

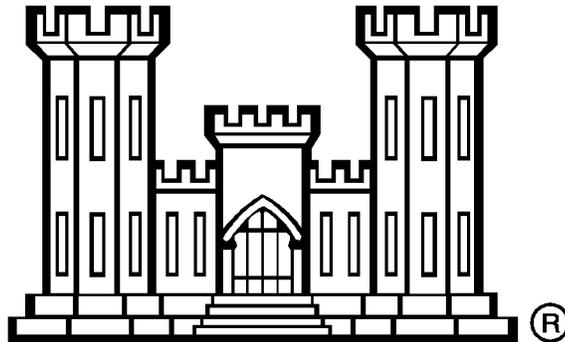
Draft ENVIRONMENTAL ASSESSMENT

**MOBILE HARBOR TURNING BASIN EXPANSION
MOBILE COUNTY, ALABAMA**

**A FEDERALLY AUTHORIZED PROJECT
2012**

Prepared by

U.S. Army Corps of Engineers, Mobile District
Planning and Environmental Division
Environment and Resources Branch
Coastal Environment Team



Last Updated: 18 May 2012

TABLE OF CONTENTS

1.0 Project Description 4
 1.1 General 4
 1.2 Authorized and Existing Permitted Project 5

2.0 Existing Environmental Documentation 6

3.0 Proposed Action 6

4.0 Need for Proposed Action..... 7

5.0 Alternatives to the Proposed Action 7

6.0 Scope 7

7.0 Existing Conditions 8
 7.1 Climatic and Physical Conditions 8
 7.1.1 Climate 8
 7.1.2 Currents 9
 7.1.3 Salinity 9
 7.1.4 Tides 10
 7.1.5 Sediments 10
 7.2 Environmental Conditions 11
 7.2.1 Estuarine Environment 11
 7.2.2 Benthic Environment 12
 7.2.3 Fish and Shellfish 13
 7.2.4 Protected Species 14
 7.2.5 Essential Fish Habitat (EFH) 15
 7.2.6 Cultural Resources..... 15
 7.3 Disposal Areas 16
 7.3.1 North Pinto 16
 7.3.2 South Blakeley 16

8.0 Environmental Impacts 16
 8.1 General 16
 8.2 Impacts..... 16
 8.2.1 Habitat 16
 8.2.2 Esthetics 17
 8.2.3 Water Quality 17
 8.2.4 Air Quality 17
 8.2.5 Noise 17
 8.3 Federally Protected Species 17
 8.3.1 Essential Fish Habitat (EFH) 17
 8.3.2 Threatened and Endangered Species 18
 8.4 Environmental Justice 18

8.5 Cultural Resources..... 19

8.6 Protection of Children..... 19

8.7 Cumulative Impacts..... 19

9.0 Conclusions 20

10.0 List of Agencies, Interested Groups Consulted 20

11.0 References..... 20

APPENDIX 3A – Public Notice FP12-MH02-05 3A-1

APPENDIX 3B – Draft 404(b)(1) Evaluation Report 3B-1

APPENDIX 3C – Letter from Alabama Historical Commission..... 3C-1

APPENDIX 3D – State Water Quality Certification 3D-1

APPENDIX 3E – Letter from U.S. Fish and Wildlife Service 3E-1

LIST OF TABLES

Table 1. Authorized and Existing Dimensions for Mobile Harbor

LIST OF FIGURES

Figure 1. Overall project map illustrating general location and project dimensions

Figure 2. Location of Mobile Harbor Turning Basin and Disposal Areas

Figure 3. Location and configuration of the proposed turning basin

Figure 4. Turning Basin and Expansion Area

**Draft SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
MOBILE HARBOR TURNING BASIN EXPANSION**

MOBILE HARBOR FEDERAL NAVIGATION PROJECT MOBILE COUNTY, ALABAMA

A FEDERALLY AUTHORIZED PROJECT 2012

1.0 Project Description

1.1 General. Mobile Harbor, Alabama, is located in the southwestern part of the state, at the junction of the Mobile River with the head of Mobile Bay (Figure 1). The port is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana. The navigation channel dredging in Mobile Bay and Mobile River began in 1826 with enactment of the River and Harbor Act of 1826. During the period 1826 to 1857, a channel 10 feet deep was dredged through the shoals in Mobile Bay up to the city of Mobile. Subsequently, further modifications to the channel were authorized and the original Federal project was enlarged by the addition of the Arlington, Garrows Bend, and Hollingers Island channels within the bay, and a channel into Chickasaw Creek from the Mobile River. Section 104 of the River and Harbor Act of 1954 authorized a 40-foot depth channel with a 400-foot width in Mobile Bay to the mouth of the Mobile River and a 40-foot depth in the Mobile River to the Cochran Bridge with the width varying from 400 to 775 feet. The Senate Public Works Committee on 16 July 1970 and the House Public Works Committee on 15 December 1970, under the provisions of Section 201 of the 1965 Flood Control Act, authorized a 40-foot by 400-foot channel, branching from the main ship channel and extending through a land cut to the Theodore Industrial Park. The Theodore Ship Channel was reauthorized in the Water Resources Development Act of 1976.

Further improvements to the existing Federal project were initially authorized in the 1985 Energy and Water Resources Appropriation Act (PL 99-88, Ninety-ninth Congress, First Session). The improvements were reauthorized in Section 201 of the Water Resources Development Act of 1986 (PL 99 – 662, Ninety-ninth Congress, Second Session), which was approved 17 November 1986, and subsequently amended by Section 302 of the Water Resources Development Act of 1996. The report referenced by this authorization recommended the following improvements to the Federal project: deepening and widening the Gulf entrance channel to 57 by 700 feet; deepening and widening the main ship channel to 55 by 550 feet in Mobile Bay, except for the upper 3.6 miles which require a width of 650 feet; deepening the Mobile River channel to 55 feet to a point about 1 mile below the Interstate 10 highway tunnels; and, constructing turning and anchorage basins near the upper end of the main ship channel.

The Mobile River, on which the Alabama State Docks facilities are located, is formed some 45 miles north of the city with the joining of the Alabama and Black Warrior/Tombigbee Rivers. The Mobile River also serves as the gateway to international commerce for the Tennessee/Tombigbee Waterway. In the southern edge of Mobile Bay,

access is gained to the Gulf Intercoastal Waterway which stretches from St. Marks, Florida, to Brownsville, Texas.

1.2 Authorized and Existing Permitted Project. The authorized Mobile Harbor Navigation Project includes the following:

- a. A 57' x 700' channel from the Gulf of Mexico for approximately eight (8) miles to Mobile Bay;
- b. A 55' x 550' channel from the mouth of the Mobile Bay for a distance of approximately 29 miles to near the mouth of Mobile River, including a passing lane two (2) miles long and 625' wide at mid-bay;
- c. A 55' x 750' x 4,000' anchorage area just south of McDuffie Island;
- d. A 55' x 1500' x 1,500' turning basin opposite McDuffie Island;
- e. A 40' deep channel with the width varying from 700', near the Mobile River mouth, to 500', near the Cochrane Bridge (U.S. Highway 98), a distance of approximately four (4) miles;
- f. A 40' x 800' – 1,000' x 2,500' turning basin opposite the Alabama State docks between river miles 1.0 to 1.5; and
- g. A 40' x 1000' x 1,600' turning basin just south of the Cochrane Bridge.

The authorized dimensions of all segments of the Mobile Harbor Project have not been constructed. A summary of both the authorized and the existing maintained dimensions are listed in Table 1. The maintained dimensions of the bay channel are 45' by 400' and the outer bar channel is 47' by 600'. Each of these areas is maintained to a depth that is 10' less than the authorized depth. Several additional features of the authorized project have not been constructed at this time. The anchorage areas that would be located south of the mouth of the Mobile River have not been constructed, and the bay channel and the bar channel, have not been widened. The new turning basin opposite McDuffie Island, between Pinto Island and Little Sand Island, was constructed in 2010.

Table 1. Authorized and Existing Dimensions for Mobile Harbor

Channel	Authorized Dimensions	Existing Dimensions
<i>Outer Bar Channel (a.)</i>	57' x 700'	47' x 600'
<i>Bay Channel (b.)</i>	55' x 550'	45' x 400'
<i>Anchorage Area (c.)</i>	55' x 750' x 4,000'	<i>Not Constructed</i>
<i>Turning Basin (d.)</i>	55' x 1,500' x 1,500'	45' x 755' x 1320'
<i>River Channel (e.)</i>	40' x 500'-700'	<i>As Authorized</i>
<i>Turning Basin (f.)</i>	40' x 800' – 1,000' x 2,500'	<i>As Authorized</i>

<i>Turning Basin (g.)</i>	40' x 1,000' x 1,600'	<i>As Authorized</i>
---------------------------	-----------------------	----------------------

Approval for advanced maintenance for the Federal Mobile Harbor navigation project was received from South Atlantic Division in the mid-1990s as per the Navigation Regulations ER1130-2-530, 29 November 1996. As such, the navigation channels have associated advanced maintenance to accomplish dredging in an efficient, cost-effective, and environmentally responsible manner. In addition to the federally-authorized channel dimensions providing for navigation, two (2) sediment basins in the Mobile River and three (3) sediment basins in the bay channel, have been previously authorized and approved. These sediment basins are to provide improved channel maintenance efficiency. Each of the basins are several thousand feet long and have depths ranging from four (4) feet to ten (10) feet lower than the existing navigation channel bottom. The basins decrease frequency of dredging to provide a more cost effective and reliable channel. In addition to sediment basins, an advanced widening feature is authorized for the bar channel.

2.0 Existing Environmental Documentation

- Environmental Impact Statement, Mobile Harbor Channel Improvements, Mobile County, Alabama, October 1980.
- Supplemental Environmental Impact Statement, Mobile Harbor Channel Improvements, Offshore Dredged Material Disposal, November 1985.
- Environmental Impact Statement, United States Navy Gulf Coast Strategic Homeporting, Appendix V, August 1986.
- Environmental Impact Statement, Choctaw Point Terminal Project, Mobile, Alabama, August 2004.
- Environmental Assessment, Mobile Harbor Turning Basin, Mobile County, Alabama, March 2009.

3.0 Proposed Action

3.1 The proposed action, as described in Public Notice FP12-MH02-05 dated May 18, 2012 (Appendix 3A), will excavate approximately 100,000 cubic yards (cy) of sediment to expand the northeast corner of the authorized turning basin in the Mobile River located between Pinto Island to the north and Little Sand Island to the south (Figure 3). As part of the original design and construction, it was necessary to “pinch in” the northeast corner of the turning basin in order to avoid two piers on the southern end of Pinto Island. Since completion of the turning basin construction, the two piers have been removed by the Alabama State Port Authority (ASPA) as part of the new ThyssenKrupp loading facility. Since the removal of the piers, the ASPA has received

numerous complaints from the harbor pilots that navigation in this area of the turning basin is difficult because of the sharp corner. USACE is therefore proposing to dredge the northeast corner of the turning basin to provide a safer and more efficient turning area for vessels calling upon the Mobile Harbor facilities. The excavation will be performed using either or a combination of a hydraulic pipeline dredge, bucket dredge, or hopper dredge. The location and configuration of the proposed turning basin expansion modification is illustrated in Figures 3 & 4.

3.2 The dredged material removed during construction of the turning basin expansion will be placed at two previously authorized upland disposal areas known as South Blakeley and/or North Pinto as identified in Figure 2. Approximately 100,000 cy of sandy material will be stockpiled at these sites. USACE, Mobile District received concurrence from the Alabama Department of Environmental Management (ADEM) for the use of the sites associated with the Federal navigation project on April, 12, 20012. ADEM tracking code is 2012-167-COEP for this permit.

4.0 Need for the Proposed Action

4.1 The principal navigation problem is the sharp corner within the turning basin. Currently, vessel operators using the turning basin have difficulty maneuvering their vessels in the vicinity of the sharp corner and have submitted numerous complaints to ASPA. Once the sharp corner is removed, the turning basin will be larger and much safer for the vessel operations.

5.0 Alternatives to the Proposed Action

5.1 Evaluation National Environmental Policy Act (NEPA) defines a “no action” as the continuation of existing conditions in the affected environment without the implementation, or in the absence of the proposed action. Inclusion of the “no action” alternative is prescribed by the Council on Environmental Quality (CEQ) regulations as the benchmark against which Federal actions are to be evaluated.

The implementation of the “no action” alternative would result in not removing the sharp corner in the turning basin. Vessel operators would continue to have a difficult time maneuvering around the corner within the turning basin and continue registering complaints to the port authority.

The selected alternative is to remove the sharp corner within the turning basin so that vessels will have an easier and safer time maneuvering their vessels within the basin.

6.0 Scope

6.1 This Environmental Assessment (EA) was prepared in accordance with Engineer Regulation (ER) 200-2-2, *Procedures for Implementing the National Environmental Policy Act (NEPA)* and the CEQ’s *Regulations for Implementing the*

Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations (CFR) Pts. 1500-1508). The objective of the EA is to determine the magnitude of the environmental impacts of the proposed action. If such impacts are relatively minor, a Finding of No Significant Impact (FONSI) will be issued and the Mobile District, U.S. Army Corps of Engineers (USACE) may proceed with the action. If the environmental impacts are significant according to CEQ's criteria (40 CFR Pt. 1508.27), an Environmental Impact Statement (EIS) or a supplement to the existing Final EIS would be prepared before a decision is reached to implement the proposed action.

USACE will request concurrence from the Alabama Department of Environmental Management (ADEM) for the modification of the existing Mobile Harbor Navigation permit issued on April 10, 2012. A Coastal Zone Consistency (CZC) determination will also be obtained from the ADEM prior to construction. The certification will be part of the Mobile Harbor Federal Navigation Project.

7.0 Existing Conditions

The proposed project is located in the vicinity of the city of Mobile, Alabama, in the southwestern portion of the state near the mouth of the Mobile River at the head of Mobile Bay as illustrated in Figure 2. It is approximately 1.5 miles south of downtown Mobile along the west side of the Mobile Harbor Ship Channel. The site is generally bounded on the west by I-10 and mainline railroad corridors through the city of Mobile and on the east by the Mobile River.

7.1 Climatic and Physical Conditions

7.1.1 Climate. Coastal areas of the Gulf of Mexico (Gulf) have a humid, warm-temperature to sub-tropical climate. Occasional subfreezing temperatures occur in the area. The water temperature of the Gulf influences winter air temperatures in the Mobile area. Air temperatures usually reach 90°F or higher about 70 days per year with occasional temperatures in excess of 100°F (Navy 1986). The climatic effect of the Gulf is demonstrated in the relatively mild average annual air temperature of 68°F with January being the coldest month and July the warmest month.

