would continue to be used for future maintenance material. Mobile District is currently participating with NMFS under expanded EFH consultation.
37	Not Specified	Jim Rives, Acting Administrator, LA DNR, Office of Coastal Restoration and Management	We have received the DSEIS of the proposed Gulfport Navigation Channel widening project, and request a Consistency Determination for the proposed activity, as required by NOAA Consistency Regulations found at 15 CFR 930.32 Subpart C. It would appear that the dredged material could be used beneficially to create a marsh on the back side of the Chandeleur Islands and/or similar placement on the back side of Cat Island. We believe direct placement of material on the islands should be suitable for back barrier island marsh creation of great value to fish and wildlife habitat, compared to loss of the	Placement of new work dredged material in a littoral disposal area near the Chandeleur Islands was added as part of the proposed action. In accordance with the Federal Standard, Mobile District cannot incur additional costs associated with the improvement project.

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			material to deeper Gulf areas.	
38	Not Specified	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	The Department highly recommends that the Corps of Engineers incorporate seasonal timing of construction activities into project planning to avoid and minimize impacts to the natural resources and processes identified. Dredging and sediment disposal have a significant potential to impact many of the animal communities on and around the National Park Service (NPS) Gulf Islands National Seashore (GUIS) if the dredge activities are not timed correctly to avoid periods of high or seasonal animal activity. In order to avoid substantial disturbances to nesting sea turtles, nesting shorebirds, and other wildlife, as well as to minimize project affects on the visiting public, construction activities within the Ship Island Bar Channel should be limited to the months of November through February. Limiting activities to these months will provide significant protection to most GUIS wildlife populations and reduce the need to take mitigation actions.	Section 5.2.10.1 includes text that states "when practical, the USACE would conduct dredging operations around Ship Island during timeframes that avoid high use months for migrating or nesting birds, sea turtles, and other sensitive wildlife". However, final determination of the dredge schedule would be based on the availability of equipment, weather, and safety concerns".
39	Not Specified	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	All suitable island sediments should be retained within the natural transport system. No beach quality sand should be disposed of in offshore areas. Disposal of island sediments offshore is detrimental to a system already in a sand-deficit situation and only continues the interruption of the natural sand supply resulting in receding beaches and reduction in island width and elevation. Acceptable disposal alternatives for beach quality sand include: beach nourishment, near shore placement (littoral zone), and by-pass.	The proposed action includes the disposal of suitable material (>50% sand) in a littoral disposal area near Cat Island and disposal new work material in a littoral disposal area near the Chandeleur Islands. The proposed new ODMDS has been removed from the proposed action.
40	Not Specified	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of	Littoral zone disposal should be redefined as shallow areas of 12' or less and should be used for disposal of all beach quality sand not otherwise deposited directly on the barrier islands. The currently designated littoral disposal area (14' to 25' depths) is too deep to adequately supply sand to the shore as it places the sediment outside of the beach system. In depths greater than 12', the sediment	Disposal depth is limited by the operating depths required for the dredging vessels. The proposed action reflects these depth restrictions. Disposal in shallow areas is not operationally feasible.

