

July 2002

Environmental Assessment

Beneficial Use of Dredged Material Cockroach Bay Restoration Hillsborough County, Florida



**U.S. Army Corps
of Engineers
Jacksonville District**



**DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019**

REPLY TO
ATTENTION OF

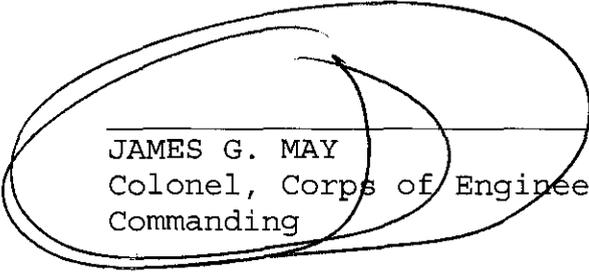
**BENEFICIAL USES OF DREDGED MATERIAL
COCKROACH BAY RESTORATION
TAMPA HARBOR
HILLSBOROUGH COUNTY, FLORIDA
FINDING OF NO SIGNIFICANT IMPACT**

I have reviewed the Environmental Assessment (EA) of the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment attached hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. The proposed work would not jeopardize the continued existence of any endangered or threatened species.
2. The State Historic Preservation Officer concurred with the U.S. Army Corps of Engineers' determination that there would be no effect on historic properties associated with the maintenance dredging of Manatee Harbor.
3. State water quality standards will be met.
4. The proposed project has been determined to be consistent with the Florida Coastal Zone Management Program.
5. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.
6. Benefits to the public will be creation of 75 acres of estuarine habitat, upland Dredged Material Management Area life extension, increased water quality from wetland filtration and continued local economic stimulus.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

15 AUGUST 2002
Date



JAMES G. MAY
Colonel, Corps of Engineers
Commanding

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1. Purpose and Need for Action

1.1 Introduction.

The Jacksonville District, US Army Corps of Engineers is considering using dredged material to create inter-tidal estuarine habitat in Tampa Bay at the Cockroach Bay Restoration Project. The District is the responsible federal agency for maintaining Tampa Harbor, Florida. The dredged material is typically placed in upland Dredged Material Management Areas (DMMA). These areas are limited and have a certain life expectancy before additional areas are required. Nationwide the US Army Corps of Engineers has created a program to use dredged material for beneficial purposes, thus extending the life of the existing DMMA's.

1.2 Authority.

This study is authorized under Section 204 of the Water Resources Development Act of 1992.

1.3 Decision to be Made.

The decision to be made is whether to use dredged material for this purpose and from what source(s) it would be economically and environmentally sound to accomplish this task.

1.4 Relevant Issues

- a. Water quality
- b. Benthos
- c. Hazardous, Toxic and Radioactive Waste (HTRW)
- d. Seagrass
- e. Fisheries
- f. Manatees
- g. Wetlands
- h. Migratory Birds
- i. Historic Properties
- j. Aesthetics
- k. Recreation
- l. Economics

m. Navigation

1.5 Permits Required.

The dredging and placement of the dredged material would require a Florida Department of Environmental Protection (DEP) Water Quality Certification in accordance with the Memorandum of Understanding between DEP and the US Army Corps of Engineers, and in accordance with Section 401 of the Clean Water Act. In addition, the work must be consistent to the maximum extent practicable with the Florida Coastal Zone Management Program.

1.6 Methodology.

An interdisciplinary team used a systematic approach to analyze the affected area, to estimate the environmental effects, and to write the environmental impact assessment. This included literature searches, coordination with agencies and private groups having expertise in particular areas, and field investigations.

2. ALTERNATIVES.

2.1 INTRODUCTION.

The Alternatives section is the heart of this Environmental Assessment. This section describes in detail the no-action alternative, the proposed action, and other reasonable alternatives that were studied in detail. Then based on the information and analysis presented in the sections on the Affected Environment and the Probable Impacts, this section presents the beneficial and adverse environmental effects of all alternatives in comparative form, providing a clear basis for choice among the options for the decisionmaker and the public. A summary of this comparison is located in the alternative comparison chart Table 1, page 6-7. This section has five parts:

- a. A description of the process used to formulate alternatives.
- b. A description of alternatives that were considered but were eliminated from detailed consideration.
- c. A description of each alternative.
- d. A comparison of the alternatives.
- e. The identification of the preferred alternative.

2.2 HISTORY OF ALTERNATIVE FORMULATION.

In our search for Beneficial Uses of Dredged Material (a Corps sponsored program with environmental benefits as its goal) and during meetings with the Habitat Restoration Committee of the Tampa Bay Regional Planning Council Agency on Bay Management, various restoration projects were identified. Some of the projects in Tampa Bay could use dredged material to assist in the restoration effort. Cockroach Bay Project was identified as one project requiring material to fill the former shell mining pits. As part of the responsibilities to construct and maintain the navigation channel in Tampa Bay and now, with the mission of Section 204 of Water Resources

Development Act of 1992 to look for ways of using dredged material in a beneficial way, the Corps has a vast knowledge of sources of material that could be used for this purpose.

2.3 ELIMINATED ALTERNATIVES.

Based on the Corps' 5-year maintenance dredging cycle, the current navigation studies, and those already approved, we have located the following sources of dredged material:

- a. Source 1-Tampa Harbor – Egmont Channel Maintenance
- b. Source 2-Tampa Harbor – Cut G Area Channel Maintenance
- c. Source 3-Dredged Material Management Area CMDA-2D Offloading
- d. Source 4-Dredged Material Management Area CMDA-3D Offloading
- e. Source 5-Manatee Harbor Maintenance
- f. Source 6-St. Petersburg Harbor Maintenance
- g. Source 7-Tampa Harbor – Big Bend Construction
- h. Source 8-Tampa Harbor – Alafia River Expansion
- i. Source 9-Manatee Harbor Phase II Construction
- j. Source 10-Tampa Harbor – Alafia River Maintenance
- k. Source 11-Manatee Harbor Dredged Material Management Area Offloading
- l. Source 12-Alafia River Dredged Material Management Area Offloading

Based on the evaluation criteria, a number of the sources were eliminated in the initial stages from further consideration. Additionally, per authority Section 204 of the 1992 Water Resources Development Act (WRDA), the proposed project must be in connection with dredging for construction, operation, or maintenance of an authorized Federal navigation project. Source 3, 4, 11, and 12 were eliminated at this stage, because these sources consisted of existing disposal areas and were not in accordance with the prescribed regulations. Therefore, they were eliminated from further study.