Tropical storms occur in the Gulf in summer and fall with Hurricane season extending from June 1 to November 30. The season averages ten (10) named storms, six (6) of which become hurricanes (Atlantic Tropical Weather Center 2002). These storms are most likely to occur in the Mobile Bay area from late August to early October (Navy 2002).

Rain. The Mobile area receives an average annual rainfall of 65 inches, among the highest for metropolitan areas in the continental U.S. This rainfall can be accentuated by hurricanes, tropical storms, and El Niño events. The driest period of the year is typically from August through November (TAI 1998). Rainfall is somewhat evenly distributed throughout the year with the exception of a slight maximum at the height of the summer thunderstorm season and a slight minimum during the late fall.

Average monthly maximum rainfall occurs in July with 7.7 inches and average minimum monthly rainfall in October, with 2.6 inches (Navy 1986).

Wind. Wind is one of the basic forces governing circulation of estuarine and continental shelf waters, and speed and direction are the most important aspects of its influence. These forces interact with atmospheric pressure to produce circulation patterns, wind-stress, tide and current modifications, and coastal erosions and deposition processes. These processes are strongly influenced during the spring and summer by the Bermuda High while a series of high and low pressure systems affect the fall and winter weather patterns. There are no consistent seasonal wind directions, but net wind movement is northward from March through August and southward from September through February. When calculated as an annual average, winds blow from the south or southeast 19 percent of the time and from the north or northeast 18 percent of the time. This pattern is well-developed, and these forces generate moderately strong southerly daytime winds, particularly during the summer months (Navy 1986). The highest wind speed ever measured in Mobile was 145 mph during Hurricane Frederic in 1979 (Navy 1986).

7.1.2 Currents. Circulation patterns within Mobile Bay are controlled by astronomical tides, winds, and freshwater inflows. The tidal prism of the Bay, based on the weighted mean tidal range of 1.4 feet and a surface area of 236,000 acres, is about 330,000 acre-feet. In the past, during periods of relatively low freshwater inflow, i.e., when inflow is about 12,200 cubic feet per second, the "flushing time" of the Bay is estimated at between 45 and 54 days (Navy 1986).

The tidal circulation of Mobile Bay was investigated by Austin (1954) during a period of low river discharge. This study indicated that the incoming current from the Gulf enters through the main pass. A portion of this water flows up the west side of the bay and part enters the Mississippi Sound through Pas aux Herons. Within about four hours, the flow through Pas aux Herons reverses and water enters Mobile Bay from the Sound. Another part of the flooding water mass flows to the east into Bon Secour Bay before turning west to rejoin the generally northward trending flood tide entering the central part of the bay.

In the northern, upper portion of the Bay, the tidal inflow from the south is forced to the east of the bay by the inflow from the Mobile River delta. The freshwater inflow generally continues on the surface in a southerly direction along the western side of the Bay. This flow pattern sets up a generally counter-clockwise circulation within the upper Bay (Navy 1986).

7.1.3 Salinity. Salinity distribution of Mobile Bay is dependent upon river flows and tides. Both surface and bottom salinity appear to be lowest in March and April and highest during the four-month period from September through December. Salinity is always higher in the bottom water, although the Bay's average depth is only 9.7 feet (Navy 1986). The relationships between river discharge and salinity profile along the ship channel were reported by McPhearson (1970) (Navy 1986). High river discharges can reduce surface salinities from 20 parts per thousand (ppt) to nearly 0 ppt even in the

southernmost portion of the Bay. High stream flow results in a high hydrostatic head that produces higher tides and currents at the mouth of the Bay. Under extremely high flows, an outward-moving surface current can continue even during flood tide. During low stream flows, saline water can intrude as much as 21 miles upstream in the Mobile River (Navy 1986).

During low river discharges, riverine and transitional waters in the upper and middle Bay form a surface lens over the more saline bottom waters. During periods of moderate to high river discharge riverine and transitional waters tend to dominate the entire surface field in the lower portion of the Bay (Navy 1986). High-salinity water from the Gulf can move as overflow from the Main Ship Channel, as a broad bottom intrusion, or as a combination of the two. The broad bottom intrusion of marine waters tends to favor the east side of the Bay, whereas riverine and transitional waters favor the bottom of the west side of the Bay (Navy 1986). Observed salinity ranges in the vicinity of Pinto Island are from 0.03 ppt during periods of high rainfall to a high of 13.0 ppt during the typical drier periods (Navy 1986).

7.1.4 Tides. In Mobile Bay and adjacent Gulf waters, the tidal variation is diurnal with an average period of 24.8 hours. The tidal wave progresses from south to north. Tidal movement into Mobile Bay is a continuation of the tidal progression within the Gulf. The Bay has a diurnal tidal cycle, typically with one high and one low tide over the average period. Two high or two low tides occur during the biweekly neap tides. The mean tidal range in Mobile Bay varies from 1.2 feet at the entrance to 1.5 feet at the head end of the Bay. Within the tidal inlets and bayous along the Alabama coast, the mean tidal range varies from about 0.6 to 1.8 feet. Mean Low Water (MLW) during the winter months and varies from 0.5 to 1.0 foot below the summer month range. The reported range of most tides within the Bay is between 1.0 and 2.5 feet (Navy 1986).

Winds can induce large variation in the range of the tidal flows. Strong northerly winds can force water out of the Bay, resulting in current velocities of several knots at the main pass. Water levels as much as 1.9 feet below MLW have been recorded under such conditions. The steadier and more prevailing southeast-to-southwest winds induce an opposite condition whereby winds pile water up in the upper portion of the Bay. An indication of the frequency of abnormal wind-driven waves and water setup resulting from these southerly winds has been derived from the frequency with which the eastbound lane of Battleship Parkway had been closed. The eastbound lane, at an elevation of 2.5 feet MLW, is more susceptible to flooding than the westbound lane.

7.1.5 Sediments. The sediment of Mobile Bay consists of sand to clays with various mixtures of sand, silt, and clay covering most of the bay bottom. The Mobile Bay sediments are approximately 50 percent sand and 50 percent clay as described by the Navy (1986). The northern portion of the bay is comprised of deltaic sands and silty sands and silts and clayey silts carried in by the Mobile River. Sediments of the lower bay are primarily estuarine silty clay and clay. The western shoreline exhibits sands which grade to clayey sand, sandy clay and clays towards the deeper parts of the bay. Oyster reefs and shell occur in isolated locations in the southern part of Mobile and Bon Secour Bays (COE 1985).

The upper portion of Mobile Harbor is predominantly silt and clay with higher concentrations of sand in mouth of the Mobile River. The northernmost part of the harbor and Mobile River mouth which reflects the conditions within the turning basin area is sandier due to the larger grain sizes initially deposited into the estuary by the mouth of the river while the finer silts and clays were deposited in the deeper portions of the harbor area.

Findings of recent geotechnical investigations for the proposed project indicate that sediments underlying the proposed Mobile Harbor Turning Basin are generally comprised of fine dark-brown, gray and tan silty sands and clay/silt composites from the bottom to approximately elevation -40 feet mean low lower water (MLLW). Within this general profile, however, some plastic clays and silts do exist. This is particularly true where the existing ship channel will be widened 100-ft as an approach to the main basin. Below elevation of -40 feet MLLW to the proposed maximum dredging elevation of -51 feet MLLW, are quantities of poorly graded sands having 4 to 5% fines and some silty sands with more than 12% fines.

7.2 Environmental Conditions

7.2.1 Estuarine Environment. The turning basin site is within the mouth of the Mobile River and characterized as shallow water habitat, located between emergent marshes. The project area is totally submerged and ranges in depth from approximately 2.3 feet at the northeast corner of the project area to about 24.4 feet at the southwest corner. Existing biological and ecological documentation of the shallow aquatic habitat is not considered to be extensive.

In 2002 a submerged aquatic vegetation (SAV) survey was conducted of the Garrows Bend (COE 2004) area to determine if SAV exists in the project area. Based on the survey, the occurrence of SAV within Garrows Bend is extremely rare. Individual plants were found anchored in the exposed water bottoms, but there was no congregation of plants that could constitute a grassbed. Earlier SAV inventories of Mobile Bay (Stout et al. 1982; COE 1985a) identified as much as 20 species SAV occurring in the shallow shoreline areas of Mobile Bay. Data show that through the 1960s and 1970s, grassbeds in the bay have steadily declined. Historically, a combination of changes has occurred to produce a decline in submerged grassbeds in Mobile Bay. Dredging activities have physically removed some suitable habitat by deepening portions of the bay. Increased boat traffic, hydraulic dredging, and shoreline construction during the last 20 years have led to increases in turbidity levels. More efficient agricultural methods have been developed to compensate for a decline in the availability of agricultural land. These changes have increased the use of concentrated fertilizers and herbicides. The resulting excessive nutrient loading is considered to be a negative impact upon submerged grassbeds because it often causes dramatic increases in the productivity of planktonic algal populations.

The environmental studies conducted by the Navy (1986) for the Gulf Coastal Strategic Homeporting Project is in the same location as the proposed turning basin. A reconnaissance was conducted to locate grassbeds within the project footprint and surrounding areas. The investigation revealed at that time that no grassbeds were observed off the southwestern tip of Pinto Island.

7.2.2 Benthic Environment. Studies of the benthic characteristics of Mobile Bay have been conducted and somewhat extensive in comparison to other similar estuarine areas. Two historic studies were performed around Garrows Bend to characterize the benthic habitat (Vittor 1978; 1981). This study area is in close proximity to the turning basin and considered to exhibit the same benthic characteristics. These studies indicated that most representative of the shallow water habitat in the project area showed a low diversity index for benthic macroinvertebrate species. Species equitability (distribution of different species) was low for these same samples with the dominant species being polychaete worms and amphipods. The amphipods are thought to be a primary food source for several forage and recreational fish (Vittor 1981). At that time the report indicated that past use and activities of the area has greatly diminished the quality of the benthic and aquatic habitats.

Vittor and Associates, Inc. (1982) studied the benthic macrofauna of bay waters off the southeastern edge of Pinto Island. This study included the location proposed for the turning basin. The study showed that densities ranged from 573 to 2,943 individuals per square meter, reaching the highest levels at the deeper sampling locations. The total number of taxa collected at a given station varied from 9 to 19. Numerical dominants in decreasing order of abundance included annelids (64.8 percent), molluscs (25.6 percent), arthropods (5.7 percent), and other phyla (3.9 percent). An earlier study (ACAB 1981) was conducted near Pinto Island indicated no consistent trends in seasonal abundance. However, species richness (total number of taxa) was lowest in late spring and summer, whereas the highest number of taxa was collected during the winter months. *Mediomastus ambiseta*, *Mulinia lateralis*, and *Mulinia ponchatrainensis* dominated the benthic assemblages at that time.

Study results at D'Olive Bay benthos was dominated by the polychaete (*Laeonereis culveri*) and the marsh clam (*Rangia cuneata*) was abundant at some stations. Benthic community composition and abundance were influenced by salinity and dissolved oxygen fluctuations. Similar conditions apparently exist for most of upper Mobile Bay (COE 1985a) with Gastropods dominating the upper bay including *Maritida reclinata*, *Probythinella protera*, and *Taxadine sphinctostoma*. Predominant annelids include *L. culveri*, *Mediomastna californiensis*, *Neanthes succinea*, *Parendelia americana*, *Streblospio benedicti*, *M. californiensis*, *N. succinea*, and *S. benedicti* with *R. cuneata*, *P. protera*, *T. sphinctostoma*, and *L. culveri* as the most suitable indicators of specific habitat types in Mobile Bay (Vittor 1979).

7.2.3 Fish and Shellfish. A number of studies evaluating the fish and invertebrates of Alabama estuaries were conducted in the past (Swingle 1971 and Swingle and Bland 1974). The studies looked at species abundance and diversity in coastal waters. A later study by Shipp (1979) provides a summary of available data on

Mobile Bay forage fish species. The study indicates that species composition and abundance have been well-documented through the years but that there is a need for research related to environmental changes in Mobile Bay. Shipp's study categorized estuarine forage fish as nearshore and marsh, demersal, or pelagic estuarine species. The nearshore and marsh species are comprised largely of fish in the families *Poeciliidae*, *Cyprinodontidae*, and *Atherinidae* which serve as the prey for the Southern flounder (*Paralichthys lethostigma*) and seatrout (*Cynoscion spp.*) both important sport and commercial species.

Demersal fish of the estuary are dependent upon benthic organisms as their food source base. Some of these fish are migratory with the three most common species in the study area in order of abundance are Atlantic croaker (*Micropogonias undulatus*), spot (*Leiostomus xanthurus*), and sand seatrout (*Cynoscion arenarius*). The most important forage fish within Mobile Bay estuary are the pelagic species; Bay anchovy (*Anchoa mitchilli*), striped anchovy (*Anchoa hepsetus*), and Gulf menhaden (*Brevoortia patronus*) being the most abundant. The highest ranking pelagic forage species in Mobile Bay watercourses are bay anchovy, Gulf menhaden, and threadfin shad (*Dorosoma petenense*) (Shipp 1979). Other investigations conducted by the ACAB (1981) focused on regional and seasonal concentrations of fish eggs and larvae of Mobile Bay. It was found that the perimeter of the bay is utilized as nursery habitat by larvae and juveniles of commercially important fish species.

The most commercially important shellfish found in Mobile Bay include the brown and white shrimp, blue crab, and American oyster. The shrimp species spawn in the Gulf and spend a major portion of their life cycle in estuarine system and are an important component of the food web, being preyed upon by fish and birds. The brown shrimp (*Penaeus aztecus*) has a peak spawning period from December through January. The post-larvae move into the estuarine waters between February and May seeking out soft bottom, shallow areas. The juvenile shrimp move eventually from the bay to the Gulf of Mexico. The white shrimp (*Penaeus setiferus*) spawns in the spring in Gulf waters. The demersal eggs hatch March to October, and post-larval movement into the Mobile Bay estuary peaks from June to September. After living as benthic feeders in very shallow waters, the shrimp passed into deeper estuarine waters and eventually emigrate to the deeper Gulf waters during ebbing tides during June through November.

