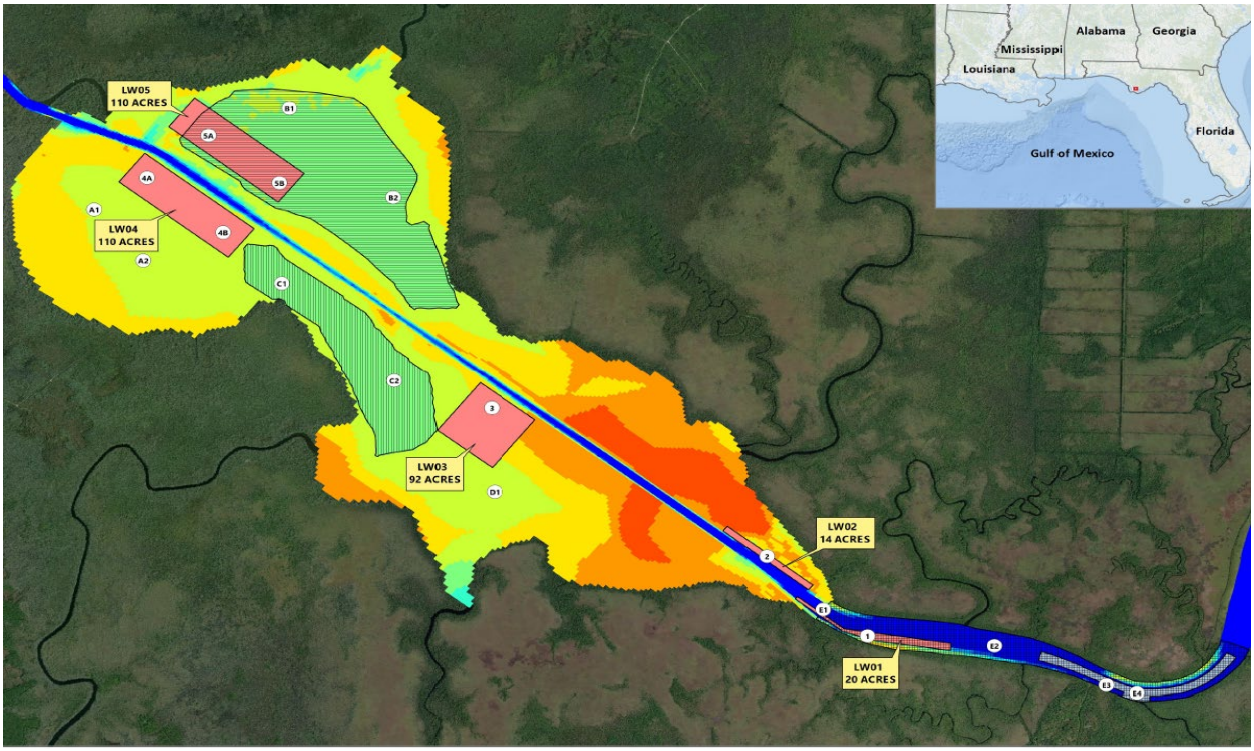
DRAFT ENVIRONMENTAL ASSESSMENT

Additional Placement Areas for Maintenance Dredging of Lake Wimico

Gulf Intracoastal Waterway, Gulf County, Florida

A FEDERALLY AUTHORIZED PROJECT



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June 2021

Table of Contents

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS AND ACCRONYMS

Apalachicola Chattahoochee Flint (ACF)
Area of Potential Effect (APE)
Bald and Golden Eagle Protection Act (BGEPA)
Clean Water Act (CWA)
Coastal Zone Consistency (CZC)
Code of Federal Register (CFR)
Council of Environmental Quality (CEQ)
Cubic Yards (cys)
Endangered Species Act (ESA)
Engineer Research and Development Center (ERDC)
Engineer Regulation (ER)
Environmental Assessment (EA)
Environmental Impact Statement (EIS)
Environmental Protection Agency (EPA)
Essential Fish Habitat (EFH)
Executive Order (EO)
Fahrenheit (F)
Finding of No Significant Impact (FONSI)
Florida Department of Environmental Protection (FDEP)
Gulf Intracoastal Waterway (GIWW)
Inland Testing Manual (ITM)
Mean Lower Low Water (MLLW)
Mean Sea Level (MSL)
National Ambient Air Quality Standards (NAAQS)
National Environmental Policy Act (NEPA)
National Historic Preservation Act (NHPA)
National Marine Fisheries Service (NMFS)
National Marine Fisheries Service-Protected Resources Division (NMFS-PRD)
Parts per thousand (ppt)
Polycyclic Aromatic Hydrocarbons (PAH)
Probable Effect Concentrations (PEC)
Sediment Quality Guidelines (SQGs)
State Historic Preservation Officer (SHPO)
Submerged Aquatic Vegetation (SAV)
Threshold Effect Concentrations (TEC)
Total Kjeldahl Nitrogen (TKN)
Total Maximum Daily Loads (TMDL)
Total Organic Carbon (TOC)
Total Petroleum Hydrocarbons (TPH)
Tribal Historic Preservation Officer (THPO)
U.S. Army Corps of Engineers (USACE)
U.S. Fish and Wildlife Service (USFWS)
U.S. Geological Survey (USGS)

1.0 INTRODUCTION

The purpose of this Environmental Assessment (EA) is to address impacts of dredged material placement activities using newly proposed open-water placement areas within Lake Wimico as part of the federally authorized Gulf Intracoastal Waterway (GIWW) in Florida. Lake Wimico is located near Port St. Joe in Gulf County, Florida (Figures 1 & 2). The GIWW bisects the lake between river miles 335 and 341. Lake Wimico is approximately 4,000 acres and is situated to the west of the lower Apalachicola River, to the east of White City, and to the north of Port St. Joe at 29° 48’03”N 85° 08’52”W.

The National Environmental Policy Act (NEPA) of 1969, as amended, excuses or excludes Federal agencies from the preparation of any formal environmental analysis with respect to actions that result in minor or no environmental effects, known as "categorical exclusions.” An intermediate level of analysis, an EA, is prepared for an action that is not categorically excluded but does not clearly require an Environmental Impact Statement (EIS) [40 Code of Federal Register (CFR) §1501.3 (a) and (b)]. Based on the EA, a Federal agency either prepares an EIS, if one appears warranted, or issues a "Finding of No Significant Impact" (FONSI), which satisfies the NEPA requirement. This EA is prepared according to the U.S. Army Corps of Engineers (USACE) Engineer Regulation (ER) 200-2-2, Procedures for Implementing NEPA, and the Council of Environmental Quality (CEQ) Regulations (40 CFR § 1508.27) for Implementing the Procedural Provisions of NEPA (40 CFR § 1500-1508). The CEQ published its Final Rule: Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) in the Federal Register July 16, 2020. The new CEQ NEPA Regulations went into effect September 14, 2020. As such, this EA has been prepared in accordance with the NEPA and the CEQ regulation updates from 2020.

1.1 Project Authority

The existing GIWW project was authorized by the 1936 River and Harbor Act (also known as the Flood Control Act of 1936), Pub. L. 74–738, as amended.

1.2 Description of the Entire Authorized GIWW Project

The authorized project provides for a waterway 12 feet deep and 125 feet wide from Apalachee Bay, Florida, to Mobile Bay, Alabama and a 12 feet deep and 150 feet wide from Mobile Bay, Alabama, to the Rigolets, Louisiana (Lake Borgne Light No. 29), and for a tributary channel (the Gulf County Canal), 12 feet deep, 125 feet wide, and about 6 miles long connecting the waterway at White City, Florida with St. Joseph Bay. The waterway between the 12-foot contours in Apalachee Bay and Lake Borgne Light No. 29 at the Rigolets is 379 miles long.

The existing GIWW project was authorized by the 1936 River and Harbor Act (also known as the Flood Control Act of 1936), Pub. L. 74–738, as amended.

1.3 Environmental Impact Assessment and Prior Studies History

An EIS was prepared for maintenance dredging activities for the portion of the waterway within the Mobile District. This portion starts from Lake Borgne (GIWW Mile 36.3) and ends at its intersection with Carrabelle Harbor Channel (GIWW Mile 376.3), including the Gulf County Canal. An 1976 EIS entitled, *Environmental Statement for Maintenance Dredging of the Gulf Intracoastal Waterway from Pearl River, Louisiana-Mississippi to Apalachee Bay, Florida, U.S. Army Corps of Engineers, (USACE), Mobile District*, was prepared to address the impacts associated with the maintenance dredging of the GIWW. In 1984, an EA entitled, *Environmental Assessment for Modifications to the Maintenance Plan as Presented in the Final Environmental Statement Maintenance Dredging of the Gulf Intracoastal Waterway from Pearl River, Louisiana-Mississippi to Apalachee Bay, Florida* (USACE, 1984), was prepared to address changes to the existing maintenance plan presented in the 1976 EIS. Changes to the plan addressed in the 1984 EA consisted of following: adjustments in the average timing and frequency of maintenance dredging; subdivision and renumbering of disposal areas; the addition of 14 disposal areas; size modifications to 11 upland and eight open water disposal areas; and changes in estimates of dredging quantities. The 1984 EA resulted in a FONSI, which was signed on February 7, 1984.

A prior EA was completed in 2014 that addressed environmental regulation updates to the GIWW federally authorized navigation project for the Florida panhandle, and also addressed impacts of dredging and previously authorized placement areas (with the closest site for Lake Wimico material in the Gulf County Canal upland placement areas). The FONSI was signed on May 9, 2014.

1.4 Project History of the GIWW

In 1909, Congress directed an investigation of a continuous waterway, "inland where practicable," along the Gulf of Mexico from St. George Sound, Florida to the Mississippi River and New Orleans. Several surveys between 1907 and 1925 resulted in the construction of numerous disconnected reaches of channel along the coast, with dimensions ranging from five feet by 40 feet to 12 feet by 90 feet.

The completion of the canal between Choctawhatchee Bay and St. Andrews Bay, Florida, in 1938, made the continuous waterway from St. George Sound to New Orleans a reality. In addition, the extension of the channel from Apalachicola through St. George Sound and Carabelle and thence inland to St. Marks, Florida was authorized in 1937. The waterway, however, has only been completed as far as Carrabelle, Florida. Barge traffic destined for St. Marks precedes from St. George Sound through the open Gulf of Mexico, Apalachee Bay, and the St. Marks River.

The history of Lake Wimico is tied directly to the GIWW as the channel bisects the lake for approximately six miles and, until recently (2019), has not been dredged since the mid 1990's. The most recent mechanical dredging event removed approximately 350,000 cubic yards (cys) and the material was barged to upland placement areas along the Gulf County canal. The impacts from Hurricane Michael that made landfall in the nearby coastal communities of the Florida panhandle on October 10, 2018 caused the need for maintenance dredging, and placement options, within the lake. In the past, dredged material would either be side cast adjacent to the channel or barged long distances to access upland placement alternatives. The currently proposed action would facilitate placement of maintenance dredged material within the lake in deeper segments allowing for lake sediments to remain within the natural lake community and decreases overall cost of placement alternatives.

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The USACE is responsible for providing the federally authorized navigation channel in Lake Wimico that allows for navigation use along the GIWW. Adequate placement capacity is necessary to maintain sufficient channel depths and widths. To ensure this channel is maintained, additional placement sites were pursued to ensure disposal capacity.

3.0 DESCRIPTION OF THE PROPOSED ACTION

The proposed action consists of adding two new open-water placement sites to accommodate approximately 250,000 cys of maintenance dredged material removed from the Lake Wimico portion of the GIWW typically between stations 15785+00 and 16000+00 (dependent on shoaling needs). Dredging and placement activities would be accomplished using hydraulic (cutterhead) or mechanical dredging equipment. The material would be placed in those two newly proposed open-water placement areas within Lake Wimico adjacent to the channel (Figure 3). The GIWW Federal navigation project is maintained to a -12-foot MLLW and 125-foot wide channel. For all channel segments, an additional -2 feet of advance maintenance dredging and -2 feet of overdepth dredging are included to maintain the channel. Maintenance dredging of soft-dredged material with mechanical, and/or hydraulic cutterhead dredges tends to disturb the bottom sediments several feet deeper than the target depth due to the inaccuracies of the dredging process. An additional -3 feet of sediment below the -2-foot paid allowable dredging cut may be disturbed in the dredging process with minor amounts of the material being removed (Tavolaro *et al*., 2007).

Two large areas are proposed for dredged material placement in Lake Wimico (Figure 3). One area (LW-B, approximately 611 acres) is located on the northern side of the channel in the northwest corner of the Lake. A second area (LW-C, approximately 291 acres) is located on the southern side of the channel near the midpoint of the lake.

Average water depths in both placement areas (LW-B and LW-C) range between 5.5 and 6 feet MLLW. The placement areas are in two deeper portions of the lake. The shape of LW-B mimics the northwestern lobe of Lake Wimico, and LW-C as an elongated placement area that lies between the channel and the south-central shoreline of the lake. Sediments in the placement areas are similar (physically and chemically) to that of maintenance dredged material from the channel.

4.0 ALTERNATIVES TO THE PROPOSED ACTION

4.1 No Action Alternative

The 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 CEQ regulations as the benchmark against which Federal actions are to be evaluated. The implementation of the "no action" alternative would result in continued shoaling and restrictive passage through Lake Wimico by both commercial, private, and recreational vessels. This alternative would not provide the necessary conditions for safe movement of commerce or marine vessels through the lake. The “no action” alternative would also precipitate the need for transport of dredged material approximately 10 miles down the Gulf County Canal for placement in previously authorized upland placement areas at a greater expense than the proposed action. Therefore, the "no action" plan was deemed a non-feasible alternative. The only other considered alternative is the proposed action as described in Section 3.0 of this EA.