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		Environmental Policy and Compliance	can not be properly reworked and distributed along the downdrift island. Disposal Areas #7 and #9 as depicted in Figure 2.2 reveals suitable depths for littoral disposal to the east of Cat Island. These disposal areas should be utilized in lieu of the designated littoral disposal area.	
41	3.1.1 Littoral Zone Disposal	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	Suitable material removed from within the Bar Channel segment should be kept within the littoral system as proposed and not deposited offshore where it becomes unavailable for beach processes. However, the currently designated littoral disposal area (14' to 20' depths) is too deep to adequately supply sand to the shore. The current practice of sediment disposal between the 14' and 20'+ contours places the sediment outside of the beach system. At these depths, the sediment can not be properly reworked and distributed along the downdrift island	Disposal depth is limited by the operating depths required for the dredging vessels. The proposed action reflects these depth restrictions. Disposal in shallow areas is not operationally feasible.
42	3.1.2 Existing ODMDS Disposal Areas/3.1.3 New ODMDS Disposal Area	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	In terms of barrier island function, disposal of island sediments offshore is detrimental to a system already in a sand-deficit situation. Routine removal of sediment from the natural transport system only continues the interruption of the natural sand source and results in receding beaches and reductions in island width and elevation. Sediment disposal must make use of the most effective placement in order to provide maximum benefit to adjacent areas. If spoil material is of sufficient quality, there should be no offshore disposal. Placement within the littoral zone, as described above, or on adjacent islands is the only acceptable disposal method.	The proposed new Gulfport ODMDS was removed as part of the proposed action. Littoral disposal near Cat Island and the Chandeleur Islands is now proposed for placement of the new work material. In addition, placement of suitable future maintenanace material is proposed for the littoral disposal site near Cat Island.
43	3.2.3.2 Beneficial Use Alternatives – Beach Nourishment	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	Placement of beach quality sediments on the north side shoreline of West Ship Island, in the vicinity of Fort Massachusetts, should be included in those sites being evaluated for beach placement.	Beach nourishment was not carried forward as an alternative, as described in Section 3.2.3.3 because the material would not be suitable for that use. The Corps is currently working with the National Park Service to pursue beach placement at Fort Massachusetts.

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44	5.2.9 Marine and Coastal Birds	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	The draft SEIS states "the significance criterion for marine and coastal birds would be a permanent loss or modification of habitat critical for life history requirements of a species or loss of an age cohort of a species of marine or coastal birds; or substantial interference with the movement of native resident or migratory marine and coastal birds." Given the substantial use of the west end of West Ship Island by nesting shorebirds, including threatened species, "significance criterion" should include disruption of the nesting process. Disturbance to nesting shorebirds can result in continual and periodic flushing of the parent birds whereas the eggs and/or chicks are left exposed to predators and/or heat fatality. Continued disturbance can lead to the complete abandonment of a nest or colony, even after eggs are deposited in the nest.	The significance criterion was modified to explain that a significant impact would include "a permanent loss or modification of habitat critical for life history requirements, including nesting". Text was added to Section 5.2.9.1 to explain that "Work would be outside of the typical state and federal 300-foot buffer zones for nesting shorebirds. Widening would bring the channel to approximately 2,000 feet from Ship Island. At that distance, birds on the island would be unlikely to be disturbed."
45	5.2.9.1 Marine and Coastal Birds – Proposed Action	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	Table ES-1, Summary of Impacts, states a "possible disruption to birds roosting on the western end of Ship Island during nearby dredging activities." This disruption would also be applicable to nesting birds and given the large numbers of shorebirds nesting on the west end of West Ship Island, disruption could be substantial.	The summary table text was modified to read "Temporary and negligible disruption to birds roosting on the western end of Ship Island during nearby dredging activities. Activity would return to normal following completion of dredging ." Work would be outside of the typical state and federal 300-foot buffer zones for nesting shorebirds. Widening would bring the channel to approximately 2,000 feet from Ship Island. At that distance, birds on the island would be unlikely to be disturbed.
	5.2.9.1 Marine and Coastal Birds – Proposed Action	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	Table ES-1 also states that "activity would return to normal following completion of dredging." Whereas that might be true for "roosting" birds, the impact to the nesting process, specifically the possible mortality of eggs and chicks, occurs during the disturbance and can not return to normal. In addition, continual or periodic flushing of the parent birds requires significant amount of energy expenditure that the birds needs to put towards egg production and chick rearing. It is unknown just how much the loss of this energy affects nesting success.	Document text has been modified to explain that work would be outside of the typical state and federal 300-foot buffer zones for nesting shorebirds. Widening would bring the channel to approximately 2,000 feet from Ship Island. At that distance, birds on the island would be unlikely to be disturbed.