Another important and very abundant crustacean which utilizes Mobile Bay for portions of its life cycle is the blue crab (*Callinectes sapidus*). Blue crab mate and ovulate in spring and summer in the bay. The females migrate offshore where the eggs hatch and early larval stages develop. Later larval stages enter the estuarine habitat. Juvenile crabs generally congregate in channels and brackish marshes along the bay throughout the year. They prefer soft mud sediments and low salinities (5 to 15 ppt).

Oysters are quite abundant within the middle and lower reaches the Mobile Bay estuary with the majority located in the southern half of the bay (Alabama Marine Resources Laboratory 1971; Smith 1984). In contrast, the presence of oysters is not common in the mouth of the Mobile River and northern-most reaches of the Bay.

Spawning of oysters involves external fertilization in which eggs and sperm mix in the water column. Spawning generally occurs late May through early June and again in September. Eggs are demersal and develop into free-swimming larvae, eventually settling into sedentary existence, congregating in the presence of mature oysters to form oyster beds or reefs.

7.2.4 Protected Species. The project area is host to wildlife on the State and Federal protected species list. Of particular concern in the proposed project vicinity are sea turtles, Florida manatee, and the Gulf sturgeon. Sea turtles are known to be present within the Mobile Bay and actively nest on adjacent Gulf of Mexico beaches. However, they are not known to actively use the upper reaches of the Bay or Mobile River.

Alabama red-bellied turtles primarily inhabit backwater areas of the bays that are 3.3 to 6.6 feet in depth. These turtles have a limited range of habitat, which is located between Interstate 10 and U.S. Highway 90 (0.8 miles) and just north of Highway 90. These areas provide broad, vegetated expanses of shallows to a great number of Alabama red-bellied turtles. These dense beds of aquatic vegetation provide turtles with substrate for basking, predator avoidance, and food.

The Florida manatee is a subspecies of the West Indian Manatee. Between October and April, Florida manatees concentrate 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. Manatees inhabit both salt and fresh water of sufficient depth (about 5 feet to usually less than 18 feet). Florida manatees may be encountered in canals, rivers, estuarine habitats, saltwater bays, and on occasion have been observed as much as 3.7 miles off the Florida Gulf coast. These manatees will consume any aquatic vegetation available to them including sometimes grazing on the shoreline vegetation. Although rare, manatee sightings have been documented in Mobile Bay and/or its tributaries for the past several years, during the period May through December.

The Gulf sturgeon is a subspecies of the Atlantic sturgeon. Subadult and adult Gulf Sturgeon spend six to nine months each year in rivers and three to six of the coolest months (September-March) in estuaries and/or the adjacent Gulf of Mexico. It appears that Gulf Sturgeon less than two years old reside in lower reaches of riverine habitats and estuaries throughout the year. In general, subadult and adult Gulf Sturgeon begin to migrate into rivers from the Gulf of Mexico as river temperatures increase to about 16 to 23° C (60.8 to 75.0° F). They continue to immigrate through early May, but most arrive when temperatures reach 21° C. Most Gulf Sturgeon return to estuaries or the Gulf of Mexico by mid-November to early December. Adults migrate up the river and other streams during the period of March through September to spawn. Juvenile Gulf Sturgeon use the bay primarily from September through June, although they may be found in the bay or adjacent estuaries during any month of the year. The proposed turning basin area may be used by Gulf sturgeon for foraging during their migration periods. However, the turning basin is not within designated Gulf Sturgeon critical habitat.

7.2.5 Essential Fish Habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity and include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include aquatic areas historically used by fish where appropriate. In estuarine waters such as Mobile Bay, these EFH include areas such as estuarine emergent wetlands, seagrass beds, algae flats, mud, sand, and shell substrates, and the estuarine water column. The EFH within the Mobile Harbor Turning Basin area includes emergent wetlands, mud substrate, and estuarine water column for species such as red drum, brown shrimp, pink shrimp, and white shrimp. The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker, and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden.

7.2.6 Cultural Resources. An extensive background search of both published and grey literature focused on the Mobile Bay area, the Archaeological Site Files for Mobile County, historical maps, aerial photography, and various repositories including the Museum of Mobile, the Mobile Public Library Archives and History, the Oakleigh Historic Museum and Archives, the Alabama State Site Files at Moundville, and records of the Mobile District, U.S. Army Corps of Engineers revealed a great deal of activity in the Mobile Bay and harbor, particularly in the last two hundred years. More than fifty vessels have been reported lost in the vicinity of Mobile Harbor, Mobile River, since the eighteenth century. Some have been reported sunk at the dock, while the greater number of vessels lost has been a result of hurricanes in 1906 and 1916, and casualty of the Civil War. However, no shipwreck previously has been recorded in the immediate project area.

Two archaeological sites have been recorded within one mile of the project area. Battery Gladden, located on the southeastern tip of Pinto Island was originally called “Pinto Battery.” The cannon battery was established there in 1861 during the Civil War. Additionally, several Confederate Obstructions were put in place between 1861 and 1865 by the Confederate Corps of Engineers. This system consisted of a complex assortment of pilings, sunken vessels, cannon batteries, and mine (torpedo) fields to obstruct the entrance channels to the Mobile River. Included in the Confederate Obstructions, and reported as comprising this state historic site, were three vessels: one was an unnamed river flat filled with brick, an early stern-wheel paddleboat named *Cremona*, and a small river steamboat called *Carondelet*. Most of the obstructions were salvaged after the war or removed to prevent an impediment to boat traffic. Neither of these sites lie within the proposed project area. All efforts will be made to assure that all equipment, staging areas, and construction activities avoid these historic sites.

7.3 Disposal Areas

The disposal sites used to accept the dredged material removed during construction of the turning basin expansion will occur at two previously authorized disposal areas as addressed below.

7.3.1 North Pinto Disposal Area. This disposal area is located on Pinto Island which is adjacent to and due south of Interstate 10. It is an upland disposal site that is 65.4 acres in size and located approximately 1.5 miles north of the turning basin. The majority of the 100,000 cys of dredged material will be placed in this disposal area. Future plans are to use this material to build up the exterior dikes and increase the dredge material storage capacity of the site.

7.3.2 South Blakeley Disposal Area. This disposal area is located on Blakeley Island approximately one mile due north of Interstate 10. It is an upland disposal site that is 237.6 acres in size and located approximately 2.7 miles north of the turning basin. This site will be used only if the Blakeley site cannot contain all the dredged material from the turning basin. Future plans are to use this material to build up the exterior dikes and increase the dredge material storage capacity of the site.

8.0 Environmental Impacts

8.1 General. Activities associated with construction of the turning basin expansion would result in a number of unavoidable but minor impacts to the immediate project area. The adverse impacts are minimal and temporary in nature and include loss of benthos, reduced esthetics, reduced air quality, increased turbidity, increased noise, and aquatic organism disturbance.

8.2 Impacts.

8.2.1 Habitat. Adverse impacts to benthic organisms would be encountered as a result of the dredging operations within the footprint of the turning basin. While most of the immobile organisms within the proposed turning basin area are quite adaptable to seasonal changes in temperature, salinity, dissolved oxygen, water clarity and water level fluctuations due to the tidal cycle, the direct removal and disposal of the dredged material would destroy the sediment dwelling organisms. Also, some mortality of motile organisms may result from entrainment by the dredge equipment. Natural recruitment of benthic organisms, encrusting organisms and fishes into the turning basin area would occur rapidly, usually within one year. However, it is expected that benthic organisms will be recruited via currents and sediment carried into the turning basin area. Recovery of the benthos will rapidly approach the same levels that exists in the adjacent navigation channel, which experiences about the same sedimentation rate and maintenance requirements as will the proposed turning basin and the overall impact would not be significant. Previous environmental studies cited in Section 2.0 of this document have indicated that submerged aquatic vegetation (SAV) is rare in this area. Therefore, it has been determined that there would be no effect on existing SAV.

8.2.2 Esthetics. Esthetics would be reduced in the project area during the dredging and disposal operations, due to the physical presence of the dredge equipment as well as the presence of other land-based equipment. However, these impacts would be temporary and insignificant.

8.2.3 Water Quality. Some silty material will be associated with the dredging and placement operations and its suspension may result in a slight localized increase in turbidity at the dredging site. The finer materials being excavated will be conducted using a hopper, bucket and/or hydraulic pipeline dredge. Disposal of the materials will be within existing upland or confined sites. The State of Alabama's water quality standards would be adhered to and water clarity would return to ambient conditions shortly after sediment placement at the disposal sites. As required by the Clean Water Act, a Section 404 (b)(1) evaluation report for the removal of sediment from the proposed turning basin area and placement of material in the identified disposal sites has been prepared and is included as Appendix 3B.

8.2.4 Air Quality. Air quality would be temporarily and insignificantly affected by the proposed action. Emissions are expected to occur and would result from the operation of the dredge, land-based equipment, and any other support equipment which may be on or adjacent to the job site. The project area is currently in attainment with National Ambient Air Quality Standards parameters. 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.

8.2.5 Noise. Noise from the dredge and other associated support equipment would be evident in the project area. Noise levels would be typical of what is already commonly accepted and occurring at the USACE's dredging operation sites. While this noise would be evident to those workers on the job and any users in close proximity of the project, it would be short-term and insignificant. Normal noise levels would be achieved at the end of each workday and after completion of the job.

8.3 Federally-protected Species.

8.3.1 EFH. The turning basin area serves as habitat for prey species, such as Gulf menhaden, shad, croaker, and spot that are consumed by other federally managed species, such as Spanish and king mackerel, various snappers and groupers, bluefish, dolphin and cobia found in Mobile Bay and/or the Gulf of Mexico. Other recreational and commercial species that have been documented in the area are spotted seatrout, southern flounder, and blue crab. The proposed action will not fill or destroy habitat considered necessary to sustain these species. Coordination with the National Marine Fisheries Service (NMFS) in Panama City, Florida in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) will be initiated through Public Notice FP12-MH02-05 for the operations involving expansion of the turning basin. The USACE, Mobile District will initiate correspondence with NMFS, Habitat Conservation Division (HCD) to obtain their concurrence with our determination. .

8.3.2 Threatened and Endangered Species. In accordance with the Endangered Species Act (ESA), coordination of such species for this area was previously conducted in 1980 and documented in the authorized project EIS for Mobile Harbor, Alabama Channel Improvements. Since that time, the Gulf sturgeon has been added to the list of federally protected species. It is believed that Sturgeon may use the proposed area for foraging during migration periods. It has been determined, however, that the action will have no adverse effect on Gulf sturgeon as the use of hydraulic pipeline and bucket dredging equipment are not known to take or harm this species. Should a hopper dredge be utilized the USACE, Mobile District will adhere to the reasonable and prudent measure provided in the 2003 Regional Biological Opinion for Hopper dredges in the Gulf of Mexico. The proposed action area does not fall within designated Gulf sturgeon critical habitat.

Other aquatic species such as the Florida manatee and sea turtles would not normally use the project area and would not likely exhibit incidental use of the area during project implementation. However, if a manatee happens to be in the area, the Manatee Construction Conservation Measures will be observed if deemed appropriate at the time of project construction to minimize potential contact with manatees,.

Subsequent coordination with the U.S. Fish and Wildlife Service (FWS), Daphne, Alabama was initiated through Public Notice FP06-MH13-10 for the proposed turning basin construction. By letter dated February 8, 2007 FWS provided recommended conservation measures in response to the public notice (see Appendix 3E). The response indicated no adverse impacts to threatened or endangered under their purview if the recommended measures are followed. However, aquatic species, such as the Florida manatee, Gulf sturgeon, and Alabama red-bellied turtle, may be affected by dredging impacts on water quality, food availability or by direct physical contact during construction. Therefore, it has been determined there may be an affect but not likely to adversely affect these species as a result of the proposed action. Based on this determination, coordination will occur with the FWS via the new public notice FP12-MH02-05 and official correspondence. The USACE, Mobile District anticipates concurrence with our determination.

8.4 Environmental Justice. On February 11, 1994, the President issued Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. The order required that Federal agencies conduct programs, policies, and activities that substantially affect human health or the environment so that there is no disproportionately high and adverse human health or environmental effects on minority and low-income populations. This project is not designed to create a benefit for any group or individual, but rather benefits on a nationwide basis. There are no indications that the proposed sand bypassing operation would be contrary to the goals of E.O. 12898, or would create disproportionate, adverse human health or environmental impacts on minority or low income populations of the surrounding community.

8.5 Cultural Resources. A marine remote sensing survey utilizing both magnetometer and side-scan sonar data has been conducted over the entire proposed project area. No

targets with the potential to be cultural resources were identified during these surveys. As a result of the negative findings, this project will pose no effect to cultural resources within the project area. These findings and recommendations have been coordinated with the Alabama State Historic Preservation Officer (SHPO) who has concurred with the investigation as indicated by in their letter dated December 19, 2006. Finally, by letter dated March 22, 2007 the SHPO concurred with the overall project stating that they have determined that the proposed activities will not have an effect on any known cultural resources listed or eligible for the National Register of Historic Places, provided that all activities occur within the previously surveyed areas. Both letters are included in Appendix 3C. Findings and recommendations for this portion of the proposed expansion will be coordinated with the Alabama SHPO.

8.6 Protection of Children. On April 21, 1997, the President issued Executive Order (EO) 13045, *Protection of Children from Environmental Health and Safety Risks*. To the extent permitted by law and appropriate, and consistent with the federal agencies' mission, the Corps of Engineers shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. The proposed action for the Mobile Harbor Turning Basin project poses no environmental health risks or safety risks disproportionately to children in the vicinity of the project.

8.7 Cumulative Impacts. Studies conducted associated with the 1980 EIS indicated that the modifications to the Mobile Harbor project may cause some change in the overall currents, salinities, and sedimentation in the project vicinity. These changes are the apparent result of the deepening of the channel and turning basin area. Current models indicate an increase in sedimentation rates within the turning basin which is also a result the deepening. It is believed that these effects will cause an increase in maintenance operations which may result in temporary impacts to air quality, water turbidity, and esthetics during maintenance activities.

The construction of the turning basin has further optimized the commercial shipping traffic activity in Mobile Harbor. This has the potential to result in increased automobile, trucking, and rail activities in the immediate area. These secondary impacts may increase levels of noise, water, and air pollution related to increased economic development associated with the improvement to Mobile Harbor. This may further lead to a slight increase in employment, population, housing, industrial and commercial development, and port expansion. However, these basic patterns and general magnitude of growth would be expected to occur with or without the proposed project. The small expansion of the turning basin should not have any additional cumulative impacts than what will normally occur over time.

