

**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**CONTINUED OPERATIONS AND MAINTENANCE  
DREDGING  
AND PLACEMENT ACTIVITIES  
BAYOU La BATRE FEDERAL NAVIGATION PROJECT  
MOBILE COUNTY, ALABAMA  
  
A FEDERALLY AUTHORIZED NAVIGATION PROJECT**

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**1.0. INTRODUCTION**

The U.S. Army Corps of Engineers (Corps), Mobile District proposes continued operations and maintenance activities of the federally authorized channel at Bayou La Batre, Mobile County, Alabama via a hydraulic pipeline dredge with the subsequent dredged material placement within previously approved upland and/or open-water disposal sites. Thin-layer disposal practices will be utilized at the open-water disposal areas. Bayou La Batre drains into the Mississippi Sound and provides access to the Gulf of Mexico.

**1.1 Purpose and Need.** The purpose of the proposed action is to provide a federally authorized channel adequate for safe navigation. The Bayou La Batre navigation project has been historically maintained to provide sufficient channel depths. The Corps, Mobile District is not proposing any project changes during this re-certification effort.

**1.2 Authority.** The original project was authorized by the 1965 River and Harbor Act (House Document 327, 88<sup>th</sup> Congress, 2<sup>nd</sup> Session). Project improvements were authorized by the Water Resources Development Act (WRDA) of 1990 (P.L. 101-640), dated November 28, 1990 and prior acts. The improved project provides for an 18-foot deep by 120-foot wide channel from Pascagoula Ship Channel east along the Gulf Intracoastal Waterway (GIWW) and north of the mouth of Bayou La Batre; an 18-foot deep by 100-foot wide channel up Bayou La Batre through and including the turning basin with a transition to a 14-foot deep by 75-foot wide channel to a point 1,500 feet above the U.S. Highway 188 bridge; and a 14-foot deep by 50-foot wide side channel up the Snake Bayou for 500 feet and then a 12-foot deep by 50-foot wide channel for an additional 850 feet. The total channel length is about 23 miles.

**2.0 NATIONAL ENVIRONMENTAL POLICY ACT CONSIDERATION**

This Draft Environmental Assessment (EA), written by the Corps, Mobile District, has been prepared to address the potential impacts associated with continued operations and maintenance of the Bayou La Batre Federal navigation project. The National Environmental Policy Act (NEPA) and Title 40 of the Code of Federal Regulations (CFR), CFR Parts 1500-1508 (40 CFR 1500-1508) require Federal agencies to consider the potential environmental consequences of proposed actions and alternatives. Based on the EA, the Corps either prepares an Environmental Impact Statement (EIS), if one appears warranted, or issues a "Finding of No Significant Impact" (FONSI), which satisfies the NEPA requirement. This EA is prepared according to the Engineer Regulation (ER) 200-2, Procedures for Implementing NEPA, and the Council of Environmental

Quality (CEQ) Regulations (40 CFR § 1508.27) for Implementing the Procedural Provisions of NEPA (40 CFR § 1500-1508). Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991), provides policy directing the Federal government to take leadership in protecting and enhancing the environment.

### **3.0 DESCRIPTION OF THE PROPOSED ACTION**

The proposed activities would consist of maintenance dredging every 3 to 4 years the Bayou La Batre channel to its authorized project dimensions and placing the dredged material in the open-water and/or upland disposal sites. The proposed action would be performed by cutter head/hydraulic pipeline dredge with a tolerance of up to two (2) feet advanced maintenance and up to two (2) feet of overdepth dredging. Maintenance dredging of soft-dredged material with hopper, mechanical, and/or hydraulic cutterhead dredges tends to disturb the bottom sediments several feet deeper than the target depth due to the inaccuracies of the dredging process. An additional -3 feet of sediment below the -2-foot paid allowable dredging cut may be disturbed in the dredging process with minor amounts of the material being removed (Tavolaro *et al.*, 2007).

With respect to disposal of the dredged material, this maintenance dredging project would use open-water sites 1, 2, 3, 11, 12, and 13 (Figure 1), as well as upland disposal sites “Charlie” (approximately 70-acres) and “Delta” (approximately 107-acres) (Figure 2). The open-water disposal sites would be surveyed before and after maintenance material placement to ensure the minimum depth requirements over the disposal site are maintained to not interfere with navigation. Minimal depth in the disposal sites 1, 2, and 3 near the GIWW is -12 feet Mean Lower Low Water (MLLW); minimal depths in the Mississippi Sound disposal sites 11, 12, and 13 is -4 feet MLLW. The approximately 2.25 million cubic yards of maintenance material from the mouth of the Bayou La Batre channel south to GIWW, about 7.69 miles, and west along to the Pascagoula Ship Channel, about 12.39 miles, would be placed in these open-water disposal sites 1, 2, 3, 11, 12, and 13 during each dredge and disposal event. Approximately 430,000 cubic yards of maintenance material dredged from within Bayou La Batre channel and its tributary, Snake Bayou, would be placed in “Delta” and/or “Charlie” upland disposal sites.

### **4.0 ALTERNATIVES TO THE PROPOSED ACTION**

In addition to the proposed action, the No Action alternative was also evaluated. This alternative avoids both the monetary investment and potential impacts associated with continued maintenance of the channel and use of the disposal sites. The implementation of the "No Action" alternative would result in the Bayou La Batre Channel not being dredged to project depth. This alternative would not provide the necessary conditions for safe navigation of commercial and recreational boats through the channel. Therefore, the "No Action" alternative was deemed unacceptable.

### **5.0 AFFECTED ENVIRONMENT**

The City of Bayou La Batre is located in southwestern Alabama near the State of Mississippi. Extensive development and infrastructure to support the commercial fishing and shipbuilding activities exist in close proximity to the bayou. From about midway between the mouth of the bayou and the turning basin, Bayou La Batre is almost solidly bulk-headed on both banks. The bulk-heads along the bayou are used for docking, unloading catch and for loading supplies onto vessels.

**5.1 Physiography.** The Bayou La Batre area is classified as coastal lowlands, ranging from sea level to about 30 feet in elevation and from 0 to 10 miles in width. These flat to gently undulating, estuarine, and coastal deposits merge with the fluvial-deltaic plains of the streams in the area. Many tidally influenced creeks, rivers, and estuaries indent the coastline. Bayou La Batre and Mississippi Sound are underlain by consolidated and unconsolidated sediments that range in age from Holocene to Miocene. Miocene sediments that outcrop in the coastal area consist of consolidated light gray to variegated and mottled consolidated clays inter-bedded with sand and gravel zones. The Pliocene age Citronelle Formation un-conformably overlies the Miocene deposits. The Citronelle Formation consists predominately of reddish brown to orange and yellow gravelly sand. Semi-consolidated to unconsolidated sediments of Pleistocene and Holocene age overlay the Citronelle Formation in Mississippi Sound. These sediments are several tens of feet thick and constitute the majority of the material that would be encountered in the Bayou La Batre channel.

