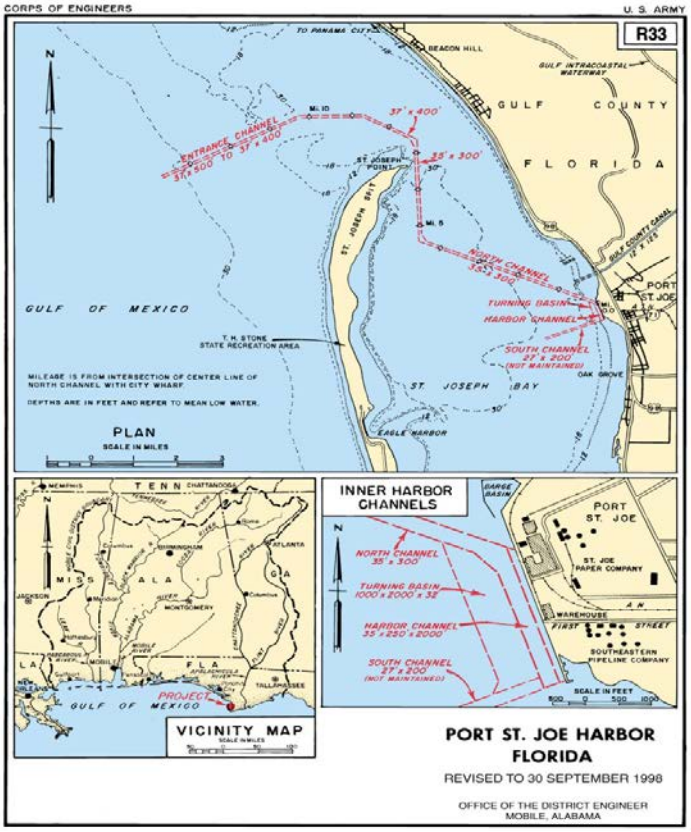
DRAFT
ENVIRONMENTAL ASSESSMENT AND
SECTION 404 (B)(1) REPORT

MAINTENANCE DREDGING OF PORT ST. JOE NAVIGATION CHANNEL GULF COUNTY, PORT ST. JOE, FLORIDA

A FEDERALLY AUTHORIZED PROJECT



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

Last Update: 11 July 2014

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1.0 INTRODUCTION

The purpose for the proposed action is to update the National Environmental Policy Act (NEPA) documentation, as the original 1973 Port St. Joe Harbor Environmental Impact Statement (EIS) predates some changes in the environmental setting and there have been new designations since then, such as Essential Fish Habitat (EFH) and Gulf sturgeon critical habitat designation, delisting of the bald eagle to protection under the Bald and Golden Eagle Protection Act, and implementation of Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and Executive Order 13045 - Protection of Children from Environmental Health Risks and Safety Risks. This Environmental Assessment (EA) will address the continual maintenance dredging, sediment placement operations and relocation of the channel for the federally authorized Port St. Joe navigation project, Gulf County, Florida.

1.1 Project History. Port St. Joe was founded in 1837 and was one of the first towns established on the Gulf of Mexico. It was an important seaport to the cotton industry of the old south and was the terminus of the first three railroads in the United States (U.S.). As no rivers flowed into St. Joseph Bay, two railroads were built connecting St. Joseph with the Apalachicola River in an attempt to siphon off some of the cotton and lumber being shipped down the river to the Port of Apalachicola. The town served as a seaport until 1841 when a ship from Cuba docked with occupants carrying yellow fever. Over 75% of the town died of the disease and the rest of the population fled, abandoning the city only seven years after it was founded. In 1843, a hurricane destroyed the abandoned city. In the early 1900s, St. Joseph's Bay and its natural deepwater harbor once again drew the interest of shippers who saw it as offering the shortest shipping route from the new Panama Canal into the southeastern U.S. Vital to their plans was the construction of the new Apalachicola Northern Railroad (ANRR; now the AN Railway) which was completed in 1910. Furthering their plans, in 1914 a new Port channel – 7,300 feet long, 300 feet wide, and 24 feet deep – was constructed by private interests. Forest products, primarily the timber along the railroad, were an attractive cargo opportunity for the railroad and port (Master Plan 2013).

The Port's channel and harbor dredging were federally authorized by the River and Harbor Act of 2 March 1945 (77th Congress, 1st Session), the Chief of Engineers Report 9 March 1950, and Harbor Act of 3 September 1954 (81st Congress, Second Session). Construction was completed in July 1962 for a total cost of $1,980,862. Approximately 1.68 million cubic yards of dredged material was removed over a four year construction period. An economic evaluation of the project in 1969 documented a Benefit-Cost ratio of 12 to 1. The U.S. Army Corps of Engineers

(USACE) conducted maintenance dredging at various locations within the ship channel and harbor in 1966, 1968, 1970, 1972, 1973, 1980, 1985 and 1986 (see **Table 1**). Cargo handled at the port between the 1940s and 1980s included paper, wood pulp, petroleum, cotton, timber, chemicals, resin, turpentine, and various agricultural commodities. The local paper mill ceased operations in August 1998 and a dry bulk shipping business closed in 1999. These closures severely curtailed Port traffic (Master Plan 2013). By 1996, the natural deep water harbor and the extended channel that led to the open waters of the Gulf of Mexico experienced its last visit from a cargo ship. The Port or navigation channel has not been maintained since its last dredging event in 1986.

Table 1:

Dredging History Port St. Joe 1959 to 1986	
Year	Quantity in Cubic Yards
1959	508,599
1960	1,176,337
1966	68,484
1968	682,730
1970	282,447
1972	173,681
1973	102,034
1980	272,905
1985	177,403
1986	44,517
Total = 3,489,167 cys	

Currently, the port bulkhead and surrounding land sits idle awaiting new development. The former major users and facilities of the Port, the St. Joe Paper Mill and Box Plant, and the Arizona Chemical Company have been razed so that the land can be reclaimed for further use. Also, left behind is the essential infrastructure used to support their operations. Water, sewer, electricity and gas are in abundant supply. The AN short-line railroad that connected the Port to the main rail lines of the U.S will soon be repaired and back in service. A $750,000 state grant for an environmental and engineering study of the shipping channel, a requirement before any dredging can take place, was recently awarded to the Port St. Joe Port Authority with the St. Joe Company providing the required match of $250,000. As a result of a recent formation of a strategic development partnership with the St. Joe Company, the Port of Port St. Joe and the surrounding land and infrastructure are now positioned to once again become a thriving port (Brief History 2013).

1.2 Location. St. Joseph Bay is located in the central Florida Panhandle in Gulf County, Florida along Highway 98 near the community of Port St. Joe which is approximately 35 miles southeast of Panama City and approximately 100 miles southwest of Tallahassee (**Figure 1**). St. Joseph Bay is bound on the eastern shoreline by the City of Port St. Joe and St. Joseph Bay State Buffer Preserve lands on the west and by St. Joseph Peninsula State Park (**Figure 4**). It is adjacent to the larger basins of St. Andrew Bay to the west and Apalachicola to the east.

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1.3 St. Joseph Bay and St. Joseph Bay Aquatic Preserve. St Joseph Bay is a small embayment that lies just west of Apalachicola, Florida. The total surface area of the bay at mean high water is approximately 43,872 acres. The bay is approximately 15 miles long north to south, with a maximum width of 6 miles. St. Joseph Bay and Apalachicola Bay are directly adjacent to one another, but provide a great contrast in condition because all the freshwater of the region goes to Apalachicola Bay. Partially isolated from the Gulf of Mexico by a sand spit, the Bay extends from Cape San Bias in the south to the tip of St. Joseph Peninsula in the north. The peninsula is 17 miles long and has an average width of 1,000 feet. Eagle Harbor, midway up the spit, forms a natural cove on the bay side. This feature may represent an ancient pass which once divided the spit into two islands.

St. Joseph Bay is the only body of water in the eastern Gulf of Mexico not influenced by the inflow of freshwater. A lack of riverine inputs and sandy sediments contribute to very clear waters within the bay. Because of this, these coastal waters tend to be clearer with sandier sediments than in the north central Gulf of Mexico. These conditions make the bay ideal habitat for the growth of lush seagrass communities. The Bay is host to one of the richest and most abundant concentrations of marine grasses along the Northwest Florida Coast. Seagrasses covered approximately 15% of the bay (6,671 acres) in 2008. Five different species of seagrasses occur within these vast meadows that cover the bay bottom (**Figure 7**). Much of the productivity of the region is attributed to the nearshore saltmarsh and seagrass habitats that serve as nursery and foraging grounds for a variety of commercial and recreational fish and invertebrate species, sea turtles , scallops and birds. Saltmarsh habitat spans approximately 762 acres. In addition, St. Joseph Peninsula supports the highest density of nesting loggerhead sea turtles, in the panhandle and is indicated as critical habitat for the piping plover and St. Andrew's beach mouse (FDEP 2008).

St. Joseph Bay Aquatic Preserve is located within and adjacent to St. Joseph Bay. It was designated an Aquatic Preserve in 1969 for the primary purpose of preserving the biological resources in the bay and maintaining them in an essentially natural condition. The aquatic preserve encompasses approximately 73,000 acres of state-owned sovereign submerged lands below the mean high water line (**Figure 3**). This includes all tidal lands and islands, sandbars, shallow banks, submerged bottom, and land waterward of the mean high water to which the state holds title. This aquatic preserve provides food and habitat for numerous fish, reptiles, marine mammals, birds and benthic invertebrates. Uplands and manmade canals are excluded from the preserve. Other exclusions include of privately owned submerged lands along the eastern shore, private in-holdings that occur along the southern and western shore, the area of the bay north of the Port St. Joe navigation channel and the immediate area of the channel.

St. Joseph Bay Aquatic Preserve also designated as an Outstanding Florida Waterbody (OFW) by the Florida Department of Environmental Protection (FDEP). This designation is applied to certain waters that are worthy of special protection due to their natural attributes. These waters are afforded special protection by the state due to their high quality, recreational or ecological significance. This designation is intended to preserve the ambient water quality at the time of the designation and does not allow any degradation. In addition, conservation lands adjacent to St.

Joseph Bay Aquatic Preserve include St. Joseph Bay Buffer State Park, St. Joseph Peninsula State Park and St. Vincent National Wildlife Refuge (**Figure 4**)

1.4 Impact Analysis. This EA evaluates the potential environmental impacts associated with the maintenance dredging, sediment placement activities and channel realignment for the portion of the federally authorized Port St. Joe navigation project located in Port St. Joe, Florida. This EA has been prepared by the USACE, Mobile District, and meets the requirements of the NEPA.

2.0 DESCRIPTION OF THE AUTHORIZED PROJECT

This project was federally authorized by the Rivers and Harbors Act of 2 March 1954. The existing Federal project provides for: (a) an Entrance Channel 37 feet deep, 500 feet wide at its outer end and diminishing progressively in width to 400 feet at the first bend (a distance of 3.6 miles), continuing at a depth of 37 feet and a width of 400 feet through the second and third bend (a distance of 3.3 miles), continuing at a depth of 35 feet and a width of 300 feet (a distance of 2.4 miles) to a point in St. Joseph Bay where the entrance channel joins the North Channel (a total distance of 9.3 miles); (b) continuing in the North Channel at a depth of 35 feet and a width of 300 feet to the north end of the Turning Basin at Port St. Joe (a distance of about 4.7 miles); (c) a Turning Basin 32 feet deep, 1,000 feet wide, and 2,000 feet long; (d) a Harbor Channel therein 35 feet deep, 250 feet wide, and 2,000 feet long, adjacent to the waterfront at Port St. Joe; and (e) a South Channel 27 feet deep, 200 feet wide and about one mile long leading from the south end of the turning basin to deep water in St. Joseph Bay (**Figure 1**).

3.0 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the periodic maintenance dredging of the federally authorized Port St. Joe navigation channel located in Gulf County, St. Joseph Bay, Florida. Maintenance of the project consists of the removal and placement of approximately five million cubic yards of fine sand, silts and clays. The dredge depth includes an authorized design depth of -37 feet Mean Lower Low Water (MLLW) for the Entrance Channel, -35 feet MLLW for the North and Harbor Channel, -32 feet MLLW for the Turning Basin, and taking no action on the South Channel. In addition, two (2) feet of advance maintenance and an over dredge depth of two (2) feet is authorized for each segment of the channel. Maintenance dredging of soft-dredged material with a hydraulic dredge may disturb the bottom sediments several feet deeper than the target depth due to the physical conditions and inaccuracies of the dredging process. Three (3) feet of sediments below the 2-foot over dredge depth cut may be disturbed in the dredging process with minor amounts of material being removed. The sediment removed during maintenance activities would be placed in the contained upland placement areas as shown in **Figures 2, 8, 10 and 11** of this document. In addition, a 15,000 foot north-south portion of the navigation channel adjacent to the end of St. Joseph Point will be shifted to the east 300 feet to preserve additional shorebird habitat and reduce the amount of dredging required to reestablish the existing channel (**Figure 13**). Dredging is typically conducted via a hydraulic pipeline, hopper or mechanical dredge. The quantity of material to be dredged is approximately five million cubic yards. Continued maintenance of the channel is anticipated to be required every 3 to 5 years based on previous records.

4.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose and need for the proposed action is to update the EA and supporting environmental documents, as the original 1973 EIS predates existing environmental and changing site conditions. This EA addresses the continual maintenance dredging, proposed upland sediment placement area options and channel relocation for the Port St. Joe navigation channel in Florida. Additional sediment placement areas are needed due to the large quantity of material (5 million cys) that must be dredged. The federally authorized dredging maintenance project provides small craft and cargo ships a secure and safe means of navigating to and from the Port. This channel has historically been a vital means for transporting cargo for over 50 years. Without the proposed action, the vessels utilizing the channel will be subjected to adverse navigational conditions caused by shoaling which would in turn eliminate a vital and economical link for the community of Port St. Joe and their important markets.

The Port of St. Joe navigation project is critical towards sustaining vital commercial activities that are essential components of Gulf County and the regional economy of Northwest Florida. Port modernization and expansion in the face of increasing international trade activity, especially with activities associated with the expansion of the Panama Canal, are essential to maintaining the economic dynamism of the State and Northwest Florida region, and will yield significant benefits by increasing employment opportunities and generating greater personal income for Florida residents (Economic Impacts 2013).

5.0 ALTERNATIVES TO THE PROPOSED ACTION

5.1 No Action Alternative. NEPA defines a No Action as the continuation of existing conditions in the affected environment without the implementation, or in the absence of the proposed action. Inclusion of the No Action alternative is prescribed by the Council on Environmental Quality (CEQ) regulations as the benchmark against which Federal actions are to be evaluated. The implementation of the No Action alternative would result in continuing to not maintain the project to a maximum design depth of -37 feet MLLW (this depth does not include 2 feet of advanced maintenance and 2 feet of allowable overdepth dredging). This alternative would result in a waterway that would eventually fill with sediments and become unsafe and non-navigable for commercial and recreational boats. Shoaling would develop at various times and places. This would forego the benefits of the channel by eliminating a major link connecting the Port to the Gulf of Mexico and outside markets for interstate and international waterborne commerce. Project abandonment would further place an economic stress on the local community and future commercial investments dependent on the project. Therefore, the "no action" alternative was deemed unacceptable and is not considered further.

