

3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION.

The Affected Environment section briefly describes the environmental resources, relevant issues, and their location on or in relation to the site. The environmental issues that are relevant to the decision to be made are:

- a) Water Quality**
- b) Sea Grass Beds**
- c) Manatees**
- d) Birds**
- e) Benthic Habitat**
- f) Wetlands**
- g) Navigation**
- h) Cultural Resources**
- i) Aesthetics**
- j) Recreation**
- k) Economics**

3.2 GENERAL DESCRIPTION.

Tampa Bay is Florida's largest open-water estuary, spanning almost 400-square miles, and receives drainage from a 2200-square-mile watershed. A rich, mosaic of habitats exist, and are highly productive in terms of wildlife resources. It has been a designated National Estuary Program site since 1990. Historically, Tampa Bay has suffered significant tidal and freshwater wetland losses due to uncontrolled dredge and fill activities associated with a burgeoning population. This, in addition to nutrient loading from various point and non-point sources, over-fishing, and irresponsible boating practices, has reduced the overall quality and quantity of water resources and wildlife habitat (TNEP 1996). Hillsborough County is located in west central Florida and plays an integral part in the economy of the Tampa Bay region. Hillsborough Bay provides access and berthing facilities for international and national shipping firms that serve the phosphate, coal, and petrochemical industries. It is bounded on the east by Polk County, Tampa Bay on the south and southeast, Pinellas County to the west, and Pasco County to the north. Historically, the bay has been plagued by contaminants. Urbanization and fertilizer runoff from berthing areas caused water quality degradation. The geographical confines of the bay also contribute to the problem by restricting tidal flushing, hence the cleansing action of the bay. Water quality in the bay has improved significantly in recent years, as improvements in municipal waste water facilities, stormwater treatment, and industrial discharge are implemented (TNEP 1993). The mouth of the Alafia River is located on the eastern shore of Hillsborough Bay approximately 6 miles south of the city of Tampa, just north of the town of Gibsonton. Nautically, it is located at mile 28 of the Tampa Harbor main shipping channel. The Alafia navigation channel connects the Alafia River to the main shipping channel in the middle of Tampa Bay. Two historic spoil islands are located (Sunken Island and Bird Island) just outside of the mouth of the river, and form the southern terminus of the channel. Two dredged material management

areas (CMDA-2D and 3D) built by the Corps, are located just to the north and south of the channel. A stack of phosphate tailings is also located at the mouth of the Alafia on the north side of the channel.



Photograph 1. Project area. Alafia River

3.3 Relevant Factors of the Environment that would be Affected

3.3.1 Physical

- a. Surface Water Quality.** Studies done by the Environmental Protection Commission of Hillsborough County (EPCHC), Manatee County, and Long et al. (1991), offer comprehensive information for stations near the proposed dredge area. EPCHC information for Hillsborough Bay is based on randomly sampled, 4.4 km² (11 acre) cells, to provide a bay segment perspective, versus exact locations on a yearly basis (S.Grabe, G. Blanchard, pers. comm. 1996). (Explanation of ratings and measurements given can be found in the EPCHC publication in the literature

cited). The following locations describe the current conditions of the areas being considered for dredging and restoration:

- b.** Sample point number 1- approximately one-quarter mile west of the mouth of the Alafia River on the north side of the channel (Lat: 27.51.16N, Long: 82.24.43W) (figure 3). Sampling occurred at a depth of 3-feet. Water clarity was approximately 2-feet in depth. A water quality rating of "poor" is given to the immediate mouth of the river (Grabe 1996). Sediments extracted from the bay bottom appeared to be predominantly gray sand with some shell hash, silts and organics (figure 4). Observed aquatic species were Florida crown conch (*Melongena corona*) (figure 5), jellyfish and tubeworms. Attached alga (*Gracilaria* spp.) were also present.
- c.** Sample point 2- directly across the channel on the south side and just north of Bird Island (Lat:27.51.08N, Long: 82.24.41 W) (Figure 3). Sampling occurred in 2.5 feet of water. Water clarity was approximately 2 feet. Water quality rated poor. Sediments extracted appeared sandy with minimal shell content, and dark with organics (figure 6). EPCHC sediment information for these exact sites is not available; however, information is available for sites in close proximity to the checkpoints. Amphipods were present in the sediment samples. Examination of the substrate revealed an absence of seagrasses, but the presence of algae. Unidentified tubeworms were abundant. A pod of bottlenose dolphins (*Tursiops truncatus*) were also spotted in the shipping channel near marker 10.
- d.** EPHC station HB36 (Lat: 27.86.0N, Long: 82.38.8W) is located in the general vicinity of the checkpoints above. Recorded measurements for 1995 at 1-m depth are: 4.9% silts, 7.58 pH, dissolved oxygen of 0.81mg/l, and salinity of 19.4 ppt. A low measurement of fines in this location is atypical for the bay as a whole, and is possibly due to station location. Strong currents from passing ships and daily tides may disperse or resuspend fines from the area (S.Grabe, pers. comm. 1996).
- e.** Station HB19 (Lat:27.90.9N, Long: 82.47,45W) taken in 1993-94 for an upstream location, indicates a silt/clay content of 21.8%, and a dissolved oxygen level of 5.4 and 2.35 mg/l respectively, obtained at a depth of 3 m. The elevated level of fines is more typical of shallow, minimally disturbed areas, or places near freshwater outfalls.

- f. Dissolved Oxygen and Contaminants**
Low dissolved oxygen content (DO) results from a shortage of oxygen in bay waters caused by the influx of excess nutrients, which may trigger algae blooms. Their subsequent decomposition increases oxygen demand, and may result in stress or elimination of aquatic species. Additionally, accumulated contaminants in bay sediments from industry discharge and stormwater runoff renders portions of the bay unsuitable for wildlife habitat. Although elevated levels of various contaminants are probable there is no reason to believe the sediments are unsuitable for upland or open water disposal. Refer to the Tier I sediment evaluation (Appendix IX) and the 404(b)1 evaluation (Appendix V)
- g.** The EPCHC has conducted water quality monitoring since the mid-1970's. Results from 1986-1990 indicate deeper waters in lower Hillsborough Bay, and waters in the northern navigation channels have the lowest levels of dissolved oxygen. Station data taken from locations along the channel and in the mouth of the Alafia River indicate levels less than 5 mg/l, and are the lowest in Tampa Bay (Long *et al.* 1991).
- h.** Sediments near the mouth of the Alafia contain elevated levels of cadmium, chromium, lead, Hg, zinc, and PCB-s (Long *et al.*, 1991). This may result from activities occurring at the Cargill fertilizer plant. The combination of low DO and contaminant laden sediments create a low quality, and mostly unsuitable wildlife habitat. Although elevated levels of various contaminants are probable there is no reason to believe the sediments are unsuitable for upland or open water disposal. Refer to the Tier I sediment evaluation (Appendix IX) and the 404(b)1 evaluation (Appendix V). In summary, this area consists of varying sediment size, depressed dissolved oxygen levels, and elevated contaminant content but is probably suitable for the proposed disposal options.
- i. Sediment Composition.** The unconsolidated sediment samples within the study area are primarily composed of fine silty sand, clayey sand and poorly sorted sand, with periodic layers of silt, clay, and peat. The unconsolidated sediments are underlain by an irregular highly weathered rock surface that exhibits sediment like characteristics. This weathered rock horizon is dominated by semi-consolidated silts and clays with occasional seams of limestone and sandstone. Directly below the weathered rock horizon sits a competent medium to hard, thick bedded, fossiliferous, porous and cherty limestone.

3.3.2 Biological

- a. **Wildlife.** The areas immediately adjacent to the Alafia channel are former dredged material placement areas; islands, saltwater shallows, mudflats, mangrove forests, and high and low saltmarsh. This landscape provides habitat for a myriad of aquatic and terrestrial species, both native, part-time resident, and passerine. The following is a discussion of the fish and wildlife resources, their status, and importance.