**5.2 Sediment.** Sediments within the Bayou La Batre inner channel contain high concentrations of metals and other constituents. Analyses of these sediments indicate that highly variable concentrations of nutrients, heavy metals, high molecular weight hydrocarbons, and pesticides. Elutriates performed on these sediments indicate that with the exception of iron and nickel, these compounds were tightly bound to the sediments and would not be released to the water column with disturbance, such as dredging. These sediments are intended for placement in the upland disposal site “Charlie” and will not pose a risk to the human environment.

Sediment within Mississippi Sound consists of inorganic clays of high plasticity, poorly graded sands, sand-clay mixtures, sand-silt mixtures, and inorganic clays of low to medium plasticity. Sandy material begins to show up in the sediment profile in the area just south of the GIWW channel and becomes dominant through the tidal pass into the Gulf of Mexico. The area below project elevation in the bayou consists of inorganic clays of high plasticity, poorly-graded sands, sand-silt mixtures and sandy clay mixtures. The material to be dredged is predominantly silty, organic material deposited since the previous maintenance cycle. Sediments dredged from the outer portion of the project scheduled for open-water disposal are relatively free of containments and are suitable for open-water disposal.

**5.3 Climate.** The project area is located in a humid, subtropical climate region, characterized by temperate winters; long, hot summers; and rainfall that is fairly evenly distributed throughout the year. Prevailing southerly winds provide moisture for high humidity from May through September. Annual temperatures range from below freezing to over 100 degrees Fahrenheit, with a normal mean annual temperature of 68 degrees Fahrenheit along the coast. Normal precipitation ranges from about 50 to 65 inches per year.

**5.4 Biological Resources.** Coastal Alabama consists of several habitats including beaches, sand dunes, coastal maritime forests, emergent wetlands, submerged aquatic vegetation, rivers, tidal creeks, tidal flats, scrub/shrub wetlands, forested wetlands, and open-water benthic habitats. These areas are home to an immensely diverse, resilient, and environmentally significant group of species, including some threatened and endangered fauna.

**5.4.1 Coastal Flora.** Coastal flora include grasses serving as groundcover with pine-oak forests, pine flatwoods and savannahs in the nearby surrounding area. The vegetative communities in Coastal Mississippi are diverse; however, existing land use patterns have resulted in a great deal of modification of the natural plant associations. Terrestrial uplands dominate higher ground areas that are not normally subject to riverine flooding or tidal inundation. Natural upland vegetation complexes found in the area include longleaf pine oaks, moist pinelands, bay forests, monoculture pine, maritime strand, and beach dune associations. The most dominant upland association, longleaf pine oaks, is well-adapted to the dry, sandy sites in the coastal plain region. This association is usually found above the 10-foot contour but sometimes integrates into the moist pinelands along streams and rivers. Other dominant species occurring in the community include: southern red oak (*Quercus falcata*), laurel oak (*Q. laurifolia*), live oak (*Q. virginiana*), southern magnolia (*Magnolia grandiflora*), flowering dogwood (*Cornus florida*), persimmon (*Diospyros virginiana*), winged sumac (*Rhus copallina*), sparkleberry (*Vaccinium arboreum*), and broomsedge (*Andropogon* spp.).

Forest coverage opens up when entering sandy areas near the coast. Vegetation consists largely of slash pine (*Pinus elliottii*) with an understory of saw palmetto (*Serenoa repens*) and wax myrtle (*Myrica cerifera*). This area, known as moist pinelands, differs from longleaf pine-oaks due to its higher water table. A thin strip of moist pinelands usually divides the floodplain swamps and longleaf pine-oak forests. Sedges, grasses, and other herbaceous plants grow in the understory area. Pitcher plant bogs are very noticeable with thousands of plants occupying a relatively small area. Depression in the land combined with the high water table produce standing water, which supports dense growths of freshwater, floating and submerged, aquatic plants.

**5.4.2. Coastal Fauna.** Coastal fauna include an array of reptiles, amphibians, birds, and mammals. Mammals found within the area include marsupials, moles and shrews, bats, armadillos, rabbits, rodents, carnivores, even-toed hoofed mammals. Mammals occur within all habitats of the system, using underground burrows, the soil surface, vegetative strata, the air, and the water for feeding, resting, breeding, and bearing and rearing young. Mammals, such as the marsh rabbit, cotton rat, swamp rabbit, river otter, and raccoon, are prevalent in the area.

Reptiles and amphibians found in the area include snakes, turtles, lizards, toads, frogs, salamanders, and crocodilians. Coastal Mississippi has a great diversity of reptiles including 23 species of turtles, 10 species of lizards, 39 species of snakes, and the alligator. Eighteen species of salamanders and 22 species of frogs and toads are indigenous to the coastal region.

Over 300 species of birds have been reported as migratory or permanent residents within the area, several of which breed there as well. Shorebirds include osprey, great blue heron, great egret, piping plover, sandpiper, gulls, brown and white pelicans, American oystercatcher, and terns. Birds of the area eat a great variety of foods, are also food to many predators, and exhibit a diversity of nesting behaviors.

**5.4.3 Benthos, Motile Invertebrates, and Fishes.** The benthic community in the project area was classified by Vittor and Associates (1982) in a study of the Mississippi Sound and selected sites in the Gulf of Mexico. In the Mississippi Sound, a total of 437 taxa were collected at

densities ranging from 1,097 to 35,537 individuals per square meter. Generally, densities increase from fall through the spring months since most of the dominant species exhibit a late winter to early spring peak in production. Species diversity, evenness, and species richness (number of taxa) demonstrate only minor inconsistent temporal fluctuations. Biomass per unit area also increases from fall to spring, primarily as a result of higher densities. Vittor and Associates (1982) named several opportunistic species that are ubiquitous in the Mississippi Sound and nearshore Gulf of Mexico. These species, though sometimes low to moderate in abundance, occur in a wide range of environmental conditions. They are usually the most successful at early colonization and thus tend to strongly dominate the sediment subsequent to disturbances such as dredging activities. These species include *Mediomastus spp.*, *Paraprionospio pinnata*, *Myriochele oculata*, *Owenia fusiformis*, *Lumbrineris app.*, *Sigambra tentaculata*, the *Linopherus-Paraphinome* complex, and *Magelona cf. phyllisae*. The phoronid, *Phoronis* sp. and the cumacean *Oxyurostylis smithi* also fit this category. *M. oculata* and *O. fusiformis* are predominate species in the Mississippi Sound. The project site lies within the area categorized as the shallow coastal margin mud habitat. The numerically dominant species *Mediomastus californiensis* and *Paraprionospio pinnata* dominated the samples collected by Vittor and Associates, Inc. (1982). Numerous fish species occur within Mississippi Sound with the most common including: Atlantic croaker (*Micropogonias undulates*), spot (*Leiostomus xanthurus*), bay anchovy (*Anchoa mitchilli*), and Gulf menhaden (*Brevoortia patronus*) (GCLR, 1978). There are no oyster reefs within the immediate vicinity of the Bayou La Batre channel or within the disposal areas along the Bayou La Batre Channel (personal comm. John Mareska, ADCNR).