9.0 Conclusion. Expansion of the turning basin is not likely to take or harm any federally listed threatened or endangered species. The hopper, hydraulic pipeline and

bucket dredging equipment that will be used for construction of the turning basin expansion is not known to take or harm any federally listed threatened or endangered species. Final consultation with FWS and NMFS HCD pertaining to the Florida manatee, Gulf sturgeon, and Alabama red-bellied turtle and EFH, respectively, will be completed prior to scheduling construction. Based on the above discussion of the minor impacts, which would result from the implementation of the proposed action and due to the lack of long-term adverse impacts, it is believed that no significant cumulative impacts resulting from the construction of the Mobile Harbor Turning Basin Expansion would occur.

10.0 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

Other Federal, State, and local organizations, affiliated Indian Tribe interests, and U.S. Senators and Representatives of the State of Alabama have been notified of the proposed action through Public Notice FP06-MH13-10 and are being asked to participate in coordinating this proposed work.

11.0 References

- Alabama Coastal Area Board (ACAB) and the Marine Environmental Sciences Consortium 1981. Final Report CAB 81-05, Daphne, Alabama.
- Alabama Marine Resources Laboratory 1971. *A Survey of the Oyster and Oyster Shell Resources of Alabama*.
- Atlantic Tropical Weather Center 2002
- Austin, G.B., Jr. 1954. *On the Circulation of Tidal Flushing of Mobile, Alabama*, Texas Agricultural and Mechanical College, Project 24, 28p.
- Department of the Navy (Navy). 1986. *Draft Environmental Impact Statement, United States Navy Gulf Coast Strategic Homeporting*. Appendix V, Mobile, Alabama.
- McPhearson, B.F. 1970. The Hydrography of Mobile Bay and Mississippi Sound, Alabama, *Marine Scientific Journal*, No. 1, Vol. 2, p83.

- Mobile Bay National Estuary Program (MBNEP). 1998. *Preliminary Characterization of Habitat Loss: Mobile Bay National Estuary Program*, December 1998.
- Shipp R.L. 1979. Summary of Knowledge of Forage Fish Species of Mobile Bay and Vicinity, *Symposium of the Natural Resources of the Mobile Estuary*, pp 167-176, US Army Corps of Engineers, Mobile District, Mobile Alabama.
- Smith, M.F., Jr. 1984. *Ecological Atlas of Coastal Alabama*, US Fish and Wildlife Service, Division of Biological Services, National Coastal Ecosystems Team, Washington, D.C.
- Stout, J.P., M.J. Lelong, H.M. Dowling, and M.T. Powers 1982. *Wetland Habitats of the Alabama Coastal Zone, Part III: An Inventory of Wetland Habitats of Mobile-Tensaw River Delta*, Alabama Coastal Area Board, Daphne, Alabama,
- Swingle, H.A. 1971. Biology of Alabama Estuarine Areas - Cooperative Gulf of Mexico Estuarine Inventory, *Alabama Marine Resources Bulletin*, No. 5, 123p.
- Swingle, H.A. and D.G. Bland 1974. *A Study of the Fishes of the Coastal Watercourses of Alabama*, Alabama Marine Resources Bulletin, No.10, pp 17-102.
- TAI Environmental Sciences, Inc., Thompson Engineering Testing, and University of South Alabama. 1998. *Preliminary Characterization of Water Quality of the Mobile Bay National Estuary Program (MBNEP) Study Area*, Prepared for the Mobile Bay National Estuary Program.
- U.S. Army Corps of Engineers (USACE) 1985. *Mobile Harbor, Alabama Channel Improvements, Offshore Dredged Material Disposal*, Environmental Impact Statement, U.S. Army Corps of Engineers, Mobile District, Mobile, Alabama.
- U.S. Army Corps of Engineers (USACE) 2004. *Final Environmental Impact Statement For Choctaw Point Terminal Project, Mobile, Alabama*, U.S. Army Corps of Engineers, Mobile District, Mobile, Alabama.
- Vittor, B.A. & Associates, Inc. 1978. *Benthic Macroinfauna of Garrows Bend (Mobile Bay, Alabama)*,. Prepared for the Alabama State Docks.
- Vittor, B.A. & Associates, Inc. 1981. *Wetland and Benthic Habitat Characterization of Garrows Bend (Mobile Bay, Alabama)*, June 1981.
- Vittor and Associates, Inc. 1982. *Ecological Characterization of South Eastern Pinto Island*, Alabama Drydock and Shipping Company, Mobile, Alabama.
- Vittor, B.A. 1979. Benthos of the Mobile Bay Estuary, *Symposium on the Natural Resources of the Mobile Bay Estuary, Alabama*, pp 143-150, U.S. Army Corps of Engineers, Mobile District, Mobile, Alabama.

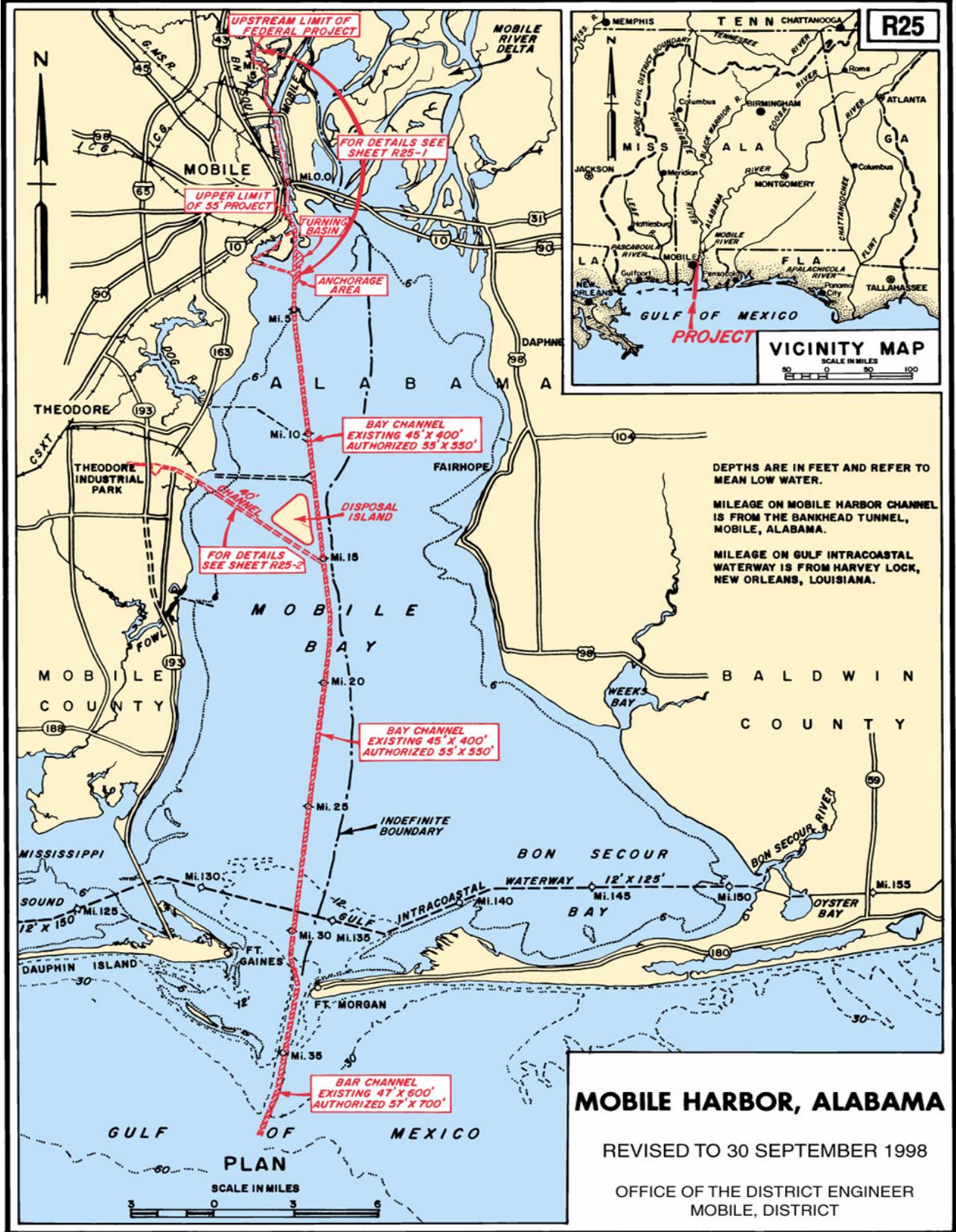


Figure 1. Overall project map illustrating general location and project dimensions.