- b. The 10 dominant (dominance as determined by Windell 1971) benthic macroinvertebrates for Hillsborough Bay include 7 species of Polychaetes, one species of Bivalve, one species of Amphipods, and *Branchiostoma* spp. (Grabe 1996). Site-specific benthic composition data was obtained from sampling studies conducted by the EPCHC. Applicable sampling locations include station HB36 at the mouth of the Alafia, and HB19, upstream near the Cargill berthing area. Station HB36 was sampled in 1995 at a depth of one meter, and indicated a total of 7 species, including 3 species of amphipods, 3 species of isopods, and one species of decapod. Station HB19 was sampled in 1993 and 1994 at a depth of 3 meters, and indicated 29 species including 17 species of Polychaetes, 2 species of molluscs, 2 species of Amphipods, 2 species of Decapods, 2 species of echinoderms, *Enteropneusta* spp., *Athenaria* spp., *Turbellaria* spp., and *Nemertea* spp. These species serve as an integral link of the Tampa Bay food chain, and provide nutrients for several aquatic and avian species.

- c. It was observed that Hillsborough Bay differed from other segments of Tampa Bay in that the cephalochordate *Branchiostoma* spp. was less abundant, and that several polychaetes were significantly more abundant. Typically *Branchiostoma* spp. is a common inhabitant of relatively clean, sandy substrates. The presence of several polychaete species, especially *Mediomastus* spp. may indicate a fine, organically enriched substrate. This would agree with documented sediment and macroinvertebrate samplings in locations adjacent to the main channel. Dominant species of polychaetes present in Hillsborough Bay include species considered to be indicators of a perturbed environments (Mote Marine 1995, Grabe 1996).

- d. **Fish.** Springer and Woodburn (1960) report 253 species of fishes in their study of Tampa Bay. Comp (1985) identified 125 species in Tampa Bay. EPCHC identified 36 species of fish from 88 trawls during the September/October 1993 survey period (Grabe 1996). The most abundant species were mojarras (*Eucinostomus*

argenteus complex) (46.7%), pinfish (*Lagodon rhomboides*) (11.6%), and gaftopsail catfish (*Bagre marinus*) (7.2%). Fishes observed in the Alafia River in waters possessing greater than 10 ppt salinity include *Dasyatis* spp., *Lepisosteus* spp., ladyfish (*Elops saurus*), tarpon (*Megalops atlanticus*), *Brevoortia* spp., *Dorosoma* spp., thread herring (*Opisthonema oglinum*), scaled sardine (*Harengula jaguana*), lizardfish (*Synodus foetens*), hardhead catfish (*Arius felis*), toadfish (*Opsanus tau*), *Strongylura* spp., *Fundulus* spp., mosquito fish (*Gambusia affinis*), sailfin molly (*Poecilia latipinna*), *Menidia* spp., *Syngnathus* spp., *Prionotus* spp., *Centropomus* spp., mojarra, pinfish, *Cynoscion* spp., jack (*Oligoplites saurus*), silver perch, (*Bairdiella chrysoura*), spot (*Leiostomus xanthurus*), bumper (*Chloroscombrus chrysurus*), drum (*Sciaenops ocellatus*), *Menticirrhus* spp., *Mugil* spp., flounder (*Ancyclopsetta quadrocellata*), and puffer (*Sphoeroides nephelus*) (CES, Inc. 1992). The occurrence of such a diverse assemblage of fish species indicates the importance of Tampa Bay and its tributaries as productive nursery grounds. However, this area of Tampa Bay at the mouth of the Alafia River is not considered valuable fisheries habitat because it is an industrial port area.

- e. Hypoxic and anoxic conditions affect fish assemblage, since average species catch was lower in areas of low DO. Catfish catch was considerably higher at stations with low oxygen levels, and may infer this species as an indicator of degraded conditions. Based on documented low DO levels in the project area and Hillsborough Bay in general, it appears this species can tolerate stressed conditions. Their presence may be based upon a shift in their prey to burrowing species. This would agree with study findings of several species of polychaetes in the study area. Other fish able to tolerate degraded water conditions include cownose ray (*Rhinoptera bonasus*), puffer, kingfish (*Menticirrhus americanus*), and lookdown (*Selene romer*), which appear almost exclusively in Hillsborough Bay (Grabe 1996).
- f. **Fish and Wildlife Resources (Turning Basin).** Field work was done by US Fish and Wildlife Service biologists in October 1997, to evaluate and provide the most current conditions of the bay in the proposed turning basin area. Sampling points were chosen based on five designs proposed by the Corps. Most sampling points were located in shallow water outside the channel because of the unsafe diving conditions in the channel. Sampling points are shown in figure 7. Points 1, 2, 3, and 6 cover basin plans 2, 3, 4, and 5 (figures 8-11), and are located north and west of the current turning basin, in a lagoon north of the shipping channel (figures

12, 13). Sample points 4 and 5 cover plan 1 (figure 14), and are located upstream, near the existing basin (figures 15-17).

- g. Sample points 1 and 2 were identical in biological community composition. The more common species of invertebrates and vertebrates were observed such as: polychaetes (*Mediomastus* spp.), moon shells (*Lunatia heros*), Florida crown conchs (*Melongena corona*), shark eyes (*Neverita duplicata*), hermit crabs (*Pagurus* spp.), sting rays (*Dasyatis americana*) and hognose rays (*Rhinoptera bonasus*). Birds observed include great egrets (*Casmerodius albus*), great blue herons (*Ardea herodias*), and brown pelicans (*Pelecanus occidentalis*). An unidentified filamentous green algae also occurred sporadically throughout the lagoon. The average water depth increased offshore at checkpoint 2 from minus 2 feet to 4 feet.
- h. A small area of bay bottom near sample point 1 has been experimentally planted with shoalgrass (*Halodule wrightii*), by Tampa Baywatch and the U.S. Fish and Wildlife Service to determine the viability of seagrass recruitment in the lagoon adjacent to the fertilizer plant. To date, a 20 percent success rate has been observed. In light of the natural re-colonization in that area of the bay, establishment is expected.
- i. Sample point 3 covers basin plan 5, and encompasses the entire west and south shoreline of disposal area C. This area is a biologically diverse and productive shoreline (figures 18,19). Shallow tidal habitat grades into sub-tidal, followed by saltmarsh and mangrove. Several black mangroves (*Avicennia germinans*) fringe the shore, with marsh elder (*Iva frutescens*), and Brazilian pepper (*Schinus terebinthifolius*) shrubs. An abundance of eastern oysters (*Crassostrea virginica*) were observed on mangroves. A small portion of low and high marsh exists at the southwest point of disposal area C, and is vegetated with saltmarsh cordgrass (*Spartina alterniflora*), and saltmeadow cordgrass (*Spartina patens*). Fiddler crabs (*Uca* spp.) were also abundant, and occupied the entire length of beach. Killdeers (*Charadrius vociferus*), terns (*Sterna* spp.), turkey vultures (*Cathartes aura*), and few wading birds were observed on the beach.
- j. The most western checkpoint, number 6, covers basin plans 3, 4, and 5. Depths were minus 4-6 feet, and displayed similar habitats found at points 1, 2, and 3. However, there appeared to be less diversity was noted, as only worms and a few molluscs were observed.