**5.5 Essential Fish Habitat.** Congress defines Essential Fish Habitat (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. The Gulf of Mexico Fishery Management Council (GMFMC) and National Marine Fisheries Service (NMFS) have identified EFHs 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, and mud, sand, shell, and rock substrates. In addition, marine areas, such as the water column, vegetated and non-vegetated bottoms, artificial and coral reefs, geologic features and continental shelf features have also been identified. The habitat within the vicinity of the project consists of open-water marine environment with a sand, silt, and clay bottom and subject to high wave action and currents.

Open-water and 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 Spanish mackerel (*Scomberomerus maculatus*), king mackerel (*Scomberomerus cavalla*), cobia (*Rachycentron canadum*), bluefish (*Pomatomus saltatrix*), pompano (*Trachinotus carolinus*), little tunny (*Euthynnus alletteratus*), spotted sea trout (*Cynoscion nebulosus*), red drum (*Sciaenops ocellatus*), and several shark species. In addition, numerous species of less interest may be taken, including ladyfish (*Elops*

*saurus*), crevalle jack (*Caranx hippos*), blue runner (*Caranx crysos*), and black drum (*Pogonias cromis*). Trawlers work the area primarily for brown and white shrimp. (*Peneus aztecus* and *P. setiferous*), but occasional trawlers seeking finfish species, including menhaden (*Brevoortia patronus*) and croaker (*Micropogonias undulatus*), as well as other industrial species may trawl this bottom (GMFMC-1998, 2004 and 2005, and Fishbase 2007).

The Mississippi Sound and adjacent waters have been identified as important nursery areas for nine sharks, primarily Atlantic sharpnose, blacktip, finetooth, and bull sharks. Less prevalent species are the spinner, blacknose, sandbar, bonnethead, and scalloped hammerhead. 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 life's in shallow coastal waters. Most shark species are abundant around barrier islands, with adult sharks commonly located south of the barrier islands (Carlson *et al*, 2003).

There is no submerged aquatic vegetation (SAV) located in the project area. Naturally high turbidity levels reduce necessary light at depths within the project area and immediate vicinity, making the area unsuitable for growth of SAV.

Table 1 provides a list of the species that NMFS manages under the Federally Implemented Fishery Management Plan.

<b>Table 1: Fishery Management Plans and Managed Species for the Gulf of Mexico. (NMFS 2008)</b>	
<p><b>Shrimp Fishery Management Plan</b>            brown shrimp – <i>Farfantepenaeus aztecus</i>            pink shrimp - <i>F. duorarum</i>            royal red shrimp - <i>Pleoticus robustus</i>            white shrimp - <i>Litopenaeus setiferus</i></p>	<p><b>Stone Crab Fishery Management Plan FL</b>            stone crab - <i>Menippe mercenaria</i>            gulf stone crab – <i>M. adina</i></p>
<p><b>Reef Fish Fishery Management Plan</b>            almaco jack – <i>Seriola rivoliana</i>            anchor tilefish - <i>Caulolatilus ntermedius</i>            banded rudderfish – <i>S. zonata</i>            blackfin snapper - <i>Lutjanus buccanella</i>            blackline tilefish - <i>Caulolatilus cyanops</i>            black grouper- <i>Mycteroperca bonaci</i>            blueline tilefish – <i>C. microps</i>            cubera snapper – <i>L. cyanopterus</i>            dog snapper – <i>L. jocu</i>            dwarf sand perch - <i>Diplectrum ivittatum</i>            gag grouper - <i>M. microlepis</i>            goldface tilefish – <i>C. chrysops</i>            goliath grouper - <i>Epinephelus itajara</i>            gray snapper – <i>L. griseus</i>            gray triggerfish - <i>Balistes capriscus</i>            greater amberjack – <i>S. dumerili</i>            hogfish - <i>Lachnolaimus maximus</i>            lane snapper - <i>Lutjanus synagris</i>            lesser amberjack - <i>S. fasciata</i>            mahogany snapper – <i>L. mahogoni</i>            marbled grouper – <i>E. inermis</i>            misty grouper – <i>E. mystacinus</i>            mutton snapper – <i>L. analis</i>            Nassau grouper – <i>E. striatus</i></p>	<p><b>Spiny Lobster Fishery Management Plan</b>            spiny lobster - <i>Panulirus argus</i>            slipper lobster - <i>Scyllarides nodife</i></p> <p><b>Coral and Coral Reef Fishery Management Plan</b>            varied coral species and coral reef communities            comprised of several hundred species</p> <p><b>Coastal Migratory Pelagic Fishery Management Plan</b>            cobia - <i>Rachycentron canadum</i>            king mackerel – <i>Scomberomorus cavalla</i>            Spanish mackerel - <i>S. maculatus</i></p> <p><b>Red Drum Fishery Management Plan</b>            red drum - <i>Sciaenops ocellatus</i></p>

queen snapper - *Etelis oculatus*  
 red hind - *Epinephelus guttatus*  
 red grouper - *E. morio*  
 red snapper - *L. campechanus*  
 rock hind - *E. adscensionis*  
 sand perch - *Diplectrum formosum*  
 scamp grouper - *M. phenax*  
 schoolmaster - *L. apodus*  
 silk snapper - *L. vivanus*  
 snowy grouper - *E. niveatus*  
 speckled hind - *E. drummondhayi*  
 tilefish - *Lopholatilus chamaeleonticeps*  
 vermilion snapper - *Rhomboplites aurorubens*  
 Warsaw grouper - *E. nigritus*  
 wenchman - *Pristipomoides aquilonaris*  
 yellowedge grouper *E. lavolimbatus*

Within the project area, EFH has been designated for managed species of Gulf of Mexico dolphin, wahoo, red drum, blue marlin, sharks (11 species), coastal migratory pelagics (3 species), reef fish (43 species), stone crab (2 species) and shrimp (4 species). No habitat areas of particular concern were identified for this area.