At this stage, those sources that met the initial requirements were evaluated in greater detail. Source 1 was eliminated because it did not contain the necessary volume of material. Approximately 100,000 cubic yards of material is available from this site which is less than the estimated quantity of 600,000 cubic yards required for deposition at the pits. Although the quantity of material may be sufficient, Source 2 was eliminated due to the material at this site being previously designated for use at MacDill Air Force Base. Source 5 was eliminated because

it did not contain the required volume of material nor the maintenance cycle acceptable for the proposed project.

Source 6 was eliminated because the availability due to its maintenance cycle rendered it unacceptable and the material had been previously committed for use at Egmont Channel. Source 7 was eliminated because it is considered a potential project and has yet to be constructed. Also, upon construction, the excavated material has a previously designated use. Source 8 was eliminated because it has yet to be constructed and is considered a potential project. Though the volume of material is acceptable, Source 10 was eliminated due to the uncertainty of when maintenance activities would be performed.

After comparing the available sources according to the prescribed evaluation criteria, the Manatee Harbor – Phase II Construction Project, contains an adequate amount of available material, it is relatively close to the disposal site, and is in accordance with Section 204 guidance.

2.4 DESCRIPTION OF SOURCE ALTERNATIVES.

2.4.1 Source 9 - Manatee Harbor Phase II Construction Dredging.

Up to 600,000 cubic yards of material would be dredged from the area of Manatee Harbor known as the widener and transported to Cockroach Bay via hydraulic dredge and pipeline, clamshell dredge to a barge with pump-out capabilities via pipeline or hopper dredge with pump out capabilities via pipeline. Impacts of the dredging have been previously addressed in the Manatee Harbor Phase II Feasibility Study.

2.5 DESCRIPTION OF COCKROACH BAY RESTORATION ALTERNATIVES

2.5.1 No Action Alternative.

The Federal government would not participate in this restoration using dredged material from either the construction of a new navigation project or the maintenance of an existing one.

2.5.2 Alternative 4 - North Pit Dredged Material Placement

This alternative includes filling of the north and south pits within the Cockroach Bay Restoration Area with approximately 400,000 cubic yards of dredged material from Manatee Harbor Phase II Construction. Methods of dredging and transportation include clamshell with barging and pump-out through a pipeline, hydraulic dredging with pipeline or hopper dredge and pump-out through a pipeline. The dredged material would be landscaped to provide 50 acres of various aquatic/estuarine habitats within the pits. The pipeline used would be placed to avoid seagrass beds along the shoreline and in the recreational navigation channel. There would be 7 water control structures and 2 flap-gate culverts constructed at various places around the pits to control tidal flows, freshwater flow, and water levels in the pits. Several existing islands used as bird rookeries would be expanded. The shoreline would be altered with the addition of several peninsulas. The shallow-water areas would be vegetated with *Spartina sp.*

2.5.3 Alternative 5 - South Pit Dredged Material Placement

This alternative includes filling of the north and south pits within the Cockroach Bay Restoration Area with approximately 200,000 cubic yards of dredged material from Manatee Harbor Phase II Construction. Methods of dredging and transportation include clamshell with barging and pump-out through a pipeline, hydraulic dredging with pipeline or hopper dredge and pump-out through a pipeline. The dredged material would be landscaped to provide 25 acres of various aquatic/estuarine habitats within the pits. The pipeline used would be placed to avoid seagrass beds along the shoreline and in the recreational navigation channel. There would be 7 water control structures and 2 flap-gate culverts constructed at various places around the pits to control tidal flows, freshwater flow, and water levels in the pits. Several existing islands used as bird rookeries would be expanded. The shoreline would be altered with the addition of several peninsulas. The shallow-water areas would be vegetated with *Spartina sp...*

2.5.4 Alternative 6 - North and South Pit Dredged Material Placement.

This alternative includes filling of the north and south pits within the Cockroach Bay Restoration Area with approximately 600,000 cubic yards of dredged material from Manatee Harbor Phase II Construction. Methods of dredging and transportation include clamshell with barging and pump-out through a pipeline, hydraulic dredging with pipeline or hopper dredge and pump-out through a pipeline. The dredged material would be landscaped to provide 75 acres of various aquatic/estuarine habitats within the pits. The pipeline used would be placed to avoid seagrass beds along the shoreline and in the recreational navigation channel. There would be 7 water control structures and 2 flap-gate culverts constructed at various places around the pits to control tidal flows, freshwater flow, and water levels in the pits. Several existing islands used as bird rookeries would be expanded. The shoreline would be altered with the addition of several peninsulas. The shallow-water areas would be vegetated with *Spartina sp..*

2.6 PREFERRED ALTERNATIVE.

The preferred alternative is the placement of Dredged Material from the Manatee Harbor Phase II Construction in both the North and South Pit with all the applicable culverts for freshwater input and saltwater exchange. This would also include the construction of 7 stop-log weir structures and 2 flap-gate culverts. This alternative would have minimal impacts while yielding great benefits by creating 75 acres of estuarine habitat and extending the useable life of the Manatee Harbor Dredged Material Management Area (DMMA).