5.2. Existing Navigation Project with Upland Placement and Channel Realignment. This alternative would result in resuming operation and maintenance of the Port of St. Joe navigation channel with a proposed modification to the dredged material upland placement areas and realignment of the channel adjacent to the sand spit. The primary proposed placement area for

the dredged material is Disposal Areas (DA) #10 which includes segments A, B, and C (**Figure 8**). This 425 acre placement area currently serves as a disposal area for the Gulf Intracoastal Waterway (GIWW) project. DA#10 was approved as a disposal area by FDEP on 10 October 2012 when they issued their state water quality permit for the GIWW project. However, the Corps only has a perpetual easement for material placement from the GIWW. Approval from the landowner is still needed for the Port St. Joe project material. Two additional upland disposal areas are also proposed and identified as the Tier 1 and Tier 2 sites. The Tier 1 site is located at the old paper mill industrial site. This site is approximately 125 acres, adjacent to the bay, and easily accessible from Highway 98 (**Figure 10**). The plan is to place only sandy sediments in this placement area so it can be redeveloped. The Tier 2 site is a 421 acre wooded area located northeast of the Tier 1 site and southwest of DA#10 (**Figure 11**). This placement area would be used for the more silty sediments from the interior of the bay. This area would be used once the DA#10 and the Tier 1 former paper mill Site are filled to capacity or there is some sort of problem that prevents the use of DA#10. An overview of all three placement areas is shown in **Figure 2**. This alternative also involves a slight channel realignment which would occur near the far northeastern end of St. Joseph Point. The north-south 15,000 foot long channel segment would be shifted 300 feet to the east to preserve shorebird habitat and reduce the amount of dredging required to reopen the existing channel. The new proposed relocation of the channel is shown in **Figure 13**. In addition, a 2,200' long by 150' wide portion of the channel would be constructed near the tip of St. Joseph Peninsula to act as a sediment basin (or "sand trap"). By dredging the channel wider in this area, it provides space for the shoaling to occur without encroaching on the channel and interfering with navigation. This sediment basin will reduce the dredging frequency, which in turn reduces operations and maintenance (O&M) cost and environmental impacts. This alternative was selected as the most feasible and preferred alternative.

5.3. Existing Navigation Project with Shoreline Placement. This alternative would result in resuming operation and maintenance of the Port of St. Joe navigation channel with proposed placement of dredged materials along the shoreline of the sand spit or shoreline areas in the vicinity of the City of Port St. Joe. This alternative was not selected due to the lack of suitable shoreline placement areas along the spit due to excessive seagrass beds. In addition, some of the sediments within the bay were not suitable for shoreline placement due to the high silt and clay content and low levels of contamination.

6.0 AFFECTED ENVIRONMENT

6.1 Physical Environment

6.1.1 Climate. The climate of the Florida Panhandle is typical of that experienced along the northern Gulf Coast. Because of the moderating effects of the Gulf, the range in both temperature and humidity extremes is small. 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 this area is 60 inches with peak rainfall periods occurring primarily during the summer and fall months. Afternoon thunderstorms increase the amount of

rainfall during the summer. September is typically the wettest month and the dry season occurs from October through December. Hurricanes can also contribute significantly to rainfall accumulation from summer to early fall. The average annual maximum daily temperature is approximately 77° Fahrenheit (F). Average low temperature is approximately 55° F while the average high temperature is 79° F. Temperatures in the area range greater than 90° F within the summer months of July and August to lows of 20° F in the winder. 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. Prevailing winds are from a southerly direction during the spring and summer and from a northerly direction during the fall and winter months.

6.1.2 Topography, Geology and Soils. Florida Panhandle is comprised of a relatively flat terrain, ranging in elevation from 0 to about 50 feet above mean sea level. The project lies entirely in the Gulf coastal lowlands physiographic province, and is characterized by low energy barrier islands, beaches, saltwater marshes and dunes, which surround numerous small creek drainages, alluvial rivers, bays and sounds. St. Joseph Bay lies on an offshore extension of the Gulf Coast Lowlands geomorphic province, which is characterized by low elevations and poor drainage. Numerous relict bars and dunes are associated with this province, indication historic fluctuation in sea level. Relict marine bars, dunes and spits formed during the high Pleistocene sea level stands and are superimposed on the otherwise flat landscape. The shoreline topography of this coastal barrier system has been in a state of change with varying rates of accretion and erosion for hundreds of years (FDEP 2008).

Soils in the coastal panhandle of Florida consist predominately of medium to fine grain sands and silts associated with recent Pleistocene formations and are generally over 100 feet thick. 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 top soils 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. Parent material includes Quaternary marine and estuarine sediments. The bottom sediments of St. Joseph Bay are predominantly sand, sand-silt-clay, sandy clay and silty clay. Approximately half of St. Joseph Bay consists of sediments of a find grain nature with dominant amounts of silts and clays. **Figure 5** depicts the typical sediments types found in St. Joseph Bay (FDEP 2008).

6.1.3 Hydrology and Water Resources. St. Joseph Bay is unique in being the only sizeable embayment body of water in the eastern portion of the Gulf of Mexico that is not markedly influenced by the inflow of freshwater. Therefore, the salinity of the bay is essentially the same as the Gulf, averaging 35 parts per thousand (ppt). The total surface area of the bay at mean high water is approximately 43,872 acres. Numerous small bayous, creeks and ditches drain into the bay, but the principal sources of freshwater include rainfall, the underlying confined Upper Floridan Aquifer, overland drainage and the Gulf County Canal. The canal is a constructed waterway that connects the bay with the GIWW and adjacent shallow ground water. Estimates for Upper Floridan Aquifer discharge rates for the St. Joseph Bay area range from 0.5 to 2 inches per year. Net precipitation defined as the difference between precipitation and lake evaporation, for the St. Joseph Bay area are estimated between 8 and 9 inches per year. One preliminary

estimate of a long term average annual freshwater flow from the canal is 1,740 cubic feet per second. On a daily basis, this inflow would amount to less than one percent (0.56%) of the bay's total volume. Because of this minimal freshwater influence, St. Joseph Bay essentially remains a high salinity coastal lagoon, with some estuarine qualities near the mouth of the canal. Sediment loading, a phenomenon related to inflow, topography, and terrestrial geologic conditions, has no significant impact on the bay and thus it has remained quite deep since a rise in sea level flooded the coastal plain approximately 5,000 years ago (FDEP 2008).

The groundwater in this area 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 within the state.

6.1.4 Air Quality. Sources of air pollution in the project area are minor and mainly due to non-point sources, such as boat motors and vehicular traffic emissions. No major sources of air pollution were found within the vicinity of the project area now that the paper mill has closed.

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 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 in attainment for all monitored pollutants including Carbon Monoxide (CO), Ozone (O3), Particulate Matter (PM-10), Sulfur Dioxide (SO2), and Lead (Pb).

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

6.1.6 Water Quality. Water quality within the project area is influenced by point and non-point source pollution. The FDEP document—Site Specific Information in Support of Establishing Numeric Nutrient Criteria for St. Joseph Bay dated December 2012 stated that a lack of riverine inputs and sandy sediments contribute to very clear waters, and St. Joseph Bay supports one of the densest stocks of seagrass beds in northwest Florida. Water temperatures in the bay range from 7º to 33º C, with peak temperatures generally occurring in July and August, and the lowest temperatures occurring in December and January. The pH in the bay averages 8.0. Salinities approximate those in the Gulf of Mexico, ranging from 23 to 40 parts per thousand (ppt), with a mean of 33 ppt. Dissolved oxygen averages 98%. They bay is well mixed, and hypoxia has not been observed. Turbidity values range from 0 to 49 nephelometric turbidity units (NTUs), with the higher values typically associated with storm events. The mean turbidity under conditions

not associated with storm events is 0.94 NTUs. Sources of pollution to St. Joseph Bay include point source discharges (sewage treatment plant), nonpoint source inputs (septic tanks and stormwater from urban and agricultural areas). In spite of these notable pollution sources the 2012 305(b) Water Quality Assessment found the State of Florida's surface and groundwater resources to be predominantly in very good condition based on the indicators assessed. In addition, water quality in the northwest sections of the state was found to be generally better than in other areas of the state (FDEP 2012).

6.1.7 Sediment Quality. The sediments within the Port St. Joseph navigation channel were sampled in June 2001 and November 2013 for both chemical and physical characteristics. Nine stations were successfully sampled using a vibracoring system in 2001 both in the bay and the Gulf within the navigation channel. Approximately 60 core borings were taken in 2013 along the entire navigation channel. In all cases, testing results indicate a significant amount of the material outside the bay consists of fine sand. The sediments samples within the bay consists of a finer grained material primarily clays and silts along with a mixture of fine sands. Of those 60 core borings, seven samples within the harbor area underwent a detailed chemical analysis. These samples were compared to both FDEP and NOAA standards. The chemistry results demonstrated that metals, dioxin/furans, and PAHs were present in the sediment of the harbor; however, all analytes were within applicable FDEP regulatory criteria. Most of the material is suitable for open-water placement and all of the material is suitable for placement in the proposed upland disposal areas (EA Engineering 2002 and Cardno Tec 2014).

A monitoring program by the National Oceanic and Atmospheric Administration-National Ocean Service (NOAA) gives an analysis of the status and trends of chemical constituents in sediments and tissues for estuaries, bays and sounds along the U.S. coastline. NOAA summarized the NOAA's Status and Trend (NS& T) Program data from 1984 through 1989 from estuaries nationwide for the period of in 1991 (NOAA, 1997). This data revealed that the concentrations of a number of chemicals were significantly elevated in sediments. In light of these studies a further in depth evaluation was conducted for four bays in the Florida Panhandle: Pensacola, Choctawhatchee, St. Andrew and Apalachicola to determine concentrations of trace metals, pesticides, other chlorinated compounds, and polynuclear aromatic hydrocarbons. The study indicated that the tributaries of the bay systems contained higher concentrations of chemical constituents than the main bays. This is likely attributed to the highly urbanized areas surrounding these systems. For the most part, St. Joseph Bay is far removed from the tributaries identified above. Upon reviewing the data set of point location of facilities containing or producing hazardous materials, no obvious potential point sources of contamination were identified. The majority of the sites identified containing contaminates were in the vicinity of water treatment facilities.

In response to the Deepwater Horizon oil spill of 2010, EPA monitored air, water and sediment along the affected coastline and bays from Louisiana to Florida. Sediment samples were collected and analyzed for Nickel (Ni), Vanadium (V), and oil related organic compounds. In the four bays in the Florida Panhandle: Pensacola, Choctawhatchee, St. Andrew and Apalachicola Florida bays, results indicated that the overall, organic and metal contaminant levels were minimal and overall sediment quality was good. The results of these sampling

events would indicate that St. Joseph Bay would not have been impacted from the Deep Water Horizon oil spill due to its distance from the spill site.

6.1.8 Hazardous Material. The USACE Emergency Management site files were examined for potential hazardous material sites adjacent to the project site. No known hazardous materials are stored on or near the project site.

6.1.9 Biological Resources.

6.1.9.1 Aquatic Environment.

6.1.9.1.1 Benthos, Motile Invertebrates, and Fishes. Benthic invertebrates are reliable indicators of habitat quality in an aquatic environment. These species live in bottom sediments where exposure to contaminants and oxygen stress are most frequent. They also indicate local conditions because they have limited mobility and cannot migrate to avoid stressful situations. Benthic invertebrates are ecologically important in serving as food for bottom-feeding fish and affecting nutrient recycling. The biomass of benthic invertebrates in coastal embayments is often high and will decline if communities are affected by poor water quality. St. Joseph Bay has a viable benthic community due to the outstanding water quality and abundant seagrass beds.

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 Bay 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. Port St. Joe 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).*

St. Joseph Bay scallops (*Argopecten irradians*) are bivalve mulluscs located in the Bay's estuaries. Local populations fluctuate greatly from year to year and periodically collapse due to natural events such as salinity variations in St. Joseph Bay. Despite the variability, the bay has one of the healthiest populations of bay scallops in Florida. Bay scallops are distributed within the shallow waters along the southeastern, southern, and southwestern shores of the bay typically in 4-8 feet of water. Seagrass beds are essential habitat for the bay scallop. Juveniles attach to grass blades as they make their transition from planktonic larvae to adults. They live elevated in the canopy for one to two months until they grow larger and actively swim by opening and closing their shells rapidly to generate thrust. Adults use both the interior and edges of the Thalassia beds in St. Joseph Bay. The animal's lifespan is just one to one and a half years Scallop harvesting is very popular in St. Joseph Bay. They used to be harvested and sold commercially; now only recreational anglers can take them during harvest season. In 2013, open harvest season for bay scallops along Florida's Gulf coast ran from June 29th to September 24th. The bag limit is two gallons of unshucked animals per person per day or one pint of meat per person per day (FFWCC 2014).

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 pompano *(Trachinotus carolinus*), and Spanish mackerel *(Scomberomorus maculates).*

6.1.9.1.2 Submerged Aquatic Vegetation. Communities of submerged vegetation for this stretch of coast occur within shallow protected waters of the St. Joseph Bay where bottom conditions and light penetration provide suitable habitat. The Bay is host to one of the richest and most abundant concentrations of marine grasses along the Northwest Florida Coast. Seagrasses covered approximately 6,672 acres of St. Joseph Bay in 2008, which is 17% of the total footprint of the bay (**Figure 7**). Five different species of seagrasses occur within these vast meadows that cover the bay bottom. These species include Cuban shoal grass (Halodule wrightii), manatee grass (Syringodium filiforme), turtle grass (Thalassia testudinum), widgeon grass (Ruppia maritimal) and star grass (Halophila englemanni). These species are critically important to the health and vitality of the bay, however, between 1993 and 2006, St Joseph Bay lost approximately 1,498 acres of seagrass. This might be due to deterioration of water quality or could reflect differences in measurements techniques use by the researchers. The area is also subject to increasing development and visitor use and these trends are expected to continue.

A recent seagrass survey along the navigation channel and turning basin was taken in September 2013. Four areas totaling 61 acres were surveyed. These areas were: 1) tip of St Joseph Peninsula, 2) Turning Basin-Northern End, 3) Turning Basin-Western Site, 4) Turning Basin-Southern End and near the marina. **Table 2** below documents the approximate location and general descriptions of seagrass observations in the primary survey areas.

Table 2. Seagrass Survey Locations Port St. Joseph

Location	Coordinates (Decimal Degrees)	Species	Cover	Description
St. Joseph Peninsula (SJP)	29.88041; -85.38545	*Thalassia testudinum*	Very Sparse (few shoots)	3 small clumps covered in sand and potentially unattached rhizomes
	29.87705; -85.38416	*Halodule wrightii*	Very Sparse (few shoots)	A few shoots with attached rhizomes
	29.87679; -85.38423	*Halodule wrightii & Thalassia testudinum*	Very Sparse (few shoots)	1 small clump of H. wrightii & 1 shoot of T. testudinum with attached rhizomes
	29.87639; -85.38429	*Halodule wrightii*	Very Sparse (few shoots)	1 shoot with attached rhizomes
	29.87603; -85.38429	*Halodule wrightii*	Very Sparse (few shoots)	1 shoot with attached rhizomes
	29.87527; -85.38456	*Halodule wrightii*	Very Sparse (few shoots)	3 to 4 shoots with attached rhizomes
Turning Basin East (TBW)	29.81381; -85.31616	*Halodule wrightii*	Very Sparse (few shoots)	A few shoots with attached rhizomes
	29.81249; -85.31568	*Halodule wrightii*	Very Sparse (few shoots)	A few shoots with attached rhizomes
Turning Basin South	29.81232; -85.31569	*Halodule wrightii*	Very Sparse	A few shoots with attached

6.1.9.2 Terrestrial Environment. The Florida Panhandle typically contains a large percentage of natural pine flatwoods, planted pine plantations, and scrub. Beach and dune vegetation include a wide variety of shrubs and sea oats. Most of the dunes within the vicinity of the project area are generally associated with high-energy shorelines and are continuously shifting and sparsely vegetated. In areas where dunes are stable, plants such as sea oats *(Uniola paniculat*a) and dune elder *(Iva imbricat*a) usually establish on the seaward side. On the backside, myrtle oak *(Q. myrtifoli*a), greenbriar *(Smilax auriculat*a), and saw palmetto are characteristic species. Marsh habitats are commonly located near the along the shorelines in the project vicinity. Characteristic plants include needlerush *(Juncus roemerianu*s), sawgrass *(Cladium jamaicens*e), cattails *(Typha sp*p.), giant reed *(Phragmites communi*s), arrowhead *(Sagittaria lancifoli*a), saltmarsh cordgrass *(Spartina alterniflor*a), saltmeadow cord grass *(S. paten*s), 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 within the project area 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.