**5.6 Cultural Resources.** During past recertification efforts, the Mobile District's cultural resources staff have evaluated the proposed action and alternatives for potential impact on cultural resources of the area and determined that there are no properties currently listed on or eligible for listing on the National Register of Historic Places.

**5.7 Esthetics.** The Bayou La Batre community in the vicinity of the project has been developed as a commercial coastal fishing and shipbuilding community. Bayou La Batre is a tidally influenced coastal stream that primarily has privately owned and operated seafood processing plants and commercial offloading docks and marinas along its riverbanks.

**5.8 Noise.** The predominant ambient sounds in the vicinity of the project are those expected in a commercial fishing and shipbuilding including local traffic (automobile and boat).

**5.9 Air Quality.** Existing air quality in coastal Mobile and Baldwin counties 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, volatile organic compounds and other hazardous air pollutants. Sources of air pollution in the project area are mainly from non-point sources such as boat motors and vehicular traffic emissions. No major sources of air pollution were found within the vicinity of the project area. Mobile and Baldwin counties are in attainment for all NAAQS (Environmental Protection Agency, 2009).

**5.10 Threatened and Endangered species.** The following federally listed threatened and endangered species are potentially found in Mobile County:

## U.S. Fish and Wildlife (USFWS)

- E - West Indian Manatee (*Trichechus manatus*)
- T - Piping plover (*Charadrius melodus*)
- E - Red-cockaded woodpecker (*Picoides borealis*)
- E - Least tern (*Sterna antillarum*)
- T - Eastern indigo snake (*Drymarchon corais couperi*)
- T - Gopher tortoise (*Gopherus polyphemus*)
- E - Alabama red-bellied turtle (*Pseudemys alabamensis*)
- T - Loggerhead sea turtle (*Caretta caretta*)
- E - Kemp's ridley sea turtle (*Lepidochelys kempii*) (P)
- T - Green sea turtle (*Chelonia mydas*) (P)
- T - Gulf sturgeon (*Acipenser oxyrinchus desotoi*)
- T - Flatwoods salamander (*Ambystoma cingulatum*) (P)
- E - Louisiana quillwort (*Isoetes louisianensis*) (P)
- C - Black pine snake (*Pituophis melanoleucus lodingi*)

## National Marine Fisheries Service, Protected Resources Division (NMFS-PRD)

- E- Blue whale (*Balaenoptera musculus*)
- E- Finback whale (*Balaenoptera physalus*)
- E- Humpback whale (*Megaptera novaeangliae*)
- E- Sei whale (*Balaenoptera borealis*)
- E- Sperm whale (*Physeter macrocephalus*)
- T- Green sea turtle (*Chelonia mydas*)
- E- Hawksbill sea turtle (*Eretmochelys imbricate*)
- E- Kemp's ridley sea turtle (*Lepidochelys kempii*)
- E- Leatherback sea turtle (*Dermochelys coriacea*)
- T- Loggerhead sea turtle (*Caretta caretta*)
- T- Gulf sturgeon (*Acipenser oxyrinchus lodingi*)

Federally protected species such as the Louisiana quillwort, red-cockaded woodpecker, flatwoods salamander, and black pine snake would not be affected because these species are not likely to be found in or near the project area. The gopher tortoise, Eastern indigo snake, Alabama red-bellied turtle, hawksbill sea turtle, leatherback sea turtle, least tern, and piping plover are anticipated to avoid the area during dredging and disposal operations as they are mobile. The blue whale, finback whale, humpback whale, Sei whale, and sperm whale would not be affected because they are not likely to be found in or near the project area due to the shallow conditions of the area.

Of the listed species, the species most likely to be found in the project area include the West Indian manatee, Gulf sturgeon, and the Kemp's, green and loggerhead sea turtles.

The Florida manatee is a subspecies of the West Indian Manatee. Between October and April, the Florida manatee concentrates in areas of warmer water. During summer months, the species may migrate as far west as the Louisiana coast on the Gulf of Mexico and may occasionally be

found along the Alabama coast. The Florida manatee inhabits both saltwater and freshwater of sufficient depth (about 5 feet to usually less than 18 feet). The Florida manatee may be encountered in canals, rivers, estuarine habitats, saltwater bays, and on occasion has been observed as much as 3.7 miles off the Florida Gulf coast. The species will consume any aquatic vegetation available to it including sometimes grazing on the shoreline vegetation. The Florida manatee could possibly be found in the proposed maintenance area during operations due to the species' southern migration.

The Gulf sturgeon is a subspecies of the Atlantic sturgeon. In early spring, subadult and adult fish migrate into rivers from the Gulf of Mexico and continue until early May. In late September or October, subadult and adult sturgeons begin downstream migrations. Adult fish spend 8 to 9 months each year in rivers and 3 to 4 of the coolest months in estuarine or Gulf waters. The Gulf sturgeon is a bottom-feeder which apparently only feeds during its stay in marine waters; food items are rarely found in the stomachs of specimens sampled from rivers. However, although the Gulf sturgeon could be found in the vicinity, the majority of the project is not located in critical habitat for the Gulf sturgeon. The south-western portion of the channel and disposal areas 1, 2, and 3 are located in Mississippi Sound and is within designated critical habitat for the Gulf sturgeon.

The Kemp's ridley sea turtles are usually found in water with low salinity, high turbidity, high organic content, and where shrimp are abundant. This species of sea turtle is the most commonly found species along the Mississippi coast. The continual influx of freshwater and high organic content associated with the northern Gulf of Mexico provides ideal foraging habitat for this species. Loggerhead sea turtles inhabit continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. In the Atlantic, loggerhead sea turtles' range extends from Newfoundland to as far south as Argentina. During summer, sea turtles nest in the lower latitudes. Primary Atlantic nesting sites are along the east coast of Florida, with additional sites in Georgia, the Carolinas, and along the Gulf coast. In the Gulf of Mexico, principal foraging areas for the green sea turtle are located in the upper west coast of Florida. Nocturnal resting sites may be a considerable distance from feeding areas, and distribution of the species is generally correlated with grassbed distribution, location of resting beaches, and possibly ocean currents. Major nesting areas for green sea turtles in the Atlantic include Surinam, Guyana, French Guyana, Costa Rica, the Leeward Islands, and Ascension Island in the mid-Atlantic. Historically in the U.S., green turtles have been known to nest in the Florida Keys and Dry Tortugas.