- k. Sample points 4 and 5 cover basin plan 1, which provides for the expansion of the existing turning basin as in the proposed plan. It is located approximately 1 mile upstream from the mouth of the river, across from the Oyster Bar Restoration Project by the Florida Department of Environmental Protection (figure 20). The shoreline is narrow, and vegetated with red (*Rhizophora mangle*) and black mangroves, and Brazilian pepper shrubs. Oysters were evident in the roots of the mangroves, but in less numbers than sample point 3. Behind the vegetated strip are terminal buildings, where associated loading/offloading and manufacturing operations occur (figures 21, 22). Large ship operations in the confined waterway create strong wake on both sides of the channel, which has eroded some areas along the southern shoreline. Water clarity was poor, which precluded benthos identification.
- l. As mentioned above, a restoration project is underway on the south shore, across from the current basin. This was once a dredge disposal area for the Cargill plant, and now harbors a revitalized fringe mangrove and saltmarsh tidal creek system. Oysters have begun to colonize the surrounding flats. Brazilian pepper has been eradicated from portions of the area. Conditions for full restoration appear favorable at this time.
- m. **Threatened and Endangered Species.** The endangered Florida manatee (*Trichechus manatus latirostis*) is found within the vicinity of the Alafia channel and berthing areas. One was observed in the field near the Alafia banks, along the north side of Bird Island, near channel marker 12. According to surveys done by the Florida Marine Institute, a small number of manatees travel north and south along the shoreline and mouth of the Alafia River year round. In the winter months, they travel between warm-water discharges at Port Sutton and Big Bend. They occur in the channel in larger numbers in the warmer months (Ackerman, pers. comm., 1996).
- n. **Wetlands.** A fringe of mangroves lines the mouth of the Alafia River in the construction area. Mangroves are also present on Bird Island. Some mangroves also grow along the fringe of the east side of Dredged Material Management Area CMDA-2D.
- o. **ODMDS:** The proposed disposal site is the Tampa Ocean Dredged Material Disposal Site (ODMDS). This site is located approximately 18 nautical miles west-southwest of Egmont Key at the entrance to Tampa Bay. It has been designated for the disposal of dredged material by the U.S. Environmental Protection Agency (USEPA). The site is four nmi² in area with center coordinates of

27°31'27"N latitude, and 83°07'38"W longitude. The water at the site is approximately 70 feet deep. The site has been used twice. Once, for the initial deepening of the navigation channel to 43 feet and the other was for the recent maintenance of the Egmont Channel cuts. The recent maintenance contained large clay balls. The relief created at the site is used by fish as a reef environment. A detailed description of conditions at the ODMDS can be found in the Final Environmental Impact Statement for Designation of an Ocean Dredged Material Disposal Site Located Offshore Tampa, Florida September, 1994. Appendix C of the Final EIS is the Site Management and Monitoring Plan for the Tampa ODMDS.

- p. **Birds** . A total of 83 species of birds are associated with marine habitats in Tampa Bay (Dunstan and Lewis 1974). Of significance to this project, adjacent spoil islands 2D, 3D, and the Alafia Banks provide nesting habitat for 22 species of birds, including 10 state-designated "species of special concern", and 2 federally endangered species (see table 2). According to the National Audubon Society and the Florida Game and Fresh Water Fish Commission (GFC), these dredged material created islands serve as important breeding areas. The Alafia Banks are one of the nation's outstanding and most diverse bird colonies, as well as being ranked as Florida's number one colony. It appears the spoil islands provide desirable nesting habitat for many species due to substrate and vegetative conditions, and absence of humans. With appropriate management, these areas will continue to serve as breeding grounds for a myriad of species.
- q. The following avian species were observed in the project area: brown pelicans (*Pelecanus occidentalis*), laughing gulls (*Larus atricilla*), ring-billed gulls (*Larus delawarensis*), cormorants (*Phalacrocorax auritus*), roseate spoonbills (*Ajaia ajaja*), reddish egrets (*Egretta rufescens*), tricolored egrets (*Egretta tricolor*), snowy egrets (*Egretta thula*), great egrets (*Casmerodius albus*), little blue herons (*Egretta caerulea*), great blue herons (*Ardea herodias*), willets (*Catoptrophorus semipalmatus*), black-necked stilts (*Himantopus mexicanus*), ruddy turnstones (*Ironware interpret*), white ibis (*Eudocimus albus*), glossy ibis (*Plegadis falcinellus*), caspian terns (*Sterna caspia*), sandwich terns (*Sterna sandricensis*), black skimmer (*Rynchops niger*), american oystercatchers (*Haematopus palliatus*), and yellow-crowned night herons (*Nycticorax violaceus*).

Table 2- Breeding Pairs of Alafia Bank and Tampa Port Authority Spoil Islands 2D and 3D for 1996 (National Audubon Society 10-96).

<u>Species</u>	<u>Alafia Bank</u>	<u>Island 2D</u>	<u>Island 3D</u>
Brown Pelican#*		600	
Double-crested Cormorant		200	
Great Blue Heron		80	
Great Egret		80	
Snowy Egret*		200	
Little Blue Heron*		90	
Tricolored Heron*		230	
Reddish Egret*		45	
Cattle Egret		700	
Black-crowned Night Heron		50+	
Yellow-crowned Night Heron		50+	
White Ibis*		8100	
Glossy Ibis		525	
Roseate Spoonbill*		100	
Clapper Rail		+	+
American Oystercatcher*	18	34	11
Willet	6+	10+	5+
Laughing Gull	500	3400	
Caspian Tern			93
Royal Tern			180
Sandwich Tern			135
Black Skimmer*			320
Total Pairs	11,074	544+	4,144

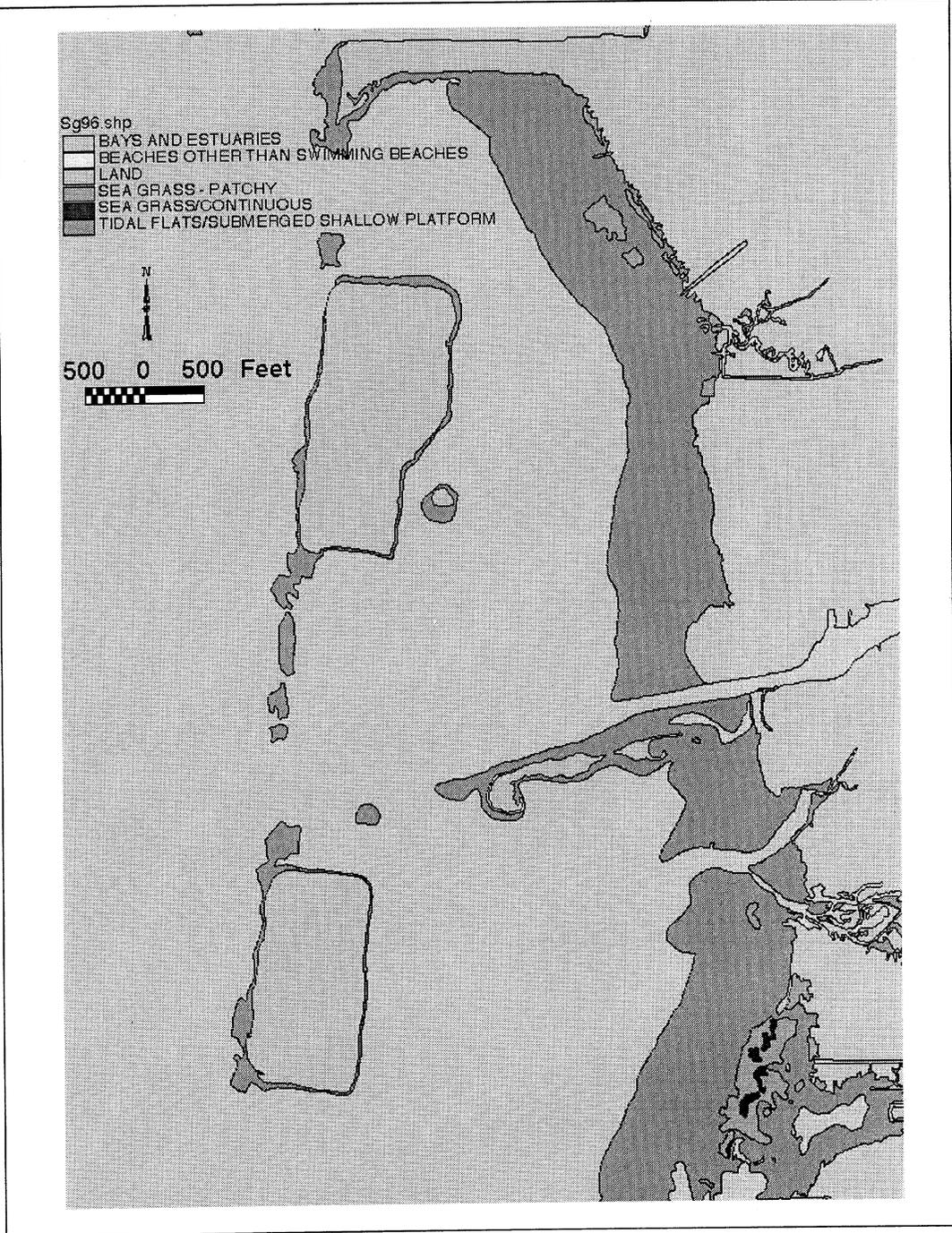


Figure 7. Seagrass Map Alafia River Navigation Project

- r. **Seagrass.** Seagrass beds are important as they offer habitat to several fish species (red drum, spotted sea trout, spot, silver perch, sheepshead, and snook), invertebrates, algae, dolphin, and the manatee. Historically, Tampa Bay has lost much of its seagrass as a result of dredge and fill activities, and degraded water quality associated with urbanization and industry discharge. Since 1950, losses equal approximately 15 thousand acres. A recent increase has been documented, and is attributed to improved bay water quality (TNEP 1996). Seagrass beds of significant size do not exist in the immediate project area (main channel and 25-feet on either side), along the east side of CMDA-2D, and the south sides of Sunken and Bird Islands. However, they do exist north of the mouth of the river in an artificial planted site. Turbidity could be a problem at the islands due to their close proximity (Johansson, pers. comm., 1996).