6.1.9.2.1 Shorebirds

Various shorebirds can be found throughout the project area. The most commonly found species within the vicinity of the project site are listed in **Table 3** below.

Table 3. Common Shorebird Species in Project Area

Common Name	Scientific Name
Spotted Sandpiper	*Actitis macularia*
Ruddy Turnstone	*Arenaria interpres*
Sanderling	*Calidris alba*
Dunlin	*Calidris alpina*
Red Knot	*Calidris cantutus*
Western Sandpiper	*Calidris mauri*
Least Sandpiper	*Calidris minutilla*
Willet	*Catoptrophorus semipalmatus*
Snowy Plover	*Charadrius alexandrinus*
Piping Plover	*Charadrius melodus*
Semipalmated Plover	*Charadrius semipalmatus*
Wilson's Plover	*Charadrius wilsonia*
Common Snipe	*Gallinago gallinago*
American Oystercatcher	*Haematopus palliates*
Black-necked Stilt	*Himantopus mexicanus*

Short-billed Dowitcher	*Limnodromus griseus*
Whimbrel	*Numenius phaeopus*
Black-bellied Plover	*Pluvialis squatarola*
American Woodcock	*Scolopax minor*
Lesser Yellowlegs	*Tringa flavipes*
Greater Yellowlegs	*Tringa melanolevea*

6.1.9.3 Essential Fish Habitat. Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity". The Gulf of Mexico Fishery Management Council in accordance with the MSFCMA (PL 94-265) has developed management plans for the following fisheries: shrimp, red drum, reef fish, stone crab, spiny lobster, coral and coral reef and coastal migratory pelagic. The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. The Gulf of Mexico Fishery Management Plans (2012) identifies EFH in the project area to be inter-tidal wetlands, submerged aquatic vegetation, non-vegetated bottoms, shell reefs and the estuarine water column. Major fisheries landed along the Gulf Coast include red drum, mullet, croaker, shrimp, blue crab, and oyster.

Table 4 on the following page provides a list of the species that National Marine Fisheries Service (NMFS) manages under the federally implemented Fishery Management Plan. Habitat associated with these species include estuarine areas, such as estuarine emergent wetlands, seagrass beds, algal flats, and mud, sand, shell and rock substrates. The habitat within the vicinity of the project consists of estuarine waters, shell, sand, and silt substrate, estuarine emergent wetlands, seagrass beds, and oyster reefs.

Table 4: Fishery Management Plans and Managed Species for the Gulf of Mexico area.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL (NMFS 2012)

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

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

Reef Fish Fishery Management Plan
- almaco jack – *Seriola rivoliana*
- anchor tilefish - *Caulolatilus intermedius*
- banded rudderfish – *S. zonata*
- blackfin snapper - *Lutjanus buccanella*
- blackline tilefish - *Caulolatilus cyanops*
- black grouper- *Mycteroperca bonaci*
- blueline tilefish – *C. microps*
- cubera snapper – *L. cyanopterus*
- dog snapper – *L. jocu*
- dwarf sand perch - *Diplectrum bivittatum*
- 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*
- mahogany snapper – *L. mahogoni*
- marbled grouper – *E. inermis*
- misty grouper – *E. mystacinus*
- mutton snapper – *L. analis*
- Nassau grouper – *E. striatus*
- queen snapper - *Etelis oculatus*
- red hind - *Epinephelus guttatus*
- red grouper – *E. morio*
- red snapper - *L. campechanus*
- rock hind – *E. adscensionis*
- sand perch - *Diplectrum formosum*
- scamp grouper - *M. phenax*
- schoolmaster – *L. apodus*
- silk snapper – *L. vivanus*
- snowy grouper – *E. niveatus*
- speckled hind - *E. drummondhayi*
- tilefish - *Lopholatilus chamaeleonticeps*
- vermilion snapper - *Rhomboplites aurorubens*
- Warsaw grouper – *E. nigritus*
- wenchman - *Pristipomoides aquilonaris*
- yellowedge grouper *E .lavolimbatus*
- yellowfin grouper – *M. venenosa*
- yellowmouth grouper – *M. interstitialis*
- yellowtail snapper - *Ocyurus chrysurus*

Stone Crab Fishery Management Plan FL
- stone crab - *Menippe mercenaria*
- gulf stone crab – *M. adina*

Spiny Lobster Fishery Management Plan
- spiny lobster - *Panulirus argus*
- slipper lobster - *Scyllarides nodife*

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*

Species in the Fishery but Not in the Mgt Unit
- cero – *Scomberomorus regalis*
- little tuny – *Euthynnus alletteratus*
- dolphin – *Coryphaena hippurus*
- bluefish – *Pomatomus saltatrix (Gulf of Mexico only)*

6.1.9.4 Threatened and Endangered Species. A list of the federally protected species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries Service for Gulf County Florida are shown in **Table 5**.

Table 5. Threatened and Endangered Species in Gulf County, Florida

Species	**Scientific Name**	**Status**
Fish		
Gulf sturgeon	*Acipenser oxyrhynchus desotoi*	TCH
Smalltooth sawfish	*Pristis pectinata*	T
Amphibians & Reptiles		
Green sea turtle	*Chelonia mydas*	E
Loggerhead sea turtle	*Caretta caretta*	T
Kemp's ridley sea turtle	*Lepidochelys kempii*	E
Leatherback sea turtle	*Dermochelys comacea*	E
Flatwoods salamander	*Ambystoma cingulatum*	TCH
Hawksbill turtle	*Eretomchelys imbricata imbricata*	E
Eastern indigo snake	*Drymarchon corais couperi*	T
Birds		
Red-cockaded woodpecker	*Picoides borealis*	E
Piping plover	*Charadrius melodus*	TCH
Bald eagle	*Haliaeetus leucocephalus*	BGEPA
Plants		
Telephus spurge	*Euphorbia telephioides*	T
White birds-in-a-nest	*Macbridea alba*	T
Chapman rhododendron	*Rhododendron chapmanii*	E
Godfrey's butterwort	*Pinquicula ionantha*	T
Florida skullcap	*Scutellaria floridana*	T
Mammals		
West Indian manatee	*Trichechus manatus*	E
St. Andrew beach mouse	*Peromyscus polionotus penninsularis*	E
Blue whale	*Balaenoptera musculus*	E
Finback whale	*Balaenoptera physalus*	E
Humpback whale	*Megaptera novaeangliae*	E
Sei whale	*Balaenoptera borealis*	E
Sperm whale	*Physeter macrocephalus*	E

References for Table 5: http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/Documents/florida_gulf_03052014.pdf. Site accessed: 20 May 2014.
http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=12045. Site accessed: 20 May 2014

The federally listed species that may be found within the vicinity of the project area include: loggerhead sea turtle (*Caretta caretta*), Kemps ridley (*Lepidochelys kempii),* green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), Gulf sturgeon *(Acipenser oxyrinchus desotoi),* Smalltooth Sawfish (*Pristis pectinata*), piping plover (*Charadrius melodus*), West Indian manatee (*Trichechus manatus),* St. Andrew beach mouse (Peromyscus polionnotus pennisularis), red-cockaded woodpecker (*Picoides borealis*), eastern indigo snake (*Drymarchon corais couperi*), and flatwoods salamander (*Ambystoma cingulatum*). A review of the listed plant and whale species for the project vicinity indicated a low likelihood of occurrence of listed species within the project area. In addition, the bald eagle (*Haliaeetus leucocephalus)* is protected under the Bald and Golden Eagle Protection Act.

The following is a detailed review of the species listed above:

Loggerhead Sea Turtle (*Caretta caretta*)

The loggerhead sea turtle is a medium to large turtle. Adults are reddish-brown in color and generally 31 to 45 inches in shell length with the record set at more than 48 inches. Loggerheads weigh between 170 and 350 pounds with the record set at greater than 500 pounds. Young loggerhead sea turtles are brown above and whitish, yellowish, or tan beneath, with three keels on their back and two on their underside.

Loggerhead sea turtles occur throughout the temperate and tropical regions of the Atlantic, Gulf of Mexico, Pacific, and Indian Oceans. This species may be found hundreds of miles out to sea, as well as in inshore areas such as bays, lagoons, salt marshes, creeks, and the mouths of large rivers. Loggerhead turtles feed primarily on sea urchins, sponges, squid, basket stars, crabs, shrimp, and a variety of mollusks. Their strong beak-like jaws are adapted for crushing thick-shelled mollusks. Although loggerhead sea turtles are primarily bottom feeders, they also eat jellyfish and mangrove leaves obtained while swimming and resting near the sea surface. As loggerheads mature, they travel and forage throughout near shore waters until their breeding season, when they return to the nesting beach areas. The majority of mature loggerheads appear to nest on a two or three year cycle. This species nests within the U.S. from Texas to Virginia, although the major nesting concentrations are found along the Atlantic coast of Florida, Georgia, South Carolina, and North Carolina. Nesting in the northern Gulf outside of Florida occurs primarily on the Chandeleur Islands in Louisiana and to a lesser extent on adjacent Ship, Horn, and Petit Bois Islands in Mississippi (Ogren, 1977). Ogren (1977) reported a historical reproductive assemblage of sea turtles, which nested seasonally on remote barrier beaches of eastern Louisiana, Mississippi, and Alabama.

Loggerhead sea turtles are considered turtles of shallow water. Juvenile loggerheads are thought to utilize bays and estuaries for feeding, while adults prefer waters less than 165 feet deep (Nelson 1986). Aerial surveys suggest that loggerheads (benthic immature and adults) in U.S. waters are distributed in the following proportions: 54% in the southeast U.S. Atlantic, 29% in the northeast U.S. Atlantic, 12% in the eastern Gulf of Mexico, and 5% in the western Gulf of Mexico. During aerial surveys of the Gulf of Mexico, the majority (97%) of loggerheads were seen off the east and west coasts of Florida (Fritts 1983). Most were observed around mid-day near the surface, possibly related to surface basking behavior (Nelson 1986).

Kemps ridley *(Lepidochelys kempii)*

The Kemps ridley sea turtle is a small turtle with adults reaching two to two and one-half feet in length and weighing 80 to 100 pounds. Adults are considered the smallest marine turtle in the world. The Kemp's ridley has an oval shell and is usually an olive-gray color with a pale yellowish bottom shell. It is the rarest and most endangered of all sea turtles. It occurs mainly in coastal areas of the Gulf of Mexico and along the East Coast.

Most Kemp's ridleys nest on the coastal beaches of the Mexican state of Temaulipas and Veracruz, although a small number of Kemp's ridleys nest consistently along the Texas coast. Nesting occurs from May into July. In addition, rare nesting events have been reported in Alabama, Florida, Georgia, South Carolina, and North Carolina. Outside of nesting, adult Kemp's ridley are believed to spend most of their time in the Gulf of Mexico, while juveniles and subadults also regularly occur along the eastern seaboard of the U.S (NMFS 1992). Age at sexual maturity be believed to be between 10 to 17 years. Under strict protection, the population appears to be in the early stages of recovery. No critical habitat has been designated for the Kemp's ridley sea turtle but it is being proposed by NOAA and USFWS.

Kemp's ridley along with loggerhead sea turtles are most likely species to occur in the project area and are generalist carnivores, typically preying on benthic mollusks and crustaceans in the nearshore environment. Their diet consists of mainly swimming crabs but may also include fish, jellyfish and an array of mullusks. Both species of sea turtles can be found in shallow sand and mud habitats at high-relief rock or reef habitats which fortunately do not occur in the project area (NMFS/NOAA June 2014).

Green Sea Turtle (C*helonia. mydas*)

The green sea turtle is mottled brown in color. The carapace is light or dark brown. It is sometimes shaded with olive, often with radiating mottled or wavy dark markings or large dark brown blotches. This species is considered medium to large in size for sea turtles with an average length of 36 to 48 inches. Its weight ranges from about 250 to 450 pounds. The upper surfaces of young green turtles are dark brown, while the undersides are white.

Although green sea turtles are found worldwide, this species is concentrated primarily between the 35° North and 35° South latitudes. This species migrates often over long distances between feeding and nesting areas (Carr and Hirth 1962). During their first year of life, green sea turtles are thought to feed mainly on jellyfish and other invertebrates. Adult green sea turtles prefer an herbivorous diet frequenting shallow water flats for feeding (Fritts et al., 1983). Adult turtles feed primarily on seagrasses, such as *T. testudinum*. This vegetation provides the turtles with a high fiber content and low forage quality (Bjorndal 1981a). In the Gulf of Mexico, principal foraging areas are located in the upper west coast of Florida (Hirth 1971). Nocturnal resting sites may be a considerable distance from feeding areas, and distribution of the species is generally correlated with grassbed distribution, location of resting beaches, and possibly ocean currents (Hirth 1971).

Historically in the U. S., green sea turtles have been known to nest in the Florida Keys and Dry Tortugas. Yet, these turtles primarily nest on selected beaches along the coast of eastern Florida. In the southeastern U.S., nesting season is roughly June through September. Nesting occurs nocturnally at 2, 3, or 4-year intervals.

Leatherback Sea Turtle (*Dermochelys coriacea*)

The leatherback sea turtle is the largest of all sea turtles. It may reach a length of about 7 feet and weigh as much as 1,600 pounds. The carapace is smooth and gray, green, brown and black in color. The plastron is yellowish white. Juveniles are black on top and white on the bottom.

This species is highly migratory and is the most pelagic of all sea turtles (NMFS and USFWS 1992). They are commonly found along continental shelf waters (Pritchard 1971; Hirth 1980; Fritts et al. 1983). Leatherbacks are found in temperate waters while migrating to tropical waters to nest (Ross 1981). Distribution of this species has been linked to thermal preference and seasonal fluctuations in the Gulf Stream and other warm water features (Fritts et al., 1983). General decline of this species is attributed to exploitation of eggs (Ross, 1981).

Leatherbacks feed mainly on pelagic soft-bodied invertebrates, such as jellyfish and tunicates. Their diet may also include squid, fish, crustaceans, algae, and floating seaweed. Highest concentrations of these prey animals are often found in upwelling areas or where ocean currents converge.

Nesting of leatherback sea turtles is nocturnal with only a small number of nests occurring in the U.S. in the Gulf of Mexico (Florida) from April to late July (Pritchard 1971; Fuller 1978; Fritts et al. 1983). Leatherbacks prefer open access beaches possibly to avoid damage to their soft plastron and flippers. The Pacific coast of Mexico supports the world's largest known concentration of nesting leatherbacks. There is very little nesting in the U.S. (Gunter 1981).

Hawksbill turtle (*Eretomchelys imbricata imbricate)*

The Hawksbill Sea Turtle is a small to medium sized turtle. Adults range in size from 30 to 36 inches carapace length, and weigh 100 to 200 pounds. It gets its name from its distinctive hawk-like beak. It has overlapping scutes (plates) that are thicker than those of other sea turtles. This protects them from being battered against sharp coral and rocks during storm events. Its carapace (upper shell) is an attractive dark brown with faint yellow streaks and blotches and a yellow plastron (under shell).

As a highly migratory species, Hawksbill sea turtles have a wide range, found predominantly in tropical reefs of the Indian, Pacific and Atlantic Oceans. Most are associated with warm tropical waters. Most U.S. sightings are around Florida and Texas. While they are omnivorous, Hawksbill are specialist feeders that target sponges and seagrass, macoralgae and jellyfish. They are highly resilient and resistant to their prey. Some of the sponges they eat are highly toxic to other organisms.