**5.11 Water Quality.** Bayou La Batre is located in the Escatawpa River Basin and forms in southern Mobile County, within the city limits of Bayou La Batre. The total drainage area of Bayou La Batre is 30.17 square miles. Bayou La Batre is a small tidal stream located in south Mobile County, Alabama, about 24 miles southwest of Mobile. The bayou empties into Mississippi Sound and Gulf of Mexico. During periods of rainfall, natural flow in the bayou comes from runoff while during periods of drought the stream functions as a tidal system and the primary source of water is Mississippi Sound and Gulf of Mexico. Water movement in the bayou is influenced by wind and tidal action and at times becomes stagnant. ADEM has collected monthly water quality data for Bayou La Batre at station BLB-1 since 1978. Data collected in 1995 and 1996 were highlighted by the U.S. Environmental Protection Agency (EPA) as having

violations of the single sample maximum criterion and geometric mean criterion. These violations resulted in EPA placing Bayou La Batre on the 1998 §303(d) list. Bayou La Batre has a use classification of Fish & Wildlife (Alabama Department of Environmental Management (ADEM), 2009). Portersville Bay, the waterbody that connects the bayou to the Gulf of Mexico, is classified for swimming, shellfish harvesting and fish and wildlife uses except those portions of the bay at Bayou Coden and Bayou La Batre.

Bayou La Batre is currently on the §303(d) list for pathogens (enterococci) from Portersville Bay to its source. In 2006 and 2007, a §303(d) sampling study was performed by ADEM on Bayou La Batre for additional water quality assessment. ADEM collected 68 samples from Bayou La Batre as a part of this general water quality and intensive enterococci study. The 2006 and 2007 data confirmed that Bayou La Batre was still not meeting the pathogen criterion applicable to its use classification of F&W. Therefore, a total maximum daily load (TMDL) will be developed for pathogens on the listed reach (ADEM, 2009).

The State of Alabama has identified the 5.46 miles of Bayou La Batre as impaired for pathogens. The §303(d) listing was originally reported on Alabama's 1998 List of Impaired Waters based on 1995 and 1996 data.

There are no continuous National Pollutant Discharge Elimination System (NPDES) discharges located in the Bayou La Batre watershed. The municipal and industrial facilities located in the Bayou La Batre watershed all discharge to Portersville Bay. Nonpoint sources appear to be a significant source of enterococci bacteria in the Bayou La Batre watershed. Land use in this watershed is characterized mostly by forested, agriculture, and developed land uses (ADEM, 2009).

Bayou la Batre was delisted from the 303(d) list for Dissolved Oxygen in 2006 and is allowed a lower range of 5mg/l to 4mg/l. However Dissolved Oxygen was observed in the sub-estuary to less than 4mg/l (ADEM, 2008).

## **6.0 ENVIRONMENTAL IMPACTS**

The dredging would provide a safe navigable channel for commercial fishermen, local businesses, and the pleasure boaters in the vicinity. The environmental impact anticipated as a result of the proposed action includes loss of benthic organism, physical substrate disturbance, esthetic degradation, noise degradation, and air quality degradation. Impacts associated with the dredging and disposal activities include: 1) temporary water quality degradation during maintenance operations; 2) minor loss of bottom dwelling organisms; 3) avoidance of the operation area by pelagic and benthic fauna; and 4) a temporary reduction in air quality due to exhaust emissions. In addition to these described impacts, the placement of dredged material at either the open-water site or upland site is also anticipated to have temporary impacts on the environment, such as avoidance of the upland sites by terrestrial fauna and an increase in noise emissions due to the operations. These described impacts to the environment are temporary in nature and are anticipated to return to pre-operation conditions within several months after completion.

No Action – The No Action alternative would result in the continuation of existing conditions . This alternative avoids both the monetary investment and potential adverse impacts associated with maintenance of the channel or the disposal sites. The implementation of the "No Action" alternative would result in the Bayou La Batre Channel not being dredged to project depths.

**6.1 Physiography.** Terrestrial vegetation near the upland disposal areas would be temporally impacted as a result of the preferred alternative. The vegetation impacted constitutes a very small percentage of the area and its loss will have no significant impact to local environment. The soils and sediments within the Mississippi Sound are consistent with the open water disposal areas that the dredged material will be deposited. Sandy-clays material mixtures are found at depths below –18 feet Mean Lower Low Water (MLLW) within the bayou. Firm to stiff clays are encountered throughout the channel at depths of –18 feet MLW in the northern portion of the Sound to –22 feet MLW in the vicinity of the GIWW. No impacts to the terrestrial ecosystem located adjacent to the project site were identified. Species that utilize terrestrial and/or aquatic systems in the vicinity of the project area or within the disposal sites may encounter a small decrease in forage area during construction. However, the area required by the construction equipment is no larger than that occupied by adjacent commercial vessels, and will result in very minor inconveniences to these species. Habitat within the disposal areas would be temporarily impacted during and shortly after disposal in a manner similar to which has occurred in many previous dredging events. Species utilizing this area would have adapted to these periodic occurrences.

**6.1.1 No Action.** There should be no significant changes to the Physiography within the area associated with the No Action alternative. The Bayou La Batre channel would continue to experience increased shoaling and the use of the channel would be limited due to shallower depths.

**6.2 Sediment.** The proposed action will result in the relocation of material from the channel to the designated disposal areas. This action is not likely to result in significant impacts to the benthic environment, as the dredged material is similar in composition to that found in the open water disposal areas. The material removed from the bayou portion of the channel will be placed into the upland disposal area “Charlie” and/or “Delta.” No significant levels of contaminants are known to exist within the dredged material.

**6.2.1 No Action.** The No Action alternative would result in continued shoaling in the Bayou La Batre channel. Overall, sediments would likely accumulate within the historic navigation channel from adjacent areas overtime making it un-navigable.

**6.3 Climate.** No climatic changes will occur as a result of this localized project.

**6.3.1 No Action.** There should be no climatic changes associated with the No Action alternative.

**6.4 Biological Resources.** No long-term adverse impacts are anticipated. Because of the nature of the project, continued operations and maintenance of the existing channel, there should be no basic change in overall characteristics.

**6.4.1 Flora.** There may be temporary disruption of the flora community caused by the disposal activities; however, the dredged material would be placed in the existing upland disposal areas and previously used open water sites. There would be a permanent loss of vegetation that is currently growing inside the disposal areas. The vegetative cover would return shortly after the material settles. Any temporary impacts associated with the pipeline to the upland site would be restored once disposal activities are complete. but they should avoid the disturbed area and should return shortly after construction activity is completed. All graded and scarred areas would be stabilized and the use of BMPs would help minimize disturbances. It is anticipated that affected areas would be small and would rapidly recover within a few months.

**6.4.2 Fauna.** There may be temporary disruption of the fauna community caused by the dredging and placement activities but they should avoid the disturbed areas and should return shortly after dredging activities are completed. Coordination with the US FWS and NMFS is ongoing and any protective measures required will be implemented in order to minimize project impacts.