5.0 PHYSICAL ENVIRONMENT

5.1 Climate

The climate of the Gulf County, Florida is typical of that experienced along the northern Gulf Coast. The range in both temperature and humidity extremes is small because of the moderating effects of the Gulf. These ranges decrease even more when southerly winds prevail and impart characteristics of a marine climate. Continental influences are felt with northerly winds that usually bring relatively dry air and larger diurnal temperature ranges. The annual average precipitation for the central portion of Gulf County, Florida Panhandle is greater than 58 inches. Frequency of rainfall is consistent through most of the year. Afternoon thunderstorms increase the amount of rainfall during the summer. Hurricanes can also contribute significantly to rainfall accumulation from summer to early fall.

The average annual maximum daily temperature is approximately 78° Fahrenheit (F). Average annual minimum daily temperature falls around 59° F. Temperatures in the area range greater than 88° F within the summer months of July and August to lows of

40° F in January. Summer and early fall humidity is high, usually between 80 and 100 percent in the afternoon. Winter and early spring humidity is much lower, often less than 20 to 40 percent during the warmest time of day.

5.2 Topography, Geology, and Soils

Gulf County, Florida covers an area of approximately 592 square miles and is comprised of a relatively flat terrain, ranging in elevation from 0 to approximately 50 feet above mean sea level (MSL). Lake Wimico lies in the Gulf coastal lowlands physiographic province, and is characterized overall by numerous small creek drainages, alluvial rivers, inland lakes, bays and sounds. According to data gathered by the Shuttle Radar Topography Mission, the lowest elevation in Gulf County is -46 feet ranking Gulf County 44th in terms of lowest elevations when compared to a total of 67 counties in Florida. Gulf County's highest elevation is 148 feet which ranks it 36th in terms of highest elevations when compared to a total of 67 counties in Florida.

Soils in Gulf County, Florida surrounding Lake Wimico consist predominately of medium to fine grain sands and silts associated with recent Pleistocene formations (USGS, 1982). Specifically, lower marine and estuarine deposits are prevalent from accumulated deposition from the Gulf of Mexico. The stratigraphy generally includes light sandy moderately well-drained topsoils overlaying dark somewhat poorly drained sandy subsoil. The wetland soils tend to have a higher clay content, but the marine origins of the predominate parent materials tend to make sand the dominate grain size throughout. Sediments in Lake Wimico are characterized predominantly by silts and clays (65-90%) and sands (10-35%) (USACE and Anchor QEA, 2020).

5.3 Hydrodynamic Modeling

In 2019, the USACE via its contractor, conducted hydrodynamic modeling in Lake Wimico to express sediment deposition and potential placement areas within the lake. Most of the shoaling in the channel is focused along the center reach of the channel. Additionally, the modeling showed two large potential placement areas in the northwestern portion of the lake (Figure 3) that were deep areas, and not near to surrounding submerged aquatic vegetation (SAV) beds along shorelines and in shallower portions of the lake. Overall, the channel is deeper on both ends of the lake with higher rates of shoaling in the center portion caused by tropical storm activity since 2018.

6.0 AFFECTED ENVIRONMENT

The safeguarding of Lake Wimico helps preserve and protect the water quality of the highly productive Apalachicola River, Apalachicola Bay and Gulf of Mexico. It creates a protected refuge for resident and migratory wildlife, including many federally and state

listed species. The lake and its surrounding lands and waters are home to the Florida black bear, manatee, bald eagle, osprey, and many species of wading and shore birds, and turtles. Its water flow into Apalachicola Bay is critical to nurseries of migrating fish and oyster populations. Additionally, the conservation of the cypress-dominated swamps, marshes and water flow help ensure a resilient landscape that provides adaptation to impacts of climate change and sea level rise, and habitat for ecological communities.

6.1 Hydrology and Water Resources

The Lake Wimico watershed drains approximately 75,000 acres from surrounding Gulf County, Florida environments with an abundant supply of both surface and groundwater inputs. Lake Wiimico is located in the extreme southeastern portion of Gulf County with flow coming from the west in St. Andrew's Bay and flow exiting the lake into Apalachicola River and Bay to the east. Lake Wimico also falls between two major groundwater systems located in the general vicinity: the Sand and Gravel Aquifer located in the western portion of the panhandle and the Florida Aquifer System in the east. Hydrology from Lake Wimico flows to increasingly saline environments in St. Andrew Bay, Apalachicola Bay, and St. Joseph Bay (Brim and Handley, 2007). U.S. Geological Survey (USGS) gage 02359170 (closest USGS gage to Lake Wimico) on the Apalachicola River measures water quality parameters ranging from temperature, dissolved oxygen, turbidity, pH, and specific conductance and provides data for potential inputs to Lake Wimico.

The groundwater supply in and around Lake Wimico is abundant and generally of good quality. This stems from two factors; a high annual rainfall and an aquifer of unconsolidated quartz sand and gravel that serves as an immense reservoir. The groundwater in this region supplies nearly 80 percent of the wells in the panhandle and is one of the softest and least mineralized groundwater supplies within the state (McGovern, 2007).

The St. Andrew Bay watershed covers approximately 750,000 acres in Walton, Washington, Jackson, Calhoun, Gulf and Bay counties. It is the only major basin that lies entirely within the Florida panhandle. The average depth of the bay is 27 feet. Several embayments are included in the watershed; these are the St. Joseph Bay and the interconnected St. Andrew, West, East and North bays.

The Apalachicola River and Bay Basin encompasses approximately 280 square miles and incorporates St. Vincent Sound, East Bay, Apalachicola Bay, and St. George Sound. The watershed is part of a larger basin, the Apalachicola-Chattahoochee-Flint (ACF) River system. The ACF river basin covers the southeastern part of Alabama, north-central and southwestern portions of Georgia, as well as the central part of the Florida panhandle. The major freshwater inflow to the bay is from the Apalachicola River. Headwaters for this alluvial river system originate in the Blue Ridge physiographic province (Livingston *et al*., 1974).

6.2 Air Quality

The Clean Air Act of 1970, as amended, mandated that the U. S. Environmental Protection Agency (EPA) establish ambient standards for certain pollutants, regarding all identifiable effects a pollutant may have on the public health and welfare. The EPA subsequently developed the National Ambient Air Quality Standards (NAAQS) identifying levels of air quality, which it judged necessary to protect public health and welfare, and account for the environment. Areas in compliance with the NAAQS are termed as in attainment areas, while areas not meeting the standards are termed non-attainment areas. The Florida Department of Environmental Protection (FDEP)-Division of Air Resource is responsible for administrating the Clean Air Act in the State of Florida.

According to the monitored ambient air quality measurements, Gulf County is considered an attainment area for all monitored pollutants including Carbon Monoxide (CO), Ozone (O3), Particulate Matter (PM-10), Sulfur Dioxide (SO2), and Lead (Pb).

Sources of air pollution in the project area are minor and mainly due to non-point sources, such as boat motors and commercial vessel emissions. No major sources of air pollution were found within the vicinity of the project area.

6.3 Noise

Noise, generally, can be defined as unwanted sound and, therefore, is considered a relative environmental parameter. Noise levels in the area are primarily from commercial and recreational vessels. Noise levels fluctuate with highest levels usually occurring during the spring and summer months due to increased boating and commercial vessel activities.

6.4 Water Quality

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters; recognizing the responsibilities of the states in addressing pollution and providing assistance to states to do so, including funding for publicly owned treatment works for the improvement of wastewater treatment; and maintaining the integrity of wetlands.

Water quality within Lake Wimico is tidally influenced from the west in St. Andrew Bay and other factors including freshwater discharges from rivers, such as the Apalachicola River, and creeks and seasonal climate changes (Brim and Handley, 2007) (Livingston, 1984). Freshwater inputs from local watersheds provide nutrients and sediments that serve to maintain productivity both in the lake and in the extensive marsh, swamp, and forested habitats Lake Wimico. Marsh habitats act to regulate the discharge of nutrients

to coastal waters and serve as a sink for pollutants.

The FDEP has classified the waters in Lake Wimico as suitable for recreation, propagation of fish and wildlife and shellfish harvesting (Class III). Sufficient dissolved oxygen concentrations, water clarity, and typical salinity ranges with little to no stratification in the water column occur within the lake. Water quality within Lake Wimico is influenced mainly by non-point source pollution. According to the 2018 Final Integrated Water Quality Assessment for Florida Section 303(d) list prepared by FDEP, Lake Wimico falls into a category of insufficient data to determine if any designated use is attained. The 2018 303(d) Impaired Waters and Total Maximum Daily Loads (TMDL) found the State of Florida's surface and groundwater resources were predominantly in good condition based on the indicators assessed. In addition, water quality in the northwest sections of the state (where Lake Wimico is located) was generally better compared to other areas of the state.

6.5 Sediment Quality

An evaluation of dredged material within the Lake Wimico GIWW channel was performed by the USACE through its contractor in October 2019. Sediments proposed for removal and placement were sampled (Figure 4), analyzed, and evaluated for suitability of placement in adjacent open water areas. Sediment analyses followed guidelines in both the USACE/EPA Inland Testing Manual (ITM) and the State of Florida Submerged Lands and Environmental Resources Permitting Program (SLERP). Field sampling consisted of sediment and water sample collection for physical and chemical analysis. Chemical analyses included total organic carbon (TOC), ammonia, nitrate, nitrite, total Kjeldahl nitrogen (TKN), phosphorus, metals, polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH). Standard elutriates were created from each sampling location composite and analyzed for metals at FDEP request.

Nutrients (ammonia as nitrogen, nitrate plus nitrite, TKN, and phosphorus) were detected in all bulk sediment samples. Nutrient concentrations were generally consistent between the Lake Wimico GIWW samples, with slightly higher concentrations in the locations located toward the middle of Lake Wimico (LW19-03 and LW19-04) (Figure 4). All 11 metals were detected in low concentrations in all Lake Wimico GIWW and placement area samples. Generally, the concentrations of metals in the Lake Wimico placement area samples were slightly greater than the metals concentrations reported in the Lake Wimico GIWW samples. At least one PAH was detected in all Lake Wimico GIWW and placement area samples. The Lake Wimico placement area samples generally had a higher frequency of detection of individual PAHs and slightly greater concentrations than the Lake Wimico GIWW samples. TPH was detected in all Lake Wimico GIWW samples, apart from LW19-05, and in three of the five placement area samples (LW19-B-03, LW19-C-01, and LW19-C-02). Concentrations of detected analytes in sediment samples were compared to sediment quality guidelines (SQGs) for freshwater sediments to assess the sediment quality of the material proposed for dredging. The SQGs used for comparison are the threshold effect concentrations

(TECs) and probable effect concentrations (PECs). The TEC values represent the concentrations below which adverse biological effects are unlikely, and PEC values represent concentrations above which adverse biological effects are probable (MacDonald *et al*. 2000). All detected analytes were less than their respective TECs or PECs in all samples and in many instances were substantially less than their respective TECs.

Surface water sample results detected ammonia and nitrate plus nitrite below the Florida Freshwater Criteria. Seven metals were detected in low concentrations in the surface water sample, each of which was substantially less than both the EPA and State of Florida water quality criteria. PAHs and TPH were not detected in the site water sample. Seven metals were detected in low concentrations in the standard elutriate samples. However, the concentrations of each of the detected metals were substantially less than both the EPA and State of Florida water quality criteria (Table 4). For mercury, samples were run using the standard method (not the low level method) because of the preservation used by the analytical laboratory after elutriates were generated, which resulted in a detection limit (0.1 micrograms per liter [µg/L]) above the State of Florida water quality criteria (0.012 µg/L). Mercury was only detected in two of the elutriate samples, both at concentrations well below the EPA acute and chronic criteria (Anchor QEA, 2020).

Overall, sediments dredged from Lake Wimico, and the proposed open-water placement areas do not exceed federal and state water quality standards and do not pose an increased effect for contamination within Lake Wimico and the surrounding environment.

6.6 Environmental Resources

6.6.1 Submerged Aquatic Vegetation

A recent study of SAV from 2017 was conducted by the USACE, Engineer Research and Development Center (ERDC) on behalf of the USACE, Mobile District to access location, species, and percent cover within previously proposed placement areas adjacent to the channel in Lake Wimico (Figure 4). Results of the survey showed one dominant SAV species within the survey areas, *Vallisneria americana* (American eelgrass). *V. americana* is a submersed native grass found in many Florida lakes typically growing in clearer bodies of water. Lake Wimico is mostly calm and turbid with a relatively fast-moving channel (2-3 knots). *V. americana* was found in waters of 2 meters or less and only three of the five surveyed placement areas (LW04, LW03 and LW02) (Figure 5) showed significant data. In most locations this limited the distribution of the plant to the very shallow areas and close to the banks. Approximately 92+% of all areas surveyed in Lake Wimico exhibited no vegetation. LW04 lies along the northwestern shore and just downstream from the inlet from White City and southwest of the channel. LW03 showed a shallow bar farther downstream and closer to the middle of the lake. These results shaped the areas proposed for placement within Lake

Wimico as areas surrounding LW05, LW04, and LW03 were chosen for possible placement due to depths and relative absence of SAV colonization.