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46	5.2.9.1 Marine and Coastal Birds – Proposed Action	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	It is further stated that "…these [foraging] birds are not dependent upon the site for survival…" For nesting birds, once the nesting process has begun (i.e., egg deposition, incubation, and early chick rearing) they are absolutely dependent upon that particular site. Continued disturbance, leading to the complete abandonment of a nest or an entire colony, can not be considered "temporary and negligible."	Document text has been modified to explain that work would be outside of the typical state and federal 300-foot buffer zones for nesting shorebirds. Widening would bring the channel to approximately 2,000 feet from Ship Island. At that distance, birds on the island would be unlikely to be disturbed. Because of the distance potential impacts were determined to be temporary and negligible.
47	5.2.10.1 Threatened and Endangered Species – Proposed Action	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	The least tern (*Sterna antillarum*) is a colonial nester that nests on the west end of West Ship Island and could be impacted by dredging operations. Disturbance, leading to the complete abandonment of a nest or an entire colony, can not be considered "temporary and negligible" for this threatened species. If the disturbance level is of sufficient magnitude to result in the abandonment of the entire colony the reproductive loss of the colony would be significant and unacceptable. We recommend the Corps of Engineers contact the Fish and Wildlife Service, Daphne Field Office, 251-441-5871, for consultation requirements under the Endangered Species Act.	Document text has been modified to explain that work would be outside of the typical state and federal 300-foot buffer zones for nesting shorebirds. Widening would bring the channel to approximately 2,000 feet from Ship Island. At that distance, birds on the island would be unlikely to be disturbed.
48	5.3.2.1 Bathymetry – Proposed Action – Disposal in Littoral Zone	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	The currently designated littoral disposal area (14' to 25' depths) is too deep to adequately supply sand to the shore. Placement of sediment in depths greater than 12' places the sediment outside of the beach system. At these depths, the sediment can not be properly reworked and distributed along the downdrift island.	Disposal depth is limited by the operating depths required for the dredging vessels. The proposed action reflects these depth restrictions. Disposal in shallow areas is not operationally feasible.
49	5.3.2.1 Bathymetry – Proposed Action – Disposal in New ODMDS/Disposal in Existing	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the	It is imperative that all suitable island sediments be retained within the natural transport system and not disposed of in offshore areas. Placed correctly, these sediments will continually provide a sand source for the barrier islands. Disposal of island sediments offshore is	The proposed new ODMDS was removed from the proposed action. New work material will be placed near Cat Island and the Chandeleur Islands. Suitable material from future maintenance dredging will be placed in the

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	ODMDS	Secretary, Office of Environmental Policy and Compliance	detrimental to a system already in a sand-deficit situation. Removal of sediment from the littoral system only continues the interruption of the natural sand source and results in receding beaches and reductions in island width and elevation. Sediment disposal must make use of the most effective placement in order to provide maximum benefit to adjacent areas. If spoil material is of sufficient quality, there should be no offshore disposal. Acceptable disposal alternatives for beach quality sand include: beach nourishment, near shore placement (littoral zone), and by-pass.	Cat Island littoral disposal site.
50	5.9.1.1 Noise – Proposed Action – Surface Noise	Gregory Hogue, Regional Environmental Officer, US DOI, Office of the Secretary, Office of Environmental Policy and Compliance	The draft SEIS states that "…the noise from the dredging operation would not be likely to affect bird populations nearshore." As discussed in sections 5.2.9, 5.2.9.1, and 5.2.10.1 above, this statement is inaccurate when evaluating the affects of noise on nesting shorebirds. Noise disturbance to nesting shorebirds can result in continual and periodic flushing of the parent birds whereas the eggs and/or chicks are left exposed to predators and/or heat fatality. Continued disturbance can lead to the complete abandonment of a nest or colony, even after eggs are deposited in the nest. Disturbance, leading to the abandonment of a nest or colony, can not be considered "temporary and negligible" for these species. In the case of the threatened least tern, if the disturbance level is of sufficient magnitude to result in the abandonment of the colony, the reproductive loss would be significant and unacceptable.	An analysis of noise and potential noise levels was added to Section 5.9.1.1. Noise levels are expected to be 52 dB or less at Ship Island. At that level significant disturbance is not expected.
51	Not Specified	Harry Wilson, Chief, Environmental Permits Division, MS DEQ 9/16/2008	The Office of Pollution Control certifies that the above-described activity will be in compliance with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act and Section 49-17-29 of the Mississippi Code of 1972, the applicant complies with the following conditions: 1. The channel depth shall gradually increase toward open water and shall not exceed the controlling navigational depth. No "sumps" shall be created by	Text was added to section 5.4.1 specifying that the dredging would comply with MDEQ required conditions. Per 9/17/08 e-mail communication between USACE and Florance Watson of MDEQ, conditions 2 and 3 will be modified to reflect conditions applicable to littoral zone disposal near Cat Island and in designated disposal sites.

