SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

MOBILE HARBOR
UPPER BAY CHANNEL WIDENING
MOBILE COUNTY, ALABAMA

A FEDERALLY AUTHORIZED PROJECT

Prepared by

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Acronyms and Abbreviations

ADCNR	Alabama Department of Conservation and Natural Resources	NHPA	National Historic Preservation Act
ADEM	Alabama Department of Environmental Management	NAAQS	National Ambient Air Quality Standards
APE	Area of Potential Effect	NEPA	National Environmental Policy Act
BMP	Best Management Practices	NMFS (PRD) (HCD)	National Marine Fisheries Service (Protected Resources Division) (Habitat Conservation Division
CAA	Clean Air Act	O&M	Operation and Maintenance
CEQ	Council on Environmental Quality	ODMDS	Offshore Dredge Material Disposal Site
CFR	Code of Federal Regulations	ROD	Record of Decision
CZMA	Coastal Zone Management Act	PL	Public Law
DO	Dissolved Oxygen	SAV	Submerged Aquatic Vegetation
EA	Environmental Assessment	SHPO	State Historic Preservation Officer
EFH	Essential Fish Habitat	SLR	Sea Level Rise
EO	Executive Order	TSS	Total Suspended Solids
ESA	Endangered Species Act	USACE	U.S. Army Corps of Engineers
FWCAR	Fish and Wildlife Coordination Act Report	USEPA	U.S. Environmental Protection Agency
GRBO	Gulf Regional Biological Opinion	USFWS	U.S. Fish and Wildlife Service
GRR/SEIS	General Reevaluation Report with Supplemental Environmental Impact Statement	VGWE	Vessel Generated Wave Energy
MBTA	Migratory Bird Treaty Act	WRDA	Water Resources Development Act
MCY	Million Cubic Yards	WQC	Water Quality Certification
MPRSA	Marine Protection, Research and Sanctuaries Act		

1 INTRODUCTION

Pursuant to the Council on Environmental Quality's (CEQ's) regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1500-1508), the U.S. Army Corps of Engineers (USACE) has prepared this Supplemental Environmental Assessment (EA) for the proposed changes to the *Mobile Harbor, Mobile, Alabama Integrated General Reevaluation Report with Supplemental Environmental Impact Statement* (referred to as the 2019 Mobile Harbor GRR/SEIS) recommended plan.

The proposed action and the alternatives are evaluated in multiple contexts for short-term and long-term effects and for adverse and beneficial effects. This Supplemental EA indicates the effects on the human environment that are well-known and do not involve unique or unknown risks. It is not anticipated that this is a precedent-setting action, nor does it represent a decision in principle about future considerations.

The information in this Supplemental EA is intended to supplement the SEIS which was integrated with the GRR dated May 2019 (USACE 2019). This Supplemental EA documents the potential additional effects of the proposed Mobile Harbor Upper Bay Channel Widener to take place within the Mobile Harbor Improvements Project.

1.1 Background

Mobile Harbor, Mobile, Alabama Integrated Final General Reevaluation Report with Supplemental Environmental Impact Statement, Mobile County, Alabama (Mobile Harbor GRR/SEIS).

1.2 Purpose and Need

In May 2019, the USACE Mobile District prepared the Mobile Harbor Integrated General Reevaluation Report with a Supplemental Environmental Impact Statement (GRR/SEIS) that was approved with a Record of Decision (ROD) signed in September 2019. The Recommended Plan (RP) consisted of a 5-foot deepening of the channel, or a 52-foot Bar Channel, a 50-foot-deep Bay Channel, and a 3-mile long by 100-foot channel widener in the bay with bend easings and turning basin modifications.

Since completion of the Mobile Harbor GRR/SEIS in May 2019, there has been a need to make design changes to the Mobile Harbor GRR to further improve navigation along the Mobile Harbor Upper Bay Channel. This evaluation includes a design change to the Upper Bay Channel to ensure navigational safety. Details of the proposed changes to the 2019 Mobile Harbor GRR/SEIS recommended plan are provided below.

1.3 Project Location

Mobile Harbor is located in the southwestern part of Alabama at the confluence of the Mobile River and the head of Mobile Bay. Mobile Harbor is approximately 28 miles north of the bay entrance from the Gulf of Mexico (Figure 1-1). Specifically, the location of the proposed Upper Bay Channel Widener is along a portion of the Upper Bay Channel across from the McDuffie Coal Terminals (Figure 1-2). The proposed widener will be

located on the east side of the channel starting south of the turning basin. The proposed widener extends approximately 3,500 feet south from the turning basin before it begins to taper back to the normal channel width. The tapered area extends approximately 3,400 feet ending just north of the Arlington Channel.

The Mobile Bay estuary is a bell-shaped, submerged river valley system approximately 31 miles long between the estuary mouth and the Mobile River and Tensaw River (Mobile-Tensaw River) Delta, and 23 miles wide between Mississippi Sound and Bon Secour Bay (USACE 2019). It receives water and sediment from the Mobile-Tensaw River System. The bay encompasses about 413 square miles of open water and has an average depth of about 9.7 ft at mean high water; the deepest area, approximately 75 ft occurs within the navigation channel with an average depth around 10 ft (USACE 2019).

As described in the 2019 Mobile Harbor GRR/SEIS, Mobile Bay is an estuary which serves as a transition zone where the freshwater from the rivers mixes with the tidally influenced saltwater of the Gulf of Mexico (USACE 219).

The proposed project location is within open water only along the eastern side of the Federal navigation channel near the McDuffie Coal Terminal and Little Sand Island and southward towards the Arlington channel. There is no terrestrial component to the project.

Figure 1: Project Map

1.4 Proposed Action

The proposed action consists of widening the existing Mobile Harbor Federal Navigation

Upper Bay Channel by approximately 100 feet via hopper, cutterhead, and/or mechanical dredge. The specific equipment type is to be determined post contract award therefore each type is considered in this analysis. The location of the proposed widening begins between Little Sand Island and the McDuffie Coal Terminals in the Upper Bay Channel reach and proceeds south to near the federally authorized Arlington channel.

1.5 Project Authority

Improvement to the existing Federal project were most recently reauthorized in Section 201 of the Water Resources Development Act (WRDA) of 1986 (Public Law (PL) 99 – 662, Ninety-ninth Congress, Section Session), which was approved 17 November 1986, and subsequently amended by Section 302 of the WRDA of 1996, to read:

(a) *AUTHORIZATION OF CONSTRUCTION - The following projects for harbors are authorized to be prosecuted by the Secretary substantially in accordance with the plans and subject to the conditions recommended in the respective reports designated in this subsection:*

The project for navigation, Mobile Harbor, Alabama: Report of the Chief of Engineers, dated November 18, 1981, at a total cost of $451,000,000, with an estimated first Federal cost of $255,000,000 and an estimated first non-Federal cost of $196,000,000. In disposing of dredged material from such project, the Secretary, after compliance with applicable laws and after opportunity for public review and comment, may consider alternatives to disposal of such material in the Gulf of Mexico, including environmentally acceptable alternatives for beneficial uses of dredged material and environmental restoration.

2 ALTERNATIVES CONSIDERED

2.1 No Action Alternative

The No Action Alternative is implementing the recommended plan detailed in the 2019 Mobile Harbor GRR.

2.2 Proposed Action

Upper Bay Channel Widener: The change in work (as necessitated and described in Section 1.2 Purpose and Need) includes adding a 100-foot widener along a portion of the Upper Bay Channel across from the McDuffie Coal Terminals. The proposed widener will be located on the east side of the channel starting south of the turning basin. The turning basin was previously proposed and authorized in the 2019 Mobile Harbor GRR. The proposed widener extends approximately 3,500 feet south from the turning basin before it begins to taper back to the standard channel width. The tapered area extends approximately 3,400 feet ending just north of the federally authorized Arlington Channel. The widening of this portion of the channel would be consistent with the authorized improvement depths to -50 feet MLLW as described in the 2019 Mobile Harbor GRR/SEIS. The approximate quantity of new work material is approximately 1.4 million cubic yards (mcy).

Dredge Material Management and Disposal Areas: The estimated dredge quantity of new work material (approximately 1.4 mcy) will be placed in totality or in combination of two beneficial use sites (Deer River, Mobile County Restoration and Dauphin Island Causeway Beneficial Use, Mobile County), Site A of the Relic Shell Mined Area, and/or the Offshore Dredge Material Disposal Site (ODMDS) (Figure 1-3). All placement sites have been previously reviewed and authorized as part of the Mobile Harbor GRR/SEIS May 2019. All future Operations and Maintenance (O&M) dredged material may be placed within any of the existing and permitted dredge disposal areas to include USACE upland dredge disposal areas, USACE open water placement areas, and/or ODMDS.