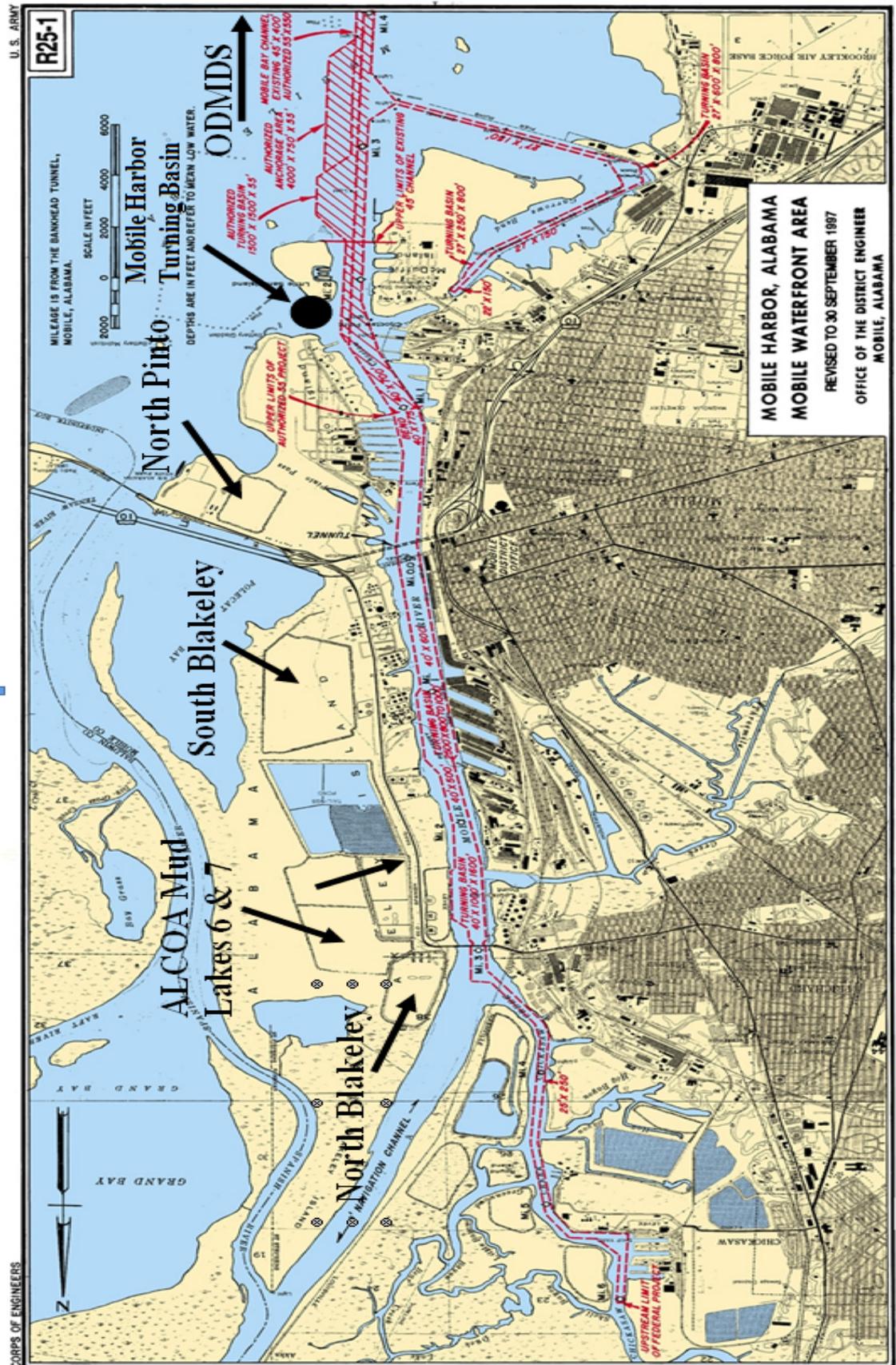


Figure 2. Location of Mobile Harbor Turning Basin and Disposal Areas

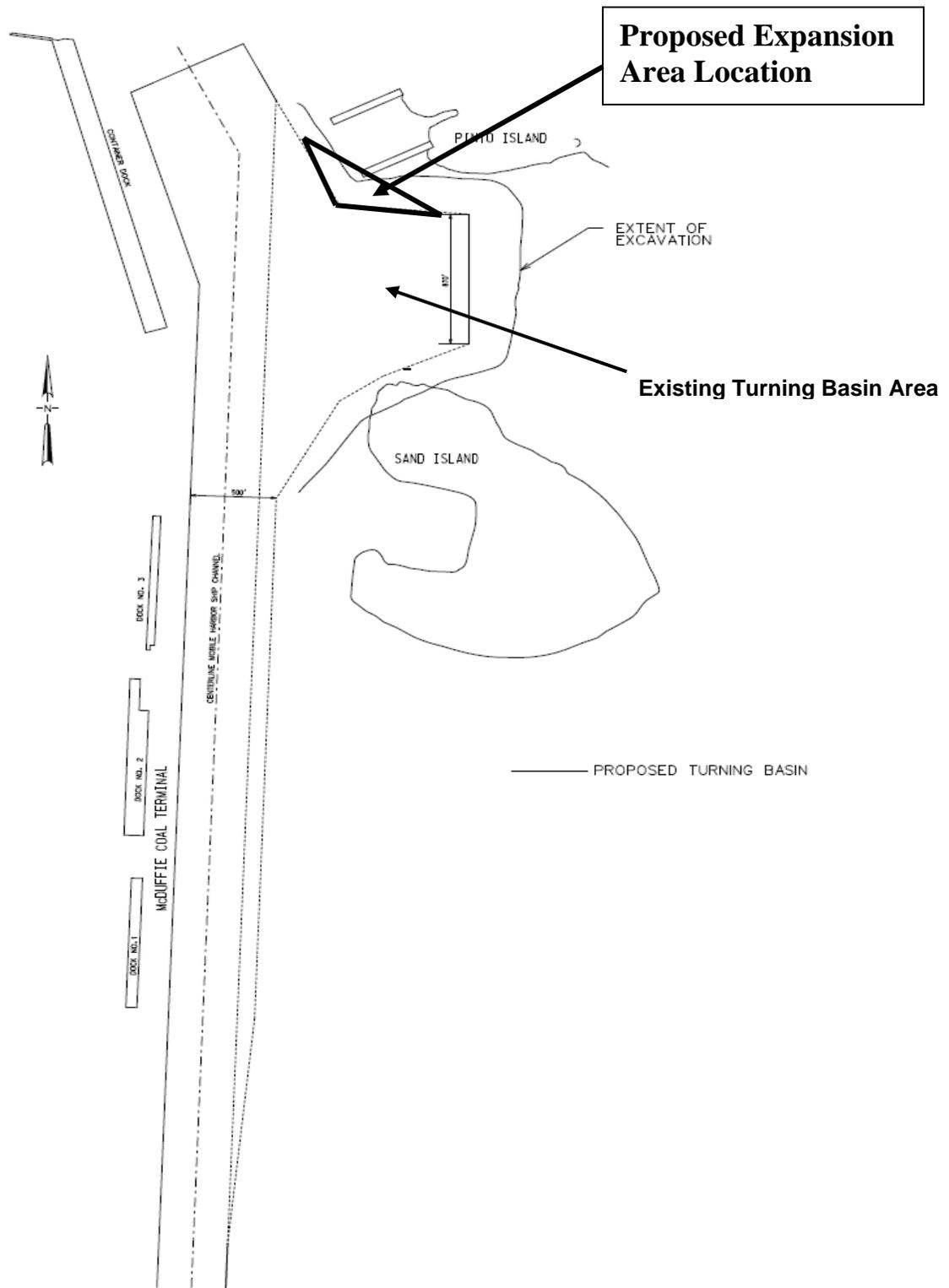


Figure 3. Location of Existing Turning Basin and Proposed Expansion Area

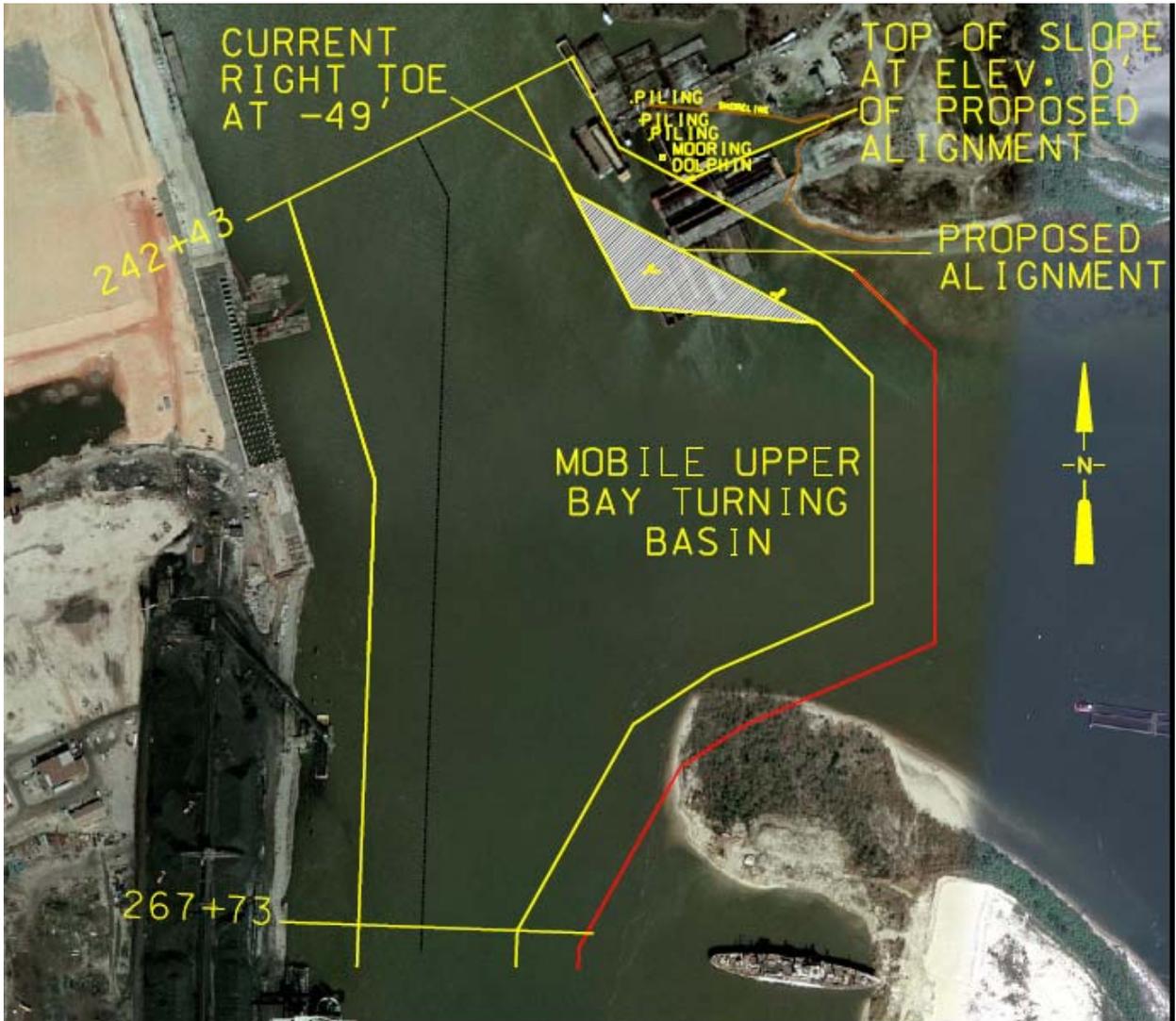


Figure 4. Location of Expansion Area

APPENDIX 3A

Public Notice FP12-MH02-05



DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:
CESAM-PD-EC
PUBLIC NOTICE NO. FP12-MH02-05

18 May 2012

**JOINT PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS,
MOBILE DISTRICT**

AND

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**MOBILE HARBOR TURNING BASIN EXPANSION
AND DREDGED MATERIAL PLACEMENT ACTIVITIES**

MOBILE COUNTY, ALABAMA

A FEDERALLY AUTHORIZED PROJECT

Interested persons are hereby notified that the U.S. Army Corps of Engineers (USACE), Mobile District proposes to expand a portion of the Mobile Harbor Turning Basin in the vicinity of the McDuffie Terminal as part of the Mobile Harbor Federal Navigation Project in Mobile County, Alabama (Figures 1 and 2). A modification to the recently issued Mobile Harbor Navigation Project water quality certification and coastal zone consistency (2012-167-COEP) is requested. Material from the dredging of this project will be placed into existing and previously certified USACE disposal sites.

This public notice is issued in accordance with rules and regulations published in the Federal Register on 26 April 1988. These laws are applied whenever dredged or fill materials may enter waters of the United States, or for the transportation of dredged material for the purpose of placement into ocean waters. The recipient of this notice is requested specifically to review the proposed action as it may impact on water quality, relative to the requirements of Section 404(b)(1) of the Clean Water Act. Review of any other potential impacts is also requested.

WATERWAY AND LOCATION: Mobile Harbor Federal Navigation Project, Mobile County, Alabama

DESCRIPTION OF THE AUTHORIZED MOBILE HARBOR PROJECT: Mobile Harbor, Alabama, is located in the southwestern part of the state, at the junction of the Mobile River with the head of Mobile Bay (Figure 1). The port is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana.

The navigation channel dredging in Mobile Bay and Mobile River began in 1826 with enactment of the River and Harbor Act of 1826. During the period 1826 to 1857, a channel 10 feet deep was dredged through the shoals in Mobile Bay up to the City of Mobile. Subsequently, further modifications to the channel were authorized and the original Federal project was enlarged by the addition of the Arlington, Garrows Bend, and Hollingers Island channels within the bay, and a channel into Chickasaw Creek from the Mobile River. Section 104 of the River and Harbor Act of 1954 authorized a 40-foot depth channel with a 400-foot width in Mobile Bay to the mouth of the Mobile River and a 40-foot depth in the Mobile River to the Cochran Bridge with the width varying from 400 to 775 feet. The Senate Public Works Committee on 16 July 1970 and the House Public Works Committee on 15 December 1970, under the provisions of Section 201 of the 1965 Flood Control Act, authorized a 40-foot by 400-foot channel, branching from the main ship channel and extending through a land cut to the Theodore Industrial Park. The Theodore Ship Channel was reauthorized in the Water Resources Development Act (WRDA) of 1976.

Further improvements to the existing Federal project were initially authorized in the 1985 Energy and Water Resources Appropriation Act (PL 99-88, Ninety-ninth Congress, First Session). The improvements were reauthorized in Section 201 of the WRDA of 1986 (PL 99 – 662, Ninety-ninth Congress, Second Session), which was approved 17 November 1986, and subsequently amended by Section 302 of the WRDA of 1996. The report referenced by this authorization recommended the following improvements to the Federal project: deepening and widening the Gulf entrance channel to 57 feet by 700 feet; deepening and widening the main ship channel to 55 feet by 550 feet in Mobile Bay, except for the upper 3.6 miles which require a width of 650 feet; deepening the Mobile River channel to 55 feet to a point about 1 mile below the Interstate 10 highway tunnels; and, constructing turning and anchorage basins near the upper end of the main ship channel.

The federally-authorized Mobile Harbor navigation project consists of the following features:

- a. A 57 feet deep by 700 feet wide channel from the Gulf of Mexico for approximately eight (8) miles to Mobile Bay;
- b. A 55 feet deep by 550 feet wide channel from the mouth of the Mobile Bay for a distance of approximately 29 miles to near the mouth of Mobile River, including a 2-mile long channel dimension 625 feet wide at mid-bay;
- c. A 55 feet deep by 750 feet wide by 4,000 feet long anchorage area just south of McDuffie Island;
- d. A 55 feet deep by 1,500 feet wide by 1,500 feet long turning basin opposite McDuffie Island;

- e. A 40 feet deep channel with the width varying from 700 feet, near the Mobile River mouth, to 500 feet, near the Cochrane Bridge (U.S. Highway 98), a distance of approximately four (4) miles;
- f. A 40 feet deep by 800 feet long – 1,000 feet by 2,500 feet turning basin opposite the Alabama State docks between river miles 1.0 to 1.5;
- g. A 40 feet deep by 1,000 feet wide by 1,600 feet long turning basin just south of the Cochrane Bridge.

The authorized dimensions of all segments of the Mobile Harbor Project have not been constructed. The maintained dimensions of the bay channel are 45 feet deep by 400 feet wide and the outer bar channel is 47 feet deep by 600 feet wide. Each of these areas is maintained to a depth that is 10 feet less than the authorized depth. Several additional features of the authorized project have not been constructed at this time. The anchorage areas that would be located south of the mouth of the Mobile River have not been constructed, and the bay channel and the bar channel, have not been widened. The new turning basin opposite McDuffie Island, between Pinto Island and Little Sand Island was constructed in 2010.

DESCRIPTION OF THE PROPOSED ACTION: The proposed action will excavate approximately 100,000 cubic yards (cy) of sediment to expand the northeast corner of the approved turning basin in the Mobile River located between Pinto Island to the north and Little Sand Island to the south (Figure 3). As part of the original design and construction, it was necessary to “pinch in” the northeast corner of the turning basin in order to avoid two piers on the southern end of Pinto Island. Since completion of the turning basin construction, the two piers have been removed by the Alabama State Port Authority (ASPA) as part of the new ThyssenKrupp loading facility. Since the removal of the piers, the ASPA has received numerous complaints from the harbor pilots that navigation in this area of the turning basin is difficult because of the sharp corner. USACE is therefore proposing to dredge the northeast corner of the turning basin to provide a safer and more efficient turning area for vessels calling upon the Mobile Harbor facilities. The excavation will be performed using either or a combination of a hydraulic pipeline dredge, bucket dredge, or hopper dredge. The location and configuration of the proposed turning basin expansion modification are as illustrated in Figures 2 and 3.

DISPOSAL AREAS: The dredged material removed during construction of the turning basin expansion will be placed at two previously authorized upland disposal areas known as South Blakeley and/or North Pinto as identified in Figure 1. Approximately 100,000 cy of sandy material will be stockpiled at one of these sites.

WATER QUALITY CERTIFICATION: Pursuant to the requirements of the Clean Water Act, state water quality certification was granted for the operations and maintenance of Mobile Harbor Navigation project, including the turning basin, on 10 April 2012 by Alabama

Department of Environmental Management (ADEM). The ADEM Tracking Code is 2012-167-COEP. Water quality certification was granted for a period of five years. Upon completion of the required comment period for this public notice, a decision relative to modification of the previously granted water quality certification will be made by ADEM.

COASTAL ZONE CONSISTENCY: Pursuant to the Coastal Zone Management Act, the proposed action is consistent with the Alabama Coastal Management Program to the maximum extent practicable. The ADEM issued coastal zone consistency for the operations and maintenance of the Mobile Harbor Navigation project as described above. Upon completion of the required comment period, a decision relative to modification of previously granted coastal zone consistency will be made by ADEM.

USE BY OTHERS: The proposed action is not expected to cause any significant land use changes in the adjacent areas. Use of waters within the auspices of the Mobile Harbor navigation project includes commercial fishing, shrimping and recreational boating. Placement of dredged material in the designated upland disposal sites would be conducted in such a manner as not to impede navigation.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) CONSIDERATIONS:

In accordance with the requirements of the NEPA, impacts associated with navigation improvements for the Mobile Harbor navigation project were addressed in an Environmental Impact Statement (EIS) dated October 1980. In addition, a Supplemental EIS dated 13 December 1985, was prepared to address impacts associated with the offshore placement of dredged material from construction of navigation improvements and channel maintenance activities, and for the designation of an offshore placement site(s). The Record of Decision implementing the harbor improvements was signed 8 January 1987. Impacts from the construction of the new Mobile Harbor Turning Basin were addressed in the Final Environmental Assessment (EA) published in May 2007, as well as a Public Notice (PN# FP06-MH13-10 published December 2006). The EIS and Supplemental EIS were coordinated with all applicable Federal, state and local agencies and the interested public. Impacts associated with use of the authorized disposal sites were addressed in an EA titled Mobile Harbor Operations and Maintenance, Mobile, Alabama dated November 2011. An ADEM certification (2012-167-COEP) was issued for the channel maintenance of Mobile Harbor and the turning basin on 10 April 2012.