6.6.2 Wetlands

Lake Wimico is a wholly underdeveloped section of the panhandle of Florida. Lake Wimico is surrounded by expansive forested and emergent wetlands (Figure 6) as reported by the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory. No wetlands are located within the federal channel of Lake Wimico nor in the proposed open-water placement areas. At the narrowest part of the lake, the nearest emergent forested wetlands are approximately 1,000 meters away from the federal navigation channel in Lake Wimico. At the widest part of the lake emergent forested wetlands are approximately 2,000 to 2,500 meters away from the channel.

Local freshwater forested/shrub wetland habitats are characterized by non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of the basin less than 2.5 meters (8.2 feet) at low water; and (4) salinity due to ocean-derived salts less than 0.5 parts per thousand (ppt). During the 2019 sediment analysis study conducted in Lake Wimico, salinity values ranged from 2-4 ppt (Anchor QEA, 2020). These habitats also exhibit woody vegetation that is 6 meters tall, or taller, and angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (*Fraxinus nigra*). Tidal fresh surface water is present for extended periods (generally for more than a month) during the growing season but is absent by the end of the season in most years. When surface water is absent, the depth to substrate saturation may vary considerably among sites and among years. Tidal fresh surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Freshwater emergent wetlands in the area are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants, and species that normally remain standing at least until the beginning of the next growing season. Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

6.6.3 Terrestrial Wildlife

The terrestrial environment surrounding Lake Wimico is comprised of forested and freshwater wetland habitats dominated by pine savannahs, hardwood stands, Cypress communities, freshwater streams and marshes, and wet prairies. Characteristic plants

include pond cypress (*Taxodium ascendens*), bald cypress (*Taxodium distichum*), needlerush *(Juncus roemerianu*s), sawgrass *(Cladium jamaicens*e), cattails *(Typha sp*p.), giant reed *(Phragmites communi*s), arrowhead *(Sagittaria lancifoli*a), giant cutgrass *(Zizaniopsis miliance*a), pickerel weed *(Pontederia cordat*a), and softstem bulrush *(Scirpus validu*s) (NWF WMD, 1997).

Terrestrial wildlife that may be found surrounding Lake Wimico consists of a wide variety of birds, mammals, reptiles and amphibians. Some of the highest diversity of reptiles and amphibian groups in the U.S. exists within the region. The surrounding drainage basins also provide some of the most important bird habitats, which receive large numbers of migratory birds from both the Midwest and Atlantic Seaboard.

The adult bald eagle is a large dark brown bird with a white head and tail and yellow bill, eyes, legs and feet. The female is larger than the male by as much as 25 percent. The juvenile bald eagle is mostly dark brown with dark brown eyes and a gray or black bill, but has white patches or spots on its tail, belly and under its wings. Plumage of juveniles varies, generally losing the white on their bodies and becoming increasingly white on their heads and tails as they gain maturity. Full adult plumage for bald eagles typically appears in their fifth year.

In Florida, females typically lay a clutch of 1-3 eggs between December and early January, with incubation lasting about 35 days. Most of Florida's breeding bald eagles, especially those in the extreme southern peninsula, remain in the state year-round. Sub-adult, non-breeding eagles migrate out of Florida starting in spring and summer and returning in fall and winter.

Their nesting territories are concentrated around inland lake and river systems in peninsular Florida, such as the Kissimmee Chain of Lakes, and along the Gulf coast. Bald eagles use forested habitats for nesting and roosting, and expanses of shallow fresh or salt water for foraging. Nesting habitat generally consists of mature canopy trees located along habitat edges, providing an unobstructed view of surrounding areas. Daytime roosts are in the highest trees and adjacent to shorelines. High quality foraging habitat for bald eagles has a diversity and abundance of prey, access to shallow water and tall trees or structures for perching. They feed on a wide variety of prey, mostly on fish such as catfish but also on birds and small mammals. They may be found nesting in the forested areas, and foraging in and around Lake Wimico.

6.6.4 Benthos, Motile Invertebrates, and Fishes

The estuaries and bays in the vicinity of Lake Wimico provide habitat for several crustacean species, which include brown shrimp *(Penaeus aztecus),* pink shrimp (*P. Duorarum*), white shrimp *(P. setiferus),* marsh grass shrimp *(Palaemonetes pugio),* and common blue crab *(Calinectes sapidus)*. These motile aquatic species travel from the surrounding estuaries and bays to utilize Lake Wimico as refuge and potential feeding grounds. While there, they may become prey items for individuals of a higher trophic level. Important commercial and recreational fishes, which feed on these invertebrates

or on aquatic primary producers, would include: striped mullet *(Mugil cephalus),* spotted seatrout *(Cynoscion nebulosus),* sand seatrout *(Cynoscion arenarius*), red drum *(Sciaenops ocellata),* black drum *(Pogonias cromis),* silver perch *(Bairdiella chrysura*), Atlantic croaker *(Micropogon undulates*), spot *(Leiostomus xanthurus*), southern king *(Menticirrhus saxatilis*), southern flounder *(Paralichthys lethostigma*), Gulf flounder *(Paralichthys albigutta*), Gulf menhaden *(Brevoortia patronus*), striped mullet *(Mugil cephalus*), Florida pomano *(Trachinotus carolinus*), and Spanish mackerel *(Scomberomorus maculates).* The freshwater lakes and rivers located throughout the project area include species such as white and channel catfish (*Ictalurus punctatus*), yellow bullheads (*Ictalurus natalis*), largemouth bass (*Micropterus salmoides*), numerous sunfish and pickerel. The migratory Alabama shad and skipjack herring can also be expected throughout various reaches surrounding the project area.

Microinvertebrate populations are dictated by substrate type, temperature, salinity and biological factors, they therefore vary significantly throughout the vicinity of the project. Studies in the East Bay-Apalachicola Bay and others in the Choctawhatchee complex indicate that predominate species in the spring months tend to be *Mediomastus ambiseta, Heteromastus filiformis, Ampelisca vadorum, Hargeria rapax,* and *Grandidierella bonnieroids.* In the summer and fall months, *Steblospio benedicti and Hypaneola florida* tend to dominate. It is important to note that all listed species, as well as less prevalent species, are present year-round in various numbers as these species are non-motile in nature (Saloman *et al*., 1982).

Marine shrimp are by far the most popular seafood in the United States, however, only those of the family *Penaeidae* are large enough to be considered seafood. Brown shrimp (*Penaeus aztecus*), white shrimp (*P. setiferus*) and pink shrimp (*P. duorarum*) make up the bulk shrimp landings in and around Lake Wimico. The life cycles of brown, white and pink shrimp are similar. They spend part of their life in estuaries, bays and the Gulf of Mexico with spawning occurring in the Gulf of Mexico. One female shrimp release 100,000 to 1,000,000 eggs that hatch within 24 hours. The post-larval shrimp develop through several stages as they are carried shoreward by winds and currents. Post-larvae drift or migrate to nursery areas within shallow bays, tidal creeks, and marshes where food and protection necessary for growth and survival are available. There they acquire color and become bottom dwellers. If conditions are favorable in nursery areas, the young shrimp grow rapidly and soon move to the deeper waters. When shrimp reach juvenile and sub-adult stages (3-5 inches long), they usually migrate from the bays to the Gulf of Mexico where they mature and complete their life cycles. Most shrimp will spend the rest of their life in the Gulf. Several shrimpers actively fish in the vicinity of Apalachicola Bay and Lake Wimico.

6.6.5 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity". The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing

activities. The National Marine Fisheries Service (NMFS) has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine areas, such as estuarine emergent wetlands, mangrove wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. Table 1 provides a list of the species that NMFS manages under the federally implemented Fishery Management Plan. The project area consists of open estuarine habitat of partially vegetated bottoms with sand and silt substrates, SAV, and bordering forested emergent wetlands. Of the species managed, the following may utilize the project area based on a query of the 2019 NMFS EFH mapper: brown shrimp (*Penaeus axtecus)*, pink shrimp (*P. duorarum)*, white shrimp (*P. setiferus)*, king mackerel (*Scomberomorus cavalla)*, Spanish mackerel (*S. maculate)*, gray snapper *(Lutjanus griseus)*, lane snapper (*L. synagris)*, cobia (*Rachycentron canadum*), and red drum (*Sciaenops ocellatus*).

Species managed by the GMFMC are listed in **Table 1** below.

Table 1: Fishery Management Plans and Managed Species for the Gulf of Mexico (NMFS 2017)

Shrimp Fishery Management Plan
- brown shrimp – *Farfantepenaeu aztecus*
- pink shrimp - *F. duorarum*
- royal red shrimp - *Pleoticus robustus*
- white shrimp - *Litopenaeus setiferus*

Reef Fish Fishery Management Plan
- almaco jack – *Seriola rivoliana*
- banded rudderfish – *S. zonata*
- blackfin snapper - *Lutjanus buccanella*
- black grouper- *Mycteroperca bonaci*
- blueline tilefish – *C. microps*
- cubera snapper – *L. cyanopterus*
- gag grouper - *M. microlepis*
- goldface tilefish – *C. chrysops*
- goliath grouper - *Epinephelus itajara*
- gray snapper – *L. griseus*
- gray triggerfish - *Balistes capriscus*
- greater amberjack – *S. dumerili*
- hogfish - *Lachnolaimus maximus*
- lane snapper - *Lutjanus synagris*
- lesser amberjack - *S. fasciata*
- mutton snapper – *L. analis*
- queen snapper - *Etelis oculatus*
- red grouper – *E. morio*
- red snapper - *L. campechanus*
- scamp grouper - *M. phenax*
- silk snapper – *L. vivanus*
- snowy grouper – *E. niveatus*
- speckled hind - *E. drummondhayi*
- tilefish - *Lopholatilus chamaeleonticeps*
- vermilion snapper - *Rhomboplites aurorubens*
- Warsaw grouper – *E. nigritus*
- wenchman - *Pristipomoides aquilonaris*
- yellowedge grouper *E .lavolimbatus*
- yellowfin grouper – *M. venenosa*
- yellowmouth grouper – *M. interstitialis*
- yellowtail snapper – *Ocyurus chrysurus*

Spiny Lobster Fishery Management Plan
- spiny lobster - *Panulirus argus*

Coral and Coral Reef Fishery Management Plan
- varied coral species and coral reef communities comprised of several hundred species

Coastal Migratory Pelagic Fishery Management Plan
- cobia - *Rachycentron canadum*
- king mackerel – *Scomberomorus cavalla*
- Spanish mackerel - *S. maculatus*

Red Drum Fishery Management Plan
- red drum - *Sciaenops ocellatus*

6.6.6 Threatened and Endangered Species

Several species of threatened and endangered marine mammals, turtles, fish and birds occur in Gulf County. The USFWS list the following species in **Table 2** as either threatened and/or endangered that may potentially occur within Gulf County.

Table 2: Threatened and Endangered Species (USFWS 2019)

LISTED SPECIES	SCIENTIFIC NAME	STATUS	DATE LISTED
Mammals			
West Indian manatee	*Trichechus manatus*	Endangered	03/11/67

Reptiles			
Eastern Indigo Snake	*Drymarchon corais coupen*	Threatened	03/03/78
Fish			
Gulf sturgeon	*Acipenser oxyrinchus*	Threatened	09/30/91
Birds			
Wood stork	*Mycteria americana*	Threatened	02/28/84
Piping Plover	*Charadrius melodus*	Threatened	12/11/85
Red knot	*Calidris canutus rufa*	Threatened	01/12/15
Red-cockaded woodpecker	*Picoides borealis*	Endangered	10/13/70
Amphibians			
Reticulated flatwoods salamander	*Ambystoma bishopi*	Endangered	02/10/09
Flowering plants			
White birds-in-a-nest	*Macbridea alba*	Threatened	05/08/92
Chapman rhododendron	*Rhododendron chapmanii*	Endangered	05/23/79
Telephus spurge	*Euphorbia telephioides*	Threatened	05/08/92
Godfrey's butterwort	*Pinguicula ionantha*	Threatened	07/12/93
Florida skullcap	*Scutellaria floridana*	Threatened	05/08/92

Note: Bald eagle (*Haliaeetus leucocephalus*) was delisted in 2007 from the Endangered Species Act (ESA) and is now protected under the Bald and Golden Eagle Protection Act (BGEPA).

The federally listed species that may be found within the vicinity of the project area include; West Indian manatee (*Trichechus manatus*), Eastern Indigo Snake (*Drymarchon corais coupen*), Gulf sturgeon (*Acipenser oxyrinchus*), Wood stork (*Mycteria americana*), Bald eagle (*Haliaeetus leucocephalus)* covered under the (BGEPA), and Reticulated flatwoods salamander (*Ambystoma bishopi*).

The reticulated flatwoods salamander inhabits slash and longleaf pine flatwoods that have a wiregrass floor and scattered wetlands (Florida Natural Areas Inventory 2001). This species occurs in Florida counties west of the Apalachicola River (Map Data from: Thompson *et al*. 2014). Due to the nature of the proposed action (open water placement activities) and habitat requirements for reticulated flatwoods salamanders, this species will not be considered further in this EA.