Figure 2: Vicinity map of proposed design changes to Mobile Harbor Upper Bay Channel

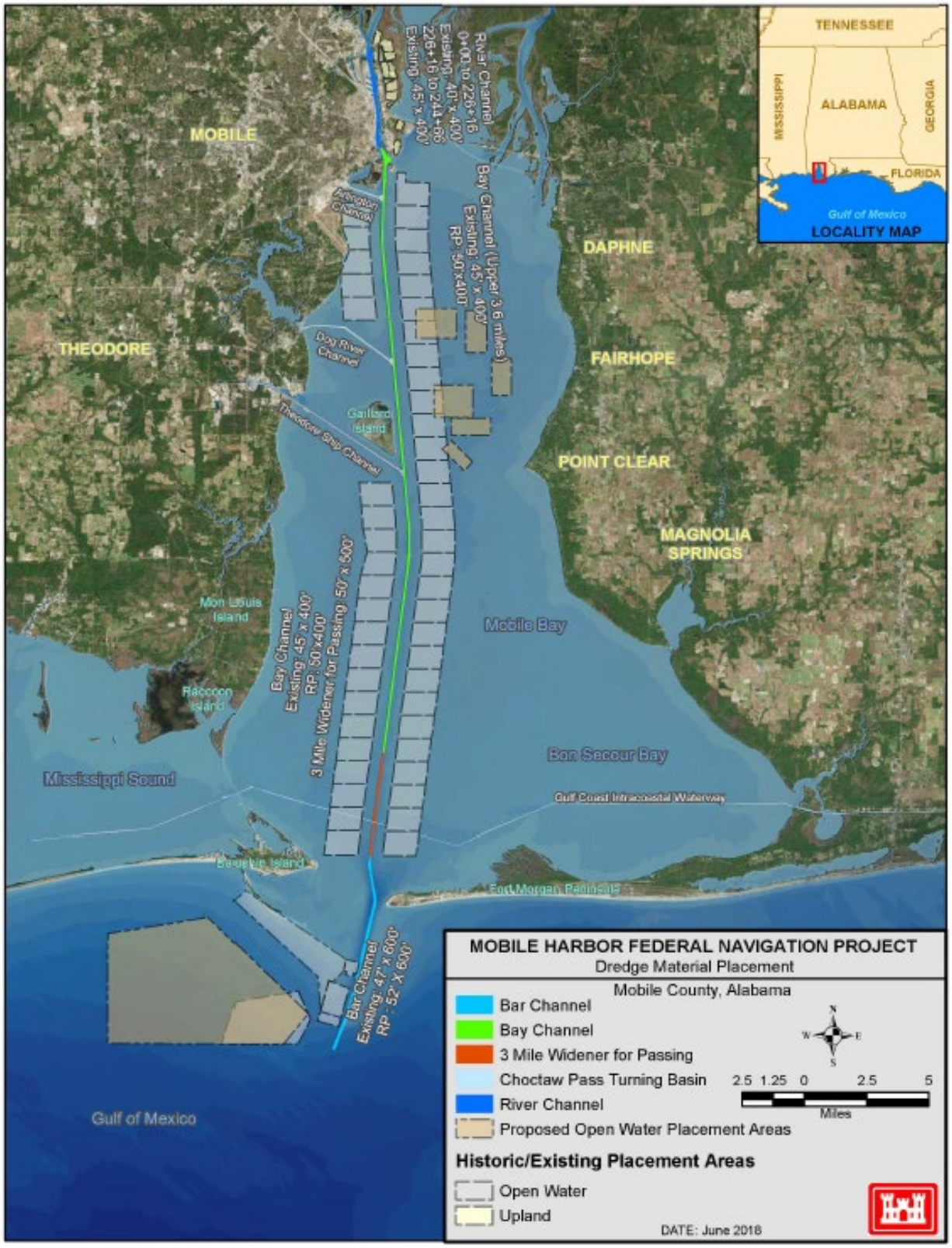

Figure 3: Dredge Material Placement Areas

3 AFFECTED ENVIRONMENT

The May 2019 GRR/SEIS contains a description of the affected environment that requires little supplementation for this proposed action. The resource categories in this chapter closely mirror the organization of the Environmental Appendix (Appendix C) in the 2019 GRR/SEIS which. The existing conditions were thoroughly documented and evaluated in this previous NEPA document. For this Supplemental EA, additional narrative on existing conditions is provided below only in cases where:

- substantive changes to the project area have occurred since completion of the GRR/SEIS in 2019;
- new resources not covered in the previous SEIS that could potentially be affected; or
- some aspects of existing resources that would be uniquely affected by the proposed activities.

3.1 Climate, Tides, and Circulation

As described in the 2019 Mobile Harbor GRR/SEIS, the climate in the project area is subtropical, characterized by warm summers and short, mild winters. The average daily temperature ranges in the summer and winter are 81–91 and 42–63 degrees Fahrenheit, respectively. The average annual rainfall is about 66 inches and is well distributed throughout the year. Precipitation records indicate July as the wettest month, while October is the driest.

The tidal variation in the Mobile Bay and adjacent waters is diurnal with an average tide cycle of 24.8 hours. The mean tidal range within the bay varies from 1.6 ft at the head of the bay to 1.2 ft at the entrance, which is classified as microtidal. The daily mean water elevation averaged by month increases for half the year and then decreases over a range that is about the same amplitude as the diurnal range (USACE 2019).

According to the 2019 Mobile Harbor GRR/SEIS report, Mobile Bay's currents are primarily influenced by tidal circulation and freshwater discharge from the Mobile-Tensaw River system under typical weather conditions. The shallow-water estuarine system experiences significant energy from strong winds during tropical cyclones and winter cold fronts, leading to substantial changes in flow intensity and sediment resuspension (USACE 2019). While ebb and flood flow durations are similar throughout the daily tidal cycle at Mobile Pass, water entering Mobile Bay during flood tide is generally redirected east and northward (USACE 2019). In the northern part of the bay, flood currents are deflected eastward due to the fluvial discharge from the Mobile-Tensaw River system, resulting in a south-directed freshwater flow along the bay's western side (USACE 2019).

3.1.1 Waves and Currents

Hydrodynamic modeling was conducted by the USACE Engineer Research and Development Center to characterize the existing conditions (e.g., flows, circulation, waves, etc.) of the study area and determine the relative changes in those conditions due to proposed navigation channel modifications. A summary of the overall approach

and results of these analyses are described in detail in Section 6.1 of the Engineering Appendix A of the Mobile Harbor GRR/SEIS 2019. A vessel generated wave energy (VGWE) assessment was conducted to quantify the relative changes in wave energy due to future vessels calling the port. The investigation included field data collection using a suite of 5 pressure sensors located north of Gaillard Island and a validation deployment using similar techniques in the southern part of the bay.

The 2019 Mobile Harbor GRR/SEIS report explains that waves generated by wind within the bay are constrained by fetch and depth. Based on the limited wave data collected during the Mobile Harbor GRR, it was observed that the average significant wave heights were generally below 1.5 feet, and the mean peak periods were less than 4 seconds on average (USACE 2019). However, during hurricane and storm conditions, as well as strong winter cold fronts, substantial surges and larger wave conditions can occur within the bay and along the coastline.

3.1.2 Sediment Transport

As described in the 2019 Mobile Harbor GRR/SEIS, the long-term regional sediment transport patterns within the bay for the period 1917/18 to 1984/2011 are documented in Byrnes et al. (2012) “Sediment Dynamics in Mobile Bay, Alabama: Development of an Operational Sediment Budget.” Byrnes et al. (2012) found that the most significant changes occurring during the 42-year interval evaluated were associated with deposition in the northern portion of the bay at the mouth of the Mobile-Tensaw Delta; deposition in the southern part of the bay resulting from current flow and sediment movement at Mobile Pass, including sand transport into Mobile Bay along the north side of Mobile Point (Fort Morgan Peninsula); and erosion and deposition associated with navigation channel dredging and placement (USACE 2019). Elsewhere in the bay, only minor deposition and erosion patterns were identified within a large estuarine system that is net depositional, according to Byrnes et al. (2012) (USACE 2019). The study found that deposition in the Bay accounts for approximately 72% of sediment input with 28 percent transported from the Bay through Pass aux Herons and Mobile Pass through natural transport processes and offshore placement of dredged sediment (USACE 2019).