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			proposed dredging. 2. The excavated material shall be disposed in the contained upland disposal site and stabilized to prevent movement of sediment into adjacent drainage areas. No disposal is permitted into adjacent upland yard(s). 3. Dredged material shall be transported in lined and covered trucks to an approved diked upland site for final disposal. 4. Best management practices should be used at all times during construction to minimize turbidity at both the dredge and spoil disposal sites. The disposal sites shall be constructed and maintained in a manner that minimizes the discharge of turbid waters into waters of the State. Best management practices should include, but not limited to, the use of staked hay bales; staked filter cloth; sodding, seeding and mulching; staged construction; and the installation of turbidity screens around the immediate project site. Any effluent from the disposal area should be routed through a return swale system and filtered through a series of hay bales and silt fences so as to reduce the turbidity of the effluent. 5. Turbidity outside the limits of a 750-foot mixing zone shall not exceed the ambient turbidity by more than 50 Nephelometric Turbidity Units. The turbidity within the beneficial use disposal area located east of the Chandeleur Islands may reasonably exceed this turbidity standard for temporary periods of time and shall not result in permanent environmental harm. 6. No sewage, oil, refuse, or other pollutants shall be discharged into the watercourse.	
52	Not Specified	Dr. William Walker MS Dept. of Marine Resources 4/9/2008	The activity has been determined to be consistent to the maximum extent practicable with the Mississippi Coastal Program provided that the applicant adheres to the following conditions: 1. An area 10 miles in length and 400 feet in width shall be dredged to a depth of 38 feet below mean low water and an area 11 miles in length and 300 feet in width shall	Conditions 1 and 4 match the proposed action. No impacts to wetlands, SAV or shellfish beds would be expected under the proposed action. No changes to the text are necessary to address this comment.

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			be dredged to a depth of 36 feet below mean low water. Approximately 6.724 million cubic yards of material shall be removed; 2. No dredging of wetlands, submerged aquatic vegetation or shellfish beds is authorized; 3. Vegetated wetlands shall not be impacted; and; 4. All dredged material shall be placed in an approved disposal area.	
53	Not Specified	James Boggs, Acting Supervisor, LA Field Office, USFWS 9/27/2007	All construction personnel are responsible for observing water-related activities for the presence of manatee(s). Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels shall operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed. Any manatee sighting in Louisiana should be immediately reported to the Service's Lafayette, Louisiana, Field Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821).	The following text was added to section 5.2.10.1: If a manatee is observed within 100 yards of an active work zone, special operating conditions would be implemented, including no operation of moving equipment within 50 feet of a manatee and operation of all vessels at no wake/idle speeds within 100 yards of the work area. Temporary signs would be posted prior to and during dredging activities to remind personnel to be observant for manatees during active operations or within vessel movement zones. Any manatee sighting in would be reported to the appropriate USFWS field office and state natural heritage program.