3. ALTERNATIVE COMPARISON

Table 1, Alternative Comparison

RESOURCE	NO ACTION	DREDGING	NORTH PIT RESTORATION	SOUTH PIT RESTORATION	NORTH AND SOUTH PIT RESTORATION
WATER QUALITY	Continued Bay degradation from agricultural runoff	Increased turbidity at dredging site. Turbidity controlled to meet State standards.	Turbidity and Sedimentation controlled at placement site , no impact on Bay from effluent. Short-term input to pits of salt-water. Long-term reversal to saltwater system from freshwater runoff input. Long-term water quality improvement to adjacent Bay from nutrient uptake in pits.	Turbidity and Sedimentation controlled at placement site , no impact on Bay from effluent. Short-term input to pits of salt-water. Long-term reversal to saltwater system from freshwater runoff input. Long-term water quality improvement to adjacent Bay from nutrient uptake in pits.	Turbidity and Sedimentation controlled at placement site , no impact on Bay from effluent. Short-term input to pits of salt-water. Long-term reversal to saltwater system from freshwater runoff input. Long-term water quality improvement to adjacent Bay from nutrient uptake in pits.
BENTHOS	A long-term minor impact on benthos in Cockroach Bay from degraded water quality	Benthic organisms eliminated at the Dredging site.	Freshwater benthic organisms eliminated in pits, long-term replaced with	Freshwater benthic organisms eliminated in pits, long-term replaced with	Freshwater benthic organisms eliminated in pits, long-term replaced with

RESOURCE	NO ACTION	DREDGING	NORTH PIT RESTORATION	SOUTH PIT RESTORATION	NORTH AND SOUTH PIT RESTORATION
	entering from the pits		increased biodiversity and biomass from estuarine benthic organisms	increased biodiversity and biomass from estuarine benthic organisms	increased biodiversity and biomass from estuarine benthic organisms
HTRW	No impact	No impact	No impact	No impact	No impact
SEAGRASSES	Reduced growth from poor water quality entering Cockroach bay.	No impact from dredging - turbidity will be controlled at the edge of the seagrass beds.	Increased growth from improved water quality near project. No impacts during transportation due to avoidance	Increased growth from improved water quality near project. No impacts during transportation due to avoidance	Increased growth from improved water quality near project. No impacts during transportation due to avoidance
FISHERIES	No impact	Minor impact on fish near dredging site - turbidity will chase some species away while suspension of organisms will attract others	Increased habitat from seagrass improvement and 50 acres estuarine habitat creation for nursery and cover. Extirpation of freshwater fish in pits.	Increased habitat from seagrass improvement and 25 acres estuarine habitat creation for nursery and cover. Extirpation of freshwater fish in pits.	Increased habitat from seagrass improvement and 75 acres estuarine habitat creation for nursery and cover. Extirpation of freshwater fish in pits.
MANATEES	No impact	Minor potential for impacts during dredging. Potential significantly reduced by implementing protection measures.	No Impact	No Impact	No impact
WETLANDS	No impact	No Impact	50 acre increase in wetland habitat, 25 acres of which would be	25 acre increase in wetland habitat 8.8 acres of which would be	75 acre increase in wetland habitat 33.8 acres of which would be

RESOURCE	NO ACTION	DREDGING	NORTH PIT RESTORATION	SOUTH PIT RESTORATION	NORTH AND SOUTH PIT RESTORATION
			planted in Spartina	planted in Spartina	planted in Spartina
MIGRATORY BIRDS	No impact	No Impact	Increase in wading, feeding, loafing and nesting habitat. Minor impact on nesting at the placement site. Potential Impacts minimized by implementing bird protection plan or avoid working during the nesting season	Increase in wading, feeding, loafing and nesting habitat. Minor impact on nesting at the placement site. Impacts minimized by implementing bird protection plan or avoid working during the nesting season	Increase in wading, feeding, loafing and nesting habitat. Minor impact on nesting at the placement site. Potential Impacts minimized by implementing bird protection plan or avoid working during the nesting season
HISTORIC PROPERTIES	No impact	No impact	No impact	No impact	No impact
AESTHETICS	No impact	Minor impact from presence and operation of dredging equipment in a port navigation channel	Minor impact along pipeline route at the recreational navigation channel and boat-launching ramp.	Minor impact along pipeline route at the recreational navigation channel and boat-launching ramp.	Minor impact along pipeline route at the recreational navigation channel and boat-launching ramp.
RECREATION	No impact	Minor disruption to recreational navigation	Minor disruption at boat launching ramp and recreational navigation channel	Minor disruption at boat launching ramp and recreational navigation channel	Minor disruption at boat launching ramp and recreational navigation channel
ECONOMICS	Limited disposal area capacity limiting maintenance and new work projects.	-Provides benefit to restoration project by providing low cost source of fill material. -Provides benefit to Harbor by	-Provides benefit to restoration project by providing low cost source of fill material.	-Provides benefit to restoration project by providing low cost source of fill material.	-Provides benefit to restoration project by providing low cost source of fill material.

RESOURCE	NO ACTION	DREDGING	NORTH PIT RESTORATION	SOUTH PIT RESTORATION	NORTH AND SOUTH PIT RESTORATION
		<p>extending DMMA life</p> <p>Short-term stimulus to local economy from sale of goods and service in support of construction</p>	<p>-Provides benefit to Harbor by extending DMMA life</p> <p>Short-term stimulus to local economy from sale of goods and service in support of construction</p>	<p>-Provides benefit to Harbor by extending DMMA life</p> <p>Short-term stimulus to local economy from sale of goods and service in support of construction</p>	<p>-Provides benefit to Harbor by extending DMMA life</p> <p>Short-term stimulus to local economy from sale of goods and service in support of construction</p>
NAVIGATION	Limited upland dredged material disposal capacity	Maintains channel, extends harbor DMMA project life.	Extends DMMA project life.	Extends DMMA project life.	Extends DMMA project life.