Their life history can be divided into three phases, namely the pelagic phase, from hatching to about 20cm, the benthic phase, when the immature turtles recruit for foraging areas, and the reproductive phase, when they reach sexual maturity. Hawksbills reach maturity after about 30 years and are believed to live from 30 to 50 years. They are solitary for most of their lives and meet only to mate. They mate biannually in secluded lagoons off their nesting beaches. Within the continental U.S. hawksbill nesting is rare and is restricted to the southeastern coasts of Florida (Volusia through Miami-Dade Counties) and the Florida Keys (USFWS 2011).

Gulf Sturgeon *(Acipenser oxyrhynchus desotoi)*

The NMFS and USFWS listed the Gulf sturgeon as a threatened species on September 30, 1991. The Gulf sturgeon, also known as the Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon. Adults are 71-95 inches in length, with adult females larger than adult males. The skin is scaleless, brown dorsally and pale ventrally and imbedded with 5 rows of bony plates.

Adult fish are bottom feeders, eating primarily invertebrates, including brachiopods, insect larvae, mollusks, worms and crustaceans. Gulf sturgeons are anadromous, with reproduction occurring in freshwater. Most adult feeding takes place in the Gulf of Mexico and its estuaries. The fish return to breed in the river system in which they hatched. Spawning occurs in areas of deeper water with clean (rock and rubble) bottoms. River systems where the Gulf sturgeons are known to be viable include the Mississippi, Pearl, Escambia, Yellow, Choctawhatchee, Apalachicola, and Suwannee Rivers, and possibly others.

Gulf Sturgeon Critical Habitat

The primary constituent elements essential for the conservation of the Gulf sturgeon are those habitat components that support foraging, riverine spawning sites, normal flow regime, water quality, sediment quality, and safe unobstructed migratory pathways. The proposed action is found within Gulf sturgeon critical habitat.

Generally, adults and subadults could be described as opportunistic benthivores typically feeding on benthic marine invertebrates including amphipods, lancelets, polychaetes, gastropods, shrimp, isopods, mollusks and crustaceans.

The “water quality” constituent element is important for Gulf sturgeon critical habitat. Temperature, salinity, pH, hardness, turbidity, oxygen concentrations, and other chemical characteristics must be protected in order to preserved normal behavior, growth, and viability of all Gulf sturgeon life stages. If water quality is severely degraded, adverse impacts to Gulf sturgeon and its critical habitat may result.

The “sediment quality” constituent element is listed to ensure the sediment is suitable (i.e. texture and other chemical characteristics) for normal behavior, growth, and viability of all life stages. In addition, the sediment quality is important to support a viable benthic community in order to allow the Gulf sturgeon continual foraging of the area.

The "migration habitat" constituent element is concerned with ensuring safe unobstructed passage for the species. It is intended primarily for the more confined areas near the river mouths or the rivers themselves. The species could potentially migrate through the project area.

The Port St. Joe navigation channel is located adjacent to and within one of the fourteen units designated as Gulf sturgeon critical habitat Unit# 11 Florida Near Shore Gulf of Mexico.

Unit 11: Florida Nearshore Gulf of Mexico – Unit 11 encompasses approximately 150 shoreline miles along the Florida panhandle adjacent to Escambia, Santa Rosa, Okaloosa, Walton, Bay and Gulf Counties. Unit 11 includes a portion of the Gulf of Mexico as defined by the following boundaries. The western boundary is the lone of longitude 87º 20.0'W (approximately 1 nm west of Pensacola Pass) from its intersection with the shore to its intersection with the southern boundary. The northern boundary is the MHW of the mainland shoreline. The southern boundary is 1 nm offshore of the northern boundary. The eastern boundary is the line of longitude 85º 17.0'W from its intersection with the shore (near Money Bayou between within Cape San Blas and Indian Peninsula) to its intersection with the southern boundary.

Smalltooth Sawfish (*Pristis pectinata*)

The Smalltooth sawfish, like sharks, skates and rays, belong to a group of fish called elasmobranchs, whose skeletons are made of cartilage. Sawfish are actually modified rays with a shark-like body and gill slits on their ventral side. Sawfish get their name from their "saws"—long, flat snouts edged with pairs of teeth which are used to locate, stun, and kill prey. They have 25-29 teeth per side. Males have broader teeth than females. Their diet includes mostly fish but also some crustaceans.

Smalltooth sawfish inhabit shallow coastal waters of tropical seas and estuaries throughout the world. They are usually found in shallow waters (less than 32 feet), very close to shore over muddy and sandy bottoms. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths. They prefer warmer water temperature of 71-82^{0}F. They are known to ascent inland in river systems and have been shown to have a salinity preference of 18-24 parts per thousand. Juvenile sawfish use shallow habitats with a lot of vegetation, such as mangrove forests, as important nursery areas. Many such habitats have been modified or lost due to development. Loss of juvenile habitat likely contributed to the decline of the species.

They are found on the peninsula of Florida, common only in the Everglades region at the southern tip of the state. No accurate estimates of abundance trends over time are available. However, available records, including museum records and anecdotal fisher observations, indicate that this species was once common throughout its historic range and that smalltooth sawfish have declined dramatically in U.S. waters over the last century. No robust estimates of historic or current population size exist. However, available data indicate that their distribution has been reduced by about 90% and their population has also declined dramatically, perhaps by 95% or more (NOAA 2014).

Piping Plover (*C. melodus*)

The piping plover is a small, pale-colored North American shorebird. The bird's light sand-colored plumage blends in with the sandy beaches and shorelines that are its primary habitat. Historically, piping plovers bred across three geographic regions. These regions include: the U.S. and Canadian Northern Great Plains from Alberta to Manitoba and south to Nebraska; the Great Lakes beaches; and the Atlantic coastal beaches from Newfoundland to North Carolina. Generally, piping plovers favor open sand, gravel, or cobble beaches for breeding. Breeding sites are generally found on islands, lake shores, coastal shorelines, and river margins.

Birds from all three populations build their nests in the north but spend the winter along the south Atlantic and Gulf coasts, sometimes arriving as early as mid-July. Piping plovers winter in coastal areas of the U.S. from North Carolina to Texas. They also winter along the coast of eastern Mexico and on Caribbean islands from Barbados to Cuba and the Bahamas. Piping plovers begin arriving on the wintering grounds in early July, with some late nesting birds arriving in September. A few individuals can be found on the wintering grounds throughout the year, but sightings are rare in June and early July.

Piping plovers feed along beaches and intertidal mud and sand flats. Primary prey for piping plovers includes worms, various crustaceans, insects, and occasionally bivalve mollusks.

The primary constituent elements essential for the conservation of the wintering plovers are those habitat components that support foraging, roosting, sheltering and the physical features necessary to maintaining the natural processes that support these habitat components. The primary constituent elements are found in geologically dynamic coastal areas that support or have the potential to support intertidal beaches and flats and associated dune systems. Important components of intertidal flats include sand and or mud flats with no or sparse emergent vegetation.

West Indian Manatee (*T. manatus)*

The species occurs 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). A few may remain year-round in Cumberland Sound, southeastern Georgia, where factory warm-water outfalls allow survival of colder winter months (Reeves et al. 1992). 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 submergent, emergent, and floating vegetation. Their diet varies according to plant availability, and they may opportunistically eat other foods.

St. Andrew beach mouse (Peromyscus polionnotus pennisularis)

The species occurs in the coastal areas in the vicinity of St Andrew Bay and St. Joseph Bay. It is found in the coastal sand dunes where they excavate burrows and feed on plant seeds and insects. Unlike house mice, beach mice do not seek out human dwellings or other structures for food and shelter. Breeding peaks during the winter months, but can occur year around if there is adequate food available. Very little information is available about the life history of this mouse.

Red-Cockaded Woodpecker (*P. borealis*)

The species typically inhabit open, mature pine woodlands, rarely deciduous or mixed pine-hardwoods located near pine woodlands. The optimal habitat is characterized as a broad savanna with a scattered overstory of large pines and a dense groundcover containing a diversity of grass and shrub species midstory vegetation is typically sparse or absent (Hooper et al. 1991).

Foraging occurs in a diversity of forested habitat types that includes pines of various ages as well as some hardwood-dominated habitats. Most foraging appears to take place on older pine trees or in open pine habitats (Lennartz ,1988).

The six largest populations are in the Apalachicola National Forest (Florida), North Carolina Sandhills, Francis Marion National Forest (South Carolina), Kisatchie National Forest (Louisiana), Eglin Air Force Base and Blackwater State Forest (Florida), and Red Hills hunting plantations in southern Georgia (James, 1995).

Bald Eagle (*H. leucocephalus*)

The Bald eagle is no longer listed as threatened or endangered, but is still protected under the Bald and Golden Eagle Protection Act. Bald eagles roost in winter. The preferred roosts are in conifers or other sheltered trees. Perching in deciduous and coniferous trees is equally common in other areas (e.g., Bowerman et al. 1993). Their breeding habitat commonly include areas close to coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources (Campbell et al. 1990). Typical nest trees include pines, spruces, firs, cottonwoods, oaks, poplars, and beeches. They tend to avoid developed areas with nearby human activity (Buehler et al. 1991). The same nest may be used year after year, or may alternate between two nest sites in successive years.

Eastern Indigo Snake (*D. couperi*)

The current range of population includes southern Georgia and Florida. The snake is very rare or extirpated in Alabama, Mississippi, and South Carolina. Recent reintroductions have been made in Florida, Alabama, Georgia, South Carolina, and Mississippi. One reintroduced population may be thriving in Covington County, Alabama. Habitat includes high pinelands (sandhills, scrub, etc.), flatwoods, and most types of hammock in Florida and southeastern Georgia. The species is found near wetlands and in association with gopher tortoise burrows. It prefers pineland habitats that are maintained by periodic fires. The species requires relatively large tracts of suitable

terrestrial habitat. When inactive, it often occupies tortoise burrows, stump holes, or land crab burrows.

Flatwoods Salamander (*A. cingulatum*)

The salamander is native to the southeastern U.S. Coastal Plain. Post-larval individuals inhabit mesic longleaf pine (*Pinus palustris*), wiregrass (*Aristida stricta*) flatwoods and savannas. The terrestrial habitat is best described as topographically flat or slightly rolling wiregrass-dominated grassland having little to no midstory and an open overstory of widely scattered longleaf pine. Low-growing shrubs, such as saw palmetto (S*erenoa repens*), gallberry (I*lex glabra*) and blueberries (V*accinium spp*.), co-exist with grasses and forbs in the groundcover. Groundcover plant diversity is usually very high. The underlying soil is typically poorly drained sand that becomes seasonally inundated.

Critical habitat for the flatwoods salamander is located in the northern portion of Gulf County, Florida. This area is outside the project area and would not be affected by the project activities.

6.2 Sea Level Rise. Systematic long-term tide elevation observations suggest that the elevation of oceanic water bodies is gradually rising and this phenomenon is termed "sea level rise." The rate of rise is neither constant with time nor uniform over the globe. In addition to elevation of oceanic water bodies, however, is the gradual depression of land surface along the Gulf coast and panhandle of Florida, referred to as "subsidence," which becomes an additional factor in the relationship between the land's elevation over time and changing sea levels. Because the coast of Florida is affected by both subsidence and global sea level rise (adjusted for local conditions), these factors combine in a single element of "relative" sea level rise. Relative sea level rise at a given location is the change in mean sea level at that location with respect to an observer standing on or near the shoreline. Sea level rise is an issue of paramount importance for the state of Florida due to its lengthy coastline, low relief, high coastal population density, ecologically and economically vital beaches, estuaries, and wetlands, and porous limestone geology. The rate of sea level rise in Florida is roughly 3 mm per year and is slowly gaining public attention as a significant threat to the natural and socioeconomic future of the state (UF, 2013).

6.3 Social Economic Environment.

6.3.1 Economic Activity. The Port of St. Joe is located in Gulf County, Florida and offers a deepwater seaport with rail lines, the Intracoastal Waterway, State and US highways as well as access to the Gulf of Mexico. The port also features 1,900 linear feet of bulkhead at the ship channel turning basin and 900 linear feet on the Gulf County Canal side. Although the Port once enjoyed substantial international and national trade, shipping from the Port began a steady decline in the 1970s with shipping virtually ending in 1980. The navigation channel was last maintenance dredged in 1986. In the wake of this decline, former industrial sites such as the St. Joe Paper Mill and Box Plan along with the Arizona Chemical Company have been cleared so that the land can be re-used. However, the infrastructure that these operations once accessed still remains. This includes access to water, sewer, electricity and gas connections which are readily available. Currently, there is no significant active shipping occurring at the port (Economic

Impacts 2014). The County's economic assets include commercial forests, agriculture, water commerce, sport fishing, tourism and seafood industry.

6.3.2 Land Use. The location of the proposed action is within the coastal region of northwest Florida. Lands in this area include national, state and counties parks, large military holdings and several urbanized areas. 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. 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). Industrial land adjacent to the Port has been cleaned up and is ready for development. It is available for immediate occupation for multimodal logistics operations

6.3.3 Cultural Resources. The State Historical Preservation Officer (SHPO) has identified nine archaeological sites in the immediate coastal area of St. Joseph Bay. They include four shell middens, three old house or settlement sites, the Confederate salt works, and the Cape San Blass lighthouse. Due to the moderate energy nature of the coastline, most relic Indian sites were probably either buried by sand or destroyed by wave action. Notable among the cultural sites is Richandson Hammock, a large, well preserved shell midden site representative of the Deptford, Swift Creek, Weeden Island, and Fort Walton Cultural periods (ca. 500 B.C. to A.D. 1500. The site is known to contain human burials. The site is believed to be one of the largest and best preserved archeeological sites of its type in the northwest Florida gulf coast region (FDEP 2008). No cultural resource sites are known to be within the footprint of the navigation channel.

7.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

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

7.1 Physical Environment.

7.1.1 Climate. The preferred alternative is not anticipated to have any impacts on the existing climatic conditions with the project vicinity.

7.1.2 Topography, Geology and Soils. The preferred alternative would have no significant adverse impacts on the existing topography, geology or soils within the project vicinity. The project would result in the removal of substrate as needed to a maximum design depth of -37 feet MLLW with 2 feet of advanced maintenance and 2 feet of allowable overdepth within the project area for a total of -41 feet. The placement of the dredged material would result in alterations to the topography and geology within the proposed upland sediment placement areas. Previous low areas would be filled with sandy sediments from the navigation channel and built up to

additional elevations ranging from one to five extra feet depending upon the topography and natural drainage patters within the containment areas.

7.1.3 Hydrology and Water Resources. The proposed action would not alter drainage or circulation patterns within the navigation channel. However, there would be impacts to the upland disposal sites. Dikes would have to be constructed or reconstructed around the proposed sediment placement areas. The dikes would be approximately 5 feet in elevation with an approximately 1-foot vertical to 3-foot horizontal inner and outer slopes. Weirs would have to be installed at the drainage outlets. Some wetlands will most likely be impacted within the new proposed placement areas. If those areas are utilized, then mitigation would have to occur. However, it is not anticipated that the project will significantly alter the overall local flow patterns or rates.

7.1.4 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. 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.

7.1.5 Noise. Noise from the dredge and other job-related equipment is expected to increase during the proposed operations in the project vicinity. There is potential short-term disruption of foraging, roosting, or nesting behavior in birds on the tip of the spit. There are potential short-term impacts to foraging behavior in marine organisms in the vicinity of sediment removal areas. Construction and placement activities in the upland disposal areas will also impact the local animals and some will be temporally displaced due to equipment operations. Any impacts would be limited to the duration of the berm construction and dredging activities. Noise levels will resume to prior conditions once the dredging, construction, and disposal operations are complete. No long-term increase in noise will occur in or around the project area.