West Indian manatee occur in coastal areas from the southeastern U.S. to northeastern South America. It is found in rivers, estuaries, and coastal areas of subtropical and tropical areas of northern South America, West Indies/Caribbean region, Gulf of Mexico (now mainly western and southwestern portions) and southeastern North America. U.S. populations occur primarily in Florida where they are effectively isolated from other populations by the cooler waters of the northern Gulf of Mexico and the deeper waters of the Straits of Florida (Domning and Hayek 1986). Occasionally manatees are found in summer from Texas to North Carolina. The species occurs along most of the Gulf coast

of Florida, but infrequently occurs north of the Suwannee River and between the Chassahowitzka River and Tampa Bay. They also occur all along the Atlantic coast of Florida, from the Georgia coast to Biscayne Bay and the Florida Keys, including the St. Johns River, the Indian River lagoon system, and various other waterways (O'Shea and Ludlow 1992). The species is primarily dependent upon submerged, emergent, and floating vegetation. Their diet varies according to plant availability, and they may opportunistically eat other foods. West Indian manatees could be found in Lake Wimico.

The Gulf sturgeon, also known as the Gulf of Mexico sturgeon, is one of seven species of sturgeon found in North America. Sturgeons are prehistoric species that date back to the time of dinosaurs. Sturgeons are popular in the food industry as a source of caviar. They have physical features that separate them from other kinds of fish, such as a spiral valve stomach and cartilaginous skeleton (like sharks and rays); however, they have scutes (hard, protective, large individual body plates) instead of shark's denticles or bony-fish's scales. Gulf sturgeon have barbels located on the underside of the snout, no teeth, rubbery lips, and a suctorial mouth for vacuuming food off the bottom. The sturgeon's coloring typically is dark brown along the upper (dorsal) side shading to a creamy white-colored belly (Wakeford 2001). Gulf sturgeon are large fish that can exceed a length of eight feet (2.4 meters), a weight of over 300 pounds (137 kilograms) and can possess strength to leap nine feet (2.7 meters) into the air. The Gulf sturgeon grow to greater than six feet in length, sports bony plates on its head and body, has fleshy "whiskers" on its long snout, and has no internal skeleton. This ancient fish evolved from much larger ancestors that lived more than 225 million years ago. Gulf sturgeon may live for more than 40 years, not reaching sexual maturity until seven or eight years of age or later.

Sturgeon are anadromous, a term used to describe fish that spend a part of their lives in saltwater yet travel upstream in freshwater rivers to spawn. Such fish return year after year to the same stream where they were hatched. For Gulf sturgeon, which are found from Florida to Louisiana, this means a move from salt to fresh water between February and April and a move downriver between September and November. They spend the winter in the Gulf of Mexico in sandy-bottom habitats six to 100 feet deep, where their diet consists of marine worms, grass shrimp, crabs and a variety of other bottom-dwelling organisms. They eat very little while in freshwater rivers. Gulf sturgeon can be found from the Mississippi River in Louisiana, east to the Suwannee River in Florida where they inhabit both salt and freshwater habitats, annually cycling between the two. Gulf sturgeon migrate into brackish and salt water during the fall and feed there throughout the winter months. In the spring, they migrate into freshwater rivers and remain there through the summer months (Wakeford 2001). Gulf sturgeon could be found in Lake Wimico.

The wood stork is a large, long legged wading bird that reaches a length of 35-45 inches (89-114 centimeters) with a wingspan of 60-65 inches (152-165 centimeters). The primary and tail feathers are black. The head and upper neck of adult wood storks have no feathers but have gray rough scaly skin. Wood storks also

have a black bill and black legs with pink toes. Adult wood storks are voiceless and are capable of only making hissing sounds.

The wood stork is the only species of stork that breeds in the U.S. Wood storks are very social in nesting habitats, as they are often seen nesting in large colonies of 100-500 nests. Colonies in South Florida form late November to early March, while wood storks in Central and North Florida form colonies from February to March (Florida Natural Areas Inventory 2001). After copulation, males begin gathering twigs for constructing nests (Coulter *et al*. 1999). Wood stork nests are primarily built in trees that stand in water (U.S. Fish & Wildlife Service 1999). In Florida, wood storks are capable of laying eggs from October to June (Stangel *et al*. 1990). Females lay a single clutch of two to five eggs per season (U.S. Fish & Wildlife Service 1999). The average incubation period is 30 days, with young wood storks able to fly 10-12 weeks after hatching.

Wood storks nest in mixed hardwood swamps, sloughs, mangroves, and cypress domes/strands in Florida (Florida Natural Areas Inventory 2001). They forage in a variety of wetlands including both freshwater and estuarine marshes, although limited to depths less than 10-12 inches. The wood stork breeds in Florida, Georgia, South Carolina, and North Carolina. Non-breeding wood storks have an extensive range throughout North America, to northern Argentina in South America (Florida Natural Areas Inventory 2001). Due to the nature of the proposed action (open water placement activities) and habitat requirements for wood storks, this species will not be considered further in this EA.

6.7 Social Economic Environment

6.7.1 Economic Activity

The Florida Panhandle relies on its coastal waters to provide a variety of economic and social benefits to its residents and visitors alike. The coastal ecosystems in the project area support a wide variety of commercial and recreational activities that contribute significantly to the State's economy. Lake Wimico is a well-known freshwater fishing location in the Florida panhandle. Surrounded by ample sport, recreational and commercial fisheries and some of the most notable economic highlights, within the region and the State. Nearby Apalachicola Bay provides 90% of the state's oyster harvest. The estuarine environments within the area also provide essential transportation links, support a variety of water-dependent facilities, and offer an array of recreational opportunities that attract thousands of visitors to the area each year. Commerce is also transported via the GIWW through Lake Wimico making it an important piece of federal and state commerce.

6.7.2 Land Use

The location of the proposed action is along the coastal region of northwest Florida. Lands surrounding the project vicinity include undeveloped wetlands and forested habitat. Agricultural lands are generally scattered across the Northern Highlands portion of the panhandle. The remainder of the land is divided between forested and non-forested wetlands, barren lands and water bodies.

The panhandle is generally rural with an overall population density of less than 75 persons per square mile (Northwest Florida WMD, 1996). Urban areas account for only about 6% of northwest Florida. High population densities of the region exist mainly along the coast in Pensacola, Ft Walton Beach vicinity, and Panama City (Northwest Florida WMD, 1996).

6.7.3 Cultural Resources

The GIWW was authorized by Congress and completed more than 50 years ago. The existing channel was constructed and operated prior to the enactment of the National Historic Preservation Act (NHPA), which was signed into law in 1966. The Mobile District has previously considered the effect that continued use and maintenance of the waterway (to include placement activities) may have on historic properties as per regulations at 36 CFR 800. This was consulted with the Florida State Historic Preservation Officer (SHPO) in 1990 (DRH Project File No. 902865). A “no effect” on historic properties was concurred on by the Florida SHPO (letter dated September 21, 1990).

An initial 2019 Phase I maritime cultural resources survey was conducted to survey the channel and five potential open-water placement areas within Lake Wimico. However, additional environmental coordination, bathymetric surveying, and hydrographic modeling conducted since completion of the maritime archaeological survey found that significant portions of the surveyed areas are covered with seagrass beds or are too shallow for safe operation of the spill barge and, therefore, unusable for the placement of dredged material. Based on this information, the USACE changed the boundaries of the Area of Potential Effect (APE) to encompass the deepest portions of the lake and to avoid sea grass beds.

In a letter dated July 9, 2019 the USACE, Mobile District informed the Florida SHPO that the boundaries of the APE for the proposed project, specifically the placement areas, needed to be changed to incorporate two large deep-water locations within the lake. After consultation with the Florida SHPO, a concurrence with Mobile District’s determination of “no adverse effect” to historic properties related to the proposed action was received via letter dated August 12, 2019.

6.8 Recreation and Aesthetics

Lake Wimico is a unique freshwater lake in the center of the Florida panhandle surrounded by marine and estuarine aquatic environments. Abundant habitat created by pine, hardwood, and Cypress timber supports osprey, ibis, heron, raccoons, deer, rabbits, turtles, snakes, alligators, manatee, and various migratory birds. In the surrounding area, there are a variety of activities you can explore, including hiking, fishing, boating, camping and nature viewing, and Lake Wimico supports a vibrant freshwater fishing industry with charters and private fishing experiences available. The surrounding area is completely devoid of residential and commercial properties making it a haven for nature watching and seclusion.

7.0 EFFECTED ENVIRONMENT

Performing an evaluation of environmental impacts for proposed federal actions is a requirement of Federal law (40 CFR §1500-1508). An impact analysis must be compared to a significance threshold to determine whether a potential consequence of an alternative is considered a significant impact. If the impact is significant, it may be mitigated (i.e., measures are available to reduce the level of impact, so it is no longer significant) or unmitigated. "Significance" under NEPA is determined using two variables: context and degree. Factors to consider when determining significance include: impacts that may be both beneficial and adverse, degree to which the action affects public health and safety, unique characteristics of the geographic area, degree to which effects may be highly controversial, highly uncertain effects or unique or unknown risks, degree to which action may establish precedent for future actions with significant impacts, etc.

7.1 Hydrology and Water Resources

The proposed action would not alter drainage or circulation patterns within the region. Furthermore, it is not anticipated that the project will significantly alter local flow patterns or rates. The physical environment in the vicinity of the proposed action area would not be impacted in any significant way. The proposed action would not alter Lake Wimico's designation as an estuarine habitat of the United States and would not alter water flows nor land usage.

No Action Alternative: Implementation of the no action alternative would result in the continuation of the current channel shoaling and potential loss of navigability through Lake Wimico and increased cost of alternate placement options.

7.2 Air Quality

The proposed action would have no significant long-term effect on air quality. Air quality in the immediate vicinity of the dredge and other equipment would be slightly affected for a short period of time by the fuel combustion and resulting engine exhausts. The

exhaust emissions are considered insignificant in light of prevailing breezes and when compared to the existing exhaust fumes from other vessels using the project.

The project area is in attainment with the NAAQS parameters (as of August 31, 2019). The proposed action would not affect the attainment status of the project area or region. A State Implementation Plan conformity determination (42 U.S. Code 70569(c)) is not required since the project area is in attainment for all criteria pollutants.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of air quality.

7.3 Noise

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 placement operations are complete. No long-term increase in noise will occur in or around the project area.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of noise in the project area.

7.4 Water Quality

Under the proposed action temporary, and minimal adverse impacts to water resources are anticipated. Short-term impacts would involve increased, localized turbidity and decreased dissolved oxygen associated with placement operations. However, these impacts are expected to be temporary and minimal. During placement operations, turbidity levels would be monitored to ensure compliance with the state water quality certification from the FDEP. All guidelines shall be maintained during the proposed activity.

No Action Alternative: The no action alternative would not cause any temporary increase to turbidity. The existing water quality conditions would be expected to remain unchanged due to current Florida water quality statutes and regulatory programs in place for evaluations.

7.5 Sediment Quality

No adverse impacts to sediment quality are likely to occur from the placement of dredged material from maintenance operations in Lake Wimico. The dredged material within the channel has a low likelihood of contamination due to its isolation from direct contamination and relative grain size. The areas that utilize open-water placement traverse areas that are far removed from potential sources of contamination and have minute probability as a carrier of contaminates. The composition of dredged material removed from the channel is similar to the composition at the placement sites, due to

their close proximity to the channel. Therefore, the project would not adversely affect sediment quality or change sediment bottoms.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of sediment quality.

7.6 Environmental Resources

This section will discuss the impacts of implementing the proposed action on resources of significance in the area, since no other alternatives are reasonable or feasible to attain need for the action.

7.6.1 Submerged Aquatic Vegetation

Although there are SAVs within Lake Wimico, there are no SAVs within the federally dredged and maintained channel portion of Lake Wimico (ERDC, 2017). The proposed placement areas are in deeper parts of the lake where there are no SAV beds. These areas are deeper (5-6 feet) than typical habitat requirements for SAV colonization.

To ensure that increased turbidity is not occurring within the seagrass beds, turbidity measurements will be recorded during dredging and placement operations at the seagrass edge and compared to background readings. In areas where seagrasses must be crossed by a pipeline between the channel and placement area, best management practices will be utilized such as the use of plastic to float pipe or collars to raise the pipe over the seagrass beds when avoidance is not possible. Prior to any dredging or placement activities within these areas, proper coordination with all appropriate agencies will be made, and suitable disposal plans would be determined as to avoid adverse impacts to these productive and vital environments. In the event dredged material placement were to induce a sediment plume that may interact with adjacent SAV beds dredging would temporally cease, and best management practices, such as turbidity curtains, may be implemented to minimize potential impacts.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of SAV.

7.6.2 Wetlands

Figure 6 shows a vast forested emergent wetland system that surrounds and flows into Lake Wimico. However, during the proposed action of open-water placement within Lake Wimico, none of the surrounding emergent wetlands would be adversely impacted by the operations. At the narrowest part of the lake, the nearest emergent forested wetlands are approximately 1,000 meters away. At the widest part of the lake emergent forested wetlands are approximately 2,000 to 2,500 meters away.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of wetlands.

7.6.3 Terrestrial Wildlife

As a result of this evaluation, no adverse impacts to the terrestrial ecosystem located in the vicinity of the proposed action area were identified. Placement activities would occur within proposed open-water placement areas.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of the terrestrial environment.

7.6.4 Benthos, Motile Invertebrates, and Fishes

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 proposed placement operations. Non-motile benthic fauna within the area would be destroyed by dredging and within-lake placement operations but should repopulate within 6 to 12 months upon project completion (Cutler and Mahadevan, 1982), (Saloman *et al*., 1982). Some of the motile benthic and other fauna, such as crabs, shrimp, and fishes, would avoid the disturbed area and should return shortly after the activity is completed. Larval and juvenile stages of these forms may not be able to avoid the activity due to their limited mobility. However, significant losses to the benthic and pelagic fauna are not anticipated due to the infrequent nature of the channel maintenance and small area (percentage wise) of ecosystem that will be affected at a given point in time.