4. AFFECTED ENVIRONMENT.

4.1 INTRODUCTION.

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that would be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the baseline conditions for determining the environmental impacts of the proposed action and reasonable alternatives. The environmental issues that are relevant to the decision to be made are the following:

- a. Water quality
- b. Benthos
- c. Hazardous, Toxic and Radioactive Waste (HTRW)
- d. Seagrass
- e. Fisheries
- f. Manatees
- g. Wetlands
- h. Migratory Birds
- i. Historic Properties
- j. Aesthetics
- k. Recreation
- l. Economics
- m. Navigation

4.2 GENERAL DESCRIPTION.

Tampa Bay is the largest estuary on the west coast of Florida (USFWS, 1984). As humans developed the Bay, the resources have been impacted. The Bay has been excavated for navigation purposes; islands and fast land have been created from the dredged material; ports and residential development have encroached on the aquatic environment; and numerous effluents have been discharged into the Bay. Tampa Bay has mangrove and emergent wetlands along the fringe of the bay where development has not occurred. These wetland areas provide cover and spawning areas for fish and shrimp. The mature mangroves provide nesting areas for birds such as the pelican. These wetlands cause improved water quality of the Bay from trapping sediments and nutrient uptake.

4.3 COCKROACH BAY RESTORATION SITE.

The project site is located within the Cockroach Bay Aquatic Preserve. This preserve is a 651-acre tract located along the southeast shoreline of Tampa Bay between Cockroach Bay and Little Cockroach Bay. The site contains 150 acres of inter-tidal habitat and 500 acres of abandoned agricultural lands and decommissioned mining lands (Leisey Shell Pits).

4.4 LEISEY SHELL PITS.

The decommissioned Leisey Shell pits encompass about 70 acres in the northern portion of the Cockroach Bay Aquatic Preserve. Prior to mining both were upland sites. Presently they are ponds with vertical sides and bottom depths ranging from 9 to 15 feet. The northern pond is the larger of the two covering about 50 acres. Neither pond supports submerged aquatic vegetation and, with vertical shorelines, emergent vegetation is limited. The northern pond has scattered white mangroves (*Laguncularia racemosa*) at the waterline and the pond is surrounded by an almost continuous barrier of Brazilian pepper (*Schinus terebinthifolius*) interspersed with Australian pine (*Casuarina* sp.) and cabbage palm (*Sabal palmetto*). The southern pond has discontinuous patches of cattails (*Typha latifolia*) along the shoreline. The land around the southern pond has been disturbed recently and vegetation is limited to species seeded to provide rapid land cover. White sweet clover (*Melilotus alba*) is the dominant plant surrounding the pond.

Fish use of both ponds was monitored through the SWIM program from 1991 to 1994 for comparison with post project conditions. Seven species of killifish (Cyprinodontidae) and two species of livebearers (Poeciliidae) were the only fishes collected. These two groups of fish and typical coastal marsh residents adapted to stressful conditions (Stickney, 1984; Myers and Ewell, 1990). The presence of only these two groups of fish, the absence of large predatory species, and the results of water quality sampling conducted by SWIM from October 1992 to March 1994 (SWIM, unpublished) indicates water quality in the ponds is poor or marginal for supporting aquatic biota.

Bird use of the pit areas was monitored monthly through the SWIM program from November 1991 through 1996, with additional surveys conducted by the National Audubon Society. Ninety-three species were confirmed using the pits. Of those, anhingas (*Anhinga anhinga*), double-crested cormorants (*Phalacrocorax auritus*), and cattle egrets (*Bubulcus ibis*) were noted as nesting. Four additional species were observed nesting on May 7, 1998; great egrets (*Casmerodius albus*), little blue herons (*Egretta caerulea*), tricolored herons (*Egretta tricolor*) and black-crowned night-herons (*Nycticorax nycticorax*).

Nesting is occurring on two small islands and a snag in the northern pond. The islands are vegetated with Brazilian pepper and cabbage palms, with most nesting taking place in the peppers. Conditions which appear to facilitate the use of the islands as nesting sites are their distance from the shore, the deep water between shore and the islands, and the presence of alligators (*Alligator mississippiensis*), which deter raccoons (*Procyon lotor*) from moving onto them.

4.5 RELEVANT ISSUES.

4.5.1 Physical.

- a. Water quality. Tampa Bay receives storm-water runoff from agricultural and residential areas of Pinellas, Hillsborough and Manatee Counties as well as discharges from sewage treatment plants and other facilities. As a result bay waters are high in

nitrogen and phosphorous and turbidity has reduced light penetration to 8 feet or less in many areas. The water quality tends to improve as the entrance to the bay is approached. West of the Sunshine Skyway Bridge water quality improves markedly as the bay meets the Gulf of Mexico. Phase I of the Cockroach Bay project has been constructed, creating an inter-tidal marsh and ponds with mangroves and *Spartina sp.*. Two large pits are located adjacent to the Phase I. Freshwater surface-water runoff is collected in these pits from adjacent agricultural lands through a culvert under the county road connecting to Hunter Lake. Several freshwater wells are located in the area of the pits. A combination of deep, poorly flushed holes and agricultural runoff containing fertilizers results in over abundance of algae in the pits which reduces oxygen levels and results in anoxic conditions in the bottom layers. During storm events, this anoxic, highly enriched water can be discharged to Cockroach Bay resulting in significant degradation of water quality in the vicinity.

- b. Hazardous, Toxic and Radioactive Waste (HTRW). The Restoration site was determined to show no evidence of hazardous or toxic waste. This determination was based on record review, aerial photography, site reconnaissance, interviews and other reports. There was little potential largely due to the shell pit mining operation that had existed on-site. There were no remaining indicators of potential contamination sources such as spills or corroded containers.

4.5.2 Biological.

- a. Benthos. The benthic areas within the navigation channel are subject to constant sedimentation. There would likely be a few organisms within the 43-foot depths. Clams and oyster beds are located along the shoreline of the aquatic preserve. A 41-acre hardbottom community is located in the shallows of the Bay north of the project at 27°41'58"N, 82°31'23"W.
- b. Manatees. The Florida manatee, *Trichechus manatus*, is a federally listed endangered species. They use the estuary for feeding, resting and traveling. They are especially known to congregate around the areas of seagrasses and warm water outfalls associated with manufacturing and power generation. They also travel along the shallow water areas of the Bay foraging on seagrasses. They can not enter the water bodies connecting to the Leisey shell pits because of the shallow water depths.