**6.4.3 Benthos, Motile Invertebrates, and Fishes.** The project area does contain various marine invertebrate species typically found in association with estuarine benthic systems. Also, various motile pelagic marine species (i.e. various marine fish, shrimp and crabs species) are present within the project area. There would be temporary disruption of the aquatic community. Non-motile benthic fauna within the project area will be lost due to the proposed operations, but should repopulate within several months upon completion of dredging. Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, are 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 to these organisms is expected to be temporary and insignificant. The substrate in the project area, for the most part, is not conducive to the establishment of shellfish resources. No oyster reefs will be impacted by the proposed activity. There is no SAV in the project area; therefore, no impacts are anticipated. The overall impact to these organisms due to the dredging and disposal activities is expected to be minimal.

**6.4.4 No Action.** The No Action alternative would avoid disruptions to the resources caused by construction of the project; however, no benefits of the project would be recognized. The No Action alternative would avoid losses of benthic fauna associated with dredging and disposal activities. The motile and non-motile species would not be disturbed and there would be no loss to larval and juvenile species. The area currently does not support oyster reefs and SAV and is expected this would not change in the future. It is anticipated the channel would continue to experience shoaling limiting its use due to shallower depths.

**6.5 Essential Fish Habitat.** Species identified to be present within the project area are motile and will likely leave the area upon initiation of dredging and disposal operations. The exception is non-motile benthic invertebrates that will be impacted by the project. The dredged material will bury some benthic organisms; however; most organisms in this environment are adapted for existence in an area of considerable substrate movement. As previously mentioned, impacts to these species will be negligible as they will re-colonize the area within a few months. No long-

term direct impacts to managed species of finfish or shellfish populations are anticipated. No impacts to EFH are anticipated from the upland disposal site's return water.

The Corps, Mobile District will take extensive steps to reduce and avoid potential impacts to EFH as well as other significant area resources. Increased water column turbidity during dredging would be temporary and localized. The spatial extent of elevated turbidity is expected to be within 400 feet of the operation, with turbidity levels returning to ambient conditions within a few hours after completion of the dredging activities. Due to the nature of dredging and disposal activities and the small area (percentage wise) of ecosystem that would be affected at a given point in time no significant long-term impacts are expected to occur. The proposed project would not adversely alter the present EFH. Further consultation regarding impacts to EFH is ongoing with the National Marine Fisheries Service, Habitat Conservation Division.

**6.5.1 No Action.** The No Action alternative would avoid any disruptions to EFH within the project area. The species that would use the project area would not be disrupted and would remain in the area. There would be no loss of benthic invertebrates as a result of dredging within the channel and placement activities at open water sites. However, the channel would continue to experience shoaling limiting its use due to shallower depths.

**6.6 Cultural Resources.** In compliance with the National Historic Preservation Act the proposed action was coordinated with the Alabama State Historic Preservation Officer (SHPO) during past recertification efforts, most recently in May 2007 via the public notice. No further coordination is needed since the project has not changed. No known cultural resources have been identified in the project area.

**6.6.1 No Action.** The No Action alternative would avoid any dredging activities within the project area and the area would remain as is.

**6.7 Esthetics.** The Bayou La Batre community in the vicinity of the project has been developed as a commercial coastal fishing and shipbuilding community. Bayou La Batre is a tidally influenced coastal stream that primarily has privately owned and operated seafood processing plants, commercial offloading docks, and marinas along its riverbanks. The proposed project would result in no obvious changes to the appearance of the shoreline in the vicinity of the project.

**6.7.1 No Action.** The No Action alternative would avoid any changes to the esthetics within the project area. The Bayou La Batre community would remain a developed commercial coastal fishing and shipbuilding community. However, the channel would continue to experience shoaling limiting its use due to shallower depths.

**6.8 Noise.** The predominant ambient sounds in the vicinity of the project are those expected in a commercial fishing and shipbuilding including local traffic (automobile and boat). Noise from the dredge equipment and other job-related equipment is expected to increase during the proposed operations in the project vicinity. Noise levels will resume to prior conditions once the dredging and disposal operations are complete. Noise levels will blend with those from adjacent activities and are not significant.

**6.8.1 No Action.** The No Action alternative would avoid temporary increases in noise levels associated with construction activities. The continuation of noise levels associated with the Bayou La Batre community would continue.

**6.9 Air Quality.** The proposed action would have no significant long-term effect on air quality. Air quality in the immediate vicinity of the dredge and other equipment would be slightly affected for a short period of time by the fuel combustion and resulting engine exhausts. The exhaust emissions are considered insignificant in light of prevailing breezes and when compared to the existing exhaust fumes from other vessels using the project. The project area is in attainment with NAAQS parameters. These standards would not be violated by the implementation of the proposed action. The proposed action would not affect the attainment status of the project area or region. A State Implementation Plan conformity determination {42 United States Code 7506(c)} is not required since the project area is in attainment for all criteria pollutants.

**6.9.1 No Action.** The No Action would avoid any added exhaust emissions associated with construction activities. The existing conditions would be expected to remain unchanged as Mobile County is currently in attainment with the NAAQS of the Clean Air Act.

**6.10 Threatened and/or endangered species.** The Corps, Mobile District is coordinating with the USFWS and NMFS-PRD that the proposed action may affect but is not likely to adversely affect any endangered or threatened species, provided incorporation of certain conservation recommendations, and will not destroy or adversely modify designated critical habitat. Based on previous recertification efforts, both USFWS and NMFS-PRD, have concurred with previous determinations to listed species.

**6.10.1 No Action.** The No Action alternative would avoid any disruptions to any listed species that would be caused by dredging and placement activities; however, no benefits of the project would be recognized. It is anticipated that ongoing conditions, increased and continued shoaling of the navigation channel, would worsen over time if the project is not maintained limiting the use due to shallower depths.

**6.11 Water Quality.** Water quality in the immediate vicinity of the dredge and open-water disposal placement sites would be slightly impaired for a short period of time due to a slight increase in turbidity. The dredging and disposal would be controlled and monitored so that no part of these operations would cause an increase in turbidity of more than 50 nephelometric turbidity units above background levels outside a 400 foot mixing zone. The proposed action will comply with conditions of the State Water Quality Certification.

**6.11.1 No Action.** The No Action alternative would avoid any temporary increased turbidity associated with dredging and placement activities. The existing water quality conditions would be expected to remain unchanged until completion of the planned waste water treatment facility has been constructed within the project area.

## **7.0 COASTAL ZONE CONSISTENCY**

ADEM will review the activities relative to the Alabama Coastal Management Program (ACMP). The Mobile District has determined that the proposed action is consistent with the ACMP to the maximum extent practicable. It is expected that the ADEM will concur with our determination of consistency with the ACMP and the requirements of Section 307 of the Coastal Zone Management Act. No action would take place until ADEM deems the proposed action consistent.