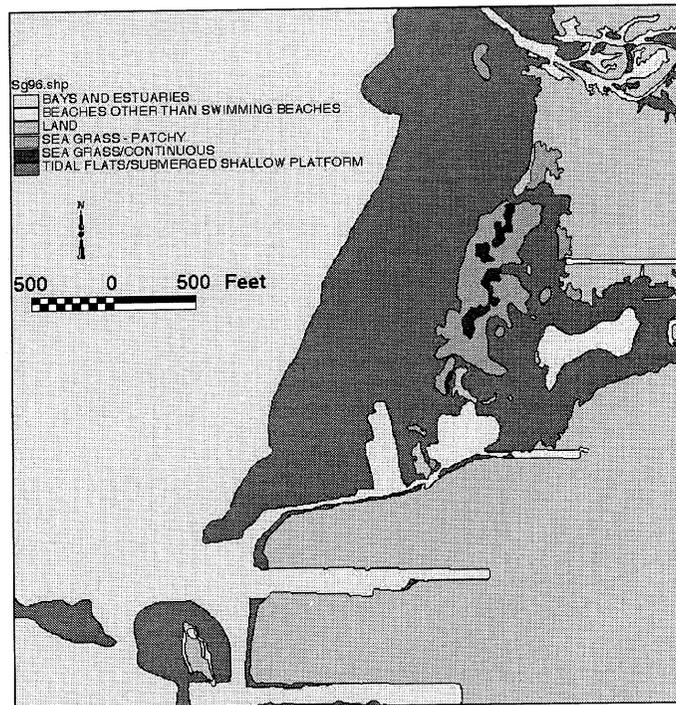


Figure 8, Seagrass Map, Whiskey Stump Key Seagrass Restoration Site

3.3.3 Social

- a. **Cultural Resources.** A cultural resources remote sensing survey has been conducted for the Alafia River channel and turning basin. Eighteen magnetic and acoustic targets were located in the entrance channel and Alafia River. Only one target near the mouth of Alafia

River has the potential to be a significant cultural resource. A diver investigation was conducted in February 2000. The magnetometer finds were modern debris and not considered historical in nature.

- b. **Aesthetics.** The general aesthetics of this area is that of an industrial area along the waterfront and recreational boating and fishing along the shoreline. The Cargil Fertilizer plant is located on the north side of the mouth of the river. The peninsula to the east of the plant is an active dredged material management area DA-C. To the south of the river is DMMA DA-A. This area is heavily vegetated due to lack of use. The other DMMA DA-B is located across at marsh south of DA-A. This marsh area has been rehabilitated and used as a wildlife area and canoe trail. The aesthetics of the dredging area is within a commercial navigation area, which see large ocean going cargo vessels, fishing vessels and large recreation craft transiting the area.
- c. **Recreation.** As mentioned in the previous section, recreational boating and fishing use the river and shoreline. Mostly the recreational boat traffic is using this area to transit to other areas. The wildlife area south of DA-A is used for bird watching, fishing and canoeing.

3.3.4 Economics

- a. **Economics.** The activities that originally justified this project in Tampa Harbor were a tonnage moved of 268,206 in 1898. This is the first available information in the District Office records for Tampa Harbor. The first breakdown of cargo available for Tampa Harbor is in 1913. Principle items received were coal, sand, shell, cement, brick, Havana Tobacco and miscellaneous merchandise. Major items shipped were phosphate, lumber and miscellaneous freight. The total tonnage for 1913 was 2,222,873 tons. This represented increase of 825 percent in just 15 years from 1880. This phenomenal increase had been attributed to channel deepening in the harbor. Since the deepening of the entrance no maintenance dredging has been conducted and sedimentation forcing vessels to light load in the upper channel. This required that the vessels either add additional freight at another port or load from a lighter (a barge) further down the harbor. The data used to justify the Federal project in Tampa was taken from 1971. Tampa Harbor was the 8th largest port in the United States, handling 36,000,000 tons of commerce almost equally divided between inbound and outbound. The major commodities requiring deeper channels are phosphates, petroleum products, and sulfur. Phosphate products were the major beneficiaries of deepening the channels. There were three major phosphate terminals at Tampa where vessels could not be fully

loaded because of restrictive channel depths. In that year, there were some 230 outbound vessels of which about 160 could have taken on more cargo if not restricted by draft. Looking at economic information for Tampa Harbor over the last five years, tonnage and growth rates appear to have stayed reasonably steady. The numbers have varied but while being down one year they recovered in the next. In 1994 Tampa handled about 49 million tons of cargo and commercial passenger transport increased about 50 percent.

- b. **Navigation.** Alafia River Navigation channel is used primarily for shipment of phosphate rock and bulk phosphate products. Vessels typically enter the harbor in ballast and load bulk materials until the vessel draft reaches the limit allowed in the channel. This channel consists of a turning basin adjacent to the harbor dock facility in the mouth of the Alafia River and a channel connects to the Tampa Harbor - Hillsborough Bay Channel Cut C. Recreational boat traffic also uses this channel. There is a recreational boat ramp located immediately upstream of the turning basin, adjacent to the US Highway 41 bridge.

4 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION.

This section describes the probable consequences of implementing each alternative upon selected environmental resources. These resources are directly linked to the relevant issues listed in Section 1.4 that have served to fine-tune the environmental analysis. The following narrative includes predicted changes to the existing environment including both direct and indirect effects, irreversible and irretrievable commitment of resources, unavoidable effects, and cumulative impacts.

4.1.1 Cumulative Impacts.

Cumulative impact is “the impact upon the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions ...” (40 CFR §1508.7).

4.1.2 Irreversible and Irretrievable Commitment of Resources

- a. **Irreversible.** An irreversible commitment of resources is one in which the ability to utilize a resource is lost forever (e.g., the mining of a mineral resource).
- b. **Irretrievable.** An irretrievable commitment of resources is one in which the ability to utilize a resource in its present state or configuration is lost for a period of time (e.g., restricting the flow of a river with a dam).

4.2 No-Action Alternative

4.2.1 Physical

- a. **Surface Water Quality.** There would be an intermittent local increase in turbidity from the re-suspension of bottom sediments from large ships entering, turning around and leaving the Port. There would be a minor short-term increase in turbidity during maintenance dredging of the channel and placement in the upland disposal area.
- b. **Benthic Habitat.** There would be no impacts on benthic habitat.

4.2.2 Biological

- a. **Manatees.** Minor intermittent impact on manatees from the vessels entering, turning and leaving the Port in a substandard channel. A potential exists for manatee to be trapped between vessels and the channel during these operations. There would be a short-term minor impact on manatees during maintenance dredging operations. This impact would be offset by the implementation of the standard State and federal manatee protection conditions. In addition, if a clamshell is used a special monitor with video equipment will be used to document the protection measures.
- b. **Birds.** Wave action will continue to erode the shoreline of Bird Island reducing bird habitat. There would be a minor impact to bird nesting along the channel and in the disposal areas. Impacts would be mitigated by the implementation of the Districts Migratory Bird Protection Policy which includes monitoring and avoidance during nesting season if possible. A 3000' buffer zone around Bird Island would be employed during the operation if nesting season impacts cannot be avoided.
- c. **Seagrass Beds.** There would be no impacts on seagrasses.
- d. **Wetlands.** There would be no impact on wetlands.