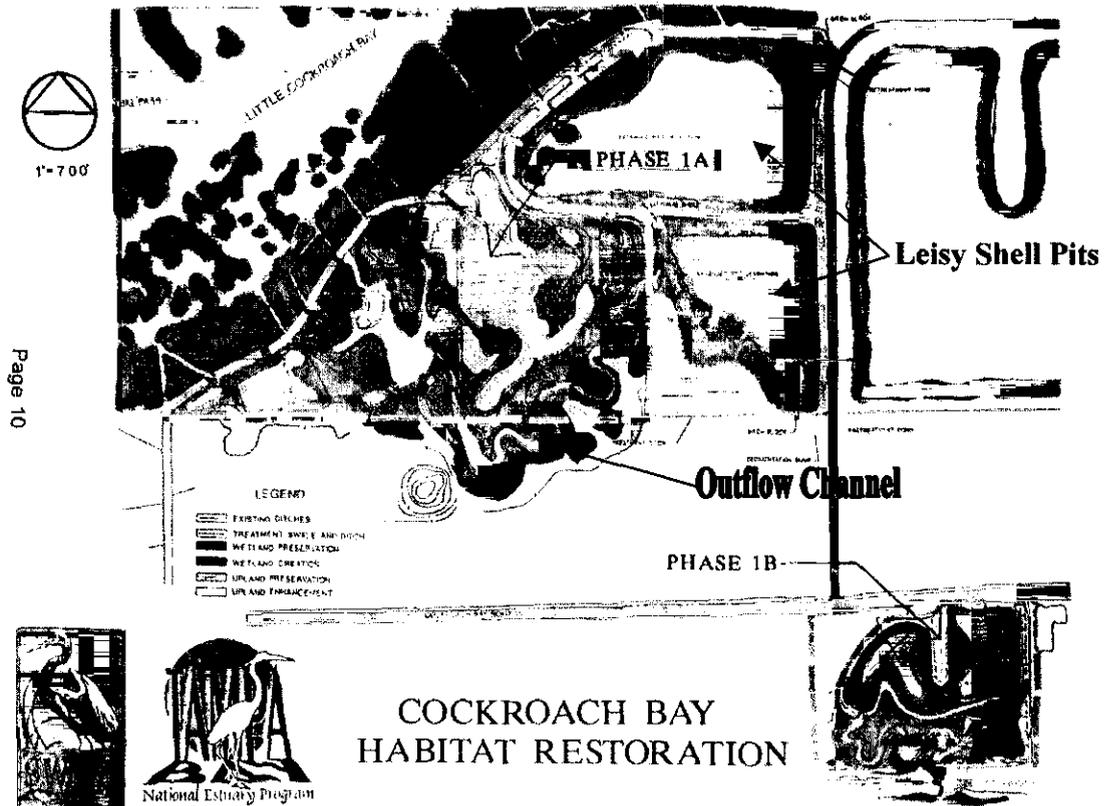


Figure 2, Site Location

- c. Fisheries. The Bay supports a wide variety of aquatic life including the American oyster which is harvested from the lower Tampa Bay, three species of clams, blue crab, and numerous species of fish: the red drum, spotted seatrout, snook, sheephead, southern flounder, Florida pompano, striped mullet, Gulf menhaden, and the black drum (USFWS, 1984). Many offshore fish spend their juvenile stages in the Bay estuary. These include the red and gag groupers, jewfish, scamp, and the red and mangrove snappers. The shell pits were surveyed from 1991 to 1994 (USFWS, 1998). Seven species of killifish (*Cyprinodontidae*) and two species of live bearers (*Poeciliidae*) were the only fish collected. The USFWS characterized these fish as typical coastal marsh species adapted to stressful conditions; i.e., freshwater surges during storm events.
- d. Seagrass. Five species of seagrasses are found in the Bay; turtlegrass, shoalgrass, manateegrass, widgeon grass, and *Halophila engelmannii* (Lewis, 1984). Seagrass beds are located along the shoreline in the aquatic preserve. Seagrass beds offer habitat for juvenile species of red drum, spotted sea trout, silver perch, sheephead and snook (USFWS, 1998). The recreational navigation channel which connects the

boat launching ramp at Cockroach Bay Road to Tampa Bay was surveyed by the US Fish and Wildlife Service for seagrasses (USFWS, 1998). Most of the channel is free from seagrasses except for a small segment of channel between markers 3 and 5. The south side of the channel or just outside the south side of the channel at this location is free of seagrasses. No seagrasses are located in the Leisey Shell Pits