Impacts associated with this proposed expansion of the turning basin and disposal of dredged material are addressed in a draft EA dated May 2012. The draft EA for this action is available for review in the USACE, Mobile District Office, Planning and Environmental Division or at the following website: www.sam.usace.army.mil/Pd1.htm.

SECTION 404(b)(1) EVALUATION REPORT: An evaluation of water quality impacts associated with the construction of the turning basin was prepared in accordance with guidelines promulgated by the U.S. Environmental Protection Agency under Section 404(b)(1) of the Clean Water Act. Impacts associated with that action included a temporary increase in turbidity and

suspended solids concentrations in and adjacent to the dredge and disposal areas, short-term elimination of benthic organisms and localized short-term degradation of esthetics near the disposal area. The Section 404(b)(1) evaluation report is available for review in the USACE, Mobile District Office, Planning and Environmental Division or at the following website: www.sam.usace.army.mil/Pd1.htm.

ENDANGERED/THREATENED SPECIES: In accordance with the Endangered Species Act, coordination of listed species for this area was conducted in 1985 in the EIS for Mobile Harbor, Alabama Channel Improvement. However, aquatic species, such as the Florida manatee, Gulf sturgeon, and Alabama red-bellied turtle, may be affected by dredging impacts on water quality, food availability or by direct physical contact during construction. Therefore, it has been determined there may be an effect but not likely to adversely affect these species as a result of the proposed action. Based on this determination, coordination will occur with the U.S. Fish and Wildlife Service via official correspondence.

ESSENTIAL FISH HABITAT (EFH): EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity and include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include aquatic areas historically used by fish where appropriate. In waters surrounding the proposed project area, such as the Mobile River, these EFHs include areas, such as emergent wetlands, seagrass beds, algae flats, and mud, sand, and shell substrates. Red drum, brown shrimp, pink shrimp, and white shrimp utilize mud/sand substrates and the water column within the Mobile Harbor Turning Basin. The area may also provide habitat for prey species (e.g. shad, croaker, and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden.

Coordination with the National Marine Fisheries Service (NMFS), Habitat Conservation Division in Panama City, Florida in accordance with the Magnuson-Stevens Fishery Conservation and Management Act will be initiated through official correspondence for the turning basin expansion and potential placement of sediment in the existing upland disposal sites.

CULTURAL RESOURCES CONSIDERATION: In compliance with the National Historic Preservation Act, the Mobile Harbor Turning Basin construction was previously coordinated with the Alabama State Historic Preservation Officer (ASHPO). A marine remote sensing survey utilizing both magnetometer and side-scan sonar data has been conducted over the entire proposed project area. No targets with the potential to be cultural resources were identified during these surveys. As a result of the negative findings, this project will pose no effect to cultural resources within the project area. A copy of this public notice will be provided to the ASHPO.

FARMLAND PROTECTION POLICY ACT CONSIDERATIONS: The provisions of the act are not applicable due to the upland disposal areas not being located near or adjacent to areas usable as farmland and thusly, will not be impacted.

CLEAN AIR ACT: Air quality in the vicinity of the proposed action would not be significantly affected with the proposed action. The equipment and machinery would generate some air pollution during construction activities, such as increased particulate levels from the burning of fossil fuels. However, these impacts would be minor and temporary in nature. The proposed action is in compliance with the Clean Air Act, as amended. The project area is in attainment with the National Ambient Air Quality Standards parameters. 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.

EVALUATION: The decision whether to proceed with the proposed action will be based on evaluating the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which may be reasonably expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, esthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. The proposed action will proceed unless it is found to be contrary to the overall public interest.

COORDINATION: Among the agencies receiving copies of this public notice are:

Region 4, U.S. Environmental Protection Agency
Field Representative, U.S. 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

Other Federal, State, and local organizations, affiliated Indian Tribe interests, and U.S. Senators and Representatives of the State of Alabama are being sent copies of the notice and are being asked to participate in coordinating this proposed work.

CORRESPONDENCE: Any person who has an interest which may be affected by this proposed activity may request a public hearing. Any comments or request for a hearing must clearly set forth the interests which may be affected and the manner in which the interest may be affected. Correspondence concerning this Public Notice should refer to Public Notice No.

FP12-MH02-05 and should be directed to the District Commander, U.S. Army Corps of Engineer, Mobile District, P.O. Box 2288, Mobile, Alabama 36628-0001, Attention: CESAM-PD-EC in time to be received prior to 30 days from date of this public notice directed to Mr. Michael Malsom at (251)-690-2023 or michael.f.malsom@usace.army.mil may be contacted for additional information.

A handwritten signature in black ink, appearing to read 'Curtis M. Flakes', with a long horizontal line extending to the right.

CURTIS M. FLAKES
U.S. Army Corps of Engineers
Mobile District

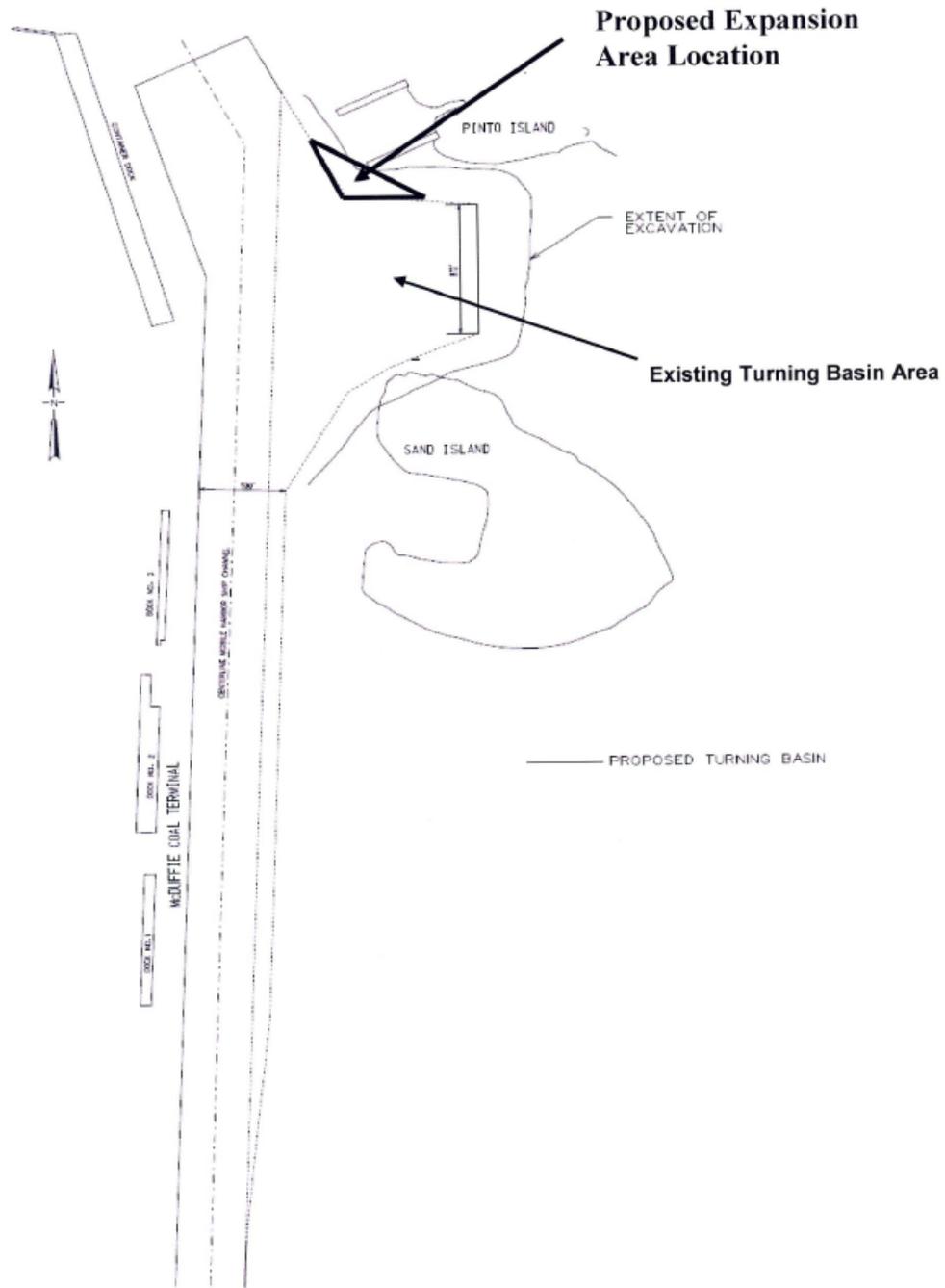


Figure 2. Location of Existing Turning Basin and Proposed Expansion Area

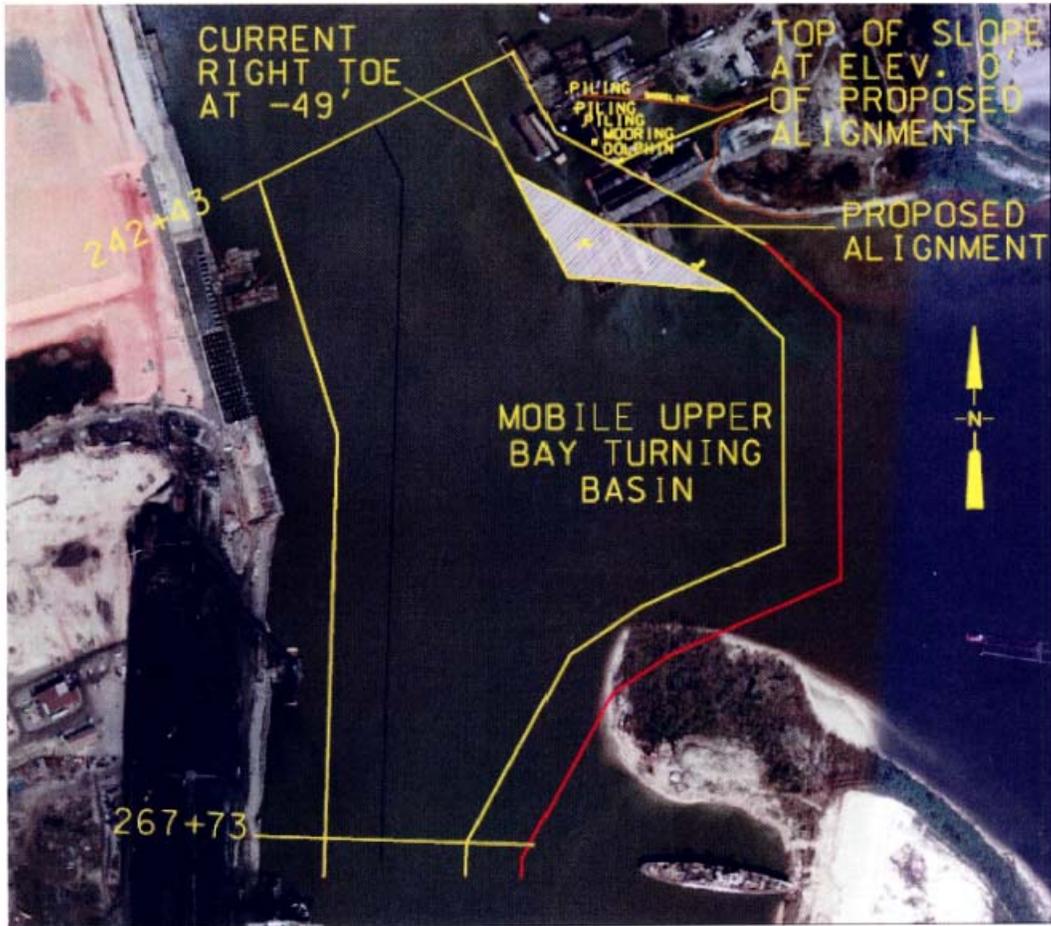


Figure 3. Location of Expansion Area

APPENDIX 3B

Draft SECTION 404(b)(1) EVALUATION REPORT

CONSTRUCTION OF THE MOBILE HARBOR TURNING BASIN MOBILE HARBOR FEDERAL NAVIGATION PROJECT MOBILE COUNTY, ALABAMA

I. DESCRIPTION OF THE AUTHORIZED FEDERAL PROJECT

Mobile Harbor, Alabama, is located in the southwestern part of the state, at the junction of the Mobile River with the head of Mobile Bay. See **Figure 1** of the Environmental Assessment (EA). The port is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana. The navigation channel dredging in Mobile Bay and Mobile River began in 1826 with enactment of the River and Harbor Act of 1826. Over subsequent years, the federal project at Mobile River and Mobile Bay was expanded to include adjoining channels within the bay. Section 104 of the River and Harbor Act of 1954 (House Document 74, 83rd Congress, First Session, as amended, and previous acts) authorized a 40-foot channel. Improvements to the existing Federal project were authorized in Water Resources Development Act of 1986 (PL 99 – 662, Ninety-ninth Congress, Second Session), which was approved 17 November 1986, and amended by Section 302 of the Water Resources Development Act of 1996.

The authorized project dimensions as illustrated in Figure 1 are: a) 57 by 700 feet for a distance of 7.4 miles across the bar; b) 55 by 550 feet for a distance of 27.0 miles in the bay; c) 55 by 650 feet for a distance of 4.2 miles in the bay; and, d) provision of a 55-foot deep anchorage and turning basin in the vicinity of Little Sand Island. The current dimensions of the existing navigation channel are: 47 feet deep by 600 feet wide across Mobile Bar and 45 feet deep by 400 feet wide in the bay (**Figure 1**). The 45-foot channel serves McDuffie Terminals located at the mouth of the river. The river channel, as illustrated in **Figure 2** of the EA, then becomes 40 foot deep and proceeds north to the Cochrane/Africatown Bridge passing over the Bankhead and Wallace tunnels. The Mobile River, on which the Alabama State Docks facilities are located, is formed some 45 miles north of the city with the joining of the Alabama and Black Warrior/Tombigbee Rivers. The Mobile River also serves as the gateway to international commerce for the Tennessee/Tombigbee Waterway. In the southern edge of Mobile Bay, access is gained to the Gulf Intracoastal Waterway which stretches from St. Marks, Florida, to Brownsville, Texas.