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DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

Record of Decision
For Construction to the Federally Authorized Project Dimensions and Future Operations and Maintenance of the Gulfport Harbor Navigation Channel, Harrison County, Mississippi

U.S. Army Corps of Engineers
Mobile, Alabama

This Record of Decision (ROD) documents my decision and rationale for constructing the Federal Gulfport Harbor navigation channel to its congressionally authorized width and performing operations and maintenance activities. The Mobile District has completed the Final Supplemental Environmental Impact Statement for Gulfport Harbor Navigation Channel (FSEIS, February, 2009), associated appendices, and supporting documentation. I have taken into account the comments and correspondence received in response to the public coordination of the document. I find the preferred alternative, channel widening, maintenance dredging, and beneficial use of suitable material as described in the FSEIS is consistent with all statutory and regulatory requirements, including the Clean Water Act, Marine Protection, Research, and Sanctuaries Act, Endangered Species Act (ESA) and the Biological Opinion issued by the National Oceanic and Atmospheric Administration (NOAA). The preferred alternative is technically feasible and economically justified, includes all practical means to avoid and/or minimize environmental harm; and is in the public interest.

Background

The U.S. Army Corps of Engineers (USACE), Mobile District, is responsible for conducting Federal dredging and dredged material discharge activities in the Gulfport Federal Navigation Channel.

The Gulfport Federal Navigation Channel project was adopted with the approval of the River and Harbor Act on July 3, 1930 (House Document Number 692, 69th Congress, 2nd session) and the River and Harbor Act approved on June 30, 1948 (House Document Number 112, 81st Congress, 1st session). Construction of this phase of the Federal project commenced in 1932 and was completed in 1950.

The USACE determined that changes were required in the Federal Gulfport Harbor Navigation Project to provide for safe and unrestricted navigation into and out of Gulfport Harbor. The time line for channel improvements dates back to 1976 at which time a Feasibility Report was prepared on the Channel Deepening for Navigation (November, 1976). A number of channel modifications were identified and evaluated in that report.

The USACE completed a Draft Environmental Impact Statement (DEIS) for modifications to the Federal Gulfport Harbor Navigation Project in 1988. In that DEIS five alignments were considered for the navigation channel through Ship Island Pass. Placement of dredged material was planned for an Ocean Dredged Material Disposal Site (ODMDS). After extensive review, evaluation, and discussion, USACE published a Final Environmental Impact Statement (FEIS) in June 1989 for deepening and widening Gulfport Harbor with subsequent placement via thin-layer and ocean disposal.

Improvements of the Federal Gulfport Harbor Navigation Project were authorized by the Fiscal Year 1985 Supplemental Appropriations Act (Public Law [PL] 99-88) and modified by the Water Resources Development Acts (WRDAs) 1986 (PL 99-662) and 1988 (PL 100-676). The improvements were funded under PL 84-99, Flood and Coastal Storm Emergencies (33 U.S.C.701n) (69 Stat. 186). The authorized deepening was completed in 1993. The present action addresses the congressionally authorized modification to widen the channel and continue with maintenance dredging operations. The project is conducted under the authority of Public Law (PL) 84-99, Flood and Coastal Storm Emergencies (33 U.S.C.701n) (69 Stat. 186). Under this law the Chief of Engineers, acting for the Secretary of the Army, is authorized to undertake activities including disaster preparedness, advance measures, emergency operations (Flood Response and Post Flood Response), rehabilitation of flood control works threatened or destroyed by flood, protection or repair of federally authorized shore protective works threatened or damaged by coastal storm, and provisions of emergency water due to drought or contaminated source. Appropriation for construction of the project was received by P.L. 109-359, Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 2006, and for Other Purposes (December 18, 2005). The original FEIS was reviewed and any new conditions that were not addressed in the 1989 FEIS were evaluated as part of the FSEIS to ensure compliance with all environmental laws and regulations.