Seagrass Beds in Vicinity of Project

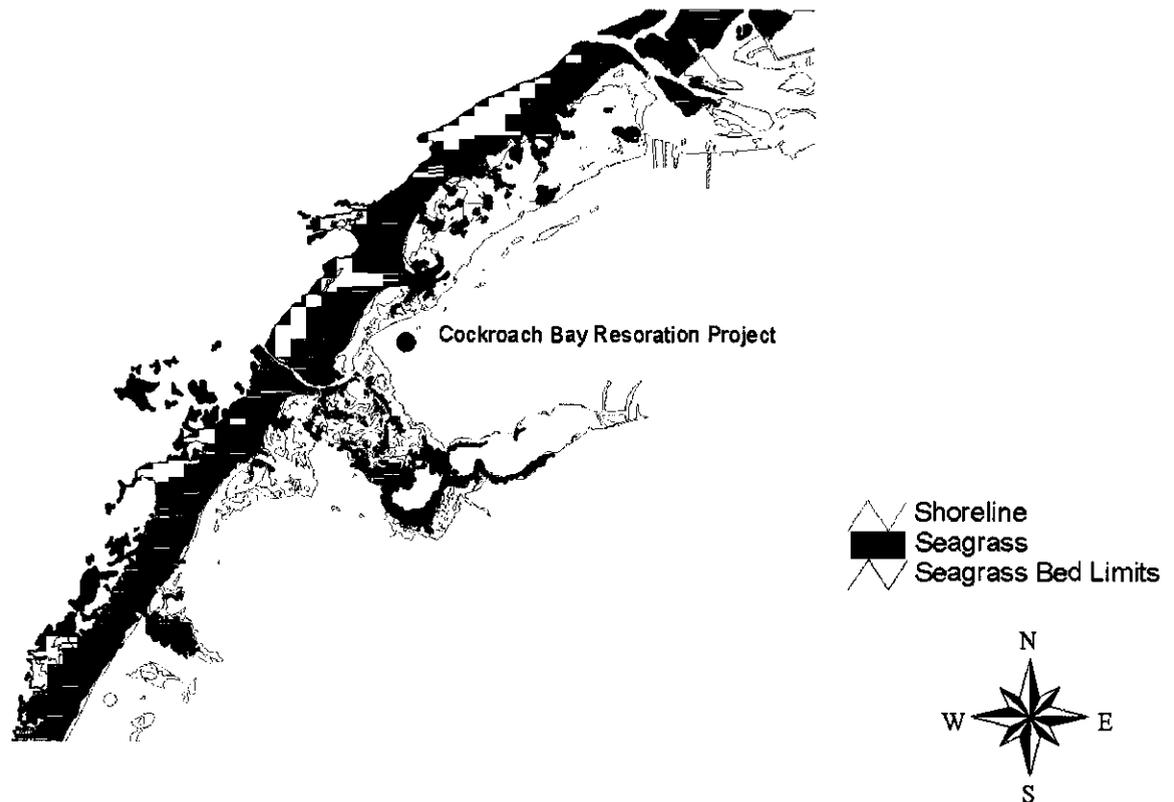


Figure 3, Seagrass Map

- e. Wetlands. Mangrove and saltmarsh wetlands are located along the shoreline of the Bay in the project area. These wetlands provide wading, nesting and foraging areas for a wide variety of shorebirds. The mangroves also provide cover for juvenile fish. Over the years the Bay has experienced a loss of wetlands from development. Mangroves are located along Cockroach Bay. The area adjacent to the pits is part of the Cockroach Bay Aquatic Preserve. Neither ponds supports aquatic vegetation, and emergent vegetation along the shoreline is limited (USFWS, 1998). Some scattered white mangrove is located along the edge of the north pond. The south pond has a

continuous bed of cattail. Mangroves line the bank of the outside of the berm that separates the north pond from the Bay.

- f. **Migratory Birds.** The Bay is home to a wide variety of birds; Gulls, terns, sandpipers, plovers, stilts, skimmers and oystercatchers are known to inhabit the Bay. Ninety-three species of birds are located in and around the pits within the Cockroach Bay Aquatic Preserve (USFWS, 1998). Of these, anhingas, double-crested cormorants, and cattle egrets nested in this area as well as great egrets, little blue herons, tricolored herons and black-crowned night herons that were observed by USFWS on a May, 7, 1998, field trip. Nesting occurs on the two small islands in the pits that are vegetated with Brazilian pepper and cabbage palms. Successful nesting has been attributed to the presence of alligators that deter raccoon.

4.5.3 Social.

- a. **Historic Properties.** An archival and literature review, including a review of the current National Register of Historic Places listing, was conducted to determine if significant cultural resources are present in the project area. Four recorded archeological sites are located in the general vicinity of the project area, one of which is the National Register Site, 8Hi2. None of these sites will be impacted by project construction. A cultural resources survey was completed in November 2000 of the immediate areas around the mining pits and the outflow area to the south. One isolated find and an archeological site were located. The one site, 8HI6928, lacks preserved features and is not considered eligible for listing on the National Register. In a letter dated January 21, 1997, the SHPO recommended that no further cultural resources investigations are necessary for the maintenance-dredging portion of the project.
- b. **Recreation.** The dredging area is located in the Tampa Harbor navigation channel. Large recreational vessels use this channel to transit to and from various mooring facilities throughout the Bay and the Gulf of Mexico or other recreational parts of the Bay. The Upland DMMA's are used for birdwatching, fishing and picnicking. Since the start of the Cockroach Bay Restoration Project, Phase I has created aquatic habitat that is being used for fishing and bird watching.
- c. **Aesthetics.** The aesthetics of the source material area is within a commercial navigation area, which see large ocean going cargo vessels, fishing vessels and large recreation craft transiting the area. Since the restoration project is under construction some phases of the total project have a disturbed setting to them. Other phases have new vegetative growth. Most of the area has a rural agricultural setting.

4.5.4 Economics.

- a. **Navigation.** The navigation channel allows transportation of international and domestic cargo to and from the Port of Tampa. This provides long-term economic

stimulus to the economy of Tampa metropolitan area and the generation of revenues from the sale of goods and services to public. The upland Dredged Material Management Area provides a long-term containment area for dredged material.

- b. **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.