No Action Alternative: Implementation of the no action alternative would avoid losses of plankton, nekton/epifauna, and benthic fauna associated with dredging and placement activities. The motile and non-mobile species would not be disturbed and there would be no loss to larval and juvenile species.

7.6.5 Essential Fish Habitat

The Gulf of Mexico Fishery Management Council in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (PL 94-265) has developed Gulf of Mexico Fishery Management Plans (2017) and identifies EFH in the project area to be intertidal wetlands, SAV, non-vegetated bottoms, the estuarine water column with sand and silt substrates, and bordering forested emergent wetlands. The proposed action will not significantly affect coastal habitat identified as EFH in the project area since impacts will be temporary in nature. Most species identified to be present within the project area are motile and will likely exit the area upon initiation of dredging and placement operations. The exception is non-motile benthic invertebrates that will be temporarily impacted by the proposed action. As previously mentioned, impacts to these species will be negligible as they will re-colonize the area within a few months.

Based on the minor nature of the proposed action in relation to impacts to fisheries resources the overall impact is considered negligible.

No Action Alternative: The No Action alternative would avoid any temporary disruptions to EFH within the project area. The species that would use the project area would not be disrupted and would remain in the area. There would be no temporary loss of benthic invertebrates as a result of maintenance dredging and placement activities. Through continued shoaling, safe commercial navigability through Lake Wimico would increase causing long-term impacts to local EFH resources due to potential loss of habitat and benthic resources. Overall benefits to the surrounding environment would not occur through the implementation of the No Action alternative.

7.6.6 Threatened and Endangered Species

The proposed action will be coordinated with USFWS for the open water placement areas and placement activities in Lake Wimico. Prior coordination with the USFWS for maintenance dredging, and other placement alternatives (use of the Gulf County Canal upland placement areas for dredged material from Lake Wimico) of the GIWW was conducted and concurrence with the USACE determination of no adverse impacts associated with maintenance dredging was received on October 4, 2007.

Any potential impacts to Gulf sturgeon would be confined to direct impacts associated with the open water placement activities. Potential impacts associated with implementation of the newly proposed open water placement areas should be temporary and isolated to actual placement area limits.

Manatees could be in the project area. Standard manatee conditions per guidelines from USFWS would be followed during construction activities. It is anticipated these species would avoid the construction areas due to noise and activity.

Overall, the proposed action “may affect but is not likely to adversely affect” the manatee and Gulf sturgeon. No other federally listed species are likely to be adversely affected as a result of the proposed action. There is no designated critical habitat within the project area. The USACE, Mobile District will coordinate with the U.S. Fish and Wildlife Service via public notice and coordination correspondence.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of threatened and endangered species.

7.7 Social Economic Environment

7.7.1 Economic Activity

No significant impacts to the economic activity in the project vicinity were identified in this evaluation. The proposed action will benefit the regional and national economy by

ensuring a safe and economical transportation link for a variety of water-dependent facilities.

No Action Alternative: Implementation of the no action alternative would result in a substantial cost increase for approved placement of dredged material needing to be barged long distances away from Lake Wimico.

7.7.2 Land Use

There are no new impacts being proposed to the land; therefore, the proposed action is not anticipated to have any adverse impacts.

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of the surrounding land use.

7.7.3 Cultural Resources

In a letter dated July 9, 2019 the USACE, Mobile District informed the SHPO that the boundaries of the APE for the proposed project, specifically the placement areas, needed to be changed to incorporate two large deep-water locations within the lake. No significant archeological sites or historic structures were identified in any of the areas. As part of this contract effort, the Florida State Master site files were examined and information on all recorded archeological sites adjacent to Lake Wimico in Florida was obtained. This was consulted with the Florida SHPO in 2019 (DRH Project File No. 2017-5548-B). A “no adverse effect” on historic properties was concurred with by the Florida SHPO (letter dated August 12, 2019).

No Action Alternative: Implementation of the no action alternative would result in no impacts to any aspect of cultural resources.

7.8 Recreation and Aesthetics

Recreation in lake would be temporarily impacted by the proposed action of dredged material placement in Lake Wimico. These impacts would be short term in duration and minimal in overall impact. Upon completion of routine dredged material placement, the lake environment would quickly return to its full recreational capabilities.

No Action Alternative: Implementation of the no action alternative would result in no short-term impacts to any aspect of recreation.

8.0 OTHER CONSIDERATIONS

8.1 Coastal Zone Management Act of 1972

The USACE, Mobile District determined that the proposed action is consistent with the Florida Coastal Management Program to the maximum extent practicable. FDEP will be petitioned for a determination of Coastal Zone Consistency (CZC) for the proposed action in Lake Wimico. FDEP will be coordinated with through release of a public notice and permit application.

8.2 Clean Water Act of 1972

The USACE, Mobile District will submit an Environmental Resources Permit application to the FDEP seeking Water Quality Certification for the proposed action in Lake Wimico. In addition, FDEP will be coordinated with through release of a public notice.

8.3 River and Harbor Act 1899

The proposed open water placement activities in Lake Wimico would not obstruct navigable waters of the United States.

8.4 Marine Mammal Protection Act of 1972, as amended

Incorporation of the safeguards used to protect threatened or endangered species during project implementation will also protect any marine mammals in the area; therefore, the project is in compliance with this Act.

8.5 Executive Order (E.O.) 11988, Protection of Children

The proposed action complies with EO 13045, “Protection of Children from Environmental Health Risks and Safety Risks” and does not represent disproportionally high and adverse environmental health or safety risks to children in the United States.

No changes in demographics, housing, or public services would occur as a result of the proposed project. With respect to the protection of children, the likelihood of disproportionate risk to children is not significant. Open water dredged material placement in Lake Wimico does not involve activities that would pose any disproportionate environmental health risk or safety risk to children as there are no residential communities surrounding the GIWW in Lake Wimico.

8.6 E.O. 11990, Environmental Justice

The proposed action complies with E.O.12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, and does

not represent disproportionally high and adverse human health or environmental effects on minority populations and low-income populations in the United States.

The proposed action is not designed to create a benefit for any group or individual. The open water placement activities do not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Review and evaluation of this action has not disclosed the existence of identifiable minority or low-income communities that would be adversely impacted by the proposed project as there are no residential communities directly impacting Lake Wimico.

9.0 REASONABLY FORSEEABLE ENVIRONMENTAL TRENDS AND PLANNED ACTIONS

The proposed action covers a small fraction of dredged material and placement operations of Gulf County and the GIWW. Dredge and placement operations would last for approximately 3-10 weeks followed by an interval period (approximately 10 years) of no activity based on shoaling rates or tropical weather activity. The proposed action will likely result in temporary impacts to aquatic wildlife during placement operations. Environmental laws and commitments would be adhered to during operations and no long-term impacts to marine mammals, EFH, and fisheries are likely.

The portion of the GIWW in Lake Wimico is dredged infrequently, with the last event occurring in 2019. Prior to that the last dredging event occurred in the 1990s. Effects are likely to be temporary and minor. Therefore, the effects from the proposed action are not expected to result in significant adverse impacts on biological resources, when considered with reasonably foreseeable future actions. Future maintenance of Lake Wimico would impart similar levels of impact previously addressed in this EA. If the open-water placement areas were to ever reach capacity, alternative solutions for placement of maintenance material would be warranted. Previous solutions included barging dredged material to upland placement areas along the Gulf County Canal at greatly increased operational costs.

10.0 LIST OF AGENCIES, INTERESTED GROUPS AND PUBLIC CONSULTED

Federally Recognized Tribes with an Interest in the Area of Potential Effect
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
National Oceanic and Atmospheric Administration Fisheries
U.S. Coast Guard, Eighth Coast Guard District, Panama City, FL
U.S. Department of the Interior, Fish and Wildlife Service, Panama City, FL
U.S. Department of Interior, National Park Service

U.S. Environmental Protection Agency, Region 4
Apalachicola National Estuarine Research Reserve
Florida Department of Agriculture
Florida Department of Environmental Protection
Florida Marine Research Institute
Florida State Historic Preservation Office
Northwest Florida Water Management District

11.0 LIST OF PREPARERS

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Figure 1: Lake Wimico, Florida Federal Navigation Project Vicinity Map