High sediment loads from the river and sediment resuspension both contribute to the 4 million cubic yards of material dredged annually from the Bay Channel per year (USACE 2019). Sediment transport modeling of Mobile Bay was conducted to assess the relative changes in sedimentation rates within the navigation channel, dredged material placement sites, and surrounding areas as a result of channel modifications within the bay which was built upon previous Modeling conducted in 2012 to evaluate thin layer placement of maintenance dredged material; the modeling efforts are described in Appendix A of the 2019 Mobile Harbor GRR/SEIS. The results from that effort indicated a minimum difference range of no greater than 0.3 ft of erosion when compared to the existing conditions and indicates no discernable net erosion or net deposition (USACE 2019).

3.1.3 Sea Level Change

As described in the 2019 Mobile Harbor GRR/SEIS, systematic long-term tide elevation

observations suggest that the elevation of oceanic water bodies are gradually rising and this phenomenon is termed “sea level rise” (SLR). The rate of rise is neither constant with time nor uniform over the globe. In addition to elevation of oceanic water bodies, however, is the gradual depression of land surface along the Gulf of Mexico Coast, referred to as “subsidence,” which becomes an additional factor in the relationship between the land’s elevation over time and changing sea levels. Because the Alabama Coast is affected by both subsidence and global SLR (adjusted for local conditions), these factors combine in a single element of “relative” SLR. Relative SLR at a given location is the change in mean sea level at that location with respect to an observer standing on or near the shoreline. Analysis of historical data suggests a relative SLR of approximately 9 inches along the Alabama/Mississippi Coast during the 20th century.

Bays and barrier islands are among the most vulnerable areas to the consequences of climate change. Serious threats to the islands come from the combination of elevated sea levels and intense hurricanes. The Alabama barrier islands consist primarily of low-lying topography with beach-ridge interior cores near the hurricane-prone Gulf of Mexico. As a result, the barrier islands are more susceptible to the effects of storm surge than other areas.

3.2 Geology, Soils, and Sediments

3.2.1 Geologic Setting

As described in the 2019 Mobile Harbor GRR/SEIS, the physiographic province for the Mobile Bay area represents the southernmost extent of the Alabama Coastal Plain consisting typically of Miocene, Pliocene, Pleistocene, or younger sediments. The geologic formations of the Alabama Coastal Plain form a wedge of seaward thickening sedimentary deposits (USACE 2019). Mobile Bay is a geologically young estuary, defined as a drowned river valley. The bay has probably held its present outline and shape from the time of its formation several thousand years ago (USACE 2019).

Additional details regarding the geological units are provided in the 2019 Mobile Harbor GRR/SEIS.

3.2.2 General Soil Setting

As described in the 2019 Mobile Harbor GRR/SEIS, the in-situ soils of Mobile Bay consist of various mixtures of sand, silt, and clay covering most of the bay bottom. According to the Navy, the Mobile Bay sediments are approximately 50% sand and 50% clay (USACE 2019). The northern portion of the bay is comprised of deltaic sands, silty sand, silts and clayey silts carried in by the Mobile River; sediments of the lower bay are primarily estuarine silty clay and clay (USACE 2019). The western shoreline exhibits sands which grade to clayey sand, sandy clays, and clays towards the deeper parts of the bay (USACE 2019).

The upper portion of Mobile Harbor is predominantly silt and clay with higher concentrations of sand in the 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 (USACE 2019).

The total annual sediment load entering the Mobile River from the Alabama and Tombigbee Rivers is estimated at 4.76 million metric tons (USACE 2019). Including contributions from adjacent water sheds downstream of the confluence of these rivers, a total of 4.85 million metric tons per year is estimated to enter the Mobile-Tensaw Delta and Mobile Bay system (USACE 2019). It is noted that approximately 33% of these materials remain in the delta, while 3.26 million metric tons enter the bay (USACE 2019). Most of the sediment load is trapped within the bay (on the order of 2.5 million metric tons per year), whereas the remainder (about 16% of the total load entering the delta) is discharged to the Gulf and Mississippi Sound (USACE 2019).

All areas of the Mobile Harbor GRR improvement project were tested and approved as suitable by EPA Region IV for ocean placement. Following the redesign of the Upper Bay Channel, a new testing program was implemented for the areas defined within the Proposed Action. Sediment suitability tests have been completed pursuant to Section 103 of the MPRSA for placement of dredge material suitability for ocean placement. Preliminary results show material suitability for ocean placement. Compliance with Section 103 of the MPRSA will be met once concurrence from EPA Region IV is received and prior to any potential placement of material in the Federally designated ODMDS. These tests include the physical characterization, chemical contaminations, and biological compatibility. Should the material be shown to meet the EPA standards, the material will be allowed to be placed into the designated ODMDS. In addition to the ODMDS, the material may also be placed in other previously authorized locations such as beneficial use sites including Deer River, Mobile County Restoration and Dauphin Island Causeway Beneficial Use, Mobile County, and Site A of the Relic Shell Mined Area.

3.3 Water Quality

As described in the 2019 Mobile Harbor GRR/SEIS, a water quality modeling effort was conducted for the 2019 study to understand the existing water quality within the waters of Mobile Bay and to quantify the relative changes in the water quality resulting from proposed Mobile Harbor Federal Navigation channel modifications. The output from the modeling effort was analyzed to assess relative differences in dissolved oxygen (DO), salinity, temperature, total suspended solids (TSS), nutrients, and chlorophyll-*a*. A more detailed discussion on the modeling effort and results are included in Sections 2.5.4 and 5.5 of the 2019 Mobile Harbor GRR/SEIS Main Report and Sections 2.4 and 3.5 of the 2019 Mobile Harbor GRR/SEIS Environmental Appendix C.

No additional modeling effort was conducted for this Supplemental EA as the proposed widening is adjacent to and part of the existing channel and consistent with all previous analysis.

3.4 Groundwater

As described in the 2019 Mobile Harbor GRR/SEIS, the groundwater in the Mobile Bay

area is obtained in two ways: by shallow well unconfined aquifer withdrawal and by deep well confined aquifer withdrawal. Groundwater levels reported by the USGS have remained stable in recent years. Seasonal patterns in unconfined aquifers reveal highest levels in April and lowest levels in September (USACE 2019).

3.5 Biological Resources

3.5.1 Wetlands

No supplemental information required. Please see Section 2.5.6.2 through Section 2.5.6.4 of the 2019 Mobile Harbor GRR/SEIS Appendix C for a description of the wetlands, submerged aquatic vegetation (SAV), and hard bottom habitat analysis within Mobile Bay and Delta considered for the overall Mobile Harbor Improvements project. No wetland, SAV, or hard bottom habitat is located within the project area for the proposed widening project.

3.5.2 Submerged Aquatic Vegetation

No supplemental information required. Please see Section 2.5.6.2 through Section 2.5.6.4 of the 2019 Mobile Harbor GRR/SEIS Appendix C for a description of the wetlands, submerged aquatic vegetation (SAV), and hard bottom habitat analysis within Mobile Bay and Delta considered for the overall Mobile Harbor Improvements project. No wetland, SAV, or hard bottom habitat is located within the project area for the proposed widening project.

3.5.3 Hard Bottom Habitat

No supplemental information required. Please see Section 2.5.6.2 through Section 2.5.6.4 of the 2019 Mobile Harbor GRR/SEIS Appendix C for a description of the wetlands, submerged aquatic vegetation (SAV), and hard bottom habitat analysis within Mobile Bay and Delta considered for the overall Mobile Harbor Improvements project. No wetland, SAV, or hard bottom habitat is located within the project area for the proposed widening project.

3.5.4 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MPRSA) as… "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments (see Table 1). The Gulf of Mexico Fishery Management Plan (2017) identifies EFH in the project area to be estuarine emergent wetlands, seagrass beds, vegetated and non-vegetated bottoms, shell reefs, and the estuarine water column. These habitats also include algal flats, mud, sand, shell, and rock substrates. Within the project area, EFH include non-vegetated bottoms and the estuarine water column.