5. ENVIRONMENTAL CONSEQUENCES.

5.1 INTRODUCTION.

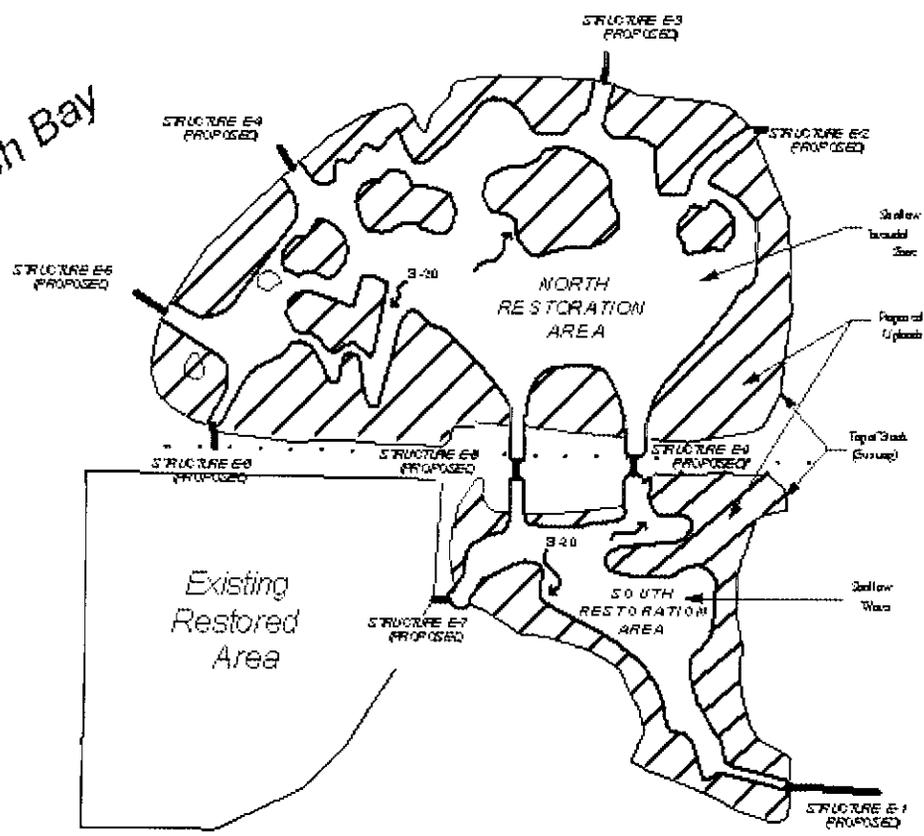
This section describes the probable consequences of implementing each alternative on selected environmental resources. These resources are directly linked to the relevant issues listed in Section 1.4 that have driven and focus the environmental analysis. The following includes anticipated changes to the existing environment including direct and indirect impacts, irreversible and irretrievable commitment of resources, unavoidable effects and cumulative impacts.

5.1.1 Cumulative Impacts.

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

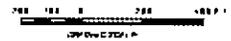


Cockroach Bay



Legend:

- TOP OF BANK
- CULVERT
- ▨ Proposed Uplands (Typical)




 DEPARTMENT OF ECOLOGY
 AND ENVIRONMENTAL SERVICES
 STATE OF MARYLAND

PROJECT	NO. 1000	DATE	10/10/00	DRAWN BY	J. H. HARRIS
DESIGNED BY	DATE	SCALE	PROJECT NO.	DATE	SCALE
APPROVED BY	DATE	SCALE	PROJECT NO.	DATE	SCALE

COCKROACH BAY RESTORATION PLAN
 PROJECT NO. 1000

SHEET
 03

5.1.2 Irreversible and Irretrievable Commitment of Resources.

- a. Irreversible. An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. One example of an irreversible commitment might be the mining of a mineral resource.
- b. Irretrievable. An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose; opportunities to use or enjoy the resource as they presently exist are lost for a period of time. An example of an irretrievable loss might be where a type of vegetation is lost due to road construction.

5.2 NO ACTION ALTERNATIVE

5.2.1 Physical.

- a. Water quality. There would be continued water quality degradation from the agricultural run-off entering and exiting the Leisey Shell Pits.
- b. Hazardous, Toxic and Radioactive Waste (HTRW). There would be no HTRW impacts.

5.2.2 Biological

- a. Benthos. There would be a long-term minor impact on benthos in Cockroach Bay from degraded water quality entering from the pits.
- b. Manatees. There would be no impacts on manatees.
- c. Wetlands. There would be no adverse impact on wetlands.
- d. Fisheries. There would be a long-term minor impact on fisheries in Cockroach Bay from degraded water quality entering from the pits.
- e. Seagrass. There would be reduced productivity of the seagrasses in Cockroach Bay Aquatic Preserve from the poor water quality from the agricultural run-off that currently enters and exits the Leisey Shell Pits. This nutrient rich water causes increased algal growth which limits light penetration which is needed by the seagrasses.
- f. Migratory Birds. There would be no impacts on migratory birds.

5.2.3 Social.

- a. Historic Properties. There would be no affect on historic properties included in or eligible for inclusion in the National Register of Historic Places.
- b. Recreation. There would be no impact on recreation.
- c. Aesthetics. There would be no impacts on aesthetics.

5.2.4 Economic.

- a. Navigation. There would no impacts on navigation. There would be a long-term limited capacity of upland Dredged Material Management Area for Manatee Harbor from the placement of dredged material.
- b. Economics. There would be a long-term impact on the local economy from limited DMMA capacity over the life of the project. Once these areas are filled they would have to be rehabilitated or new ones created, thus, inhibiting new project growth or slowing maintenance of the existing navigation channels.

5.2.5 Cumulative effects.

If this action was considered in conjunction with other similar projects and similar No Actions, there would be no cumulative adverse impact.

5.2.6 Unavoidable effects.

There would be no unavoidable impacts.

5.2.7 Irreversible and Irretrievable Resource Commitments.

There would be no irreversible or irretrievable commitment of resources from the selection of this alternative.

5.3 SOURCE 9 - MANATEE HARBOR PHASE II DREDGING.

The following was taken from the Manatee Harbor Phase II General Design Memorandum

5.3.1 General Environmental Effects

The project would directly impact seagrasses, and shallow bay bottom would be lost. There would be a temporary impact on the marine environment as a result of the dredging operations. This is associated with the degradation of water quality in the channel area. Dredging would result in the destruction of benthic populations, as well as temporary disruption of fish populations, aquatic ecosystems and food chains in the area.

5.3.2 Vegetation

Dredging in the deep open water areas would not have an impact on vegetation since vegetation is not present in these areas. Dredging can impact surrounding seagrass beds by clouding the water, inhibiting light penetration to seagrasses.