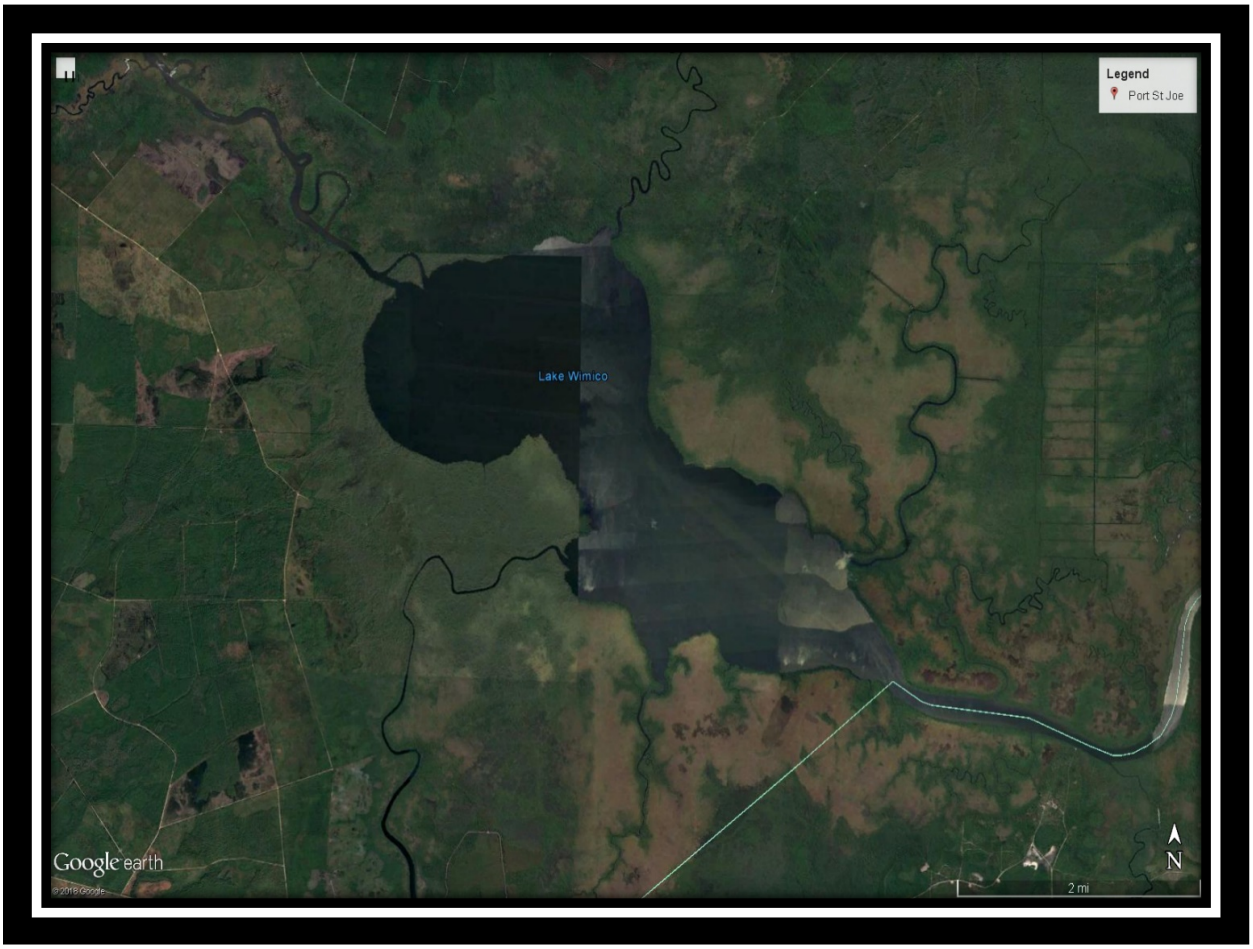

Figure 2: Lake Wimico, Florida

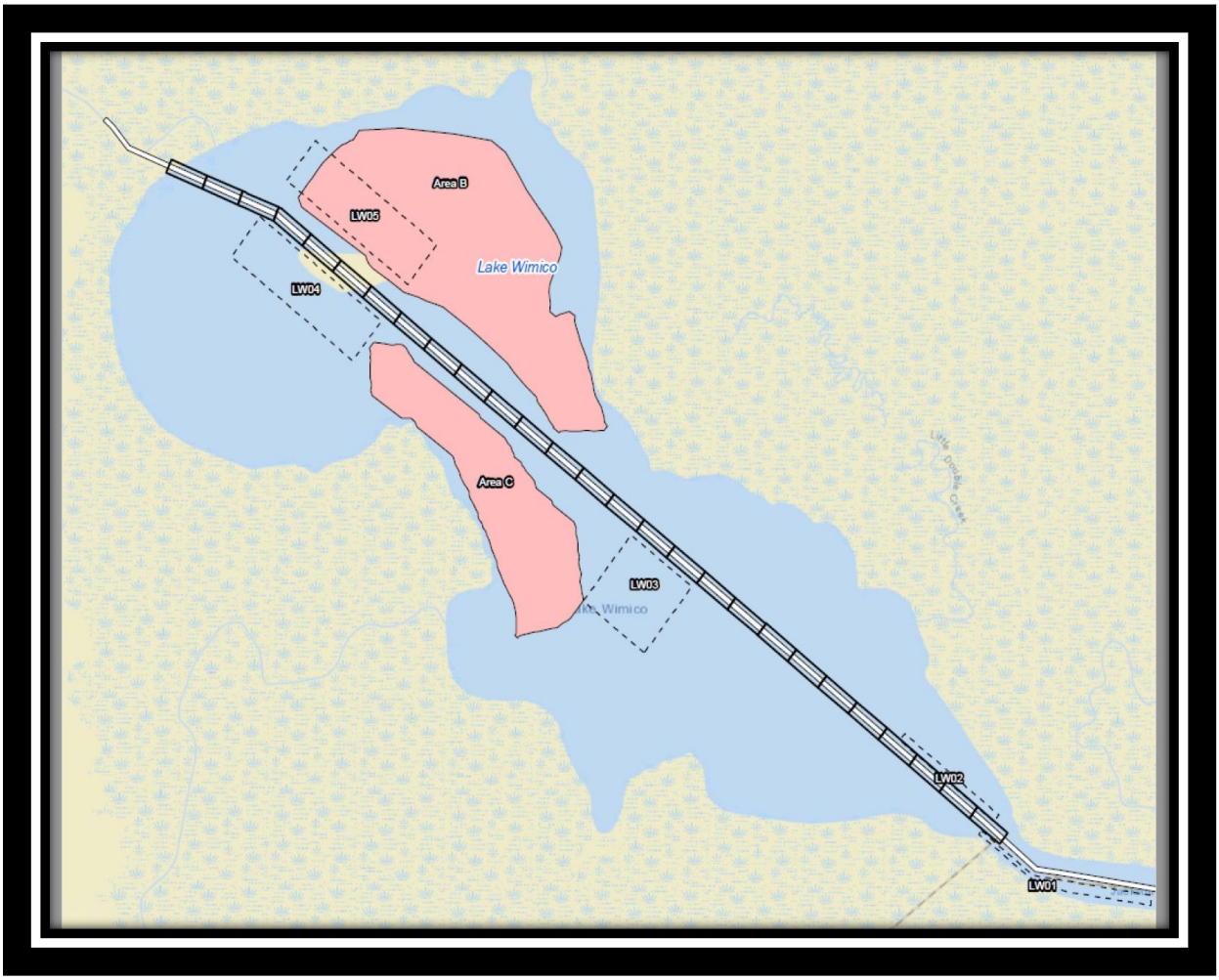

Figure 3: Proposed Lake Wimico Open-Water Placement Areas

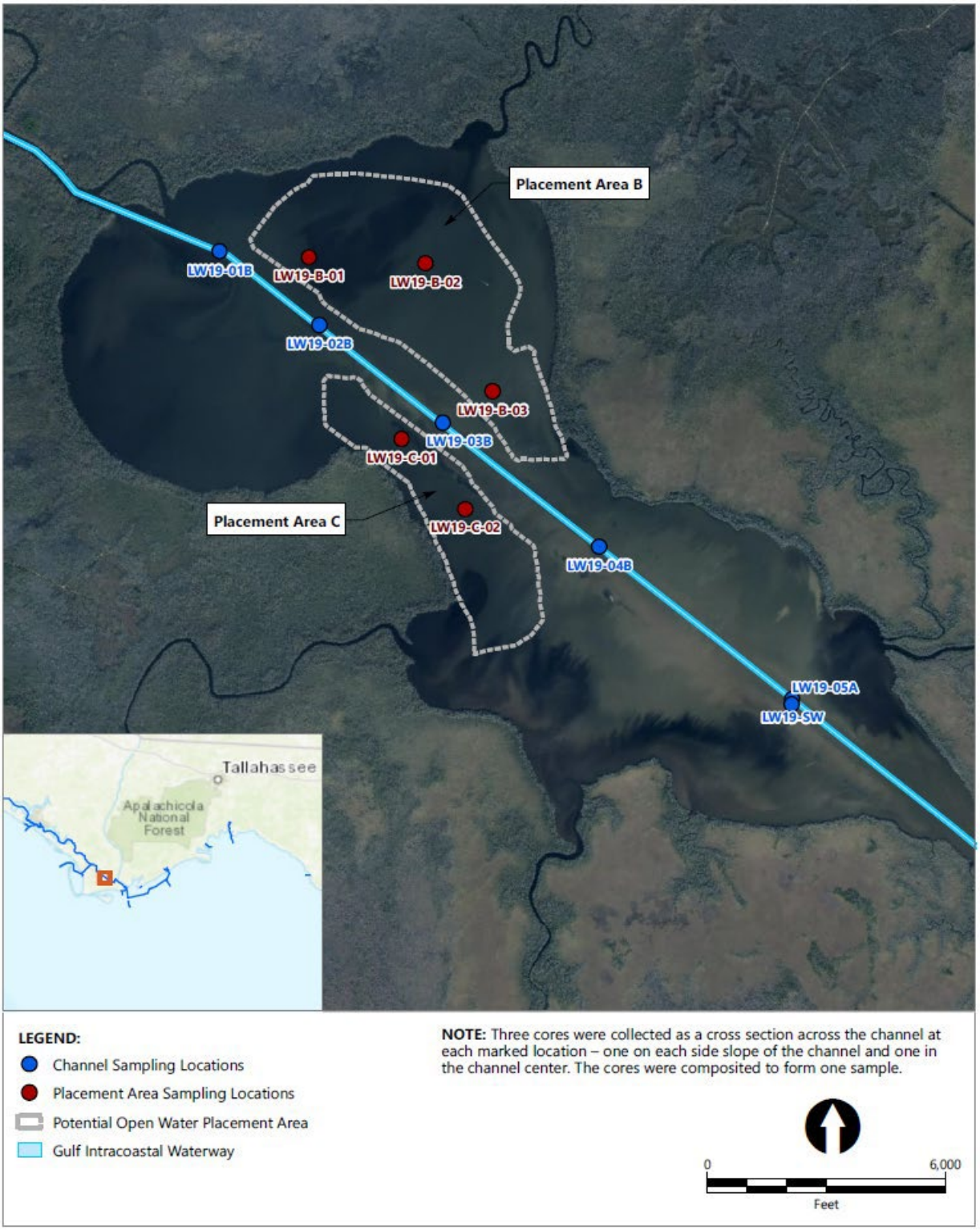

Figure 4: Sediment Sampling Locations in Lake Wimico

Figure 5: Areas of SAV Surveys Conducted in 2017

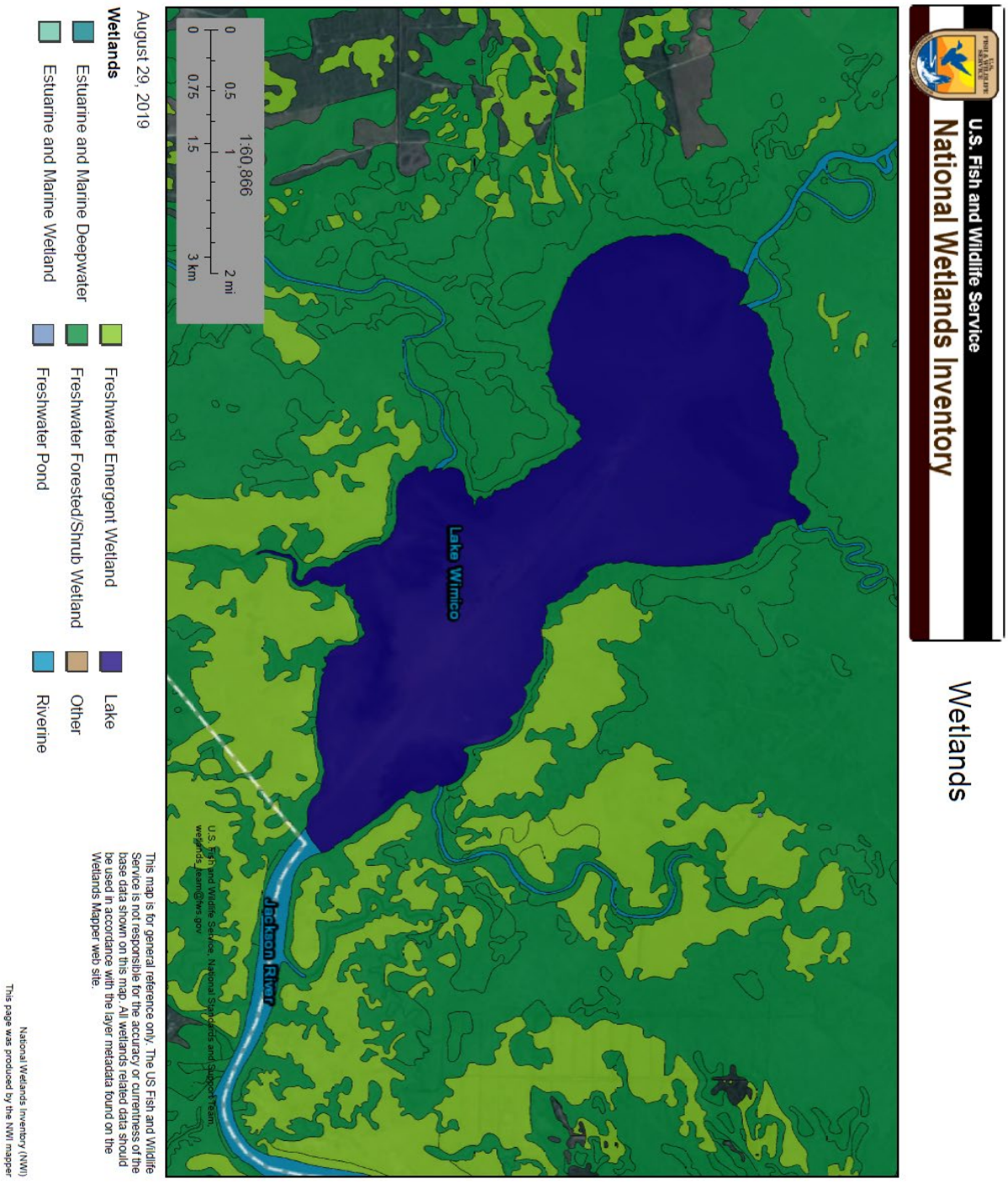

Figure 6: Lake Wimico National Wetlands Inventory Map

APPENDIX A

SECTION 404(b)(1) EVALUATION REPORT

Additional Placement Areas for Maintenance Dredging Of Lake Wimico

Gulf Intracoastal Waterway, Gulf County, Florida

I. PROJECT DESCRIPTION:

A. **Location:** Lake Wimico is located in the southwest corner of Gulf County, Florida (Figure 1) and is bisected by the Gulf Intracoastal Waterway (GIWW).

B. **General Description:** The proposed action consists of adding two new open-water placement sites to accommodate approximately 250,000 cys of maintenance dredged material removed from the Lake Wimico portion of the GIWW typically between stations 15785+00 and 16000+00 (dependent on shoaling needs). Dredging and placement activities would be accomplished using hydraulic (cutterhead) or mechanical dredging equipment. The material would be placed in those two newly proposed open-water placement areas within Lake Wimico adjacent to the channel (Figure 3). The GIWW Federal navigation project is maintained to a -12-foot MLLW and 125-foot wide channel. For all channel segments, an additional -2 feet of advance maintenance dredging and -2 feet of overdepth dredging are included to maintain the channel. Maintenance dredging of soft-dredged material with mechanical, and/or hydraulic cutterhead dredges tends to disturb the bottom sediments several feet deeper than the target depth due to the inaccuracies of the dredging process. An additional -3 feet of sediment below the -2-foot paid allowable dredging cut may be disturbed in the dredging process with minor amounts of the material being removed (Tavolaro *et al.*, 2007).

Two large areas are proposed for dredged material placement in Lake Wimico (Figure 3). One area (LW-B, approximately 611 acres) is located on the northern side of the channel in the northwest corner of the Lake. A second area (LW-C, approximately 291 acres) is located on the southern side of the channel near the midpoint of the lake. Average water depths in both placement areas (LW-B and LW-C) range between 5.5 and 6 feet MLLW. The placement areas are in two deeper portions of the lake. The shape of LW-B mimics the northwestern lobe of Lake Wimico, and LW-C as an elongated placement area that lies between the channel and the south-central shoreline of the lake. Sediments in the placement areas are similar (physically and chemically) to that of maintenance dredged material from the channel.

C. **Authority and Purpose:** The authority and purpose of the proposed action is described in Sections 1.1 and 2.0, respectively, of the EA to which this evaluation is appended.

D. **General Description of Dredged or Fill Material:**

(1) **General Characteristics of Material:** Sediments to be dredged from the channel in Lake Wimico are composed primarily of silts and clays (65-90%) and some sand (10-35%). Similar grain size distributions were reported in the Lake Wimico placement area samples.

(2) **Quantity of Material:** Approximately 250,000 cys of dredged material will be removed from the Lake Wimico portion of the GIWW. Placement would occur in two newly proposed open-water placement areas in Lake Wimico.

(3) **Source of Material:** Material consists of silts, clays, and sand generated from the GIWW channel in Lake Wimico.

E. **Description of the Proposed Discharge Sites:**

(1) **Location:** Two large areas are proposed for dredged material placement in Lake Wimico (Figure 3). One area (LW-B) is located on the northern side of the channel in the northwest corner of the Lake. A second area (LW-C) is located on the southern side of the channel near the midpoint of the lake. Average water depths in both placement areas (LW-B and LW-C) and ranges from 5.5 to 6 feet MLLW.