The present action addresses a need to help alleviate increasing pre-Hurricane Katrina vessel traffic and cargo activity (Table 1). Although activity in the Port of Gulfport was reduced during 2005 and 2006 as a result of the Hurricane, shipping is increasing and is expected to match or exceed previous levels. Currently, traffic in the navigation channel is one-way and requires vessels to wait at anchor unless the channel is clear.

TABLE 1
Summary of Activity at Port of Gulfport

	Vessel Calls per Year	Shipping Tonnage per Year	Container Activity per Year
2002	352	2,133,486	154,486
2003	384	2,207,545	199,878
2004	363	2,420,706	206,702
2005	352	2,536,961	229,564
2006	225	1,452,739	170,474

Description of Project Alternatives

The actions considered in the FSEIS include the Proposed Action and the No-Action Alternative.

Proposed Action

The proposed action consists of the following elements:

- Dredge Channel to Authorized Project Dimensions
  - Increase the Gulf Entrance and Bar Channel width to 400 ft from the present 300 ft in the Gulf of Mexico for a distance of about 10 miles into Mississippi Sound.
  - Increase the channel width through Mississippi Sound to 300 ft from the present 220 ft for a distance of about 11 miles between the inner portion of the Bar segment of the Ship Island Pass Channel and the entrance to the Turning Basin at Gulfport.
  - Perform maintenance dredging on existing navigation channel.
- Remove Sediment Using Several Dredging Methods
  - Hopper Dredge
  - Mechanical Dredge
  - Hydraulic Cutter Head Dredge
- Place Dredged Material Using Four Disposal Options:
  - Disposal of suitable sandy dredged material for littoral zone placement associated with constructing Gulfport Harbor to its authorized project dimensions (an estimated 925,300 cubic yards [yd^3] of suitable material) and future suitable maintenance material in portions of the littoral disposal area between the 14-foot and 18-foot contour southeast of Cat Island
  - Placement of future maintenance material in the existing ODMDS located on the western side of the navigation project
  - Disposal of dredged material associated with constructing Gulfport Harbor to its authorized dimensions (approximately 3,926,400 yd^3 of material) in the littoral zone east of the Chandeleur Islands, in water depths greater than 25 feet
  - Disposal of future maintenance dredged material removed from within the Mississippi Sound in open-water placement sites via thin-layer disposal

Other beneficial use options including island creation, wetland creation, and beach nourishment were considered. However, sediments were determined to be infeasible for those uses. For example, the combined total of silts and clays is greater than 85 percent which precludes use in beach nourishment. Harrison County requires that dredged material used for beach nourishment be a minimum of 90 percent sand by weight that passes through a 40 mesh (420-µm) sieve. No more than 10 percent of material by weight may pass though a No. 200 mesh (75-µm) sieve.

No-Action Alternative

Under the No-Action Alternative, the USACE would continue to maintain the existing navigation channel with the present dimensions, which include:

- A channel segment about 10 miles long, 38 ft deep, and 300 ft wide that extends from the Gulf of Mexico across the Ship Island Bar into Mississippi Sound.
- A channel segment about 11 miles long, 36 ft deep, and 220 ft wide in Mississippi Sound.
- Dredged material from maintenance activities would be placed in open-water, littoral, and ocean disposal areas.

This alternative was not selected because it does not meet the purpose and need of the project as authorized in P.L. 109-359, Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 2006, and for Other Purposes, to construct the navigation channel to its authorized dimensions and improve navigation into and out of Gulfport Harbor.

Selection of the Proposed Action

USACE determined that the proposed action best satisfies the purpose and need for the project. The benefits anticipated from implementation of this alternative would include long-term improvements to commercial vessel traffic and improved socioeconomic conditions in the Gulfport region. In addition, nearshore fish habitats and sediments would benefit from renourishment and protection from erosion with placement of suitable dredged material for littoral zone placement near Cat Island and the Chandeleur Islands.