Open-water and estuarine marshes provide habitat for various species of invertebrates and vertebrates. Epibenthic crustaceans and infaunal polychaetes dominate the diets of

higher trophic levels, such as flounder, catfish, croaker, porgy, and drum. The fish species composition of the estuarine and offshore areas along the northern Gulf of Mexico is of a high diversity due to the variety of environmental conditions, which exist within the area. The major fisheries along the Mississippi and Alabama Gulf coast are Spanish mackerel (Scomberomerus maculatus), king mackerel (Scomberomerus cavalla), cobia (Rachycentron canadum), bluefish (Pomatomus saltatrix), pompano (Trachinotus carolinus), little tunny (Euthynnus alletteratus), spotted sea trout (Cynoscion nebulosus), red drum (Sciaenops ocellatus), and several shark species. In addition, numerous species of less interest may be taken, including ladyfish (Elops saurus), crevalle jack (Caranx hippos), blue runner (Caranx crysos), and black drum (Pogonias cromis). Trawlers work the area primarily for brown and white shrimp (Peneus aztecus and Paraptochus setiferous), but occasional trawlers seeking finfish species, including menhaden (Brevoortia ronus) and croaker (Micropogonias undulatus), as well as other industrial species may trawl this bottom (GMFMC, 1998, 2004, and 2005, and Fishbase 2007).

Gulf of Mexico and adjacent waters have been identified as important nursery areas for nine sharks, primarily Atlantic sharpnose, blacktip, finetooth, and bull sharks. Less prevalent species are the spinner, blacknose, sandbar, bonnethead, and scalloped hammerhead.

Typically sharks migrate inshore in the early spring around March and April, remain inshore during the summer months and then migrate offshore during the late fall around October. Most shark species in the Gulf of Mexico and surrounding waters give birth during late spring and early summer, with young sharks spending just a few months of their life in shallow coastal waters. Most shark species are abundant around barrier islands, with adult sharks commonly located south of the barrier islands (Carlson et al, 2004).

Non-vegetated bottoms and the estuarine water column within the project area provides habitat for various species of fish, both invertebrates and vertebrates. Within the project area, the EFH designated for managed species of Gulf of Mexico include red drum, sharks (5 species), coastal migratory pelagic (3 species), reef fish (43 species), and shrimp (4 species). No habitat areas of particular concern were identified for this area.

Management Plan	**Common Name**	**Scientific Name**
Coastal Migratory Pelagic	King mackerel	*Scomberomorus cavella*
	Spanish mackerel	*Scomberomorus maculatus*
	Cobia	*Rachycentron canadum*
Red Drum	Red drum	*Sciaenops ocellatus*
Snappers	Queen snapper	*Etelis oculatus*
	Mutton snapper	*Lutjanus analis*
	Blackfin snapper	*Lutjanus buccanella*
	Red snapper	*Lutjanus campechanus*
	Cubera snapper	*Lutjanus cyanopterus*
	Gray (Mangrove) snapper	*Lutjanus griseus*
	Lane snapper	*Lutjanus synagris*
	Silk snapper	*Lutjanus vivanus*
	Yellowtail snapper	*Ocyurus chrysurus*

	Wenchman	*Pristipomoides aquilonaris*
	Vermillion snapper	*Rhomboplites aurorubens*
	School master	*Lutjanus apodus*
	Dog snapper	*Lutjanus jocu*
	Mahagony	*Lutjanus mahogoni*
Tilefishes	Goldface tilefish	*Caulolatilus chrysops*
	Blueline tilefish	*Caulolatilus microps*
	Tilefish	*Lopholatilus chamaeleonticeps*
	Anchor tilefish	*Caulolatilus intermedius*
	Golden tilefish	*Lopholatilus chamaeleonticeps*
Jacks	Greater amberjack	*Seriola dumerili*
	Lesser amberjack	*Seriola fasciata*
	Almaco jack	*Seriola rivoliana*
	Banded rudderfish	*Seriola zonata*
Triggerfishes	Gray triggerfish	*Balistes capriscus*
Hogfish	Hogfish	*Lachnolaimus maximus*
Shrimp	Brown shrimp	*Penaeus aztecus*
	White shrimp	*Penaeus setiferus*
	Pink shrimp	*Penaeus duorarum*
	Royal red shrimp	*Pleoticus robustus*
Coral and Coral Reefs	Hydrozoa corals (stinging and hydrocorals)	** There are over 140 species of corals listed in the Coral Fishery Management Plan. Taxonomy is undergoing review and will be updated in Coral Amendment 7.*
	Anthozoa (stony and black corals)	
Groupers	(Atlantic) Goliath grouper	*Epinephelus itajara*
	Red grouper	*Epinephelus morio*
	Yellowedge grouper	*Hyporthudus flavolimbatus*
	Warsaw grouper	*Hyporthudus nigritus*
	Snowy grouper	*Hyporthudus niveatus*
	Black grouper	*Mycteroperca bonaci*
	Yellowmouth grouper	*Mycteroperca interstitialis*
	Gag grouper	*Mycteroperca microlepis*
	Scamp grouper	*Mycteroperca phenax*
	Yellowfin grouper	*Mycteroperca venenose*
	Marbled grouper	*Epinephelus inermis*
	Nassau grouper	*Epinephelus striatus*
	Misty grouper	*Epinephelus mystacinus*
	Red grouper	*Epinephelus morio*
	Red hind grouper	*Epinephelus guttatus*
	Rock hind grouper	*Epinephelus adscensionis*
	Speckled hind grouper	*Epinephelus drummondhayi*
	Sand perch	*Diplectrum formosum*
	Dwarf sand perch	*Diplectrum bivittatum*
	Yellow mouth grouper	*Mycteroperca interstitialis*

Table 1: Managed Fisheries for the Gulf of Mexico

3.5.5 Benthos, Motile Invertebrates, and Fishes

Details of the benthic communities and fish present within the project area can be found in Sections 2.6.7 and 2.6.8 of Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS. No changes have occurred to the area since the 2019 analysis was presented.

3.6 Threatened and/or Endangered Species

The most recent Section 7 coordination occurred in 2019 when the USACE, Mobile District sought consultation as part of the Mobile Harbor GRR/SEIS for improvements to the existing Mobile Harbor Federal Navigation Project, Mobile County. By letter dated 21 December 2018, the U.S. Fish and Wildlife Service (USFWS) provided concurrence **(2016-CPA-0130)** with the USACE effects determination that the project actions may affect but are not likely to adversely affect the identified listed species. In addition, the USFWS provided the Final Fish and Wildlife Coordination Act Report (FWCAR) dated 1 April 2019 which included the Service's final comments and recommendations.

Table 2 lists the species for the Proposed Project location in Mobile County; HUC_10 (0316020503) Mobile Bay as provided by the USFWS Project Code 2023-0092336 letter as either threatened, endangered, or protected:

LISTED SPECIES	**SCIENTIFIC NAME**	**STATUS**
Marine Mammals		
West Indian manatee	*Trichechus manatus*	Endangered
Reptiles		
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
Loggerhead sea turtle	*Caretta caretta*	Threatened
Alabama red-bellied turtle	*Pseudemys alabmensis*	Endangered
Fish		
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	Threatened
Birds		
Wood stork	*Mycteria americana*	Threatened

Table 2: USFWS Listed Species

The USFWS federally listed species that may be found within the vicinity of the project area only include West Indian manatee (*Trichechus manatus latirostris)*, Gulf sturgeon (*Acipenser oxyrinchus desotoi)*, Loggerhead (Caretta caretta) and Kemp's ridley (Lepidochelys kempii) sea turtles. The Alabama red-bellied (Eretmochelys imbricata) turtle and Wood Stork (Mycteria americana) are not likely located in the project area because the proposed action is outside of the preferred habitat; therefore, the proposed activity will have no effect on these species and is not considered further in this analysis.

The West Indian manatee migrates along the Gulf coast from Florida to Louisiana as a seasonal transient. It is very unlikely that manatees would be adversely impacted due to

the low likelihood that they would be found that far up in the channel and their ability to avoid the project area during operations. However, in the rare event that a manatee were located in the vicinity of the project site, "Standard Manatee Construction Conditions" would be implemented throughout the duration of the project.

The proposed activity does not contain any terrestrial component that would affect Loggerhead or Kemp's ridley sea turtles nesting. No USFWS designated critical habitat is present within the proposed channel widening project area.