(2) **Size:** LW-B is approximately 611 acres and LW-C is approximately 291 acres.

(3) **Type of Sites:** The placement areas are in two deeper portions of the lake. The shape of LW-B mimics the northwestern lobe of Lake Wimico, and LW-C as an elongated placement area that lies between the channel and the south-central shoreline of the lake. Sediments in the placement areas are similar (physically and chemically) to that of maintenance dredged material from the channel.

(4) **Type of Habitat:** The open-water placement areas are primarily unvegetated freshwater habitats.

(5) **Timing and Duration of Discharge:** It is anticipated, dependent upon in-channel shoaling that dredging, and placement operations could take anywhere from 3-10 weeks. Future maintenance activities are expected to be sporadic due to varying rates of shoaling.

F. **Description of Dredged Material Placement:** The project will be maintained using either a hydraulic pipeline cutter-head or mechanical dredge with

dredged material being placed in either of the open-water placement areas in Lake Wimico.

II. FACTUAL DETERMINATIONS (SECTION 230.11):

A. Physical Substrate Determinations:

(1) **Substrate Elevation and Slope:** The project would result in the removal of substrate as needed to depth -12 feet MLLW with -2 feet of allowable overdepth dredging and -2 feet of advanced maintenance. The dredged material would be placed in the two proposed open-water placement areas in Lake Wimico. Material placement would be managed to ensure no emergent habitat was created. Average depths in the placement areas range from approximately 5.5 to 6 feet.

(2) **Sediment Type:** The dredged material proposed for placement is comprised of primarily of silts and clays (65-90%) and some sand (10-35%).

(3) **Dredged/Fill Material Movement:** The dredged material would be placed in the open-water placement areas in waters ranging from approximately 5.5 to 6 feet deep. The placement areas are in lower flow areas of the lake where movement of placed material would be minimal outside of the designated placement areas.

(4) **Physical Effects on Benthos:** Disruption in the benthic community is expected to temporary and minimal. Immobile benthic fauna within the proposed project area may be covered, but the community should repopulate within several months of completion. Other mobile benthic fauna will avoid the disturbed area and return upon project completion. No adverse impacts are anticipated to occur to benthos.

(5) **Other Effects:** No other effects are anticipated.

(6) **Actions Taken to Minimize Impacts (Subpart H):** The dredged material would be placed using a pipeline in depths ranging from 5.5 to 6 feet in open water placement areas of the lake in low velocity areas to limit turbidity increases during placement. No other actions to minimize impacts are deemed appropriate for this project.

B. Water Column Determinations:

(1) **Salinity:** There would be no change in salinity gradients or patterns due to the proposed action.

(2) **Water Chemistry (pH, etc.):** No effect.

(3) **Clarity:** Minor increases in turbidity may be experienced in the immediate vicinity of dredged material placement operations. However, these increases

will be temporary and would return to pre-project conditions shortly after completion of operations.

(4) **Color:** No effect.

(5) **Odor:** No effect.

(6) **Taste:** No effect.

(7) **Dissolved Gas Levels:** Temporary decreases in dissolved oxygen could likely result from the operations depending on timing of discharge. If decreases occur, they will be of a short duration. No significant effects to the water column are anticipated.

(8) **Nutrients:** Slight increases in nutrient concentrations may occur, however, these would rapidly return to normal. Theses described increases would have no significant effect to the water column.

(9) **Eutrophication:** No effect.

C. **Water Circulation, Fluctuation, and Salinity Gradient Determinations:**

(1) **Current Patterns and Circulation:**

(a) **Current Patterns and Flow:** Placement of dredged material in the open-water placement areas would have no effect on current patterns and flow in the vicinity of the project area. No changes to currents are anticipated.

(b) **Velocity:** No effect.

(2) **Stratification:** No effect.

(3) **Hydrologic regime:** No effect.

(4) **Normal Water Level Fluctuations:** No effect.

(5) **Salinity Gradient:** The salinities in the project area are primarily constant due to minimal inflows of saltwater from surrounding bays and tidal influence from the Gulf of Mexico. No effect on the salinity gradient is anticipated.

D. **Suspended Particulate/Turbidity Determination:**

(1) **Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site:** Dredged material consists primarily of silts and clays (65-90%) and some sand (10-35%). Impacts from sediment disturbance during open water placement operations are expected to be temporary and minimal. Suspended

particles are expected to settle out within a short time frame (hours to days), with no long-term significant effects on water quality. Turbidity during placement is not expected to violate state water quality certifications criteria.

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

(a) **Light Penetration:** No significant effects.

(b) **Dissolved Oxygen:** No significant effects.

(c) **Toxic Metals and Organics:** No effects.

(d) **Pathogens:** No effects.

(e) **Esthetics:** No effect.

(3) **Effects on Biota:**

(a) **Primary Production Photosynthesis:** No significant effects.

(b) **Suspension/Filter Feeders:** No significant effects.

(c) **Sight Feeders:** No effect.

(4) **Actions Taken to Minimize Impacts (Subpart H):** No further actions are deemed appropriate.

E. **Contaminant Determination:** Sediment and elutriate samples were collected and analyzed from both the channel and proposed placement areas in Lake Wimico (Figure 4). Efforts consisted of collecting sediment and site water samples from five channel locations and five sample locations in the proposed open-water placement areas.

Overall, sediments dredged from Lake Wimico, and the proposed open-water placement areas do not exceed federal and state water quality standards and do not pose an increased effect for contamination within Lake Wimico and the surrounding environment. Further information regarding sediment sampling and results can be found in Section 6.5 of the associated EA. Specific data tables and further analyses of testing results are presented in the Evaluation of Dredged Material for Lake Wimico, Florida Technical Memorandum as an enclosure to the associated EA.

F. **Aquatic Ecosystem and Organism Determinations:**

(1) **Effects on Plankton:** No effects.

(2) **Effects on Benthos:** No significant long-term effects would occur to local benthos.

(3) **Effects on Nekton:** No significant effects.

(4) **Effects on Aquatic Food Web:** No significant effects.

(5) **Effects on Special Aquatic Sites:** In early 2020, The Nature Conservancy, with partners the Florida Department of Environmental Protection (DEP), Florida Fish and Wildlife Conservation Commission (FWC),and the National Fish and Wildlife Foundation (NFWF) purchased approximately 20,161 acres of crucially biodiverse habitat surrounding Lake Wimico. The tract was transferred to the Florida DEP which subsequently purchased an additional 578-acre parcel adjacent to the FWC's Apalachicola River Wildlife and Environmental Area and FWC's Box-R Wildlife Management Area. The proposed open water placement of dredged material from the navigation channel in Lake Wimico will have no effect on these special aquatic sites.

(a) **Sanctuaries and Refuges:** Not applicable.

(b) **Wetlands:** Not applicable.

(c) **Mud Flats:** Not applicable.

(d) **Vegetated Shallows:** No significant impacts to the submerged aquatic vegetation (SAV) were identified in this evaluation (Figure 5). Section 6.6.1 of the associated EA provides a description of results from the 2017 SAV survey conducted by the USACE in the proposed open-water placement areas.

(e) **Coral Reefs:** Not applicable.

(f) **Riffle and Pool Complexes:** Not applicable.

(6) **Effects on Threatened and Endangered Species:** The project may affect but is not likely to adversely affect the manatee and Gulf sturgeon. No other federally listed species are likely to be adversely affected as a result of the proposed action. There is no designated critical habitat within the project area. The USACE, Mobile District will coordinate with the U.S. Fish and Wildlife Service via public notice and coordination correspondence.

(7) **Effects of Other Wildlife:** No significant effects.

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

G. **Proposed Placement Site Determinations:**

(1) **Mixing Zone Determination:** The State of Florida will specify an appropriate mixing zone upon issuance of a state water quality certification. Typical mixing zone requirements for a project like this would be a mixing zone of approximately 150 meters and sampled turbidity readings not exceeding 29 nephelometric turbidity units (NTU).

(a) **Depth of Water at the Placement Site:** Average depths in both proposed placement areas range from 5.5 to 6 feet.

(b) **Current Velocity, Direction, and Variability at the Placement Areas:** Not significant.

(c) **Degree of Turbulence:** Not significant.

(d) **Stratification Attributable to Causes Such as Obstructions, Salinity or Density Profiles at the Placement Areas:** No effect.

(e) **Discharge Vessel Speed and Direction, if Appropriate:** No effect.

(f) **Rate of Discharge:** No effect.

(g) **Ambient Concentrations of Constituents of Concern:** Sediment sampling and analysis were completed in 2019 to determine presence of potential contaminants in dredged sediments and placement areas. No ambient constituents exceeded levels of concern. Further information regarding sediment sampling and results can be found in Section 6.5 of the associated EA. Specific data tables and further analyses of testing results are presented in the Evaluation of Dredged Material for Lake Wimico, Florida Technical Memorandum as an enclosure to the associated EA.

(h) **Dredged Material Characteristics, Particularity Concentrations of Constituents, Amount of Material, Type of Material (sand, silt, clay, etc.) and Settling Velocities:** The proposed action would involve open water placement for maintenance operations of the GIWW channel in Lake Wimico. The most recent quantity of dredged material was approximately 250,000 cys. Future maintenance activities (approximately every 10 years, and dependent on shoaling rates) are expected to be similar, but varying shoaling rates or natural occurrences (tropical activity, etc.) could alter this quantity. The type of material removed would consist primarily of silts and clays (65-90%) and some sand (10-35%). Settling of dredged material upon placement in the open-water placement areas is anticipated.

(i) **Number of Discharge Actions per Unit of Time:** The number of discharge actions per unit time will vary depending upon the dredging action quantity and frequency.

(2) **Determination of Compliance with Applicable Water Quality Standards:** The proposed action is in compliance with all applicable water quality standards.

(3) **Potential Effects on Human Use Characteristics:**

(a) **Municipal and Private Water Supply:** No effect.

(b) **Recreational and Commercial Fisheries:** Recreational and commercial fishing would be temporarily impacted primarily as a result of the physical presence of heavy equipment during dredging and placement operations. Conditions would return to normal levels upon completion of the proposed action.

(c) **Water Related Recreation:** No significant effects.

(d) **Aesthetics:** No significant effects.

(e) **Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves:** In early 2020, The Nature Conservancy, with partners the Florida Department of Environmental Protection (DEP), Florida Fish and Wildlife Conservation Commission (FWC),and the National Fish and Wildlife Foundation (NFWF) purchased approximately 20,161 acres of crucially biodiverse habitat surrounding Lake Wimico. The tract was transferred to the Florida DEP which subsequently purchased an additional 578-acre parcel adjacent to the FWC's Apalachicola River Wildlife and Environmental Area and FWC's Box-R Wildlife Management Area. The Apalachicola National Estuarine Research Reserve is located to the east of the project site in both Apalachicola Bay and St. George Sound. The proposed open water placement of dredged material from the navigation channel in Lake Wimico will have no effect on these sites.

(f) **Other Effects:** No effect.

H. **Determination of Cumulative Effects on the Aquatic Ecosystem:** The proposed action is not expected to have significant cumulative adverse effects.

I. **Determination of Secondary Effects on the Aquatic Ecosystem:** The proposed action is not expected to have any significant secondary adverse effects on the aquatic ecosystem.

III. FINDING OF COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE:

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

B. The proposed discharge represents the least environmentally damaging practicable alternative.

C. The planned placement of dredged material would not violate any applicable state water quality standards; nor will it violate the Toxic Effluent Standard of Section 307 of the Clean Water Act (CWA).

D. Use of the open-water placement areas in Lake Wimico will not jeopardize the continued existence of any federally listed endangered or threatened species provided the specified conditions in this document are implemented during maintenance dredging and placement operations.

E. The proposed placement of dredged material will not contribute to significant degradation of waters of the United States; nor will it result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing; life stages of organisms dependent upon the aquatic ecosystem; ecosystem diversity, productivity and stability; or recreational, aesthetic or economic values.