The Mobile Harbor Turning Basin was authorized as a portion of the Mobile Harbor Project in the Supplemental Appropriations Act of 1985 (PL 99-88), which was approved on 15 August 1985. The project was also authorized in the WRDA of 1986 (PL 99-662), which was approved on 17 November 1986, and provides for development to deepen and widen the channel through the bar to 57 feet by 700 feet for 7.4 miles; deepen and widen the bay channel to 55 feet by 550 feet for 27 miles; deepen and widen an

additional 3.6 miles of bay channel to 55 feet by 650 feet; and provide a 55-foot deep anchorage area and turning basin in the vicinity of Little Sand Island.

a. Location. The project is located is within the Mobile Harbor Turning Basin as illustrated in Figure 2 of the EA.

b. General Description of the Proposed Action. The proposed action will excavate approximately 100,000 cubic yards (cy) of sediment to expand the northeast corner of the authorized turning basin in the Mobile River located between Pinto Island to the north and Little Sand Island to the south (**Figure 3** of the EA). As part of the original design and construction, it was necessary to “pinch in” the northeast corner of the turning basin in order to avoid two piers on the southern end of Pinto Island. Since completion of the turning basin construction, the two piers have been removed by the Alabama State Port Authority (ASPA) as part of the new ThyssenKrupp loading facility. Since the removal of the piers, the ASPA has received numerous complaints from the harbor pilots that navigation in this area of the turning basin is difficult because of the sharp corner. USACE is therefore proposing to dredge the northeast corner of the turning basin to provide a safer and more efficient turning area for vessels calling upon the Mobile Harbor facilities. The excavation will be performed using either or a combination of a hydraulic pipeline dredge, bucket dredge, or hopper dredge. The location and configuration of the proposed turning basin expansion modification is illustrated in Figures 2 - 4.

c. Authority and Purpose. The navigation channel dredging in Mobile Bay and Mobile River began in 1826 with enactment of the River and Harbor Act of 1826. During the period 1826 to 1857, a channel 10 feet deep was dredged through the shoals in Mobile Bay up to the city of Mobile. Subsequently, further modifications to the channel were authorized and the original Federal project was enlarged by the addition of the Arlington, Garrows Bend, and Hollingers Island channels within the bay, and a channel into Chickasaw Creek from the Mobile River. Section 104 of the River and Harbor Act of 1954 authorized a 40-foot depth channel with a 400-foot width in Mobile Bay to the mouth of the Mobile River and a 40-foot depth in the Mobile River to the Cochran Bridge with the width varying from 400 to 775 feet. The Senate Public Works Committee on 16 July 1970 and the House Public Works Committee on 15 December 1970, under the provisions of Section 201 of the 1965 Flood Control Act, authorized a 40- foot by 400-foot channel, branching from the main ship channel and extending through a land cut to the Theodore Industrial Park. The Theodore Ship Channel was reauthorized in the Water Resources Development Act of 1976.

Further improvements to the existing federal project were initially authorized in the 1985 Energy and Water Resources Appropriation Act (PL 99-88, Ninety-ninth Congress, First Session). The improvements were reauthorized in Section 201 of the Water Resources Development Act of 1986 (PL 99 – 662, Ninety-ninth Congress, Second Session), which was approved 17 November 1986, and subsequently amended by Section 302 of the Water Resources Development Act of 1996. The report referenced by this authorization recommended the following improvements to the Federal project: deepening and widening the gulf entrance channel to 57 by 700 feet; deepening and

widening the main ship channel to 55 by 550 feet in Mobile Bay, except for the upper 3.6 miles which require a width of 650 feet; deepening the Mobile River channel to 55 feet to a point about 1 mile below the Interstate 10 highway tunnels; and, constructing turning and anchorage basins near the upper end of the main ship channel.

The purpose of the proposed action is to improve navigation within the turning basin by removing a sharp corner of the basin and providing a safer and more open area for harbor pilots to maneuver their vessels.

d. General Description of the Dredged or Fill Material. The material to be placed in the existing disposal areas site will be new dredged material from the proposed Mobile Harbor Turning Basin. A geotechnical investigation was conducted to determine the physical characteristics of the material contained in the proposed project area. A summary of the findings are discussed below. The sediment proposed for excavation was also sampled and tested for possible contaminants. A summary of this investigation is also summarized below.

(1) Geotechnical Investigation. The findings of the geotechnical investigations indicate that sediments underlying the proposed Mobile Harbor Turning Basin are generally comprised of fine dark-brown, gray and tan silty sands and clay/silt composites from the marine bottom to approximately elevation -40 MLLW. Within this general profile, however, some plastic clays and silts do exist. This is particularly true where the existing ship channel will be widened 100-ft as an approach to the main basin. Below elevation of -40 MLLW to the proposed maximum dredging elevation of -51 MLLW, are quantities of poorly graded sands having 4 to 5% fines and some silty sands with more than 12% fines.

(2) Sediment Contaminant Analyses. It was assumed for chemical testing of the sediments that upper 10 feet of the area would present the sediments deposited within the last 100 years or more. The preliminary findings of the sediment chemical analyses indicate that within the upper 10-foot layer, a few metals (arsenic, copper, mercury, and nickel) and pesticides were present at detectable levels but did not exceed critical thresholds.

e. General Description of the Discharge Sites.

(1) Location Map. Maps illustrating the location of the existing disposal areas are presented in **Figure 2** of the EA.

(2) Type of Habitat. The South Blakeley and North Pinto disposal areas are existing upland and confined disposal areas that are approved to accept materials that contain sand and fine-grained sediments.

(4) Timing and Duration of Discharge. The construction of the Mobile Harbor Turning Basin expansion is anticipated to occur sometime in FY12 or FY 13.

f. Disposal Method. Placement of materials in the South Blakeley and North Pinto disposal sites will be accomplished by hydraulic pipeline dredge.

II. FACTUAL DETERMINATIONS.

a. Physical Substrate Determinations.

(1) Substrate elevation and slope. The substrate placed in South Blakeley and North Pinto disposal area will be confined within the disposal areas.

(2) Sediment type. Approximately 100,000 cys of dredged material will be placed at South Blakeley and North Pinto disposal areas. The material consists of predominantly sand with some fine grained materials.

(3) Dredged/fill material movement. The dredged material placed in the South Blakeley and North Pinto disposal sites will be confined within the boundaries of the disposal areas.

(4) Physical effects on benthos. None within the upland disposal areas. There is no open water disposal.

(5) Other effects. No other significant effects due to movement of the physical substrate are noted.

(6) Actions taken to minimize impacts. No actions, which would further reduce impacts due to the placement of the dredged material are deemed necessary.

b. Water Circulation/Fluctuation, and Salinity Determination.

(1) Water

(a) Salinity. No significant effects.

(b) Water chemistry. No effects.

(c) Clarity. Water clarity may locally be decreased slightly during the proposed placement of dredged material, but this would not be significant.

(d) Color. No effects.

(e) Odor. No effects.

(f) Taste. No effects.

(g) Dissolved gases. No effects.

(h) Nutrients. No effects.

(i) Eutrophication. No effects.

(2) Current Patterns and Circulation

(a) Current patterns and flow. No effects.

(b) Velocity. No effects.

(c) Stratification. No effects.

(d) Hydrologic effects. No effects.

(3) Normal Water Level Fluctuations. No effects.

(4) Salinity Gradients. No significant effects.

(5) Actions That Will Be Taken To Minimize Impacts. No other actions that would minimize impacts on water circulation/fluctuation and salinity are deemed necessary.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected changes in suspended particulate and turbidity levels in the vicinity of the disposal site. Suspended particulate and turbidity levels are expected to undergo minor increases during dredging activities, however, suspended sediment of this type will quickly fall out of the water column and return to normal conditions. No significant effects would occur as a result of these increases.

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

(a) Light penetration. Increased turbidity levels in the project area as a result of the removal of dredged material would reduce the penetration of light into the water column only slightly and would be a minor short-term impact.

(b) Dissolved oxygen. No effects.

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

(d) Pathogens. No effects.

(e) Esthetics. The placement of dredged material would likely decrease the esthetic qualities of the project area for a short period of time during and shortly after placement. The disposal areas equilibrate and rapidly return to normal upon exposure to

the wave climate.

(f) Others as appropriate. None appropriate.

(3) Effects on biota.

(a) Primary production, photosynthesis. No significant effects.

(b) Suspension/filter feeders. Some local increases in suspended particulates may be encountered during the dredging and disposal actions, but these increases would not cause significant impacts to these organisms unless they are directly covered with sediment. If directly covered with dredged material, it is expected that some organisms will be destroyed. Rapid recruitment of these organisms will promote a rapid recovery to normal populations. Overall, the impact to these organisms is expected to be minor and insignificant.

(c) Sight feeders. Sight feeders would avoid impacted areas and return when conditions are suitable. However, it is difficult to relate the presence or absence of sight feeders in an area to the placement of dredged material. Sight feeders, particularly fishes, may vary in abundance as a result of temperature changes, salinity changes, seasonal changes, dissolved oxygen level changes, as well as other variables. No significant impacts are expected to occur on sight feeders.

(4) Actions taken to minimize impacts. No further actions are deemed appropriate.

d. Contaminant Determination. No significant effects. The preliminary findings of the sediment chemical analyses indicate that within the upper 10-foot layer, a few metals (arsenic, copper, mercury, and nickel) and pesticides were present at detectable levels but did not exceed critical thresholds.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on plankton. No effects.

(2) Effects on benthos. Benthic organisms would be destroyed by the removal of dredged material within the turning basin, but no significant effects are expected on the benthic community as a result of the proposed action.

(3) Effects on nekton. No effects.

(4) Effects on aquatic food web. No effects.

(5) Effects on special aquatic sites.

(a) Sanctuaries and refuges. Not applicable

- (b) Wetlands. Not applicable
- (c) Mud flats. Not applicable.
- (d) Vegetated shallows. Not applicable
- (e) Coral reefs. Not applicable.
- (f) Riffle and pool complexes. Not applicable.

(6) Threatened and endangered species. In accordance with the Endangered Species Act, coordination of listed species for this area was conducted in 1985 in the EIS for Mobile Harbor, Alabama Channel Improvement. Further coordination was also conducted for an adjacent disposal area associated with the Chocktaw Point Terminal Project, Mobile, Alabama in a 2004 EIS and considered to be the same environmental conditions. Based on these findings, construction of the turning basin expansion had no effect to any Federal listed threatened or endangered species. However, aquatic species, such as the Florida manatee, Gulf sturgeon, and Alabama red-bellied turtle, may be affected by dredging impacts on water quality, food availability or by direct physical contact during construction. Therefore, it has been determined there may be an affect but not likely to adversely affect these species as a result of the proposed action. Based on this determination, coordination will occur with the U.S. Fish and Wildlife Service via official correspondence.

(7) Other wildlife. No significant effects.

(8) Actions to minimize impacts. No other actions to minimize impacts on the aquatic ecosystem are deemed appropriate.

f. Proposed Disposal Site Determination.

(1) Mixing zone determinations. The Alabama Department of Environmental Management (ADEM) delineates mixing zones on a case-by-case basis. Any requirements placed on the project would be followed to the maximum extent practicable.

(2) Determination of compliance with applicable water quality standards. Preliminary finding show that action would be in compliance to the maximum extent practicable, with all applicable water quality standards.

(3) Potential effects on human use characteristics.

- (a) Municipal and private water supply. No effects.
- (b) Recreational and commercial fisheries. No effects.
- (c) Water-related recreation. No effects.

(d) Esthetics. No significant effects.

(e) Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves. Not applicable.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. No significant cumulative effects on the aquatic ecosystem would occur as a result of the proposed action.

h. Determination of Secondary Effects on the Aquatic Ecosystem. No significant effects.

III. FINDING OF COMPLIANCE.

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

b. The proposed excavation and discharge represents the least environmentally damaging practicable alternative.

c. The planned placement of dredged materials would not violate any applicable Section 401 State water quality standards; nor will it violate the Toxic Effluent Standard of Section 307 of the Clean Water Act (CWA). The renewed certification was received from ADEM on April 12, 2012 for Section 401 Water Quality Certification and Coastal Zone Consistency.

d. Use of the previously authorized disposal sites will not jeopardize the continued existence of any federally-listed endangered or threatened species or their critical habitat provided the specified conditions in this document are implemented during maintenance dredging and disposal operations. Sufficient safeguards exist to protect federally-protected species which may enter into the project area.

e. The proposed activity would not result in any significant adverse effects on human health or welfare, including municipal or private water supplies, recreation and commercial fishing, plankton, fish, shellfish, and wildlife. The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, esthetic, and economic values would not occur. No wetlands would be impacted by the proposed action.

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

DATE: _____

Steven J. Roemhildt
Colonel, Corps of Engineers
District Commander

APPENDIX 3C

Letters form Alabama Historic Commission

December 19, 2006

Ree Rodgers
US Army Corps of Engineers
Mobile District
PO Box 2288
Mobile, AL 36628

RE: AHC 2007-0309
Cultural Resources Survey of Choctaw Pass Turning Basin
Mobile Harbor
Mobile County

468 South Perry Street
Montgomery, Alabama
361 30-0900

tel 334 242-3184
fax 334 240-3477

Dear Ms. Rogers:

We agree with your extensive comments that you provided to us for the above referenced report and have two more minor corrections to request. Please have the author provide a date for figure 3, 5. In addition, we would like to point out that Hurricane Katrina hit in 2005 rather than in 2004.

Finally, we are concerned about the anomaly verbally reported to you by the author which rests outside the original APE. The location of the anomaly seems to correspond with the position given by Mistovich and Knight in their 1983 report to your office for the CSS Phoenix. If the APE is changed, this important resource could be effected. We look forward to receiving the revised report.

As always, we appreciate your efforts to help us in preserving Alabama's non-renewable cultural resources. If you have questions or comments or if we may be of additional service, please contact Stacye Hathorn of our office and include the AHC project number referenced above.

Sincerely,



Colonel (Ret.) John A. Neubauer
Executive Director

JAN/SGH/sgh



STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

COLONEL (RET.) JOHN A. NEUBAUER
EXECUTIVE DIRECTOR

March 22, 2007

TEL: 334-242-3184
FAX: 334-240-3477

Mr. Kenneth Bradley ^{AB PD-EI}
Mobile District, COE
P. O. Box 2288
Mobile, AL 36628

Re: AHC 07-0309
FP06-MH13-10
Choctaw Pass Turning Basin
Mobile County, AL

Dear Mr. Bradley:

Based upon the additional information forwarded by your office, we have determined that the proposed activities will not have an effect on any known cultural resources listed on or eligible for the National Register of Historic Places, provided that all activities occur within the previously surveyed areas. Therefore, we concur with the proposed activities.