Impacts to sea turtles and gulf sturgeon have been addressed through consultation of the Gulf Regional Biological Opinion (GRBO 2003 as amended 2005 and 2007) for Dredging of Gulf of Mexico Channels and Sand Mining Areas Using Hopper Dredges (Consultation Number F/SER/2000/01287) with the National Marine Fisheries Service- Protected Resource Division.

3.7 Marine Mammals

All marine mammals are protected under the Marine Mammal Protection Act (MMPA), regardless of their status under the ESA. It should be noted that the only two whale species that may occur in the project area are also covered under the ESA. There is a total of six threatened or endangered whale species (i.e., whale species protected under both the ESA and MMPA).

All marine mammals are protected by the MMPA of 1972, as amended, but the West Indian manatee and four whale species, which include the finback, sei, sperm, and Bryde's whales, are also listed as endangered and, therefore, are also protected under the ESA. The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

Most NMFS regionally listed marine mammal species, including the West Indian manatee, have been, or are known to occur, in the Gulf of Mexico. Based on NMFS aerial surveys, the most often sighted groups along the upper continental slope of the north-central Gulf of Mexico were Risso's dolphin, Atlantic bottlenose dolphin, Atlantic spotted dolphin, pantropical spotted dolphin, striped, spinner, and clymene dolphin, sperm whale (*Physeter macrocephalus*), dwarf and pygmy sperm whales, and short-finned pilot whale (Evans, 1999; Waring et al., 2013). However, sperm whales tend to inhabit areas with a water depth of 1,968 ft or more and are uncommon in waters less than 984 ft deep.

Additional details regarding this project and marine mammals protected by the ESA and MMPA can be found in Section 2.8 of Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS.

3.8 Fisheries Resources

As described in the 2019 Mobile Harbor GRR/SEIS, commercial and recreational fishing is a vital part of both the economy and quality of life in south Alabama. The fisheries have been an integral part of Mobile Bay's culture and surrounding area for an amazing

10,000 years (USACE 2019). The Mobile Bay NEP (2001) in their Comprehensive Conservation and Management Plan credits the Alabama commercial seafood industry and its related support industries, such as shipbuilding and marine supply, for the employment of nearly 4,000 workers and for generating approximately $450 million annually in related products (USACE 2019). Since the 1880s, the seafood fisheries, have been a major contribution to the seafood economy. Blue Crab, shrimp, oysters, and finfish landings have historically experienced a relatively stable harvest but have declined somewhat in recent years (USACE 2019). For more details on the fishery resources in Mobile Bay, refer to the Section 2.10 Fisheries Resources in Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS.

3.9 Invasive Species

As described in the 2019 Mobile Harbor GRR/SEIS, there are both plant and animal invasive species within the bay. The Eurasian watermilfoil, water hyacinth (*Eichhornia crassipes*), nutria (*Myocastor coypus*), and cattle egrets (*Bubulcus ibis*) are known invasive species. The plant species (Eurasian watermilfoil and water hyacinth) in some instances have clogged some area waterways, altering hydrology and navigation, while also crowding out native submerged and emergent aquatic vegetation. The nutria, an exotic estuarine rodent, is responsible for the destruction of large areas of marsh vegetation in the Mobile Bay estuary. Cattle egrets directly compete with native wading birds for nesting habitat (USACE 2019).

3.10 Air Quality

As described in the 2019 Mobile Harbor GRR/SEIS, the ambient air quality is determined by the type and amount (concentration) of pollutants emitted into the atmosphere, the size and topography of the air basin in question, and the prevailing meteorological conditions in that air basin. Through the Clean Air Act of 1970 (CAA) and its amendments, Congress has mandated the protection and enhancement of the nation's air quality. The EPA has established the National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants to protect the public health and welfare: sulfur dioxide (SO2), ozone (O3), nitrogen dioxide (NO2), particulate matter whose particles are less than or equal to 10 micrometers (PM10), particulate matter whose particles are less than or equal to 2.5 micrometers (PM2.5), carbon monoxide (CO), and lead (Pb). The State of Alabama has adopted the NAAQS as the state ambient air standards (USACE 2019).

More details regarding criteria pollutants and their effects on public health are provided in Appendix C-3 of the 2019 Mobile Harbor GRR/SEIS.

3.11 Hazardous and Toxic Materials

No supplemental information required. Please see Section 2.13 of Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS for a description of Hazardous and Toxic Materials within the action area. No physical changes have occurred to the action area since the 2019 analysis. However, the USACE Mobile District is currently conducting a sediment testing program for the material within the action area pursuant to Section 103 of the MPRSA with EPA Region IV for placement of dredged material suitability within the ODMDS. Compliance with Section 103 of the MPRSA will be met

once concurrence from EPA Region IV is received and prior to any potential placement of material in the Federally designated ODMDS.

3.12 Noise

No supplemental information required. Please see Section 2.14 of the 2019 Mobile Harbor GRR/SEIS Appendix C for a description of the airborne, background, and underwater noise analysis within the action area.

3.13 Cultural and Historic Resources

The USACE is required under Section 106 of the 1966 National Historic Preservation Act (NHPA) to consider the effects if it's undertakings on historic properties. According to 36 Code of Federal Regulation (CFR) § 800.16(y), an undertaking is a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency. This includes those carried out by or on behalf of a federal agency, those carried out with federal financial assistance and those that require a federal permit, license, or approval. According to 36 CFR § 800.(l)(1) of the NHPA, a historic property is any prehistoric or historic district, site, building, structure, or object that is listed on or eligible for listing on the National Register of Historic Places (NRHP).

As a supplemental action under the 2019 Mobile Harbor SEIS, coordination with Section 106 for this Supplemental EA was guided by stipulations and requirements in the 2019 Programmatic Agreement (PA) between the USACE and Alabama State Historic Preservation Officer (SHPO) regarding the Mobile Harbor GRR. So far, Section 106 compliance efforts for this Supplemental EA completed under the 2019 PA include:

- Consultations with the SHPO and Federally Recognized Tribes to revise the area of potential effect (APE) for this Supplemental EA,
- Phase I remote sensing marine archaeological inventory survey of the revised APE, and
- A Phase II archaeological diver assessment of potential submerged historic resources identified during the Phase I survey effort.

No historic properties were identified within the APE during the Phase I survey and Phase II diver assessment and the USACE has determined that the proposed action in this Supplemental EA will result in no effects to historic properties. The USACE has applied the criteria of adverse effect according to 36 CFR 800.5(a)(1) and determined that the project will result in no historic properties effected according to 36 CFR 800.4(d)(1).

3.14 Protected Managed Lands and Resources

According to the Alabama Department of Conservation and Natural Resources (ADCNR), Alabama is home to 11 national wildlife refuges that represent a cross-section of Alabama's diverse natural environment as well as state and privately managed areas. Alabama's protected lands and resources encompass the beaches and estuaries of the Gulf Coast, the waters of the Tennessee River, and the swamps and wetlands along the Tombigbee River. The ADCNR is the state agency responsible for the conservation and management of Alabama's natural resources, including state parks, state lands, wildlife, and aquatic resources. A summary of the Protected and Managed Lands considered in

this report is provided in Section 2.17 of Appendix C of the 2019 Mobile Harbor GRR/SEIS report.

3.15 Aesthetics and Recreation

No supplemental information required. Please see Section 2.18 of the 2019 Mobile Harbor GRR/SEIS Appendix C for a description of the Aesthetics and Recreation analysis within the action area.

3.16 Socioeconomics

No supplemental information required. For the complete detailed socioeconomic analysis (regional economic activity, population, employment and income) for the Mobile Harbor improvements, see Section 2.19 of Appendix C of the 2019 Mobile Harbor GRR/SEIS.

3.17 Environmental Justice

Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* requires that Federal agencies "conduct their programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under such programs, policies, and activities because of their race, color, or national origin."

Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, and Indian tribes serves to heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population (CEQ 1997).

For the complete detailed Environmental Justice analysis for the Mobile Harbor improvements, see Section 2.22 of Appendix C of the 2019 Mobile Harbor GRR/SEIS. Analysis includes minority populations, low-income populations, neighborhood populations, and subsistence consumption of fish and wildlife.

3.18 Public and Occupational Safety

No supplemental information required. Please see Section 2.5.23 of the 2019 Mobile Harbor GRR/SEIS for a description of public and occupational safety within the action area.