4.2.3 Social

- a. **Cultural Resources.** There would be no adverse effects upon cultural resources from the No-Action Alternative.
- b. **Aesthetics.** There would be no adverse effects upon the aesthetics of the Alafia River Navigation Project site from the No-Action Alternative.

- c. **Recreation.** There would be no adverse impacts on recreation from this alternative.

4.2.4 Economics

- a. **Economics.** There would be a major long-term loss of revenues from the gradual reduction in cargo handling capabilities of the Port as vessel sizes increase. Companies using these vessels would seek other Ports with larger vessel handling capabilities.
- b. **Navigation.** Recreational traffic would remain the same if the same size vessels were used. If larger vessel used the port, commercial navigation becomes more difficult and less safe. There would be a long-term reduction in vessel safety as larger vessels try to use the smaller channel.

4.2.5 Cumulative Impacts.

The only cumulative impact identified with this alternative would be a significant impact on navigation and economics should no actions associated with port improvements be undertaken at other ports either locally or nationally.

4.2.6 Unavoidable Effects.

No unavoidable effects resulting from the No-Action Alternative were identified.

4.2.7 Irreversible and Irretrievable Commitments of Resources.

There would be no utilization of resources should this alternative be implemented. Therefore, there is no irreversible or irretrievable commitment of resources.

4.2.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

There would be no short-term uses so; therefore there would be no change in productivity.

4.3. Expansion of Existing Channel and Existing Turning Basin

4.3.1 Physical

- a. **Surface Water Quality.** A Tier I evaluation was conducted of the dredged material. Based on this evaluation it was determined that there was no potential for adverse water quality impacts (Appendix IX). There would be an increase in turbidity surrounding the construction and maintenance dredging operations. Turbidity levels would not exceed State water quality standards and would rapidly return to ambient levels.

4.3.2 Biological

- a. **Manatees.** There would be a short-term adverse impact on manatees during construction of the new facilities and maintenance. This impact would be mitigated by the implementation of the standard State and Federal Manatee Protection Conditions (Appendix I). During blasting operations special conditions would be implemented. A major component of these special conditions is the establishment of a blasting zone and the use of manatee observers in an elevated observation mode. As part of the normal plan is the monitoring for the presence of manatees by all workers and cessation of work should manatees enter the construction zone. Resuming work would only occur should the manatees reach the safe zone.
- b. **Birds.** There would be a medium short-term disruption to bird nesting from the construction activities along the navigation channel. This impact would be mitigated by the implementation of the Migratory Bird Protection Plan. Part of that plan is to avoid the bird-nesting season at this site which is February through August. If this isn't possible then, a bird monitor surveys the area for activity and sets up a buffer zone around the area. Bird Island is a special case and the buffer zone would not allow work south of the channel in a 3000' area. A long-term secondary impact of the new channel would be an increase in the wave action from boat passage from larger vessels. Stabilizing the shoreline with rock from the construction could mitigate this.
- c. **Seagrass Beds.** There would be no impact on seagrasses from this alternative.
- d. **Wetlands.** There would be a loss of 6.0 acres of mangroves along the shoreline of the Alafia River in the turning basin and along the south side of the channel in the vicinity of the Dredged Material Area DA/B. This impact would be mitigated by the creation of 6.0 acres of mangrove wetlands along the south bank, the creation of two new inter-tidal channels to the Restoration Area adjacent to the project to increase the biological productivity of the tidal marsh, the eradication of exotic plants species from 15 acres along the south bank, creation of 2 reptile ponds, and the creation of a mangrove slough.
- e. **Benthic Habitat.** There would be a loss of 70 acres of benthic habitat. The habitat lost varies in depth from 20 feet near the top of the channel to approximately 2 feet. Approximately half of this acreage is within the photic zone. This area is located within the impact are of a commercial

port and is considered degraded. This area would be re-colonized by species more suited for deeper water.

4.3.3 Social

- a. Cultural Resources.** There would be no impacts to historic properties from this alternative based on the diver investigations of the site.
- b. Aesthetics.** There would only be a minor short-term impact on aesthetics from the presence and operation of the dredging equipment in the vicinity of Bird Island and the canoe trail near the mouth of the River. The dredging in the turning basin would not have much of an impact because of the industrial use of this area.
- c. Recreation.** There would be a minor impact on recreational bird watching at Bird Island, recreational fishing during the dredging, and recreational boat traffic in the area.

4.3.4 Economics

- a. Economics.** There would be a short-term stimulus to the local economy during construction from the sale of goods and services in support of the work. There would also be a long-term increase in revenues from the use of the port by larger vessels and the increased sale of commodities.
- b. Navigation.** There would be a short-term adverse impact on vessels using the channel during the construction period. There would be increased safety for vessels using the new channel and turning basin.

4.3.5 Cumulative Impacts.

There would be a minor long-term cumulative impact as all ports increase their sizes to keep pace with industry demands.

4.3.6 Unavoidable Effects.

The only unavoidable impact of the dredging would be the turbidity generated during dredging.

4.3.7 Irreversible and Irretrievable Commitment of Resources

The only loss of resources that cannot be retrieved is the fuel consumption used in the construction effort. The bottom sediments are relocated to other sites and could be retrieved and placed back into the channel.

4.3.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

The relative productivity of this area from the channel construction would not change.

4.4. Ocean Dredged Material Disposal Site Placement

4.4.1 Physical

- a. **Surface Water Quality.** A Tier I evaluation was conducted of the dredged material. Based on this evaluation it was determined that there was no potential for adverse water quality impacts (Appendix IX). There would be a turbidity plume created from the dumping of dredged material at the ODMDS and the smothering and covering of benthic organisms at the site. Turbidity levels would not exceed State water quality standards and would rapidly return to ambient levels.

4.4.2 Biological

- a. **Manatees.** There would be no impact on manatees.
- b. **Birds.** There would be no impact on birds.
- c. **Seagrass Beds.** There would be no impact on seagrasses.
- d. **Mangroves.** There would be no impacts on mangroves.
- e. **Benthic Habitat.** Benthic life would be covered and smothered by the mass dumping of dredged material. The area would be quickly re-colonized in between construction projects using the site.

4.4.3 Social

- a. **Cultural Resources.** There would be no impacts to historic properties for use of this disposal area.
- b. **Aesthetics.** There would be no impact on aesthetics.
- c. **Recreation.** There would be a minor adverse impact on recreation use of the ODMDS during disposal operations. This includes fishing and SCUBA diving.

4.4.4 Economics

- a. **Economics.** There would be a short-term localized generation of revenues associated with the construction and operation of the Dredged Material Management Area. The associated maintenance

dredging of the Alafia River Navigation Project would result in a major long-term secondary benefit through the encouragement of commercial and recreational navigation.

- b. **Navigation.** There would be a short-term adverse impact on commercial navigation from the transportation of dredged material to and from the ODMDS. This traffic flow would be coordinated with the Tampa Pilots association to minimize impacts.

4.4.5 Cumulative Impacts

There would be no cumulative effect from this alternative.

4.4.6 Unavoidable Effects.

There would be a turbidity plume created from the dumping of dredged material at the ODMDS and the smothering and covering of benthic organisms at the site.

4.4.7 Irreversible and Irrecoverable Commitment of Resources

There would be no irretrievable commitment of resources except for the expenditure of fuel for the transportation to and from the disposal site.

4.4.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

The long-term productivity of the ODMDS would not be affected by placement of material. In fact, the placement of more substrate at this site would create more relief creating more habitat for aquatic life.