The proposed action would cause short-term minor impacts to benthic invertebrates, fish communities, mollusks, crustaceans, and essential fish and shellfish habitats at the dredged and disposal sites. Existing sediments at disposal sites would also incur short-term minor impacts prior to added sediments mixing and reworking. There would be potential for minor short-term noise-related impacts to roosting birds on the western edge of Ship Island. Temporary negligible impacts would occur from disruption to marine mammal communities, marine and coastal birds, protected species, commercial and recreational fishing, and recreation during dredging activities. Temporary minor impacts to water quality would occur in the immediate vicinity of dredge and disposal operations. Negligible amounts of air pollutants would be generated during the operation of dredging vessels. Permanent changes would occur to bathymetry as a result of channel widening.

No impacts would be expected to occur to plankton, hard bottom habitats, submerged aquatic vegetation, geology, meteorology, physical oceanography, marine sanctuaries, cultural resources, minority populations, low-income populations, children, utilities, or public safety.

Long term cumulative beneficial impacts to the Gulfport region and its recovery from Hurricane Katrina would occur from enhancement of shipping operations to Gulfport Harbor.

Consideration of Public and Agency Comments

Throughout the development of the FSEIS the USACE considered public and agency comments and incorporated information received into the SEIS as appropriate. The USACE considered public comments provided during a May 2006 scoping meeting, an October 2006 public workshop, a March 2007 public hearing, and comments submitted during the formal public comment periods. Summaries, transcripts, presentation and scoping meeting posters, and the Draft and Final SEIS documents were posted on the Gulfport Harbor Navigation Channel EIS web site (http://usacegulfportnavigationeis.net/default.aspx). The Draft and Final SEIS documents were also available at local libraries and from the USACE upon request.

Meetings to present information on the Proposed Action were held with Federal, State, and local agencies, environmental groups, and interested individuals as part of the NEPA process.

The USACE circulated the DSEIS in February 2007 for public review and comment. Comments were received from elected officials, Federal and state agencies and citizens. The USACE considered all comments received and responded to comments by modifying the proposed action, changing the text of the document, or explaining why changes in the documentation were not needed. Letters and responses to comments are in Appendix D of the FSEIS. All of the comments received were carefully considered during the development of the FSEIS. Specific comments from the public and state agencies lead to adoption of a beneficial use disposal alternative for suitable materials near Cat Island and the Chandeleur Islands.

Monitoring

Monitoring throughout the dredging and disposal activities will be implemented to protect natural resources and water quality in adherence with all environmental laws and regulations. Monitoring activities include implementation of the requirements of the Regional Biological Opinion from NOAA for the protection of sea turtles and Gulf sturgeon, and use of special operating conditions if manatees are observed near dredge or disposal vessels.

All requirements and conditions of Mississippi Department of Environmental Quality, Office of Pollution Control's Section 401 water quality certification for the project will be followed to protect water quality at the dredge and disposal sites. These include dredging to the proper navigational depth, implementing best management practices, adhering to turbidity limits, and ensuring that no sewage, oil, refuse, or other pollutants are discharged into the watercourse.

Statement of Decision

In summary, I find the proposed action, as described in the FSEIS, is consistent with all statutory and regulatory requirements, provides for the Congressionally authorized width of the navigation channel, is technically and economically justified, includes all practical means to avoid or minimize environmental harm, and is in the public interest. I believe that in order to best provide safe and efficient navigation in the near future, as authorized by Congress, the proposed action will best serve the public and the region. After careful consideration of the documents and public concerns associated with this project, I hearby select the proposed action, widening and performing maintenance activities on the Federal Gulfport Harbor Navigation Project including disposal via thin-layer disposal in open-water sites, in existing ODMDSs, and in the littoral zones near Cat Island and Chandeleur Islands.

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