4 POTENTIAL ENVIRONMENT IMPACTS

Please see the 2019 Mobile Harbor GRR/SEIS and its Environmental Appendix C for complete analysis and details of all environmental impacts associated with the Mobile Harbor improvements project. This Supplemental EA provides supplemental information related to the specific widening of the channel as stated in Section 2.2 above for the Proposed Action. The Proposed Project assessed here is a minor change in design from the improvements found in the overall 2019 Mobile Harbor GRR/SEIS with most of the

previously assessed impacts remaining the same.

4.1 Climate, Tides, and Gulf Circulation

No Action: Under the No Action Alternative, there would be no change from existing conditions.

Proposed Action: Generally, the scale and type of activities associated with the No Action Alternative, Proposed Project, or Future Maintenance activities would not result in overall regional climate, meteorological, or oceanographic impacts. No activities associated with any of the alternatives could result in impacts on regional processes and would not change the climate or weather patterns in the project area. As a result, there would be no impacts to winds, rainfall, temperature, astronomic tides, or the Gulf of Mexico circulation patterns.

4.2 Geology, Soils, and Sediments

The significance criterion for geology, soils, and sediment would be a permanent change in underlying bedrock or sediment stratigraphy that interferes with the natural movement and deposition of sediments in the Mobile Bay and nearshore Gulf of Mexico.

All areas of the Mobile Harbor GRR improvement project were tested and approved as suitable by EPA Region IV for ocean placement. Following the redesign of the Upper Bay Channel, a new testing program was implemented for the areas defined within the Proposed Action. Sediment suitability tests have been completed pursuant to Section 103 of the MPRSA for placement of dredge material suitability for ocean placement. Preliminary results show material suitability for ocean placement. These tests include the physical characterization, chemical contaminations, and biological compatibility. Should the material be shown to meet the EPA standards, the material will be allowed to be placed into the designated ODMDS. In addition to the ODMDS, the material may also be placed in other previously authorized locations such as beneficial use sites including Deer River, Mobile County Restoration and Dauphin Island Causeway Beneficial Use, Mobile County, and Site A of the Relic Shell Mined Area.

No Action: Under the No Action Alternative, there would be no change in existing conditions and no impacts on soils. A Section 404(b)(1) Evaluation Report has been prepared for this study which describes the existing sediment characterizations in the navigation channel and placement areas. A copy of the 404(b)(1) is included in Attachment A.

Proposed Action: There would be no permanent changes to the underlying sediment and supporting geologic structure that would result in impacts to sedimentation or sediment transport processes associated with the project. No activities from project construction, sediment placement, or Future Maintenance will have an impact on the underlying geological framework.

4.3 Water Quality

No Action: Under the No Action Alternative, there would be no change from existing conditions.

Proposed Action: As evaluated in Section 3.5 of the Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS, the output from the water quality modeling efforts were analyzed to assess relative differences in dissolved oxygen (DO), salinity, temperature, total suspended solids (TSS), and nutrients. The results of the modeling analyses show that no impact from the project is predicted for temperature or DO levels in the surface or bottom waters at these locations and that the daily average DO conditions of the proposed project are the same as the No Action alternative. In addition, increases in nutrient levels would not be expected to result from implementation of the proposed project.

The dredging and placement operations are expected to create an increase of construction-related turbidity in excess of the natural condition in proximity of the channel and placement site. Impacts from sediment disturbance during these operations are expected to be temporary, minimal and similar to conditions experienced during past routine O&M dredging of the channel. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality. No measurable changes in temperature, salinity, pH, hardness, dissolved oxygen or other chemical characteristics are expected. Thus, the USACE, Mobile District does not anticipate any adverse impacts as a result of this action.

The USACE, Mobile District is required to implement appropriate best management practices (BMPs) to minimize turbidity impacts to the maximum extent practicable under the Alabama Department of Environmental Management (ADEM) Section 401 Water Quality Certification (WQC) conditions. The USACE Mobile District has consulted with the ADEM pursuant to Section 401 of the Clean Water Act and the Coastal Zone Management Act (CZMA) as required. By letters dated 28 September 2023, the ADEM provided WQC (ADEM-2018-345.1-WQC-COEP) and CZM certifications for a period of 10-years.

4.4 Groundwater

No Action: No impacts would occur to groundwater under the No Action because no changes to existing groundwater would occur.

Proposed Action: Impacts to groundwater will be minimized by utilizing best management plans (BMPs) during construction. Groundwater impacts will also be minimized by designing appropriate stormwater retention, infiltration, and/or sewage infrastructure as needed. Facilities within the immediate area will have access to municipal water. No negative impacts would occur to the local area's water supply under the Proposed Action because no large changes to existing water usage would occur. No indirect impacts are anticipated.

4.5 Biological Resources

4.5.1 Wetlands

No Action: Under the No Action Alternative, the channel widths would remain the same with no impacts occurring.

Proposed Action: No wetlands, submerged aquatic vegetation, hardbottom, or natural shellfish reefs are found within the project area. The proposed channel widening would affect mud bottoms adjacent to the existing and maintained Federal Navigation Channel. All placement areas, discussed in section 2.2 above, were assessed in the 2019 Mobile Harbor GRR and are authorized for use.

4.5.2 Submerged Aquatic Vegetation

No Action: Under the No Action Alternative, the channel widths would remain the same with no impacts occurring.

Proposed Action: No wetlands, submerged aquatic vegetation, hardbottom, or natural shellfish reefs are found within the project area. The proposed channel widening would affect mud bottoms adjacent to the existing and maintained Federal Navigation Channel. All placement areas, discussed in section 2.2 above, were assessed in the 2019 Mobile Harbor GRR and are authorized for use.

4.5.3 Hard Bottom Habitat

No Action: Under the No Action Alternative, the channel widths would remain the same with no impacts occurring.

Proposed Action: No wetlands, submerged aquatic vegetation, hardbottom, or natural shellfish reefs are found within the project area. The proposed channel widening would affect mud bottoms adjacent to the existing and maintained Federal Navigation Channel. All placement areas, discussed in section 2.2 above, were assessed in the 2019 Mobile Harbor GRR and are authorized for use.

4.5.4 Essential Fish Habitat

No Action: Under the No Action Alternative, existing conditions in the project area would continue. There would be no expected environmental changes in association with maintaining the channel widening project.

Proposed Action: The USACE, Mobile District takes extensive steps to reduce and avoid potential impacts to EFH as well as other significant area resources. Adverse impacts to wetlands, oyster reefs, or SAV from the implementation of the project would be anticipated to be no-effect, limited or negligible. Most of the motile benthic and pelagic fauna, such as crab, shrimp, and fish, should be able to avoid the disturbed area and should return shortly after the activity is completed. No long-term direct impacts to managed species of finfish or shellfish populations are anticipated. However, it is reasonable to anticipate some non-motile and motile invertebrate species will be physically affected through dredging and placement operations. These species are expected to recover rapidly soon after the operations are complete. No significant long-term impacts to this resource are expected as result of this action. Increased water

column turbidity during dredging would be temporary and localized. No change is anticipated to occur to the habitat types. Overall, Impacts to EFH would be temporary and localized in nature associated with the dredging and placement activities in Mobile Harbor. The proposed activities would not significantly affect coastal habitat identified as EFH in the project area. Based on the limited occurrence of this habitat in the general vicinity of the project and the temporary nature of the impact, the overall impact to fisheries resources is considered negligible.

The proposed action will not adversely affect coastal habitat identified as EFH in the project area. No adverse impacts to wetlands, SAVs or shell reefs, which are outside of the project footprint, are anticipated. Overall, Impacts to EFH would be temporary and localized as a result of the dredging and placement activities. In addition, material being utilized for beneficial use purposes of marsh and wetland creation would be beneficial to coastal habitat and resource conservation.

Consultation History: EFH consultation was completed with NMFS-HCD as required under MSFCMA for the 2019 Mobile Harbor GRR/SEIS. The USACE, Mobile District made the determination that the project would have no adverse effect to EFH. As a result of reviewing the Main Report and Appendix C, by letter dated September 7, 2018, NMFS concurred with the Districts determination that the project would not result in adverse effects to EFH. For this proposed project, the USACE, Mobile District has coordinated its EFH determination of no adverse effect with NMFS-HCD. By email dated 22 August 2023, the NMFS-HCD concurred with the project as proposed.

4.5.5 Benthos, Motile Invertebrates, and Fishes

No Action: Under the No Action Alternative, existing conditions in the project area would continue. There would be no expected environmental changes in association with maintaining the navigation project.