**8.0 WATER QUALITY CERTIFICATION** Based on past recertification efforts, it is expected that ADEM will issue water quality certification for the proposed project. No action would take place until ADEM issues water quality certification for the project. Issuance of water quality certification by ADEM would indicate that the proposed action would be in compliance with the applicable provisions of the Clean Water Act of 1972 and Alabama Codes.

**9.0 PROTECTION OF CHILDREN.** EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), recognizes a growing body of scientific knowledge and demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; because children eat, drink, and breathe more in proportion to their body weight; because their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each Federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed 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. No changes in demographics, housing, or public services would occur as a result of the proposed action. The proposed action does not involve activities that would pose any disproportionate environmental health risk or safety risk to children because it will occur away from children.

**10.0 ENVIRONMENTAL JUSTICE.** On February 11, 1994, the President issued Executive Order (EO) 12898, *Federal Actions to address Environmental Justice in Minority Populations and Low Income Populations*. The EO focuses federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The EO directs the federal agencies to develop environmental justice strategies to aid the Corps of Engineers to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low-income populations. No changes in demographics, housing, or public services would occur as a result of the proposed action. The proposed action is not designed to create a benefit for any group or individual. The dredging and disposal of the overall Bayou La Batre project does not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community.

## **11.0 CUMULATIVE IMPACTS SUMMARY**

Cumulative impacts are those impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. This section analyzes the proposed actions as well as any connected, cumulative, and

similar existing and potential actions occurring in the area surrounding the site. In general, the proposed dredging and disposal operations would have no significant adverse or cumulative impacts.

The dredging and disposal operations at Bayou La Batre, past, present and for the reasonably foreseeable future, will not cause changes in the current activities of the vicinity. Recreational and commercial boaters that presently use the navigation project will likely remain unchanged as no channel improvements are planned. Therefore, no significant cumulative impacts are expected from this proposed action.

### **12.0 CONCLUSION**

The proposed action would have no significant environmental impacts on the existing environment. No mitigation actions are required for the proposed project. Best Management Practices would be employed during the proposed actions to minimize any identified adverse impacts. The implementation of the proposed action would not have a significant adverse impact on the quality of the environment and an environmental impact statement is not required.

### **13.0 LIST OF AGENCIES, INTERESTED GROUPS AND PUBLIC CONSULTED**

Region 4, U.S. Environmental Protection Agency  
Field Representative, Fish and Wildlife Service  
Regional Director, National Park Service  
Regional Director, National Marine Fisheries Service  
Commander, Eighth Coast Guard District  
Alabama State Historic Preservation Officer  
Alabama Department of Environmental Management  
Alabama Department of Conservation and Natural Resources  
Gulf of Mexico Fishery Management Council  
Federal Emergency Management Agency  
Appropriate Federally Recognized Indian Tribes

### **14.0 LIST OF PREPARERS**

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Department of the Army  
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P.O. Box 2288  
Mobile, Alabama 36628-0001  
(251) 694-3786

### **15.0 REFERENCES**

**Alabama Department of Environmental Management (ADEM)**, Steven G. Summersell, *Mobile Bay National Estuary Program, Mobile Bay Sub-Estuary Monitoring Program Report, Bayou La Batre, Sub Estuary*, December 2008.

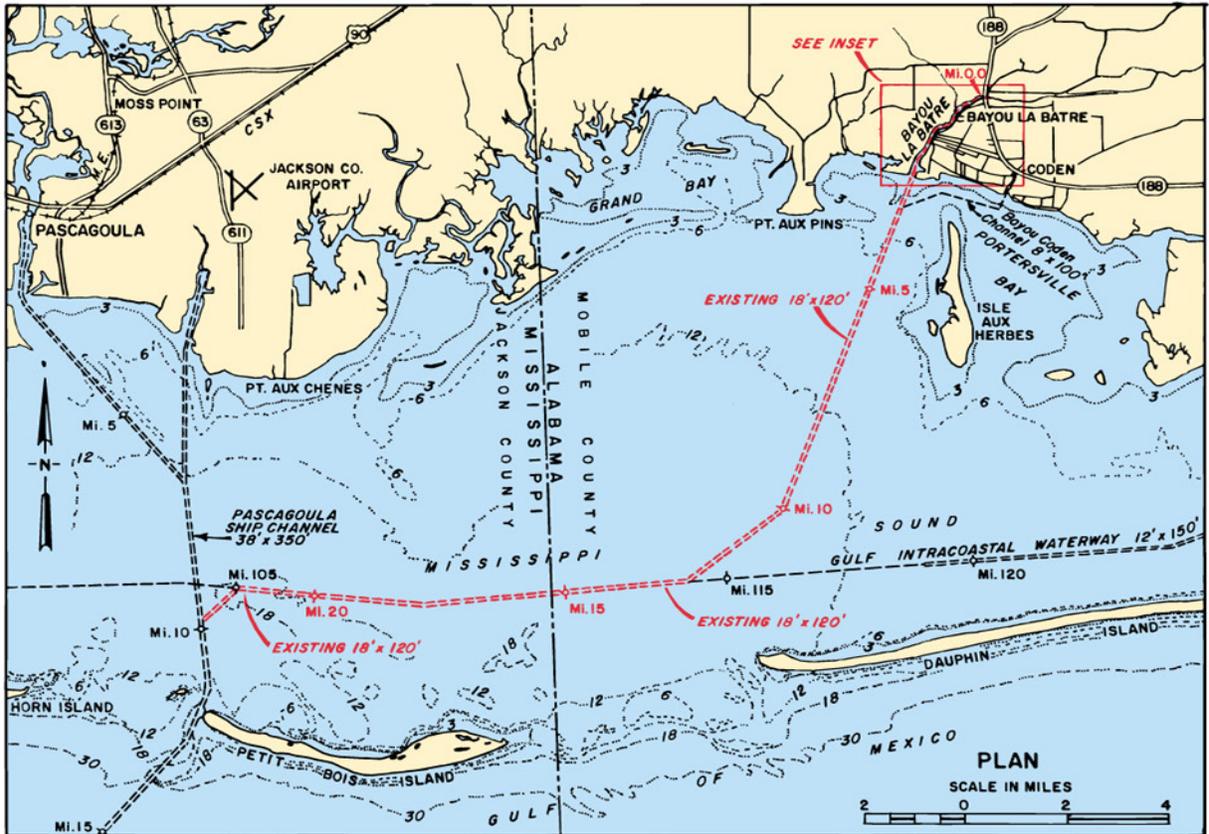
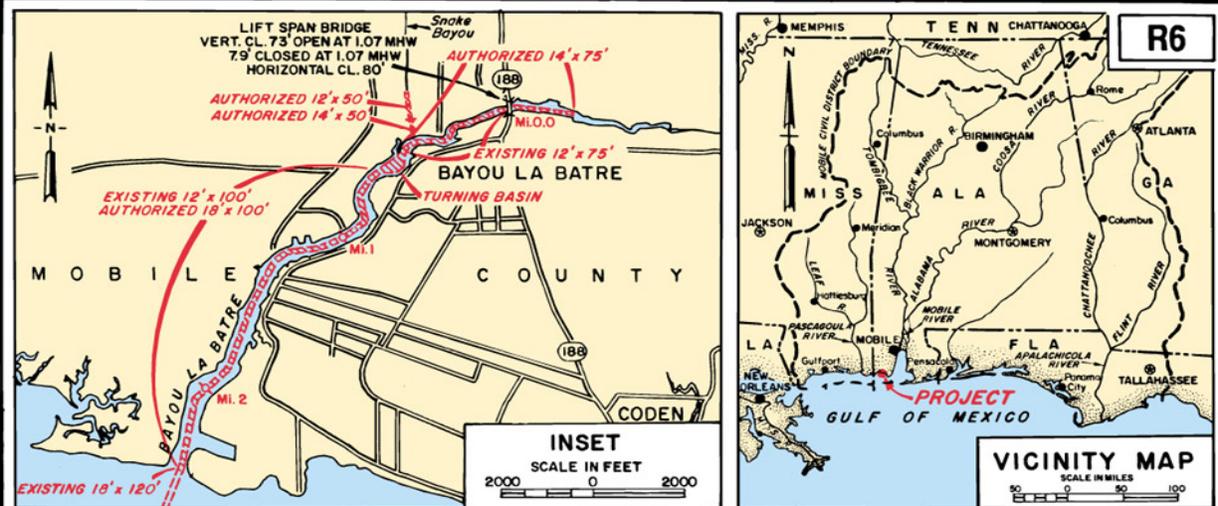
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**Vittor, B. A. and Associates, Inc.** 1982. *Benthic Macroinfauna Community Characterizations in Mississippi Sound and Adjacent Waters.* Contract Report to U. S. Army Corps of Engineers, Mobile District, Mobile, Alabama.