7.1.6 Water Quality. Under the proposed action little to no impacts to water resources is anticipated. Short-term impacts would involve increased, localized turbidity and decreased dissolved oxygen associated with dredging and disposal operations. However, these impacts are expected to be temporary and minimal. During dredging and disposal operations, turbidity levels would be monitored to ensure compliance with the state water quality certification from the FDEP. All FDEP guidelines shall be maintained during the proposed activity.

7.1.7 Hazardous Material. No known hazardous, toxic or radioactive waste concerns are known to exist within the confines of the project. The proposed action would not generate any hazardous, toxic or radioactive wastes. The dredging contractor would be required to secure and properly dispose of any hazardous materials or wastes associated with the dredging and disposal operation.

7.1.8 Sediment Quality. No adverse impacts to sediment quality are likely to occur from the disposal and placement of dredged material from maintenance operations. The dredged material within the channel has been tested in 2002 and 2013. Test results indicate that the majority of the sediments are suitable for open-water placement and that all of the sediment is suitable for placement within the designated upland containment areas. The composition of the majority of the dredged material slated for removal from the channel is fine sand. Its placement in the contained upland disposal areas should have no long term impacts on the environment.

7.1.9 Biological Resources.

7.1.9.1 Aquatic Environment.

7.1.9.1.1 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 dredging and disposal operations. Non-motile benthic fauna within the area would be destroyed by dredging. However, the number of organisms affected will be minimal in proportion to the total population of the bay and they should repopulate within 6 to 12 months upon project completion (Culter and Mahadevan, 1982), (Saloman et al., 1982). Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, would avoid the disturbed area and should return shortly after the activity is completed. However, 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 phased nature of the channel maintenance and small area (percentage wise) of ecosystem that will be affected at a given point in time.

There are a significant amount of scallops in St. Joseph Bay that are near the vicinity if the project site but not within the footprint of the project. Dredging of the channel should not impact the overall population of scallops in any way.

7.1.9.1.2 Submerged Aquatic Vegetation. The 2013 Pre-dredging Seagrass Survey Report concluded that no significant direct impacts to seagrass beds are expected from channel dredging in the primary survey areas. All of the seagrass documented in the primary survey areas were most likely solitary shoots or very small, sparse patches. Given the sub optimal environmental conditions in which these seagrasses were found, there is limited potential that they will survive through the winter or into the next growing season. Indirect dredging effects, such as increased turbidity and smothering, could potentially impact the seagrass beds documented in the secondary survey areas. Efforts should be taken to protect these beds for from any dredging impacts. FDEP will likely require the use of turbidity curtains in these areas during active dredging operations.

To ensure that increased turbidity is not occurring within the seagrass beds turbidity measurements will be measured during dredging 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. 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.

7.1.9.2 Terrestrial Environment. As a result of this evaluation, no adverse impacts to the terrestrial ecosystem located in the vicinity of project were identified. Dredged material placement activities would occur within pre-approved contained disposal area. Containment dikes would be constructed around the proposed placement area so there will be minimal impacts to the terrestrial environment.

7.1.9.2.1 Shorebirds. No adverse impacts to nesting migratory shorebirds are anticipated with the implementation of the project. If nesting is evident, construction activities would be halted until coordination with the Florida Fish and Wildlife Commission (FWC) has been made, and a buffer zone is established. In addition, low likelihood sites would be inspected prior to dredging and the Florida FWC would be contacted if nesting is identified and appropriate actions would be taken to avoid adverse impacts.

7.1.9.3 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 management plans for the following fisheries: shrimp, red drum, reef fish, stone crab, spiny lobster, coral and coral reef and coastal migratory pelagic species. The Gulf of Mexico Fishery Management Plan (2012) identifies EFH in the project area to be intertidal wetlands, submerged aquatic vegetation, non-vegetated bottoms, shell reefs, and the estuarine water column. The proposed action will not significantly affect coastal habitat identified as EFH in the project area due to the fact that impacts will be temporary in nature. Species identified to be present within the project area are motile and will likely exit the area upon initiation of dredging operation and placement. The exception is non-motile benthic invertebrates that will be impacted by the project. As previously mentioned, impacts to these species will be negligible as they will re-colonize the area within a few months. Based on an overall assessment of the project, USACE, Mobile District found the impacts to fisheries resources associated with the proposed project would not have a long term adverse effect on EFH. Compliance with EFH procedures is being initiated through publication of this EA, public notice and official letter to NMFS.

7.1.9.4 Threatened and Endangered Species. The USACE, Mobile District believes that the majority of the threatened and endangered species listed for Gulf County (**Table 5**) are not likely to be in the project area. For example, the red-cockaded woodpecker prefers old-growth pines and pine/hardwood stands. This habitat does not occur in the area. The Eastern indigo snake is largely restricted to the vicinity of sandhill habitats occupied by Gopher tortoises. The St. Andrew beach mouse inhabits sand dunes which will not be impacted by the project. The Flatwoods salamander prefers flat or slightly rolling wiregrass dominated grassland having little to no midstory. This type of habitat is not found within the project boundaries. The listed plants are not believed to be located in the impacted areas. In summary, the marine open-water setting, developed shoreline environment, and proposed sediment placement areas are not suitable habitat for the above mentioned species.

Past consultation has focused on the West Indian manatees, Gulf sturgeon, Smalltooth sawfish, sea turtles, and piping plovers. The USACE, Mobile District has historically agreed to implement "Standard Manatee and Smalltooth Sawfish Construction Conditions" during similar dredging projects in Florida (**Enclosure 1**). The Mobile District believes that if these measures are implemented there will be no adverse impact to these species. In addition, it is anticipated these species would avoid the construction areas due to noise and activity. The loggerhead, Kemp's ridley, leatherback, green, and hawksbill sea turtles could possibly be impacted because they may be found in the area; however, if they are in the vicinity, it is believed that they will avoid the area while dredging and disposal operations are in progress.

Dredged material would be removed from the channel by a hydraulic pipeline or mechanical dredge and placed in a confined upland disposal area. This method is preferable in terms of turbidity reduction and minimizing the potential impact to wildlife, primarily manatees and sea turtles. In addition, no effects are anticipated with the use of a hydraulic cutter-head dredge, as they are not known to impact sea turtles and Gulf sturgeon as determined by the NMFS in 2003 in the Gulf Regional Biological Opinion for Dredging of Gulf of Mexico Navigation Channels and Sand Mining Areas Using Hopper Dredges by USACE Galveston, New Orleans, Mobile, and Jacksonville Districts (GRBO) (Consultation Number F/SER/2000/01287) dated November 19, 2003 and amended in 2005 and 2007. Impacts associated with construction activities should be temporary and isolated to actual construction limits.

The project area is not in the vicinity of the critical habitat for piping plover. The USACE, Mobile District believes these motile species would avoid the dredging and placement area during operations and that the site does not provide suitable habitat for this species.

The project is located adjacent to Gulf sturgeon critical habitat Unit 11 (Figure 7) which covers a shoreline distance of approximately 150 miles. Unit 11 includes winter feeding and migration habitat for Gulf sturgeon from the Yellow River, Choctawhatchee River, and Apalachicola River subpopulations. Telemetry relocation data suggest that these subpopulations feed in nearshore Gulf of Mexico waters between their natal river systems. Survey data suggests that sturgeon from these rivers remain within one mile of the coastline between these river systems. They also prefer depths less than 20 feet. Gulf nearshore substrate contains unconsolidated, fine-medium grain sand which support crustaceans such as mole crabs, sand fleas, various amphipod species and lancelets (Federal Register 2003). The proposed project should have minimal if any impact to these sturgeon. In the unlikely event a Gulf sturgeon is in the area, the proposed action would not adversely affect the species due to the mobile species likely avoiding the project area during dredging and disposal operations. No significant impacts to these species are anticipated.

Based on this assessment the USACE, Mobile District has determined that no federally-protected species or designated critical habitat were likely to be adversely affected as a result of the proposed project. To reduce the likelihood of take the USACE, Mobile District has agreed to incorporate the following conditions during operations and maintenance dredging of the navigation channel:

- Dredging will be conducted utilizing hydraulic or mechanical methods reducing the potential for entrainment of Gulf sturgeon, Smalltooth sawfish, and sea turtles associated with hopper dredges. If a hopper dredge is used, an observer will be on the vessel.

- During active hydraulic dredging operations the cutterhead will be located within the substrate.

- If threatened or endangered species are observed during dredging operations, the operation will be temporarily stopped until the species has left the area.

- Standard Manatee and Smalltooth sawfish Construction Conditions will be followed during operations (**Enclosure 1**).

The proposed project will be coordinated with USFWS and the NMFS Protected Resource Division (PRD) during the USACE, Mobile District recertification process.

Gulf sturgeon Critical Habitat

The project area includes estuarine critical habitat in Unit 11 (**Figure 6**). Therefore, it may contain some of the primary constituent elements (PCE)s: water quality, abundant prey items, flow regime, sediment quality, and safe unobstructed migratory pathways. Potential impacts on the five PCEs are analyzed below.

Water Quality: Potential water quality impacts as a result of dredging and disposal were considered. Dredging and placement are expected to create some degree of turbidity in excess of the natural condition. Impacts from sediment disturbance during these operations are expected to be temporary, minimal and similar to conditions experience during past routine operation and maintenance of the channel. Suspended particles will settle out within a short time frame, with no measurable effects on water quality. No measurable changes in temperature, salinity, pH, hardness, oxygen content or other chemical characteristics are expected.

During dredging and placement operations, turbidity levels would be monitored, to ensure compliance with state water quality certification. The USACE, Mobile District Corps does not expect measurable impacts to Gulf sturgeon critical habitat as a result of water quality impacts related to the proposed action.

Migratory Pathway: Neither the placement of dredged materials, nor the operation of the dredging equipment is expected to create barriers to the migration of the species. The bay portion of the project provides sufficient width and appropriate habitat depth for sturgeon passage and foraging around the dredging activities.

Sediment Quality: The area that will be utilized for dredged material placement is 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 disposal sites, due to their close proximity to the channel. Therefore, the project would not adversely affect sediment quality or change sediment bottoms, which is a PCE for gulf sturgeons.

Flow regime: The proposed action is the maintenance dredging of an existing Federal navigation project. Dredging is limited to the authorized channel dimensions of - 37 feet MLLW, with up to two feet of over dredging and two feet of advanced maintenance dredging, for a maximum depth of -42 feet MLLW. No alterations to the length, width, or depth of the project will be made. Therefore, the USACE, Mobile District concludes that the proposed action will not adversely modify the flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of fresh water discharge over time) necessary for normal behavior, growth, and survival of the species.

Prey Abundance: Unit 11 provides foraging habitat for the Gulf sturgeon. Upon exiting the rivers where the Gulf sturgeon have spent the summer months foraging sparingly in freshwater, the species initially concentrate around the mouths of the rivers, lakes and bays; they then disperse into nearshore areas and continue to forage. Due to the presence of prey and the belief that sturgeon feed heavily upon entering the estuary, it is likely that some Gulf sturgeon may forage in the action area.

Dredging and placement would impact epibenthic crustaceans and infaunal polychaetes within the navigation channel and contained placement area. These impacts are primarily short-term in nature, consisting of a temporary loss of benthic invertebrate populations in the project footprint of the channel and placement areas. The total area comprises less than 0.01% of estuarine area within Unit 11. The materials that will be removed (dredged) from the project area are homogenous with those that will remain in the channel and, therefore, no alteration of habitat composition is occurring. Due to the fact that similar habitat is expected to be present pre- and post-dredging, it is anticipated that the benthic biota in the dredging areas will have the ability to rapidly recover and re-colonize.

Observed rates of benthic community recovery, after removal of dredged material, range from a few months to several years. The relatively species-poor benthic assemblages associated with low salinity estuarine sediments can recover in periods of time ranging from a few months to approximately one year, while the more diverse communities of high salinity estuarine sediments may require a year or longer.

Table 6. Threatened & Endangered Species Determination of Effects for Gulf County

Species	Scientific Name	Status	Determination (species/CH)
Gulf sturgeon	*Acipenser oxyninchus desotoi*	Threatened	NLAA/NLAM
Smalltooth sawfish	*Prisis pectinata*	Threatened	NLAA/NA
Piping Plover	*Charadrius melodus*	Threatened	NLAA/NE
Red cockaded woodpecker	*Picoides borealis*	Endangered	NLAA/NA
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA	NLAA/NA
Eastern indigo snake	*Drymarchon corais couperi*	Threatened	NLAA/NA

Frosted flatwood salamander	*Ambystoma cingulatum*	Threatened	NLAA/NA
Hawksbill sea turtle	*Eretmochelys imbricate*	Endangered	NLAA/NA
Leatherback sea turtle	*Dermochelys coriacea*	Endangered	NLAA/NA
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered	NLAA/NA
Green sea turtle	*Chelonia mydas*	Endangered	NLAA/NA
Loggerhead sea turtle	*Caretta caretta*	Threatened	NLAA/NA
West Indian manatee	*Trichechus manatus*	Endangered	NLAA/NA
St. Andrew beach mouse	*Peromyscus polionotus penninsularis*	Endangered	NLAA/NA
Blue whale	*Balaenoptera musculus*	Endangered	NLAA/NA
Finback whale	*Balaenoptera physalus*	Endangered	NLAA/NA
Humpback whale	*Megaptera novaeangliae*	Endangered	NLAA/NA
Sei whale	*Balaenoptera borealis*	Endangered	NLAA/NA
Sperm whale	*Physeter macrocephalus*	Endangered	NLAA/NA

NA = not applicable **NE** = no effect
NLAA = not likely to adversely affect **NLAM** = not likely to adversely modify
Ref:http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=12037

7.2 Sea Level Rise. Port St. Joe is located in a vulnerable area and subject to the consequences of climate change and storm damage. Serious threats to the St. Joseph Spit come from the combination of elevated sea levels and intense hurricanes. The Florida coastline consists primarily of low-lying topography which lies in the hurricane-prone Gulf of Mexico. As a result, the low-lying shoreline is more susceptible to the effects of storm surge than other areas. Rising sea levels result in pushing the high-water mark landward, potentially causing the existing marsh and seagrass beds to disappear. Losses could be accelerated by a combination of other environmental and oceanographic changes such as an increase in the frequency of storms and changes in prevailing currents, both of which could lead to increased shoreline loss through erosion. This could translate into continued loss of valuable habitat along the Florida coastline, including sea turtle nesting habitat, shorebird foraging and roosting areas, dune habit, and salt marsh. The Port St. Joe project has the potential to minimize some of the local sediment losses by placement of sandy dredged material within the old mill site. These sediments will elevate the site by several feet and potentially minimize the impacts of sea level rise and storm impacts.

7.3 Social Economic Environment

7.3.1 Economic Activity. Port development, modernization and expansion in the face of increasing expansion of the Panama Canal, are essential to maintaining the economic well-being of the State and Northwest Florida region, and will yield significant benefits by increasing employment opportunities and generating greater personal income for Florida residents (Economic Impacts 2014). The proposed action will benefit the local and regional and economy by ensuring a safe and economical transportation link for a variety of water-dependent facilities.

7.3.2 Land Use. Land adjacent to the seaport identified as Tier 1 placement area has served as industrial use property for numerous years. There are 4.39 acres of wetlands on this 125 acre property. These wetlands will have to be mitigated for if sediment is placed inside this proposed disposal area and impacts these wetlands. The proposed 421 acre sediment placement area known as Tier 2 is located in the adjacent forest has not been previously impacted with dredged material. This site contains approximately 118 acres of wetlands. These wetlands will have to be mitigated for if dredged material is placed in this proposed sediment placement area.

7.3.3 Cultural Resources. The Port St. Joe navigation channel was authorized by Congress and completed more than 50 years ago. The existing channel was constructed in 1962 and operated prior to the enactment of the NHPA, which was signed into law in 1966. Since then, the Mobile District consulted with the Florida Department of State Division of Archives, History and Records Management back in the early 1980s for maintenance dredging of the channel. However, since the proposed project will involve a slightly modified section of the navigation channel, the Mobile District will initiate consultation with the State Historic Preservation Officer (SHPO) during the recertification process.