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

DATE_____ _____

Sebastien P. Joly
Colonel, U.S. Army
District Commander

Figure 1: Lake Wimico, Florida Federal Navigation Project Vicinity Map

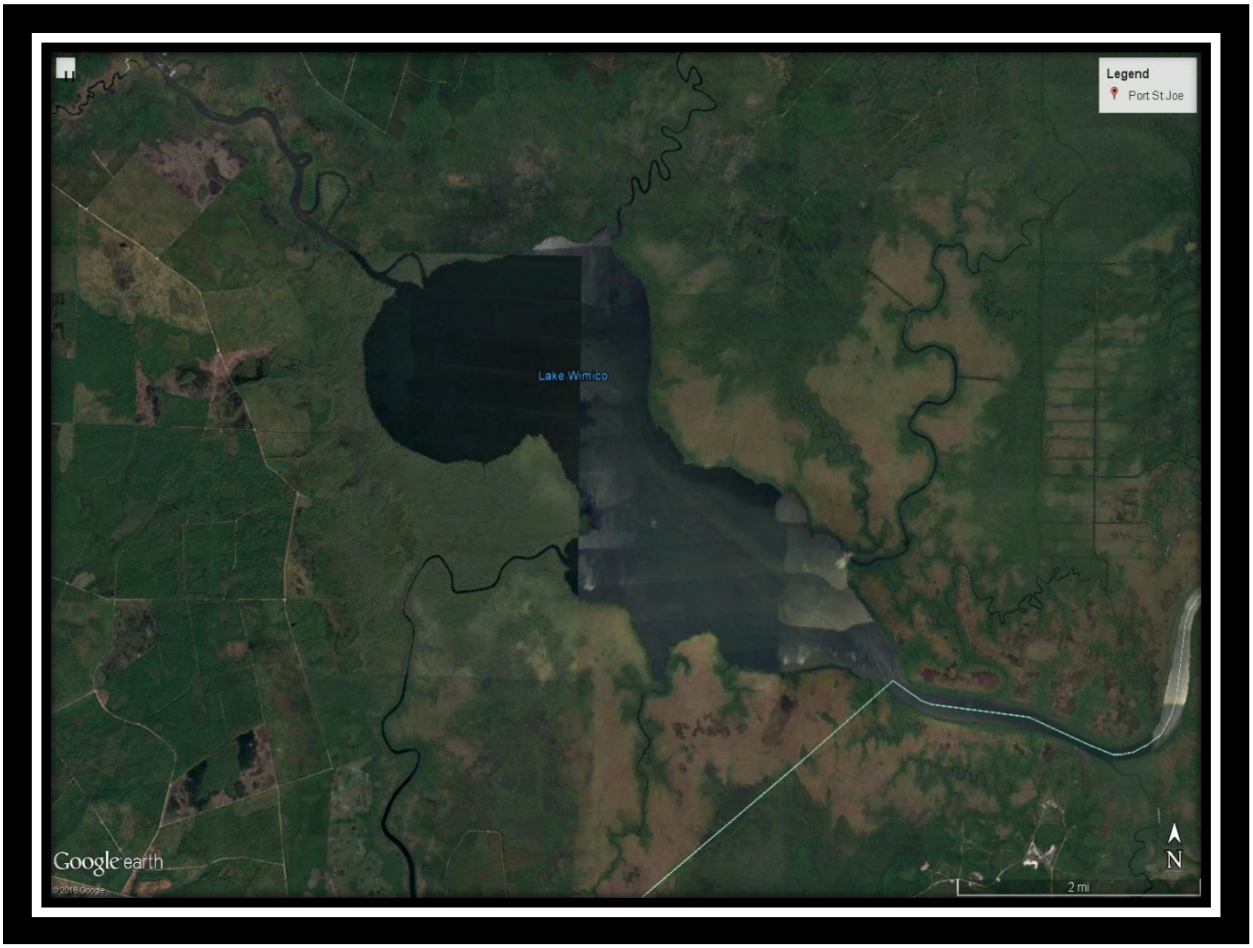

Figure 2: Lake Wimico, Florida

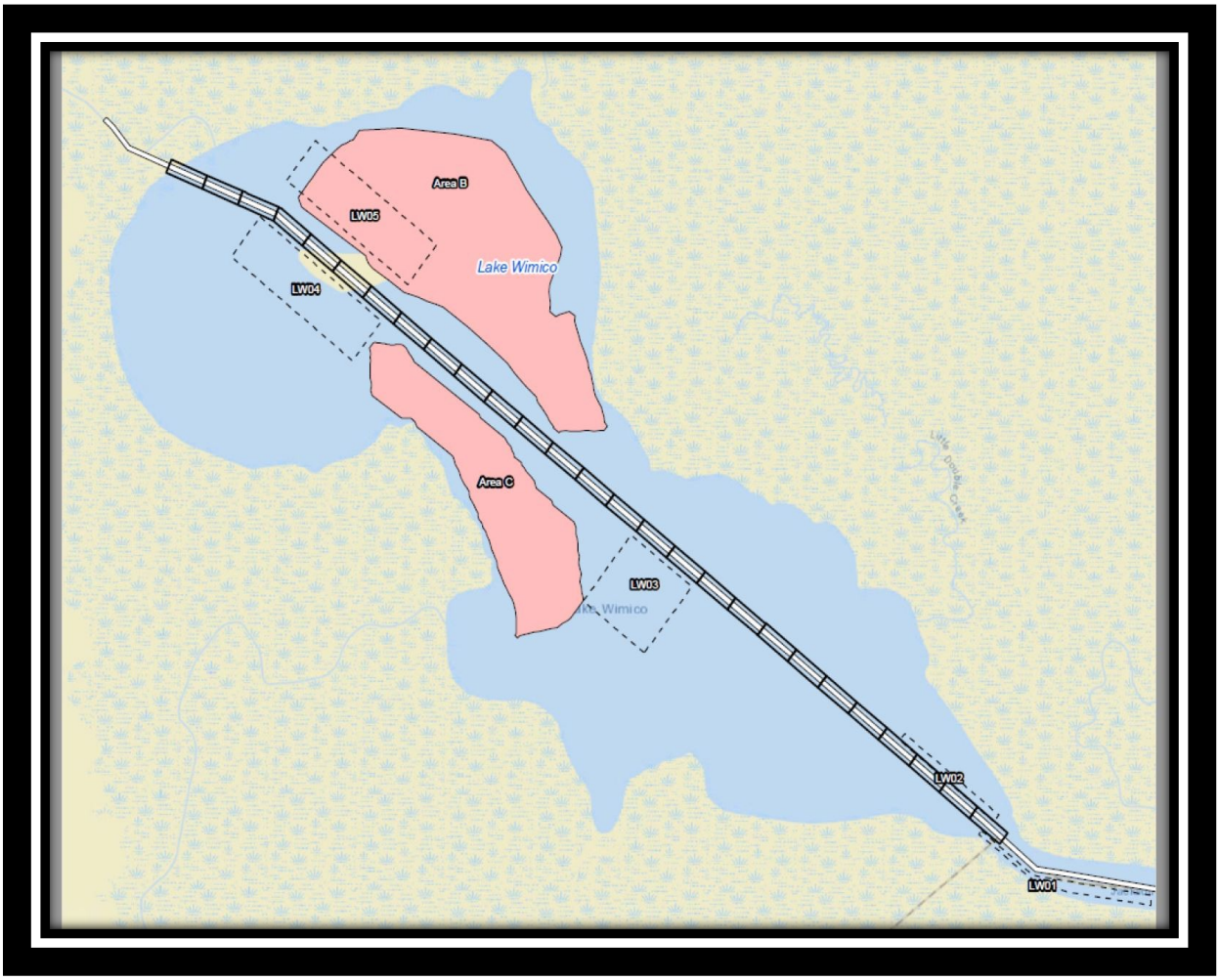

Figure 3: Proposed Lake Wimico Open-Water Placement Areas

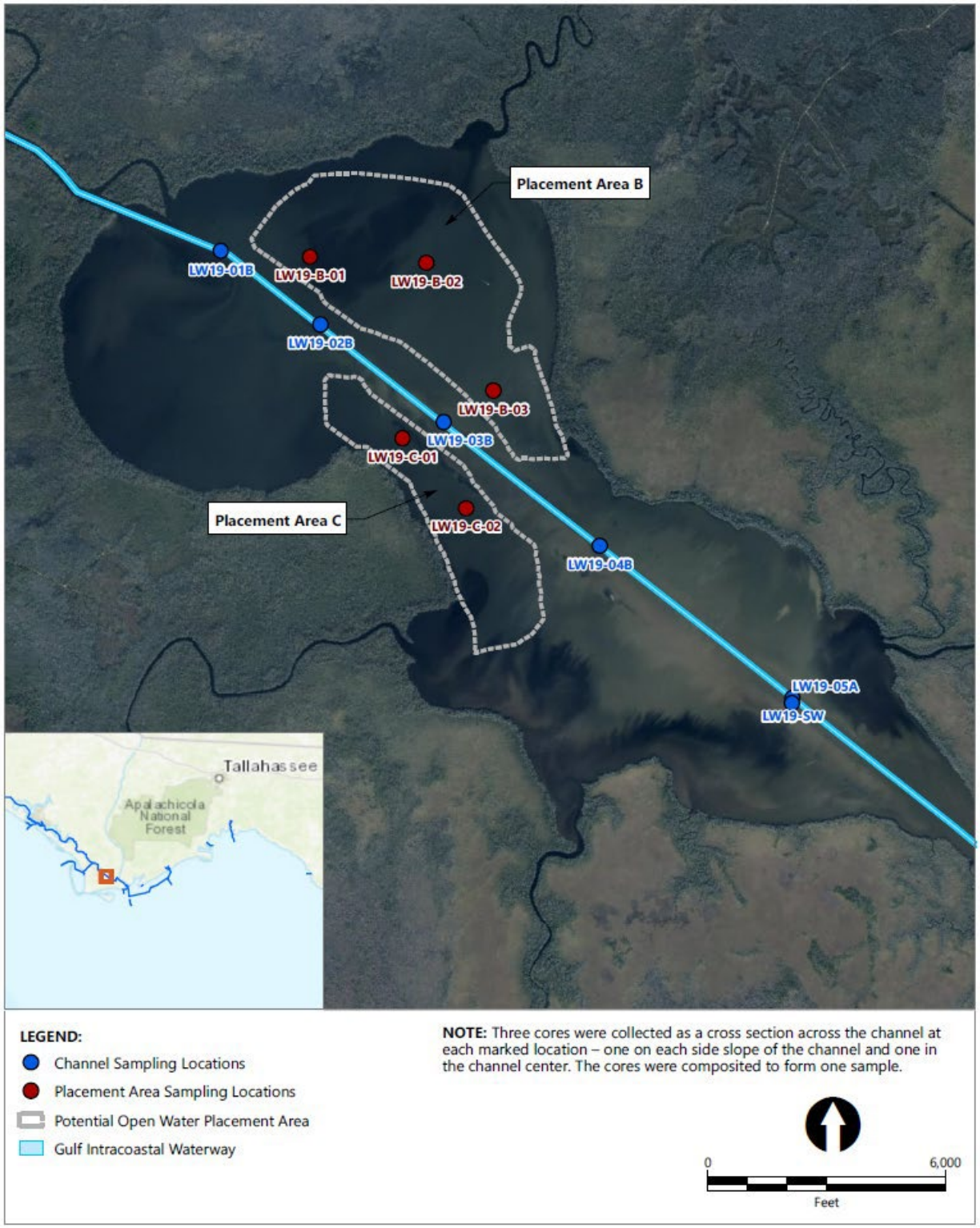

Figure 4: Sediment Sampling Locations in Lake Wimico

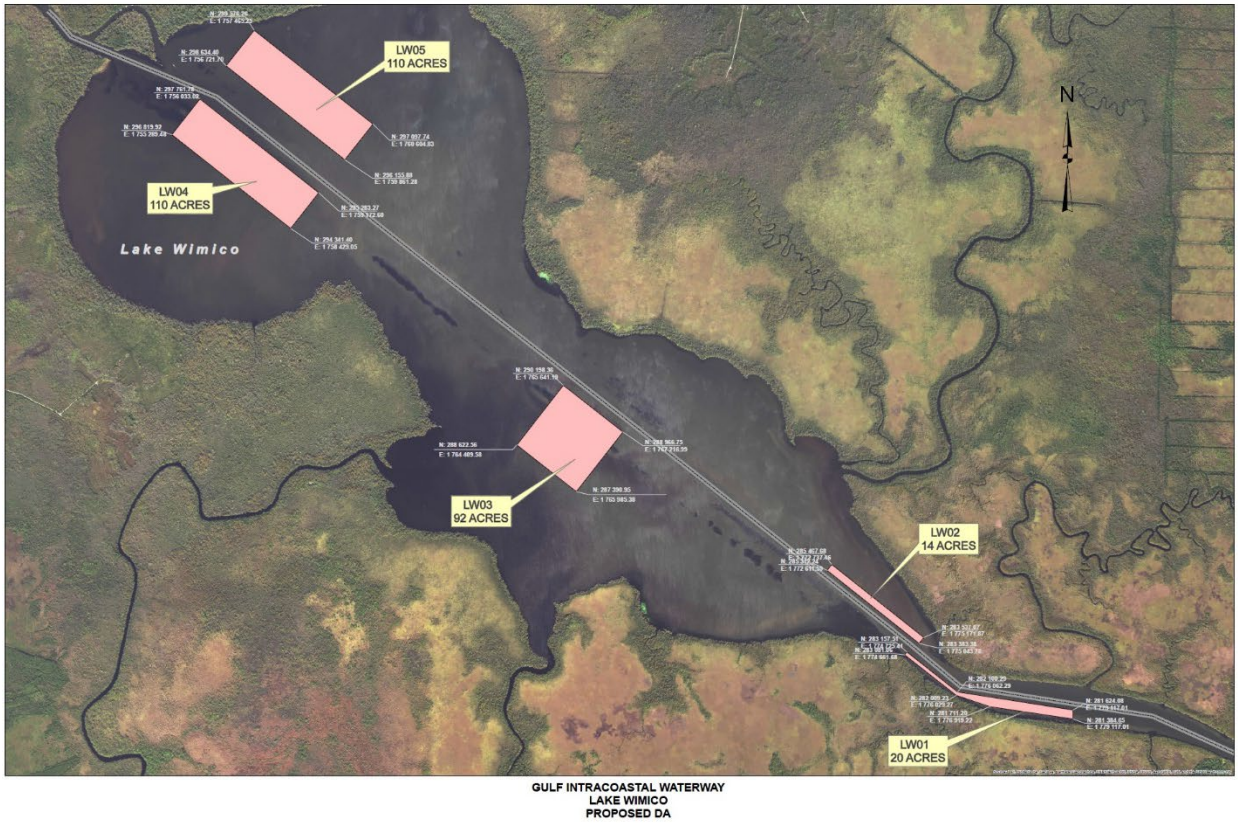

Figure 5: Areas of SAV Surveys Conducted in 2017