DEPTHS ARE IN FEET AND REFER TO MEAN LOW WATER.  
 MILEAGE ON BAYOU LABATRE CHANNEL IS FROM ALABAMA HIGHWAY 188 BRIDGE, BAYOU LA BATRE, ALABAMA.  
 MILEAGE ON GULF INTRACOASTAL WATERWAY IS FROM HARVEY LOCK, NEW ORLEANS, LOUISIANA.  
 MILEAGE ON PASCAGOULA HARBOR CHANNEL IS FROM CSX RAILROAD BRIDGE, PASCAGOULA, MISSISSIPPI.

**BAYOU LA BATRE**  
**ALABAMA**  
 REVISED TO 30 SEPTEMBER 1998  
 OFFICE OF THE DISTRICT ENGINEER  
 MOBILE, DISTRICT



**Bayou La Batre Navigation Project  
Proposed Upland Disposal Areas**

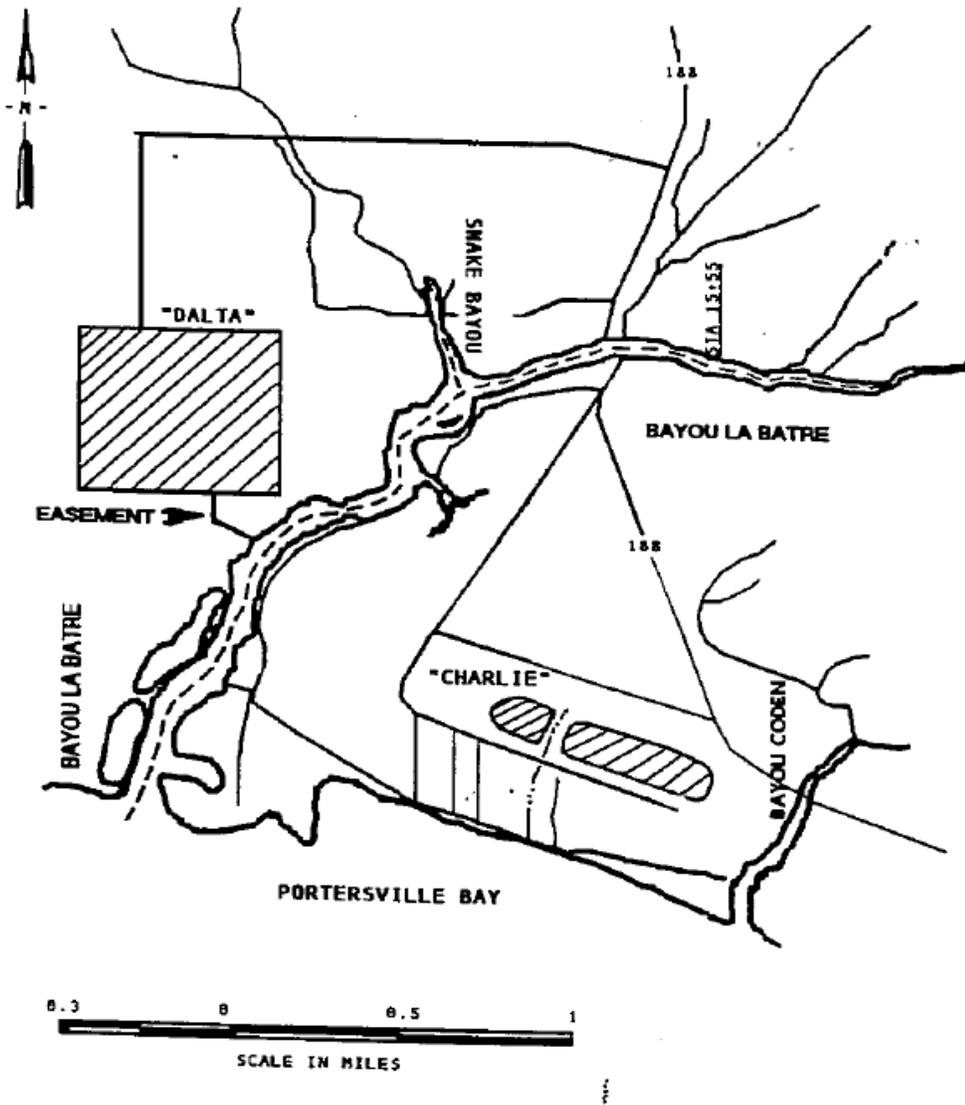


Figure 3: Bayou La Batre Navigation Project  
Upland Disposal Sites