Proposed Action: No significant impacts to the benthos, motile invertebrates, and fishes from the proposed action were identified in this evaluation. There would be temporary disruption of the aquatic community caused by the dredging and disposal operations. Non-motile benthic fauna within the area would be destroyed by dredging and disposal operations but should repopulate within six to twelve months upon project completion (Culter,1982). Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, would avoid the disturbed area and should return shortly after the activity is completed. The larval and juvenile stages of these forms may not be able to avoid the activity due to their limited mobility. For further detailed analysis of potential effects to biological resources, see Section 3.8 Biological Resources in the Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS.

4.6 Threatened and/or Endangered Species

No Action: No impacts would occur to Threatened and/or Endangered Species (T&E) under the No Action because no physical effects to species or changes to existing wildlife habitat would occur.

Proposed Action: The proposed activity does not contain any terrestrial component that would affect Loggerhead or Kemp's ridley sea turtles nesting. No USFWS or National Marine Fisheries Service (NMFS) Protected Resources Division (PRD) designated critical habitat is present within the proposed channel widening project area.

Impacts to sea turtles and gulf sturgeon have been addressed through consultation of the Gulf Regional Biological Opinion (GRBO 2003 as amended 2005 and 2007) for Dredging of Gulf of Mexico Channels and Sand Mining Areas Using Hopper Dredges (Consultation Number F/SER/2000/01287) with the NMFS PRD.

The USACE, Mobile District finds that the proposed activity may affect but is not likely to adversely affect (MANLA) any endangered and/or threatened species likely to be found in the project area (Table 3).

LISTED SPECIES	**SCIENTIFIC NAME**	**STATUS**	**DETERMINATION**
Marine Mammals			
West Indian manatee	*Trichechus manatus*	Endangered	MANLA
Reptiles			
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered	MANLA
Loggerhead sea turtle	*Caretta caretta*	Threatened	MANLA
Alabama red-bellied turtle	*Pseudemys alabamensis*	Endangered	No Effect
Fish			
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	Threatened	MANLA
Birds			
Wood stork	*Mycteria americana*	Threatened	No Effect

Table 3: USFWS Listed Species with Effects Determination

Consultation History:
Section 3.10 of Appendix C of the 2019 Mobile Harbor GRR/SEIS describes in detail the previous consultation history and rationale for the USACE effects determination. In conclusion it states: “Regional data such as the USFWS and NMFS species list and/or critical habitat designations, suitable habitat criteria, examination of possible routes of effects, and the Gulf Regional Biological Opinion (GRBO) was used to make a

determination that the project may affect but is not likely to adversely affect threatened or endangered species. No designated critical habitat is found within the action area. Pursuant to Section 7 of the ESA, consultation with the USFWS and NMFS-Habitat Conservation Division has been initiated and a request for concurrence with this determination has been sent by letter dated November 9, 2018. The USFWS in a letter dated December 21, 2018 concurred with the may affect but is not likely to adversely affect determination. In regard to the Migratory Bird Treaty Act (MBTA), it is noted that the project area is entirely within the open water and away from any landforms; therefore, it is highly unlikely that any impacts to the piping plover, red knot, or least tern would occur. In addition, by letter dated April 1, 2019, the USFWS provided the final Fish and Wildlife Coordination Act Report (FWCAR). This report stated that the USFWS did not oppose the implementation of the proposed project provided the listed conservation measures and recommendations were implemented. The USACE, Mobile District does not object to these conditions and consultation will continue until final resolution."

For this proposed project, by letter dated July 27, 2023, the USFWS concurred with the USACE determination that the project may affect, but will not likely adversely affect listed species and/or designated critical habitat.

4.7 Marine Mammals

No Action: Under the No-Action Alternative, marine mammals would continue to utilize the area without additional disruption from localized temporary impacts.

Proposed Action: A dredge transiting to the offshore ODMDS could encounter a marine mammal but such interactions are rare. Noise generated from dredging equipment has the potential to harm marine mammals, including large whales. Although behavioral impacts are possible (i.e., a whale changing course to move away from a vessel), the number and frequency of vessels present within a given project area is small and any behavioral impacts would be expected to be minor. Furthermore, for hopper dredging activities, endangered species observers would be on board and would record all large whale sightings and note any potential behavioral impacts.

West Indian Manatee. The proposed project may affect but is not likely to adversely affect the manatee. The dredging contractors would adhere to the standard manatee conditions during construction in order to avoid vessel strikes. The standard manatee conditions apply annually from 1 June to 30 September. The dredging contractors will be instructed to take the necessary precautions to avoid contact with manatees. If manatees are sighted within 100 yards of the dredging activity, all appropriate precautions would be implemented to insure protection of the manatee. The Contractor would stop, alter course, or maneuver as necessary to avoid operating moving equipment (including watercraft) any closer than 100 yards of the manatee. Operation of equipment closer than 50 ft to a manatee shall necessitate immediate shutdown of that equipment.

For this proposed project, by letter dated July 27, 2023, the USFWS concurred with the USACE determination that the project may affect, but will not likely adversely affect listed

species and/or designated critical habitat.

4.8 Fisheries Resources

No Action: Under the No Action Alternative, existing conditions in the project area would continue. There would be no expected environmental changes in association with maintaining the navigation project.

Proposed Action: The significance criteria for commercial and recreational fishing in the project area would be an effect to the species or a change to the habitat structure leading to a change in species composition or long-term changes in revenue for fisheries within Mobile Bay. Results of the detailed analyses provided within the Environmental Appendix C of the 2019 Mobile Harbor GRR/SEIS suggest no substantial impacts in aquatic resources within the study area are anticipated due to project implementation, as the area of greatest potential changes to environmental conditions are already adapted to natural shifts in multiple water quality and habitat factors as well as conditions resulting from the existing navigation channel. In addition, the dredge material placement areas proposed are frequently utilized and no expected impacts to commercial fishing activities above those that already exists from normal maintenance operations are expected to occur.

4.9 Invasive Species

No Action: Under the No Action Alternative, existing conditions in the project area would continue. There would be no expected environmental changes in association with maintaining the navigation project.

Proposed Action: The project area is within open water only and along the existing federal navigation channel. The area is devoid of any aquatic resources besides benthic habitat. No invasive species exist within the project area that would either be adversely or beneficially affected.

4.10 Air Quality

No Action: No impacts would occur to air quality under the No Action because no changes to existing pollution loading would occur.

Proposed Action: Air quality in the vicinity of the proposed action would not be significantly affected by the proposed action. The equipment and machinery would generate some machinery related air pollution during dredging activities such as increased particulate levels from the burning fossil fuels. However, these impacts would be minor and temporary in nature. The proposed action complies with the CAA. The project area is in attainment with the NAAQS parameters. The proposed action would not affect the attainment status of the project area or the 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 critical pollutants.

Mobile County is in attainment with the NAAQS of the CAA. Therefore, the County is meeting air quality standards for all criteria pollutants (EPA, 2022).

4.11 Hazardous and Toxic Materials

No Action: Under the No Action Alternative, current channel and harbor maintenance operations would continue. The levels of hazardous materials and petroleum products traveling through the channel and harbor would remain similar.

Proposed Action: During construction, petroleum product levels including the consumption of fuel as well as fuel/oil storage could increase in the Mobile Harbor and channel area due to construction dredging and placement activities. Any potential impacts would be temporary. Once implementation of the proposed project is complete, the equipment would leave the area and/or continue to operate in a maintenance mode in other areas of the channel. Although exposure risks may increase slightly due to the potential for more vessels in the channel and harbor during dredging operations, this increase would be minor. Overall, under the proposed action, minor but temporary impacts associated with hazardous materials and petroleum products may occur.

The USACE Mobile District is currently conducting a sediment testing program for the material within the action area pursuant to Section 103 of the MPRSA with EPA Region IV for placement of dredged material suitability within the ODMDS. Compliance with Section 103 of the MPRSA will be met once concurrence from EPA Region IV is received and prior to any potential placement of material in the Federally designated ODMDS.

4.12 Noise

No Action: Under the No Action Alternative, current channel and harbor maintenance operations would continue.

Proposed Action: Noise from the dredge and other job-related equipment is expected to increase during the proposed operations in the project vicinity. Noise levels will resume to prior conditions once the dredging and disposal operations are complete. No long-term increase in noise will occur in or around the project area. No indirect impacts are anticipated.

4.13 Cultural and Historic Resources

No Action: Under the No Action Alternative, the proposed project would not be implemented. Dredging and placement operations would remain unchanged. Under this scenario no additional historic resources would be disturbed or impacted.