4.5. Creation of Wetlands at Dredged Material management Area CMDA-2D

4.5.1 Physical

- a. **Surface Water Quality.** A Tier I evaluation was conducted of the dredged material. Based on this evaluation it was determined that there was no potential for adverse water quality impacts (Appendix IX). There would be a short-term impact on water quality from the placement of material into an area along CMDA-2D and the associated increased turbidity. This affect would be different dependent on the method of displacement. If the material were pumped directly to the site, there would be a substantial turbidity plume generated. This impact would be mitigated by the use of Flocculent or underwater berm. If the material was first placed inside CMDA-2D then, hauled over the berm and pushed it the water there would be very little turbidity generated. In the long-term the creation of wetlands in this area would help water quality through nutrient uptake of the wetland plants. Regardless of the method of placement turbidity control measures would keep turbidity levels within the allowable limits contained in the States water quality criteria. Turbidity levels would rapidly return to normal after completion of the project.

4.5.2 Biological

- a. **Manatees.** There could be an impact on manatees from the placement of material into the site and transportation of material to the site. This impact would be mitigated by the implementation of the State and Federal Manatee Protection Conditions.
- b. **Birds.** There would be a short-term adverse impact on bird nesting during the bird-nesting season 1 April through 31 August from the construction at CMDA-2D. This impact could be mitigated by the implementation of a Migratory Bird Protection Plan. If the season cannot be avoided, a bird monitor would be used to identify nesting sites and create a buffer zone around these sites. In the long-term the creation of this 107-acre site would provide a substantial area for birds to nest and forage for food.
- c. **Seagrass Beds.** There would be no impact on seagrass beds.
- d. **Mangroves.** There would be a potential for additional mangrove habitat within the 107-acre site. The amount of habitat would be dependent on the final elevations created.
- e. **Benthic Habitat.** There would be a change in benthic habitat from an open-water to a shallow-water habitat. This would increase the biological productivity of the site by increasing the bottom into the photic zone.

4.5.3 Social

- a. **Cultural Resources.** There would be no impacts to historic properties for use of this alternative since the site was formed by the placement of dredged material. Further placement would not impact any buried artifacts.
- b. **Aesthetics.** There would be a minor aesthetic impact from the presence and operation of dredging equipment adjacent to bird watching and fishing activities.
- c. **Recreation.** There would be a minor interruption to fishing and bird watching along this shoreline.

4.5.4 Economics

- a. **Economics.** There would be a minor long-term benefit to the Port from the Beneficial Uses of Dredged Material and not using the upland DMMA or the ODMDS.
- b. **Navigation.** There would be a minor short-term disruption to recreation navigation along the shoreline of CMDA-2D.

4.5.5 Cumulative Impacts.

There would be a beneficial cumulative impact from the creation of wetlands with Tampa Bay. If this were done with other dredged material from the federal projects a substantial amount of habitat would be created or restored.

4.5.6 Unavoidable Effects.

There would be a loss of open-water habitat and some turbidity generated.

4.5.7 Irreversible and Irrecoverable Commitment of Resources.

The only long-term commitment of resources would be the expenditure of fuel to support the work.

4.5.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

There would be a short-term effect from the placement of material in the open-water and the associated loss of fish habitat. However, in the long-term there would be the creation of 107 acres of saltmarsh habitat, which is considered to be more productive.

4.6. Creation of Avian Habitat at Bird/Sunken Island

4.6.1 Physical

- a. **Surface Water Quality.** A Tier I evaluation was conducted of the dredged material. Based on this evaluation it was determined that there was no potential for adverse water quality impacts (Appendix IX). There would be a short-term impact on water quality from the placement of material into an area south of Bird Island and the associated increased turbidity. If the material were pumped directly to the site, there would be a substantial turbidity plume generated. This impact would be mitigated by the use of Flocculent. Regardless of the method of placement turbidity control measures would keep turbidity levels within the allowable limits contained in the States water quality criteria. Turbidity levels would rapidly return to normal after completion of the project. In the long-term the creation of wetlands in this area would help water quality through nutrient uptake of the wetland plants.

4.6.2 Biological

- a. **Manatees.** There could be an impact on manatees from the placement of material into the site and transportation of material to the site. This impact would be mitigated by the implementation of the State and Federal Manatee Protection Conditions.
- b. **Birds.** There would be a short-term adverse impact on bird nesting during the bird-nesting season 1 March through 31 August from the construction. This impact could be mitigated by the implementation of a Migratory Bird Protection Plan. If the season cannot be avoided, a bird monitor would be used to identify nesting sites and create a buffer zone around these sites. In the long-term the creation of this 52-acre site would provide a substantial area for birds to nest and forage for food.
- c. **Seagrass Beds.** There would be no impact on seagrasses.
- d. **Mangroves.** There would be no adverse impact on mangroves. There would be a long-term benefit to mangroves by providing additional area for potential growth.
- e. **Benthic Habitat.** There would be a loss of open-water habitat and the creation of saltmarsh and mangrove habitat from the placement of dredged material.

4.6.3 Social

- a. **Cultural Resources.** There would be no impacts to historic properties for use of this alternative since the site was formed by the placement of dredged material. Further placement would not impact any buried artifacts.
- b. **Aesthetics.** There would be a minor aesthetic impact from the presence and operation of dredging equipment adjacent to bird watching and fishing activities.
- c. **Recreation.** There would be a minor interruption to fishing and bird watching along this shoreline

4.6.4 Economics

- a. There would be a minor long-term benefit to the Port from the Beneficial Uses of Dredged Material and not using the upland DMMA or the ODMDS.

- b. **Navigation.** There would be a minor impact on recreation boat traffic along the Bird Island shoreline.

4.6.5 Cumulative Impacts

There would be a beneficial cumulative impact from the creation of wetlands with Tampa Bay. If this were done with other dredged material from the federal projects a substantial amount of habitat would be created or restored.

4.6.6 Unavoidable Effects.

There would be a loss of open-water habitat and some turbidity generated.

4.6.7 Irreversible and Irrecoverable Commitment of Resources.

The only long-term commitment of resources would be the expenditure of fuel to support the work.

4.6.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

There would be a short-term effect from the placement of material in the open-water and the associated loss of fish habitat. However, in the long-term there would be the creation of 52 acres of saltmarsh habitat, which is considered to be more productive.

4.7. Whiskey Stump Key Seagrass Restoration Project Placement

4.7.1 Physical

- a. **Surface Water Quality.** A Tier I evaluation was conducted of the dredged material. Based on this evaluation it was determined that there was no potential for adverse water quality impacts (Appendix IX). There would be a short-term increase in turbidity from the placement of dredged material in the hole adjacent to Port Redwing. In the long-term, there would be a reduction in anoxic water quality conditions within the hole. Turbidity control measures would keep turbidity levels within the allowable limits contained in the States water quality criteria. Turbidity levels would rapidly return to normal after completion of the project.

4.7.2 Biological

- a. **Manatees.** There could be an impact on manatees from the placement of material into the hole and transportation of material to the hole. This impact would be mitigated by the implementation of the State and Federal Manatee Protection Conditions.
- b. **Birds.** There would be no impact on birds from this alternative.

- c. **Seagrass Beds.** There would be no direct adverse impact on seagrasses in the area. The turbidity generated by the placement could impact adjacent patchy seagrasses. However, the use of turbidity curtains or a flocculent that would reduce turbidity at the edge of the seagrass beds would mitigate this impact. There would be a long-term benefit to seagrasses by raising the bottom elevation into the photic zone that could promote additional seagrass growth.
- d. **Mangroves.** There would be no impact on mangroves from this alternative.
- e. **Benthic Habitat.** There would be an elimination of the silty substrate and replacement with a sandy substrate with the bottom elevation raised to within the photic zone.

4.7.3 Social

- a. **Cultural Resources.** There would be no impacts to historic properties for use of this alternative since the site was excavated well below the surface. Any historic resources were previously removed. Further placement would not impact any buried artifacts.
- b. **Aesthetics.** There would be a minor adverse impact on aesthetics from the presence and operation of dredging equipment at this site.
- c. **Recreation.** There would be a short-term minor disruption to fishing along the edge of the hole. There would be a long-term reduction in fishing opportunities for fishing as the edge effect for fishing habitat is diminished.

4.7.4 Economics

- a. **Economics.** There would be a minor long-term benefit to the Port from the Beneficial Uses of Dredged Material and not using the upland DMMA or the ODMDS.
- b. **Navigation.** There would be a minor impact on commercial and recreation navigation from the transportation and placement of dredged material at the site.