7.4 Cumulative Effects Summary. Cumulative impacts are those impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. This section analyzes the proposed dredging maintenance project as well as any connected, cumulative, and similar existing and potential actions occurring in the area surrounding the site.

The cumulative impacts of development and other activities throughout the watershed that have acted in combination to degrade the health and productivity of much of the entire St. Joseph Bay system, thus diminishing the human benefits the system provides. Areas of inland and coastal wetlands within the Bay and other important habitats have been and continue to be lost throughout the watershed. These include tidal marshes, seagrass and other benthic communities. Much of this loss is due to the cumulative impacts of development and is not directly recoverable. The proposed dredging and placement activities are not projected to have any significant adverse cumulative effects. However, there is a potential to impact wetlands which will have to be mitigated. Also, future Port development projects were known to be dependent upon this action but will be constructed in previously impacted industrial property.

7.5 Regulatory Requirements.

7.5.1 Water Quality Certification. Water Quality Certification under Section 401 of the Clean Water Act will be requested from the State of Florida for the proposed action. All FDEP guidelines shall be maintained during the proposed activity.

7.5.2 Coastal Zone Management Act Considerations. Coastal Zone Consistency under Section 307 of the Coastal Management Act will be requested from the State of Florida for the proposed action. The proposed action has been determined to be consistent with the Florida Coastal Program to the maximum extent practicable.

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

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

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

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

Examples of risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants that children might come into contact with or ingest.

The potential environmental health or safety risks to children resulting from the Proposed Action are addressed in Section 6. The proposed action complies with EO 13045, "Protection of Children from Environmental Health Risks and Safety Risks," and does not represent disproportionately high and adverse environmental health or safety risks to children in the United States. The project area is not used disproportionately by children.

7.7 Environmental Justice. On February 11, 1994, the President issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. The Environmental Justice (EJ) Policy requires agencies to incorporate into NEPA documents and analysis of the environmental effects of their proposed programs on minorities and low-income populations and communities. EJ is defined by the USEPA as "the fair treatment and

meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group, should bear the disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies."

The effects of the proposed action on local populations and the resources used by local groups, including minority and low-income groups, are addressed in Section 6. The proposed action complies with EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and does not represent disproportionately high and adverse human health or environmental effects on minority populations and low-income populations in the United States. The project area is not used disproportionately by these populations.

7.8 Coordination. Under the agency and public coordination guidelines of the NEPA process, numerous persons have been contacted for input on the proposed action. The general public will be notified of the proposed action via public notice. Copies of the public notice will be made available to Federal and state agencies and the interested public for a 30-day review period. Comments on the proposed action are requested in writing by the end of that 30-day period. Comments on the action will be considered prior to a decision on the action.

8.0 LIST OF AGENCIES, INTERESTED GROUPS AND PUBLIC CONSULTED.

Engineering Research and Development Center
Federally Recognized Tribes with an Interest in the Area of Potential Effect
Florida Department of Agriculture
Florida Department of Environmental Protection
Florida Marine Research Institute
Florida State Historic Preservation Office
Gulf of Mexico Fishery Management Council
National Oceanic and Atmospheric Administration Fisheries
National Register of Historic Places
Northwest Florida Water Management District
U.S. Coast Guard, Eighth Coast Guard District
U.S. Department of the Interior, Fish and Wildlife Service, Panama City, FL
U.S. Environmental Protection Agency, Region 4

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10.0 LIST OF PREPARERS

Michael Malsom, Biologist

Jennifer Jacobson, Chief Coastal Environmental Team

U.S. Army Corps of Engineers, Mobile District
109 Saint Joseph St.
Mobile AL, 36602

List of Figures

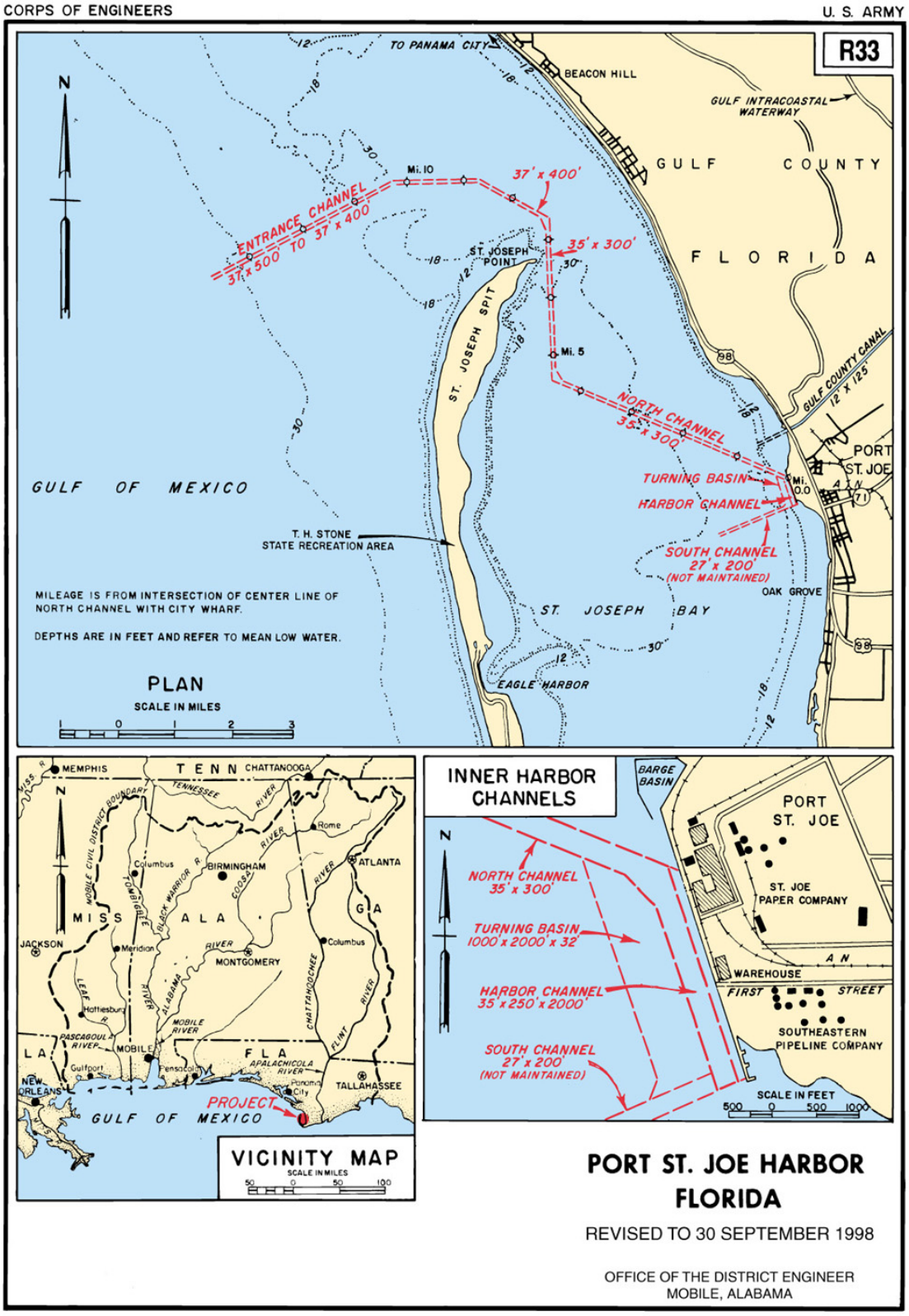

Figure 1. Location Map of Port St. Joe Harbor, Florida Navigation Project

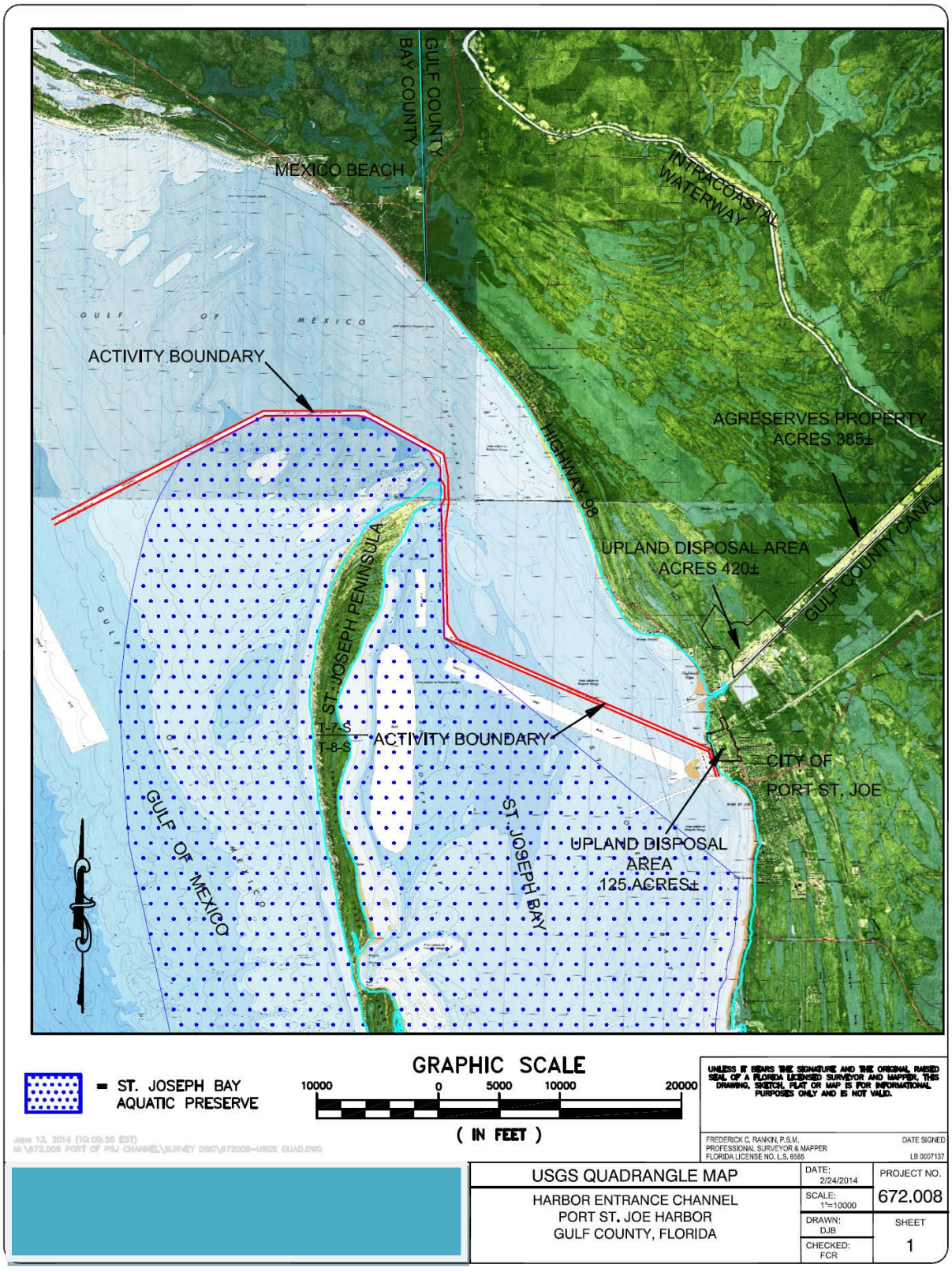

Figure 2. Port St. Joe Navigation Project Dredged Material Upland Placement Areas