However, should any archaeological cultural resources be encountered during project activities, work shall cease and our office shall be consulted immediately.

We appreciate your efforts on this issue. Should you have any questions, the point of contact for this matter is Amanda Hill at 334-230-2692. Please have the AHC tracking number referenced above available and include it with any correspondence.

Sincerely,

Colonel (Ret.) John A. Neubauer
State Historic Preservation Officer

APPENDIX 3D

Letter from ADEM Granting WQC

LANCE R. LEFLEUR
DIRECTOR



ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

April 10, 2012

MR. CURTIS FLAKES
U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

RE: State of Alabama: CWA Section 401(a) Water Quality Certification and Coastal Consistency Concurrence
Mobile Harbor Navigation Project, Mobile County (097)
U.S. Army Corps of Engineers Joint Public Notice and Permit: FP11-MH01-06
ADEM Tracking Code: 2012-167-COEP

Dear Mr. Flakes:

This office has completed its review of the above referenced joint public notice and all submitted materials related to the U.S. Army Corps of Engineers' (USACOE) proposal to conduct dredging and disposal activities in the Mobile Harbor, Mobile Bay and the Gulf of Mexico in Mobile County, Alabama. The approved project involves the dragline/clamshell, hydraulic pipeline or hopper dredge removal of approximately 1.2 million cubic yards of material annually from the mouth of the Mobile River to the Cochrane Bridge with placement in upland disposal areas located in the upper harbor area or the Mobile-North Ocean Dredged Material Disposal Site (ODMDS); the dragline/clamshell, hydraulic pipeline or hopper dredge removal of approximately 4.3 million cubic yards of material annually from the main channel in Mobile Bay, from near the mouth of the bay to the mouth of the Mobile River, with placement in the Mobile-North ODMDS; and, the hopper or hydraulic cutterhead dredge of approximately 300,000 cubic yards of material annually from the Mobile Bay Channel from the Gulf of Mexico to Mobile Bay with placement in the SIBUA and the Mobile-North ODMDS. In addition, in the event where storm related emergency dredging activities are considered critical to provide safe navigation for returning the channels to the pre-storm dimension and restoring full shipping capacity, the USACOE will utilize the open bay disposal areas and the Galliard Island disposal area.

Action pertinent to water quality certification is required by Section 401(a)(1) of the Clean Water Act, 33 U.S.C. §1251, *et. seq.* If conducted in accordance with the conditions prescribed herein, ADEM hereby **grants** official certification that there is reasonable assurance that the discharge resulting from the proposed activities as submitted will not violate applicable water quality standards established under Section 303 of the Clean Water Act and §22-22-9(g), *Code of Alabama* (1975). This certification terminates coincidentally with the expiration of FP11-MH01-06 but in no case shall this ADEM certification exceed a maximum of five (5) years from the date the U.S. Army Corps of Engineers issues permit FP11-MH01-06 unless specifically authorized in response to a written request for same.

The ADEM **concurs** with USACOE's consistency determination that the project is consistent with the Alabama Coastal Area Management Program to the maximum extent practicable.

The ADEM certifies that there are no applicable effluent limitations under Sections 301 and 302 nor applicable standards under Sections 306 and 307 of the Clean Water Act in regard to the activities specified. However, regulations promulgated by the EPA requiring discharge permits for storm water runoff from individual and commercial facilities may be applicable. This certification does not address the requirements of those regulations.

To protect water quality and coastal resources, the following conditions must be incorporated as part of **FP11-MH01-06**.

1. The ADEM must be notified of the starting date and expected completion date, including any project phasing utilized, prior to project implementation.

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)



Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

2. The USACOE and/or its assigns **shall** allow any duly authorized employee of the ADEM or its contractors, or Attorney General or District Attorney to enter the premises associated with the project authorized by this permit for the purposes of ascertaining compliance with the terms and conditions of the permit and with the rules and regulations of the ADEM.
3. The USACOE and/or its assigns must implement and maintain appropriate, effective Best Management Practices (BMPs) for prevention and control of nonpoint sources of pollutants, during and after project implementation. The USACOE and/or its assigns, at a minimum, must implement applicable effective BMPs as provided in the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, published by the Alabama State Soil and water Conservation Committee, March 2009.
4. The USACOE and/or its assigns shall conduct **daily** inspections of the sand placement activities during the life of the project to ensure that in-stream turbidity resulting from active dredging or return water from a disposal area will not cause the discharge of sediment into wetlands, substantial visible contrast with the receiving waters greater than 400 feet from the activity or result in an increase of 50 NTUs above background turbidity levels in the receiving waters. The USACOE and/or its assigns must suspend operations should downstream turbidity exceed upstream turbidity by 50 NTUs. The USACOE and/or its assigns shall **immediately** notify the ADEM Coastal Program Satellite Office at (251) 432-6533 of resultant work stoppage.
5. The USACOE and/or its assigns shall be responsible for the condition of the spoil disposal areas for the life of the placement activity and until the disposal areas are reclaimed or adequately stabilized, and for pumping and discharge rates, to ensure settling of suspended solids within the confines of the spoil disposal areas sufficient to ensure that turbidity in the return water will not cause substantial visible contrast within the receiving waters, or result in an increase of 50 NTUs above background turbidity levels in the receiving waters.
6. Upon the loss or failure of any treatment facility, BMP, or other management measure as identified by responsible on-site staff during day-to-day operations or as identified by ADEM technical staff during facility inspections, the USACOE and/or its assigns shall, where necessary to maintain compliance with this certification, suspend, cease, reduce, or otherwise control work/activity and all discharges until effective treatment is restored. The USACOE and/or its assigns shall **immediately** notify the ADEM Coastal Program Satellite Office at (251) 432-6533 of resultant work stoppage.
7. The USACOE and/or its assigns shall provide written notice to the ADEM of any proposed modifications to the fill and construction proposal. Modification and/or time extension requests must be received **60 days prior** to the expiration of this CWA 401 (a) water quality certification. Modification and/or time extension requests should be submitted to the ADEM Coastal Program Satellite Office, Attn: Jennifer Robinson, 4171 Commanders Drive, Mobile, AL 36615.

In recognition that projects are site specific in nature and conditions can change during project implementation, the ADEM reserves the right to require the submission of additional information or require additional management measures to be implemented, as necessary on a case-by-case basis, in order to ensure the protection of water quality and coastal resources.

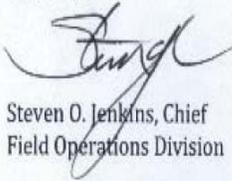
Liability and responsibility for compliance with this certification are not delegable by contract or otherwise. USACOE shall ensure that any agent, contractor, subcontractor, or other person employed by, under contract, or paid a salary by USACOE complies with this certification. Any violations resulting from the actions of such person shall be considered violations of this certification and may result in an enforcement action.

U.S. Army Corps of Engineers
2012-167-COEP/FP11-MH01-06
April 10, 2012
Page 3 of 3

This certification does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, trespass, or any infringement of Federal, State, or local laws or regulations, and in no way purports to vest in USACOE title to lands now owned by the State of Alabama nor shall it be construed as acquiescence by the State of Alabama of lands owned by the State that may be in USACOE's possession.

Call or write Jennifer Robinson: (251) 432-6533 or jrobinson@adem.state.al.us anytime with questions. Always include the ADEM Tracking ID referenced above when correspondence relative to this project.

Sincerely,



Steven O. Jenkins, Chief
Field Operations Division

SOJ/jcr File: CZCERT/XXX

Enclosure (6 Pages)

E-copy: Larry Parson, U.S. Army Corps of Engineers
Rosemary Hall, USEPA Region IV, Atlanta
Patric Harper, USFWS, Daphne
Mark Thompson, NMFS, St. Petersburg
Carl Ferraro, ADCNR, Spanish Fort

APPENDIX 3E

**Letter from the U.S. Fish and Wildlife Service
in Response to Public Notice FP06-MH13-10**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

1208-B Main Street
Daphne, Alabama 36526

February 8, 2007

IN REPLY REFER TO:

2007-FA-0103

Commander
U.S. Army Engineer District, Mobile
P.O. Box 2288
Mobile, AL 36628-0001

ATTN: Mr. Larry Parson, CESAM-PD-EC

Dear Sir:

This letter is in reference to the U.S. Army Corps of Engineers (Corps) proposal (Public Notice FP06-MH13-10) to construct a turning basin in the vicinity of the McDuffie Terminal as part of the Mobile Harbor Federal Navigation Project in Mobile County, Alabama. Following are the U.S. Fish and Wildlife Service (Service) comments concerning this federally authorized project as it relates to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. et seq.) and the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 Cr.S.C. 1531 et seq.).

This project will consist of removing approximately 3 million cubic yards of material from the Mobile River between Pinto and Sand Islands. Total depth of the basin will be -51.0 feet (MLLW). Excavation will be performed using either or a combination of a hydraulic pipeline dredge, bucket dredge, or hopper dredge. Disposal will consist of 1.2 million cy of sandy material being placed in Garrows Bend associated with the construction of the Choctaw Point Terminal Project. The remaining material will be placed either in the Sand Island Beneficial Use Area and/or on the Gaillard Island disposal site.

The Service is concerned about the potential indirect or direct physical impact on endangered Florida manatees (*Trichechus manatus latirostris*) which may be migrating through the project area during the proposed dredging operation. Direct impacts could occur from boat, barge, hopper dredge, cutterhead, or hydraulic pipeline strikes. Because manatees are known to seasonally occur in or near the area slated for dredging and disposal, and could be affected by this activity, we have determined that a "may affect" situation exists for the manatee.

The Florida manatee lives in freshwater, brackish, and marine habitats. Submerged, emergent, and floating vegetation are their preferred food. During the winter, cold temperatures keep the population concentrated in peninsular Florida where many manatees rely on the warm water from natural springs and power plant outfalls. During the summer, they expand their range and are seen (rarely) as far north as Rhode Island on the Atlantic coast and as far west as Texas on

www.fws.gov

PHONE: 251-441-5181



FAX: 251-441-6222

the Gulf coast. The most significant problem presently faced by manatees in Florida is death or serious injury from boat strikes. Manatee sightings have been documented in Mobile Bay and/or its tributaries for the past 20 years, usually during the period May - December. From these records, March is the only month in which no sightings have been reported in Alabama waters.

The Service proposes that the Corps (through their contractor) implement the "Standard Manatee Construction Conditions" that we have recommended in previous consultations for similar dredging operations within Alabama. The Service believes that, if these conditions will be implemented, there will be no adverse impact to the manatee and formal consultation will not be required. If these steps cannot be exercised or there is an occurrence of collision with and/or injury to a manatee, as a result of the proposed project, then formal section 7 consultation with this office should be undertaken. We request that any observation of a manatee, within the area during project operations, be reported to this office.

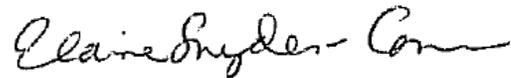
Gulf sturgeon, particularly juveniles, may be affected by dredging impacts on water quality or food availability, or by direct physical contact. While life history information is currently incomplete for Gulf sturgeon in this area, we know that the species utilizes Mobile Bay and surrounding waters through much of the year. Adults may be found in Mobile Bay from October to March, and then migrate up the Mobile River and other streams during the period of February to September to spawn. Apparently, juvenile sturgeon use the bay primarily from September to June, although they may be found in adjacent waterways, as well as the bay, during any month of the year. The Service believes that, if the Corps implements the Construction Conditions for manatee protection mentioned above, there will be no adverse impact to Gulf sturgeon. Also, in an effort to avoid impacts to manatees and Gulf sturgeon, we recommend that the Corps require the contractor to restrict pumping open water, i.e., the cutterhead remains within the sediment during operation.

The endangered Alabama red-bellied turtle (*Pseudemys alabamensis*) is known to occur within the general area and, because a portion of Sand Island is proposed to be removed, nesting habitat may be affected by this project. We recommend that a survey be performed by a qualified biologist to determine whether the turtle or its nesting habitat occurs on this portion of the island. ESA consultation with the Service should be concluded prior to project construction.

Due to the identification of *Vallisneria neotropicalis* at Sand Island in 2002 (Vittor 2004) and the ephemerality of submerged aquatic vegetation (SAV) throughout our area, we recommend that a SAV survey be conducted in the area proposed for dredging. Results of the SAV survey should be submitted to the resource agencies for review and comment, prior to construction.

For further discussion, please contact Patric Harper at (251) 441-5857.

Sincerely,



Elaine Snyder-Conn
Acting Field Supervisor

cc: NMFS, Panama City, FL
ADCNR, MRD, Dauphin Island, AL
ADEM, Coastal Programs, Mobile, AL

enclosure

Literature Cited

Vittor, B. A. 2004. Mapping of Submerged Aquatic Vegetation in Mobile Bay and Adjacent Waters of Coastal Alabama in 2002. Prepared for the Mobile Bay National Estuary Program. Vittor and Associates, Inc., Mobile, AL. 63 pp.

**ALABAMA
STANDARD MANATEE CONSTRUCTION CONDITIONS**

- a. The lessee/grantee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatees.
- b. The lessee/grantee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to, or exit from, essential habitat.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatees are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure their protection. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service in Daphne (251-441-5181).
- g. Temporary signs concerning the manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the lessee/grantee upon completion of the project. A sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* will be posted in a location prominently visible to water related construction crews. A second sign should be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should be at least 8½" by 11" which reads *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service in Daphne (251-441-5181).*

TEMPORARY MANATEE SIGNS
for standard manatee construction conditions

The *Caution: Manatee Area* signs are available through the companies listed below and may also be available from other local suppliers. Permit/lease holders, should contact sign companies directly to arrange for shipping and billing.

Cape Coral Signs & Designs Inc.

1311 Del Prado Boulevard
Cape Coral, Florida 33990
1-800-813-9992
FAX 813-772-9992

Municipal Supply and Sign Company

P.O. Box 17
Naples, Florida 33939-1765
1-800-329-5366
813-262-4639
FAX 813-262-4645

JADCO Signing Inc.

708 Commerce Way
P.O. Box 911
Jupiter, Florida 33458
1-800-432-3404
407-747-1065
FAX 407-744-2985

The second sign should be at least 8½ inches by 11 inches, and should read:

Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service in Daphne (251-441-5181).

An example is enclosed, and this example can be copied and used during construction activities.

Last Page