4.7.5 Cumulative Impacts.

There could be a cumulative impact on cold water fishery refugia in Tampa Bay if all the dredged material holes are filled within shallow-water areas. This would not likely occur because it would not be economically feasible or logistically possible.

4.7.6 Unavoidable Effects.

There would be some turbidity generated but would be controlled. There would be a reduction in fish habitat from the loss of edge of the hole.

4.7.7 Irreversible and Irretrievable Commitment of Resources.

The only loss would be the fuel expended during placement.

4.7.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity.

There would be a short-term effect from the placement of material in the hole and the associated loss of fish habitat. However, in the long-term there would be potential generation of seagrass beds which is considered to be more productive.

5 LIST OF PREPARERS

Name	Job Title	Years Experience	NEPA Participation
William J. Fonferek	Biologist	21 years	NEPA preparation, coordination, endangered species consultation
Tommy Birchett	Archeologist	20 years	Cultural Resources Assessment
Glenn Schuster	Environmental Engineer	22 years	Water Quality Assessment
Peter Besrutchko	Environmental Engineer	10 years	HTRW Assessment
Paul Stevenson	Landscape Planner	12 years	Aesthetic and Recreation Assessment
Graham Story	Hydraulic Engineer	8 years	Water Circulation Modeling
Dan Haubner	Civil Engineer	6 years	Study Manager
Tim Murphy	Civil Engineer	8 years	Project Manager

6 COORDINATION WITH OTHERS

6.1 INTRODUCTION.

This section provides information on how the development and planning of this proposed action was coordinated with concerned agencies and interested parties during initial site selection through the preliminary development of this document.

6.2 INITIAL PROJECT PLANNING.

During the initial planning phases several interagency meetings were held in Tampa on May 5, 1997; August 27, 1997; and September 16, 1997 with representatives of the Florida Department of Environmental Protection Tampa Office, US Fish and Wildlife

Service, National Marine Fisheries Service, Tampa Baywatch, Audubon Society and the Tampa Bay Estuary Program. Additionally, Mr. Tim Murphy briefed the Tampa Bay Regional Planning Council's Agency on Bay Management on February 12, 1998.

6.3. Scoping

During the beginning phase of the Feasibility study, a scoping letter dated 29 January 1998 was sent to the State Clearinghouse and all other interested parties to identify areas of concern and opportunities (Appendix I). The following responses were received:

- a. The Florida State Clearinghouse responded with a postcard assigning the project a State Application Identifier SAI#FL9802020037C.
- b. The Tampa Bay Regional Planning Council's Intergovernmental Review responded by letter dated February 23, 1998, stating that the enclosed agenda item from the Agency on Bay management was considered and the staff comments approved by the Clearing house Review Committee.
- c. The Florida Department of Community Affairs responded by letter dated April 3, 1998, requesting additional time to respond.
- d. The Hillsborough County Planning commission responded by letter dated February 1998, stating that the new work should demonstrate a need, project benefits and minimize and mitigate environmental impacts. It stated there is potential for detrimental effects on seagrasses, areas with the potential for seagrass recovery and other benthic communities; cause or accelerate shoreline erosion; degrade littoral zone environments; and impact avian and manatee habitat.
- e. The Tampa Bay Regional Planning Council responded by letter dated February 23, 1998, stating as presented to the Agency on Bay Management's Natural Resources/Environmental Impact Review Committee, the study will evaluate various alternatives to providing sufficient turning basin and dockage to accommodate Panamax-sized vessels at the Cargill Fertilizer, Inc. facility and determine the federal interests in the project. This single-user site is located inside the mouth of the Alafia River in northeastern Tampa Bay. The existing facility includes a 32'-deep, 150'-wide, 3.6-mile long channel from the main Tampa Bay shipping channel to the 700'x1,200' turning basin. The stated need is for a 1,200'x1,200' turning basin, a 250'-wide channel and 43' depths to permit Cargill to use Panamax ships, now considered standard for the industry and more economically competitive. The two alternatives presented to the committee were:
 - Expansion of the existing turning basin. This would entail deepening by 11' and widening by 500' and generation of about 1,000,000 cubic yards of dredged material. The amount of alteration needed to existing facilities was not provided.

- Dredging/construction of a new turning basin outside and north of the mouth of the Alafia River. This new basin would be more than 25 acres in size and 43' deep, in an area now about 3' deep. Some 4,000,000 cubic yards of dredged material would require disposal. New dockage and trans-loading facilities would be needed, but the size and location was not provided.
- At the committee meeting many concerns were raised relating to the identification of environmental impacts associated with each alternative. These concerns should be addressed as part of the Corps' study.
- Regarding expansion of the existing turning basin ("1" above): What habitat would be impacted by basin expansion and channel deepening? How would mitigation be accomplished? How much more maintenance (amount of material and frequency) would be needed than the current project? Would the configuration of the expanded turning basin and increased depth of the channel affect erosion rates of the Bird Islands, the river banks, or other areas? What products will be handled at the expanded facility?
- Concerning the proposed new turning basin ("2" above): How would the dredged material (an estimated 4 million cubic yards) be disposed – a new island in Tampa Bay, upland, or in open-waters of the Gulf? What would be the primary and secondary impacts of disposal site creation and use? Would the turning basin and increased channel depth affect erosion rates of the Bird Islands, the eastern shoreline of Tampa Bay in the project's vicinity, and elsewhere? Would the basin effect the stability/vulnerability of the nearby gypsum disposal site? Would additional hardening of the shoreline be necessary? Would the basin have an adverse affect on seagrass beds in the vicinity, due to sloughing of the basin sides and the creation of a large sump in the open bay? How many acres of seagrass and other shallow water estuarine habitat would be removed for this alternative, including for necessary docking and trans-loading equipment? How would mitigation for all primary and secondary impacts be accomplished? How much maintenance (amount of material and frequency) would be needed? Where would this material be disposed? What products would be handled through the new facilities? What would be the fate of the existing basin and channel into the Alafia River?
- General questions: Would the federal government assume any portion of the responsibility for construction and maintenance of the modified Alafia River Navigation Channel, including a turning basin, for a

single user? What beneficial uses are available for the large quantity of material that would be generated by either alternative?

- Of considerable concern within Tampa Bay is the potential for a finding of federal interest in a single-user project such as this. A positive finding would set a serious precedent within the estuary, where industrialization has been planned, developed and supported by federal involvement in two areas. Significant expansion of federal involvement into an area with many high quality environmental values. Without substantial, over-riding public interest, such a project is contrary to regional, state and federal policies.
- f. The Tampa Bay Regional Planning Council responded by letter dated February 13, 1998, inviting the Corps to the next meeting of the Clearinghouse Review Committee on the February 23, 1998 at 9:00 am.
- g. The National Marine Fisheries Service responded by letter dated February 27, 1998, recommending that sediment quality in the project area be tested, beneficial uses of dredged material be explored; such as wetland creation along CMDA-2D and 3D or reinforcement of shoreline along the gypsom stack. However, this could not be done at the expense of potential seagrass beds. Various manmade mines and borrow areas should also be used for dredged material placement and re-vegetation. They also recommended additional modeling of the expansion of the existing turning basin. They stated that creation of anew turning basin would cause irreplaceable loss of shallow bottom habitat that currently supports or may potentially support seagrasses. And they stated that, impacts on saltmarsh and mangroves from expansion of the existing turning basin could be compensated for with a high degree of certainty whereas impacts on seagrass could not.
- h. The Florida Department of Community Affairs responded by letter dated March 13, 1998, requesting an additional amount of time to respond.
- i. The Florida Department of Community Affairs responded by letter dated April 15, 1998, with the Clearinghouse Review Comments. According to the FDCA, the project is consistent with the Coastal management Program at this stage. The FDCA summarized agency comments and provided the attached documents which some have been previously forwarded to this office.
- j. RESPONSE: We have taken into consideration all of the comments in response to our requests for ideas and concerns. These responses have been used in formulation of the project. The construction of the new turning basin has been eliminated from consideration due to the impacts associated with it. We have identified several beneficial use projects including expansion of Bird Island, wetland creation along the east-side of CMDA-2D and the filling of the MacDill

Seagrass Restoration Site. The remainder of the material not used in these options would be transported to the ODMDS.