Figure 3. St. Joseph Bay Aquatic Preserve Location Map

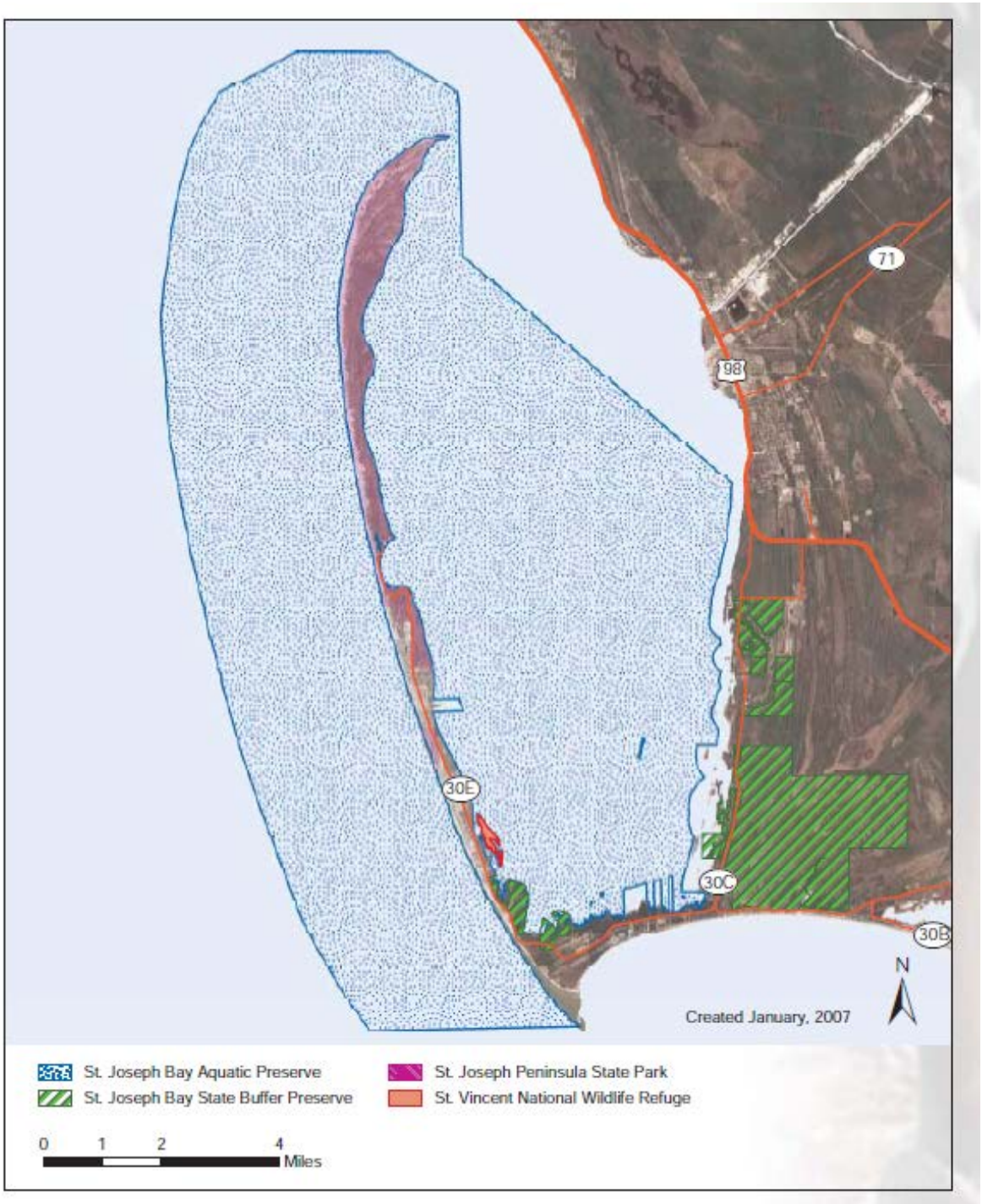

Figure 4. Conservation Lands Adjacent to St. Joseph Bay Aquatic Preserve

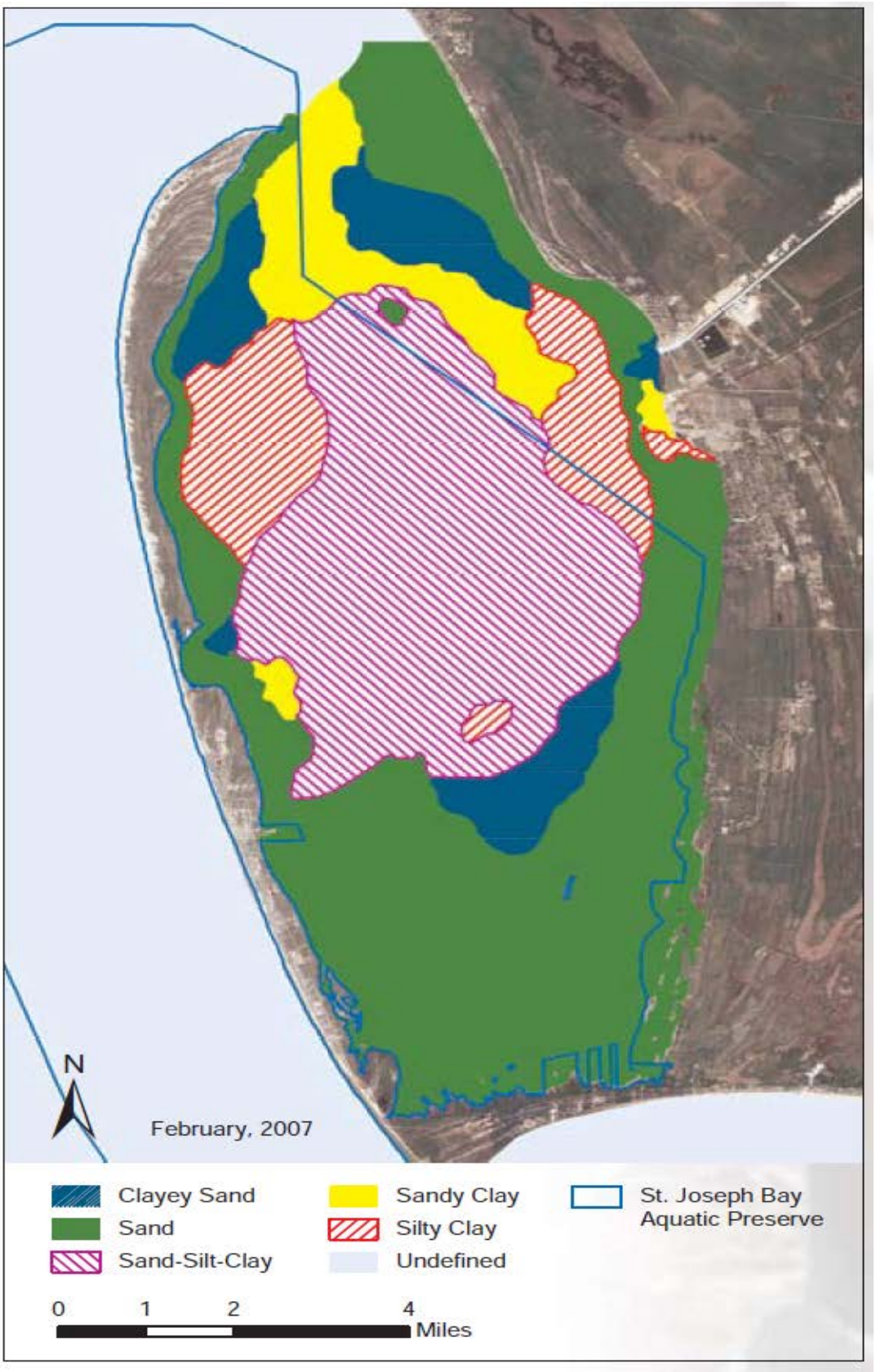

Figure 5. Bottom Sediments of St. Joseph Bay

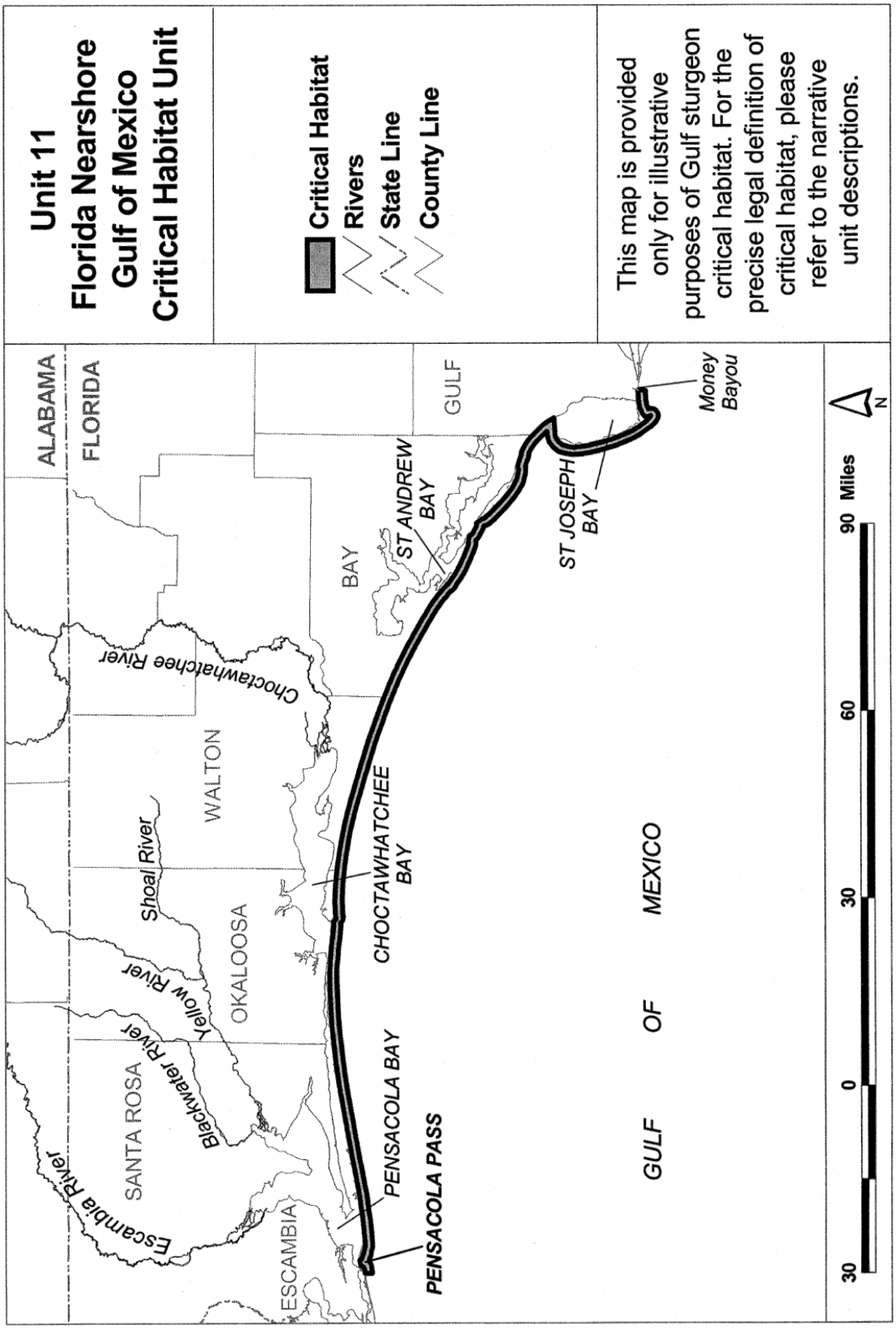

Figure 6. Unit 11 Florida Nearshore Gulf Sturgeon Critical Habitat Map

Figure 7. Seagrass Beds St. Joseph Bay Mapped by FDEP 2008

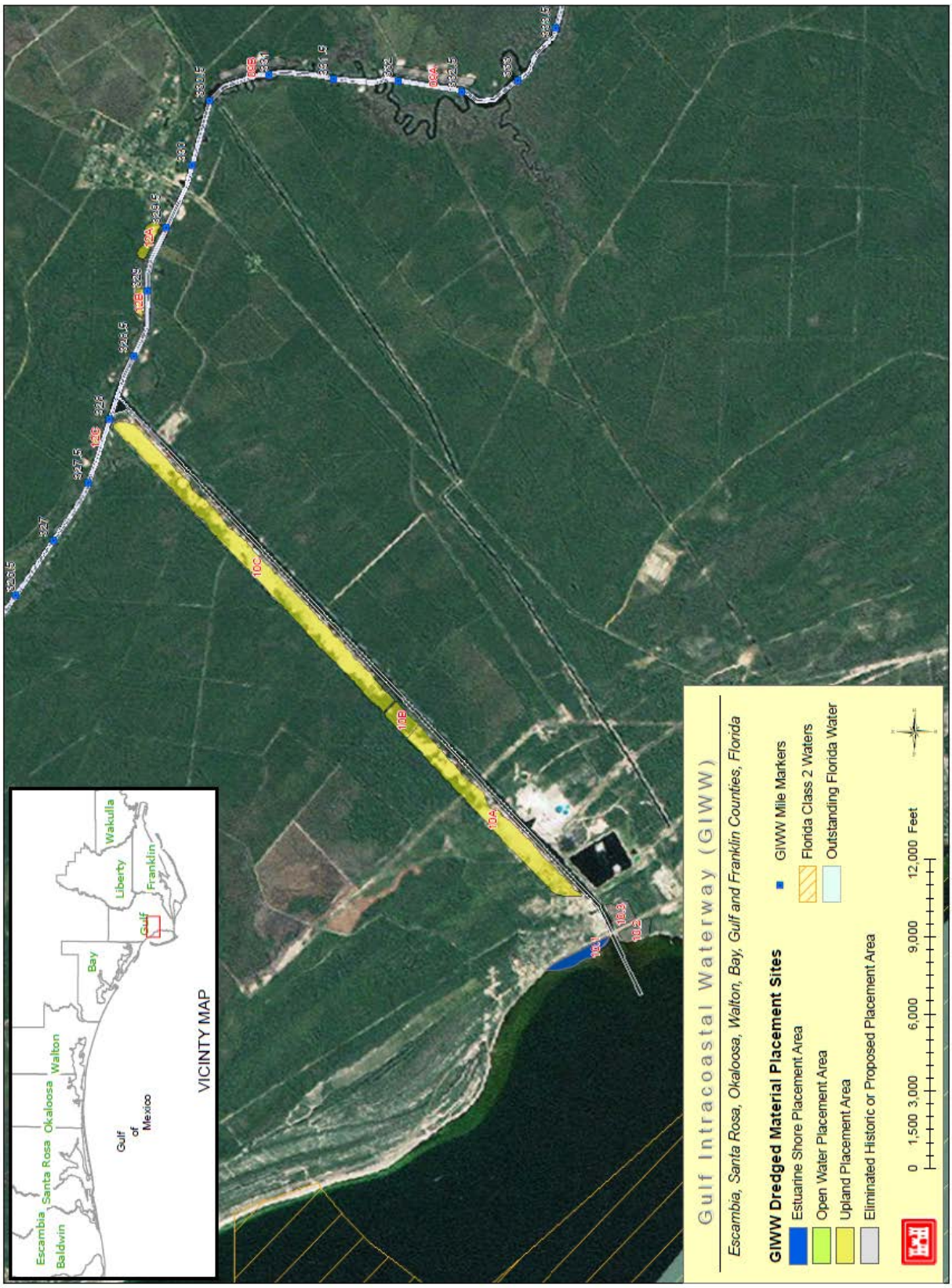

Figure 8. GIWW 425 Acre Sediment Placement Area DA#10 A, B, and C

Figure 9. St. Andrew and St Joe Watershed Boundaries

Figure 10. Tier 1 Proposed 125 Acre Sediment Placement Site / Former Paper Mill Site