Proposed Action: In compliance with Section 106 of the NHPA and requirements of the 2019 PA, the USACE, Mobile District has completed a Phase I inventory survey and Phase II resource assessment within the APE. Based on the results of these efforts, the USACE, Mobile District, has determined that the proposed channel widener project will not result in historic properties effected. Consultation with the Alabama SHPO and Federally Recognized Tribes regarding this finding of no effect is ongoing. The USACE has applied the criteria of adverse effect according to 36 CFR 800.5(a)(1) and determined that the project will result in no historic properties effected according to 36 CFR 800.4(d)(1).

Consultation with the SHPO and Federally Recognized Tribes regarding this finding of no effect has concluded. By letter (AHC 23-1297) dated 6 October 2023, the SHPO concurred with the USACE determination of no effects to historic properties. Responses from the Federally recognized Tribes were not received.

4.14 Protected Managed Lands and Resources

No Action: Under the No Action Alternative, existing conditions in the project area would continue. There would be no expected environmental changes in association with maintaining the navigation project.

Proposed Action: Results of the detailed analyses by Berkowitz et al. (2019) suggest that no substantial impacts in aquatic resources within the Federal Reserves and other managed areas are anticipated due to project implementation, as the area of greatest potential changes to environmental conditions are already adapted to natural shifts in salinity (and other factors) as well as conditions resulting from the existing navigation channel. The project is located within open water only adjacent to the existing navigational channel.

Future maintenance of the navigation channel would be similar and no greater than current conditions after project construction and no additional impacts to national wildlife refuges and private managed areas in the project area would be expected to occur.

4.15 Aesthetics and Recreation

No Action: No impacts would occur to the area aesthetics under the No Action because no changes to view frames, vegetation, or architecture would occur.

Proposed Action:
Direct Impacts: Recreational and commercial boaters that presently use the area near the navigation channel would be temporarily unavailable. However, unavailability of the area would be short term in duration and minimal in overall impact. Upon completion of the dredging activity, the affected area would quickly return to its primary use as a Federal navigational channel. The dredging activity would take place in open water with no visible effects to the surrounding viewshed. There would be no long-term adverse effects to aesthetics of the area.

Future maintenance of the navigation channel would be similar and no greater than current conditions after project construction and no additional impacts to national wildlife refuges and private managed areas in the project area would be expected to occur.

4.16 Socioeconomics

Components of socioeconomic resources that are analyzed include population, employment, and income. The Region of Interest encompasses Alabama's two southernmost coastal counties - Mobile and Baldwin Counties. It includes the developed urban area of the city of Mobile, the maritime facilities, and residential areas along the east and west banks of the Mobile River and Mobile Bay. Mobile and Baldwin counties form the economic region of interest, which is the geographic area in which the predominant social and economic impacts of the Proposed Action are likely

to occur.

No Action: Under the No Action Alternative, the proposed project would not be implemented. Therefore, existing socioeconomic conditions would be expected to remain as they are at present for the short-term. However, medium to long-term detrimental economic impacts may result from the No Action Alternative. If improvements are not made to Mobile Harbor to meet the shipping industry's need for the port to accommodate larger shipping vessels coming online internationally, the Port may not reach its full potential and Alabama's share of global trade may be negatively impacted. Over the long-term, the port may lose business to other ports with facilities that accommodate larger ships and allow ships to maximize capacity. As a result, international trade could be limited, which may hinder current growth trends causing an indirect negative impact to employment levels, salary levels and tax collections in the ROI, surrounding counties and the state of Alabama.

Proposed Action: A minimal amount of materials and services (primarily fuel) may be purchased locally in Mobile and Baldwin Counties. The direct impact to the economy associated with dredging activities, if any, would be short-term, minor and beneficial to the local economy.

The local area could see a minor increase in temporary construction workers. Beneficial indirect impacts to the hospitality and service industries for accommodations, food and entertainment purchases by the temporary workers are likely, but minor. Changes to population levels in the area as a result of construction activities are not expected.

The adverse environmental impacts of implementation of the proposed action during construction are minimal and temporary in nature and include reduced air quality, increased noise from dredging operations and increased traffic from workers. These environmental impacts can contribute to socioeconomic impacts. Traffic would not be impacted due to the small amount of workers changing rotations on the dredge equipment, such that air quality, noise and traffic impacts would not contribute to adverse socioeconomic impacts. Overall, socioeconomic impacts from implementation of the RP are anticipated to be positive and short-term during construction although small relative to the total economy of the counties.

4.17 Environmental Justice

The environmental justice evaluation includes whether an alternative potentially results in significant adverse health or environmental impacts and if those impacts would be disproportionately experienced by a minority or low-income population.

No Action: Under the No Action Alternative, the proposed action would not be implemented and no channel improvements would be made. In addition, over the long-term, detrimental economic impacts may result from the No Action Alternative, as the Port may not reach its full potential; resulting in loss of trade causing an indirect negative impact to employment levels, salary levels and tax collections, which could

reduce funding for schools and other state supported services.

Proposed Action: The adverse environmental impacts of implementation of the proposed action are minimal and temporary in nature and include reduced air quality, increased noise from dredging operations and increased traffic from workers. Air quality would be temporarily and insignificantly affected by the proposed action. Emissions are expected to occur from construction activities and would result from the operation of the dredge and any other support equipment which may be on or adjacent to the job site. Dredging operations do not generate high levels of air noise. Dredging equipment moves frequently, thereby limiting the exposure of any one location to construction noise for a prolonged period of time. The impact of construction related noise would be short-term and insignificant. The general absence of significant adverse impacts to human health, environmental health risks, and safety risk indicates the proposed project would not have disproportionately high and adverse impacts to any communities, including environmental justice communities. A full detailed analysis of potential effects to minority and low-income communities can be found in Section 2.22 and 3.24 of Appendix C of the 2019 Mobile Harbor GRR/SEIS.

4.18 Public and Occupational Safety

No Action: Under the No Action alternative, the channel widths would remain the same. After further Ship Simulation analysis, the existing channel widths have been determined to be too narrow for vessel safety and navigation.

Proposed Action: The proposed action would expand the channel width in the project area allowing for increased vessel safety and maneuverability.

5 CUMULATIVE EFFECTS

The CEQ regulations define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.” (40 CFR. § 1508.7). Actions considered in the cumulative impacts analysis include implementation of the proposed action and no action alternatives and other Federal, State, Tribal, local agencies, or government or private actions that impact the resources affected by the proposed action.

The total of direct impacts associated with the proposed channel widening are minor. The natural environment in the project area has long been impacted by a variety of human actions including the construction and maintenance of the Mobile Harbor Federal Navigation channel. This project site is within open water only and adjacent to multiple industrial facilities. The widening of the channel in this location would improve the safety of the vessels operating within the harbor and turning basin. There are no known future actions being contemplated that would add to these cumulative impacts. This project does not cumulatively contribute to the environmental degradation of the local area.

Complete and thorough details pertaining to the potential cumulative effects can be found in the 2019 Mobile Harbor GRR/SEIS Main Report Section 6.0 and in Section 4 of Environmental Appendix C.

In conclusion, the proposed action, as well as the No Action alternative, would have no more than minor direct, indirect, or cumulative impacts on the environment.

6 PROTECTION OF CHILDREN

Executive Order (EO) 13045, the Protection of Children from Environmental Health Risks and Safety Risks, was issued April 23, 1997. EO 13045 applies to significant regulatory actions that concern an environmental health or safety risk that could disproportionately adversely affect children.

Environmental health risks or safety risks refer to risks to health or to safety that are attributable to products or substances that the child is likely to encounter or ingest. The proposed action would not impact the health and safety of children. Barriers, site workman, and other measures would be implemented to provide protection to non-project workers.

7 COORDINATION

This EA was made available to the public and agencies through a 30-day public announcement of availability (Appendix C) on August 9, 2023. The U.S. Environmental Protection provided comments to which USACE, Mobile District provided a response by email dated September 27, 2023. In addition to the comments by the EPA Region IV, concurrence with the proposed project was received by the USFWS, NMFS-HCD, AHC SHPO, and the ADEM and can be found in Appendix C.

8 CONCLUSION

Based on the above discussion, implementation of the proposed action, dredging and placement activities is not projected to have any significant long-term adverse effects. Upon finalization of this Supplemental EA, a Findings of No Significant Impacts (FONSI) will be prepared and signed by the District Commander.

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