- k. The Draft Environmental Assessment and Feasibility Report were coordinated with the public by letter dated May 8, 2000.
- l. On June 8, 2000, Mr. William J. Fonferek, Biologist, Jacksonville District US Army Corps of Engineers, gave a presentation to the Natural Resources/Environmental Impact Review Committee of the Agency on Bay Management. The Committee recommended the following:
 - That the Corps keeps its policy of not funding projects which benefit a single user;
 - Any Bay bottom involved in the project not already owned by the Port Authority be deeded to the authority;
 - There should be no filling of Hillsborough Bay to create new uplands from Bay bottom;
 - The proposed footprint of the turning basin be shifted to the north and east to avoid impacting the south bank of the river.

RESPONSE: The Report will have a negative recommendation as far as any further action on the project. In order to construct the project the Corps must have some proprietary interest in the project. The local sponsor (Tampa Port Authority) is responsible for acquiring lands, easements and right-of-ways for the project. Any filling of Hillsborough Bay would be for the purpose of shallowing the Bay bottom to create wetlands not uplands. We have considered shifting the turning basin within the confines of the existing Port. We have determined that if it is shifted to that direction there would be more adverse impacts on the entrance channels associated with the wetlands restoration area along the south bank.

- m. The US Environmental Protection Agency responded by letter dated June 15, 2000 stating that requirements of Section 103 of the Marine Protection, Research, and Sanctuaries Act must be met. They also state that the beneficial uses of dredged material should be coordinated with state and federal resource agencies to determine if the proposed uses are appropriate and /or feasible. If the impacts are adequately addressed to the satisfaction of the State/federal agency, we would have no objection to the use of an Environmental Assessment in lieu of a more comprehensive EIS.

RESPONSE: We are in the process of coordinating the use of the ODMDS with their office. The concepts of the beneficial uses of dredged material for creation of more habitat were recommended by the Habitat Restoration Committee for the Agency on Bay Management and are part of the Comprehensive Conservation Management Plan of the Tampa Bay Estuary Program. According to the latest seagrass mapping of the area no seagrasses exist within the areas to be filled or excavated. We are currently updating the document as per comments received regarding the impacts of the project.

- n. The Tampa Bay Regional Planning Council, Clearinghouse Review Committee held a meeting to discuss the project on June 26 2000.
- o. The Tampa Bay Regional Planning Council's Intergovernmental Coordination and Review Committee reviewed the project at the request of the Florida State Clearinghouse. Their comments included the following:
 - The project would impact "Natural Resources of Regional Significance".
 - That in accordance with the *Future of the Region: A Strategic Regional Policy Plan for Tampa Bay Region* that the impacts are of over-riding public interest;
 - And that impacts be mitigated at a minimum of 4:1 for created wetlands or 8:1 restored wetlands.

RESPONSE: Even though the federal government is not subject to local regulations, the Corps tries to accommodate local planning and zoning wishes into account. The project goes through a substantial review and documentation process in accordance with federal regulations. These Civil Works Feasibility Studies for projects are then presented to our higher authority with a recommendation for funding for construction. The Congress of the United States determines whether projects will be constructed even if they have a negative recommendation. Mitigation has been determined and is consistent with the federal governments "No Net Loss of Wetlands" Policy.

- p. The Florida State Clearinghouse responded to the coordination by postcard dated May 17, 2000, stating it had assigned a State Application Identifier to the project for inter-agency review and that the response would be made than no later than June 29, 2000.
- q. The Florida Department of Community Affairs responded by letter dated June 20, 2000, requesting an extension of the comment period until July 14, 2000.
- r. The Tampa Bay Regional Planning Council stated by letter dated June 30, 2000, that the previously scheduled meeting would be rescheduled to July 10, 2000 to review the project. An additional response was forwarded to the Planning Council by the Hillsborough County Planning Commission. It contained the following comments:
 - Federal funding of this project would be inconsistent with the single owner policy;
 - Additional clarification of the cost/benefit analysis is requested;
 - Opportunities for realigning the turning basin to avoid impacts should be examined;
 - Recommend a more thorough evaluation of the sediment;
 - Additional water quality analysis is recommended;
 - Additional analysis is recommended in regard to the biological benefits/deteriments of using riprap to harden the shoreline versus using mangrove plantings;

- And Recommend analysis of the beneficial use sites including the erosion potential of contaminant-laden sediments and the loss of existing productive habitat.

RESPONSE: The Corps is charged with evaluating each project and to determine impacts and benefits/costs of the project. This is used to determine whether is in the public's interest from a national scope. The Corps will recommend that because this facility belongs to a single user that the project should not be funded. Congress, however, may on its own determine that the project should be constructed. The cost/benefit analysis is based on the best information available and goes into great detail as to forecasting the future trends of the commercial navigation industry. Due to the single owner issue, most of the economic evaluation is proprietary and confidential, and therefore not available for release. However, these costs and benefits have been reviewed by another Corps District and Higher Headquarters and deemed adequate. An evaluation of the sediments has been conducted in accordance with the Tier I protocol of EPA's Inland Testing Manual. There is no indication that the materials are contaminated and no further testing is required. Further testing will be conducted as part of the State water quality certificate procedures. No material that does not comply with their standards will be placed in State waters. Because the turning basin is located in the mouth of the Alafia River and is also tidally influenced, there does not appear to be any problems associated with mixing, flushing or water circulation. We had looked at several methods of bank stabilization and are planning to use mangroves as a more biologically suitable method of stabilization. The Corps had conducted modeling of water circulation in Hillsborough Bay and the proposed expansion of CMDA-2D or Bird Island would not affect water circulation. Erosion of the areas near the channels are primarily due to ship traffic. Stabilization of Bird Island will be done with excess rock from the channel. Stabilization of CMDA-2D will be done with vegetation. The analysis conducted indicates that any beneficial use of dredged material will have far more benefits to the environment than existing conditions.

- m. The Florida Department of Community Affairs requested by letter dated July 14, 2000 an extension of the Clearinghouse comments until August 4, 2000.
- n. The Florida Department of Community Affairs requested by letter dated August 9, 2000 an extension of the Clearinghouse comments until August 18, 2000.
- o. The Florida Department of Community Affairs responded for the Florida State Clearinghouse by letter dated September 11, 2000, stating that the project was consistent with the Florida Coastal Management Program. They provided comments from the various agencies. Comments from several agencies have been previously addressed. The following comments are from the Department of Environmental Protection:
 - All wetland losses should be quantified and evaluated and acreages should be based on a determination of the state's regulatory jurisdiction;

- The EA should have a mitigation proposal based on the impacts identified in the jurisdictional determination;
- Impacts to the restoration area should be included in the plan;
- Correct inconsistencies between the Report and the EA;
- Include endangered species consultation in the appropriate appendix.
- The EA should be revised to reflect the above comments.

RESPONSE: Wetlands have been identified and have been quantified in accordance with jurisdictional limits. A Mitigation Plan has been prepared and will be added as an appendix to the document. The EA will be upgraded based on the new information. Inconsistencies will be corrected between documents. The Endangered Species Consultation was conducted during the preparation of the Fish and Wildlife Coordination Act Report. The two Appendices will be combined.

7 ENVIRONMENTAL COMMITMENTS.

- State Water Quality standards will be met.
- Standard manatee protection conditions would be implemented.
- Special precautions would be taken to protect manatees during blasting operations.
- The Districts Migratory Bird Protection Policy would be implemented.
- No cultural resources would be impacted by the work unless resources are recovered.
- Impacts would be mitigated by the creation of 6 acres of mangroves along the south shoreline of the Alafia River, 2 inter-tidal channels would be excavated to increase flushing to the Restoration Area along the south bank, 1 mangrove slough would be excavated within the Restoration area, 2 Reptile Ponds would be created to replace those disturbed by the new construction, and exotic plant species would be removed from the area between the shoreline and the access road encompassing approximately 15 acres.

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