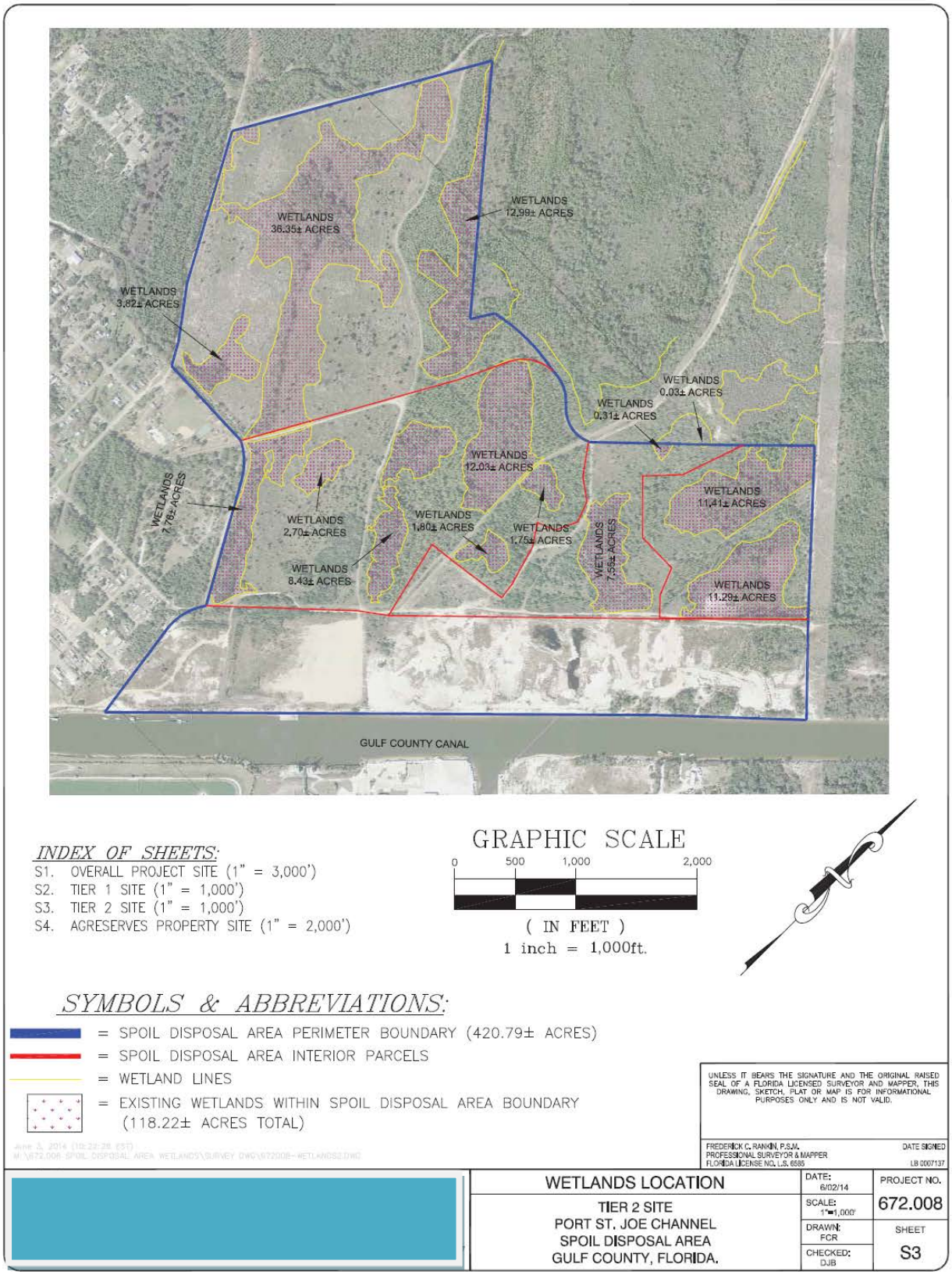

Figure 11. Tier 2 Proposed 421 Acre Woodland Sediment Placement Site

Figure 12. Aerial View of Former Port St. Joe Paper Mill Site

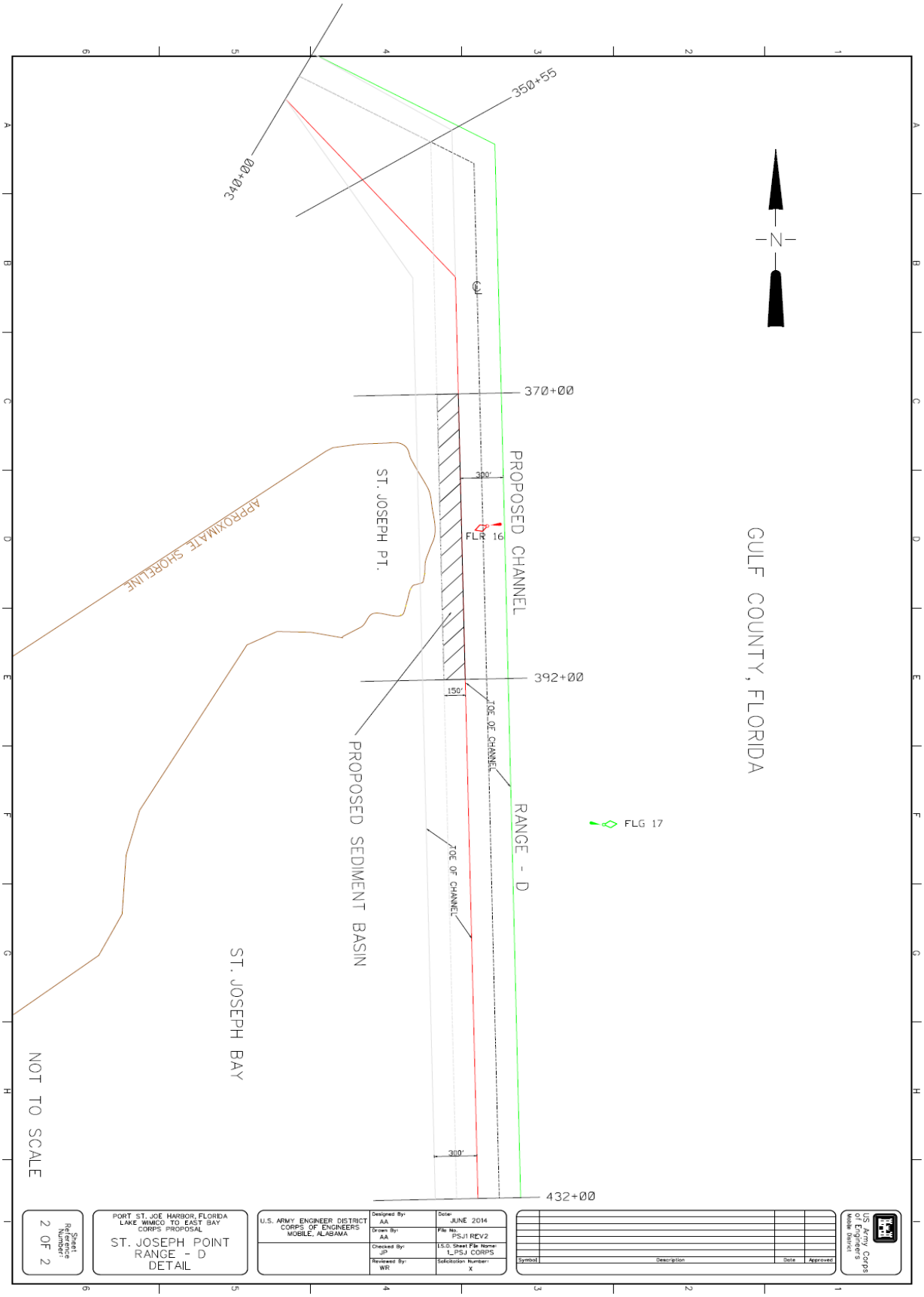

Figure 13. Navigation Channel Relocation and Sediment Basin Map near End of St. Joseph Point

List of Enclosures

EA-Enclosure 1 – Sea Turtle and Smalltooth Sawfish Construction Conditions dated March 23, 2006.

EA-Enclosure 2 – Draft Section 404 (b) (1) Report Port St. Joe Federal Navigation Channel Continued Operation and Maintenance Dredging Gulf County, Florida dated July 2014.

EA-Enclosure 3 – TBD

EA-Enclosure 4 – TBD

EA-Enclosure 5 – TBD

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

DRAFT
SECTION 404(b)(1) EVALUATION REPORT

MAINTENANCE DREDGING OF PORT ST JOE NAVIGATION CHANNEL
GULF COUNTY, PORT ST. JOE, FLORIDA

A FEDERALLY AUTHORIZED PROJECT

I. PROJECT DESCRIPTION:

A. **Location:** The federally authorized Port St. Joe navigation project site is located in St. Joseph Bay, Gulf County, Florida (**EA-Figure 1**).

B. **General Description:** This existing Federal project provides for: (a) an Entrance Channel 37 feet deep, 500 feet wide at its outer end and diminishing progressively in width to 400 feet at the first bend (a distance of 3.6 miles), continuing at a depth of 37 feet and a width of 400 feet through the second and third bend (a distance of 3.3 miles), continuing at a depth of 35 feet and a width of 300 feet (a distance of 2.4 miles) to a point in St. Joseph Bay where the entrance channel joins the North Channel (a total distance of 9.3 miles); (b) continuing in the North Channel at a depth of 35 feet and a width of 300 feet to the north end of the Turning Basin at Port St. Mo (a distance of about 4.7 miles); (c) a Turning Basin 32 feet deep, 1,000 feet wide, and 2,000 feet long; (d) a Harbor Channel therein 35 feet deep, 250 feet wide, and 2,000 feet long, adjacent to the waterfront at Port St. Joe; and (e) a Sough Channel 27 feet deep, 200 feet wide and about one mile long leading from the south end of the turning basin to deep water in St. Joseph Bay (**EA-Figure 1**). Dredging would be done via a hydraulic pipeline dredge or possibly a hopper or mechanical dredge. In addition, up to three upland disposal sites will be constructed or reopened to serve as containment cells (**EA-Figures 2, 8, 10 and 11**). The dredged material containment cells will be constructed with sandy material previously stockpiled in the disposal areas from the Gulf Intracoastal Waterway (GIWW) project.

C. **Authority and Purpose:** The authority and purpose of the proposed action is described in Sections 2.0 and 4.0 of the EA to which this evaluation is appended.

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

(1) **General Characteristics of Material:** The sediments that would be dredged and placed in authorized upland containment cells consist primarily of fine sand. However, some material located within the bay consists of various mixtures of fine sand, silt, and clay.

(2) **Quantity of Material:** The quantity of material to be dredged is approximately 5 million cubic yards.

(3) **Source of Material:** The source of the material to be placed in the disposal area is from the Port St. Joe federal navigation channel.

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

(1) **Location:** The designated sediment placement areas are located in three different areas. The primary placement area is GIWW Disposal Area #10 (**EA-Figure 8**) also known as the Agreserve Property identified on **EA-Figure 2**. Additional placement areas are the Tier 1 site located at the former paper mill site (**EA-Figure 10**) and the Tier 2 upland disposal site (**EA-Figure 11**).

(2) **Size:** The size of the containment areas are as follows: 1) Disposal Area #10 415 acres, 2) Tier 1 paper mill site 125± acres, and 3) Tier 2 upland site 420± acres.

(3) **Type of Site:** DA#10 is a previously designated contained sediment placement area. The former Tier 1 paper mill site used to be an industrial area. The site was cleaned up and restored to natural vegetation. It currently looks like an open field and contains approximately 4.39 acres of wetlands. The Tier 2 upland site is located due north of the paper mill DA and in the vicinity of DA#10 within an adjacent wooded area. It does contain approximately 118± acres of wetlands and consists primarily of pine forests.

(4) **Type of Habitat:** The confined upland placement area DA #10 is a previously used and diked material management areas consisting of some native vegetation. The former paper mill site is an estuarine shoreline area that is a flat, open areas adjacent to the bay shoreline, consisting of native grasses with a few shrubs. The upland disposal area is a pine and shrub forested area with some scattered wetlands.

(5) **Timing and Duration of Discharge:** Maintenance dredging and disposal would be performed once all permits and funding was approved and received. This channel was last dredged in 1986. The proposed maintenance dredging would typically require 4 to 6 months to complete. At this time, estimated dredging would occur in FY 2015 depending on the availability of funding.

F. **Description of the Disposal Method:** The disposal method used will be dredged material placement in the newly authorized contained sites. A hydraulic cutterhead dredge would pump material via pipeline into the containment cells. If a hopper dredge is used, the material would be pumped into the placement areas also. The dredged material will be placed in a uniform manner (one cell at a time) beginning with DA#10 followed by the former paper mill site. If additional capacity was needed, the remainder of the material would be placed in the newly designated Tier 2 upland disposal area.

II. **Factual Determinations (Section 230.11)**:

A. **Physical Substrate Determinations:**

(1) **Substrate Elevation and Slope:** The preferred alternative would have some impacts on the existing substrate elevation and slope within the project vicinity. The project would result in the removal of substrate as needed to a maximum depth of -41 feet MLLW which includes two feet of advanced maintenance and two feet of allowable overdepth within the project area.

(2) **Sediment Type:** The dredged material proposed for disposal is composed of primarily fine sand with some silts and clays.

(3) **Dredged/Fill Material Movement**. The material will be hydraulically moved from the navigation channel to the contained sediment placement sites.

(4) **Physical Effects on Benthos**. Disruption in the benthic community is expected to be temporary and minimal. Immobile benthic fauna within the proposed project area may be destroyed, but should repopulate within several months of completion. Other mobile benthic fauna will avoid the disturbed area and return upon project completion. Research conducted by the U.S. Army Corps of Engineers (USACE), Engineer Research and Development Center (ERDC) under the Dredged Material Research Program (DMRP) suggests that the benthic community is adapted to a wide range of naturally occurring environmental changes and that no significant or long-term changes in community structure or function are expected.

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

(6) **Actions Taken to Minimize Impacts (Subpart H)**. 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.

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

(3) **Clarity**. Minor increases in turbidity may be experienced in the immediate vicinity of the project during placement operations. However, these increases will be temporary and would return to pre-project conditions shortly after completion.

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

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

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

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

(8) **Nutrients**. Slight increases in nutrient concentrations may occur; however, these would rapidly return to normal. These 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 into the contained disposal site would have no effect on current patterns and flow in the vicinity of the project area.

(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 vicinity are relatively consistent due to the lack of freshwater inflow into the bay. Therefore, the salinity of the bay is essentially the same as the Gulf, averaging 35 parts per thousand (ppt). 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 of fine silt, clays and sandy particles. Impacts from sediment disturbance during dredging operations are expected to be temporary, minimal and similar to conditions experience during past routine operation and maintenance of the channel. 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 certification conditions because it will be in a contained area. The return water from the dredge material containment cell would consist of clear water and would not have any impacts.

(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 effect.

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

(3) **Effects on Biota:**

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

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

(c) **Sight Feeders**. Sight feeders would avoid the impacted areas and return when conditions are more suitable, however, it is difficult to relate the presence or absence of sight feeders in an area to the placement of dredged material. Sight feeders, particularly fishes, may vary in abundance as a result of temperature changes, salinity, changes, seasonal changes, dissolved oxygen level changes, as well as other variables. Sight feeders such as shorebirds tend to be attracted to associated placement activities due to the presence of food items in the sediment.

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

E. **Contaminant Determinations**. The sediments within the Port St. Joseph navigation channel were sampled in June 2001 and November 2013 for both chemical and physical characteristics. Nine stations were successfully sampled using a vibracoring system in 2001 both in the bay and the Gulf within the navigation channel. Approximately 60 core borings were taken in 2013 along the entire navigation channel. In all cases, testing results indicate a significant amount of the material outside the bay consists of fine sand. The sediments samples within the bay consists of a finer grained material primarily clays and silts along with a mixture of fine sands. Of those 60 core borings, seven samples within the harbor area underwent a detailed chemical analysis. These samples were compared to both FDEP and NOAA standards. The chemistry results demonstrated that metals, dioxin/furans, and PAHs were present in the sediment of the harbor; however, all analytes were within applicable FDEP regulatory criteria. Most of the material is suitable for open-water placement and all of the material is suitable for placement in the proposed upland disposal areas.

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

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

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

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

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

(5) **Effects on Special Aquatic Sites**. No effect.

(a) **Sanctuaries and Refuges**. No effect.

(b) **Wetlands**. No significant effects

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

(d) **Vegetated Shallows**. No significant impacts to the submerged aquatic vegetation (SAV) were identified in this evaluation. **EA-Figure 7** shows the potential location of SAVs sites within the vicinity of the project area. Prior to any dredging or placement activities within these areas, proper coordination with all appropriate agencies will be made, and suitable disposal plans will be determined to avoid adverse impacts.

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

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

(6) **Effects on Threatened and Endangered Species**. The USACE, Mobile District believes that the majority of the threatened and endangered species listed for Gulf County (**EA-Table 5**) are not likely to be in the project area. For example, the red-cockaded woodpecker prefers old-growth pines and pine/hardwood stands. This habitat does not occur in the area. The Eastern indigo snake is largely restricted to the vicinity of sandhill habitats occupied by Gopher tortoises. The St. Andrew beach mouse inhabits sand dunes which will not be impacted by the project. The frosted flatwoods salamander inhabits slash and longleaf pine flatwoods that have a wiregrass floor and scattered wetlands. No such habitats occur in this area. In summary, the marine open-water setting and developed shoreline environment is not suitable habitat for the above mentioned species.

Past consultation has focused on the West Indian manatees, Gulf sturgeon, Smalltooth sawfish, sea turtles, and piping plovers. The USACE, Mobile District has historically agreed to implement "Standard Manatee and Small Sawfish Construction Conditions" during similar dredging projects in Florida. The Mobile District believes that if these measures are implemented there will be no adverse impact to these species. In addition, it is anticipated these species would avoid the construction areas due to noise and activity. The loggerhead, Kemp's ridley, hawksbill, leatherback, and green sea turtles could possibly be impacted because they may be found in the area; however, if they are in the vicinity, it is believed that they will avoid the area while dredging and disposal operations are in progress.

(7) **Effects on Other Wildlife**. No significant effects.

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

G. **Proposed Disposal Site Determinations:**

(1) **Mixing Zone Determination**. The project lies within the following special resource area: Class II waters designated for shellfish propagation and harvesting within St. Joseph Bay. Turbidity must not exceed 29 nephelometric turbidity units (NTUs) above background at the edge of 150 meter mixing zone boundary at any time.

(a) **Depth of water at the disposal sites**. Not Applicable.

(b) **Current velocity, direction, and variability at the disposal site**. Not significant.

(c) **Degree of turbulence**. Not significant.

(d) **Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site**. No effect.

(e) **Discharge vessel speed and direction, if appropriate**. No effect.

(f) **Rate of discharge**. Rate of discharge will vary according to the particular type of dredge disposing of the material.

(g) **Ambient concentrations of constituents of interest**. Not applicable.

(h) **Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities.** The proposed action would involve maintenance dredging and disposal operations for the Port St. Joe federal navigation channel in the State of Florida. The quantity of material is approximately five million cys. The type of material removed would consist of primarily fine sand with some silts and sands. Rapid settling of particles is anticipated.

(i) **Number of discharge actions per unit of time**. The number of discharge actions per unit of time will vary depending upon the particular disposal activity.

(2) **Determination of Compliance with Applicable Water Quality Standards**. The proposed activity 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 operation activities. However, the area is large enough so that recreational and commercial boats will be able to maneuver around the dredge and its pipeline in most instances.

(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**. No effect.

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

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

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

III. **Finding of Compliance with the Restrictions on Discharge:**

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

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

C. The planned placement of dredged materials 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 newly upland sediment placement sites will not jeopardize the continued existence of any federally-listed endangered or threatened species or their critical habitat provided the specified conditions in this document are implemented during maintenance dredging and disposal operations.

E. The proposed placement of fill 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_____

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Jon J. Chytka
Colonel, Corps of Engineers
District Commander

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