5.3.3 Threatened And Endangered Species

Vessel traffic and dredge operations present a potential threat to endangered and threatened species. Compliance with the Biological Opinion from the USFWS would reduce this potential threat. The proposed project was coordinated with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service in accordance with the Endangered Species Act. The agencies agreed that the proposed work would not adversely affect listed species under their jurisdiction. However, if a hopper dredge or explosives are used to excavate navigation channels, the potential to adversely affect sea turtles and/or manatees exists. If blasting were required, the Corps would abide by the manatee protection measures for manatees' set forth by the U.S. Fish and Wildlife Service to prevent injury to manatees and sea turtles. If it is decided that a hopper dredge would be used, further coordination with the National Marine Fisheries Service will be required.

5.3.4 Hardgrounds

No impact to hardground habitat would be expected.

5.3.5 Fish And Wildlife Resources

The dredged areas (-40 feet m.l.w.) may be too deep to support an appreciable amount of benthic life, because it would be below the zone of sunlight penetration and low in dissolved oxygen (USFWS, 1991).

5.3.6 Migratory Birds:

There may be a temporary adverse impact on migratory nesting should the construction occur during the 1 April through 31 August timeframe. However, implementing the U.S. Army Corps of Engineers, Jacksonville District's Migratory Bird Protection Policy, would minimize the impact. If the work occurs outside this timeframe, there would be no adverse impact on these birds. There would be a long-term moderate benefit to nesting by providing additional suitable habitat for nesting as proposed in the Mitigation Plan.

5.3.7 Essential Fish Habitat

Impacts to seagrasses, estuarine sand substrate and estuarine water column and Federally managed species are addressed in the EFH.

5.3.8 Historic Properties

Three targets were recommended for further study and will require diver evaluation.

5.3.9 Aesthetics

The aesthetic resources at Manatee Harbor are limited. The proposed work would not adversely affect aesthetic resources at the port facility. Aesthetic resources in the general area of Tampa Bay would be temporarily impacted by the presence of the dredge and other construction equipment.

5.3.10 Recreation

There would be a temporary adverse affect on recreational fishing in the immediate project area due to construction activities and turbidity. Long-term adverse effects are not expected from this project.

5.3.11 Water Quality

Water quality conditions would be degraded during dredging operations. The work would result in elevated turbidity and suspended solids at the dredge site and discharge site from the upland disposal area. Turbidity would be controlled during dredging by using floating turbidity screens between dredging operations and sensitive resources not to be disturbed (Gee & Jenson, Inc.,1999). Conditions within the dredge and disposal sites should return to normal shortly after the work is completed. Long-term quality impacts associated with the project would result from erosion or storm water runoff, if not properly managed. Work would be required to comply with conditions specified in a Water Quality Certificate, which is issued by the State of Florida.

5.3.12 Hazardous, Toxic, And Radioactive Waste

The preliminary assessment indicated that no hazardous, toxic, radioactive (HTRW), or other harmful substances are impacting the project area. However, if contaminants are found during project construction, the site must be remedied. Contamination chemicals if not detected during the site assessment, may be disturbed or released by the project. Past experience has shown that the highly permeable ground substrate of the area results in rapid dilution of the residual contaminants.

5.3.13 Air Quality

The short-term impact from emissions by construction equipment associated with the project would not significantly impact air quality.

5.3.14 Noise

With the implementation of the proposed action there would be a temporary increase in the noise level during construction. Construction equipment would be properly maintained to minimize the effects of noise. There would be no noise-related impacts associated with the no action alternative.

5.3.15 Navigation

Completion of the project would have a favorable impact on navigation. The proposed project would offer better access and safer navigation for vessels utilizing Manatee Harbor regardless of the tides. The no action alternative will not improve navigation for port users. Port users will continue to be restricted by tides.

5.3.16 Cumulative Impacts

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). At this time, there are no known projects or activities of this type ongoing or planned in the Tampa Bay region. However, there is an ongoing study to extend the south

channel at Port Manatee. The channel extension would be located south of Berth 11 and allow construction and operation of a new berthing facility.

The regional economy as well as the port facility would be negatively impacted if the proposed project would not be constructed.

5.3.17 Irreversible And Irretrievable Commitment Of Resources

5.3.18 Irreversible

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. Energy and fuel used during construction would be an irreversible commitment of resources.

5.3.19 Irretrievable

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. Benthic organisms within the dredged area that would be eliminated during construction would be irretrievably lost for a period of time. However, the high rate of repopulating expected from these organisms reduces the significance of loss.

5.3.20 Unavoidable Adverse Environmental Effects

Temporary loss of benthic organisms, permanent loss of partially vegetated shallow bay bottom would occur. Probable increases in traffic due to port expansion would result in moderate increases in the overall noise level.

5.3.21 Local Short-Term Uses And Maintenance/Enhancement Of Long-Term Productivity

It is recognized that maintenance dredging of Port Manatee channel is a continual effort. No acceptable and permanent one-time fix has been identified. Periodic maintenance dredging is an ongoing effort. Dredging efforts have a temporary and short-term impact on the biological resources. Although the project area would be environmentally stressed during dredging operations, all systems are expected to return to original balances shortly after the work is complete

5.4 ALTERNATIVE 4 - NORTH PIT RESTORATION WITH CULVERTS

5.4.1 Physical.

- a. Water quality. There would be a major impact on water quality in the both pits from the placement of slurred dredged material into the pits. The north pit would experience sedimentation from the direct placement while the south pit would provide additional settling before the return water is allowed to enter Cockroach Bay. In the long-term, local agricultural runoff would enter the north pit where nutrients would accumulate in the vegetation prior to the discharge entering Cockroach Bay. The

culverts would allow for the exchange of tidally influenced salt water to enter the system.

- b. Hazardous, Toxic and Radioactive Waste (HTRW). There would be no HTRW impacts.

5.4.2 Biological

- a. Benthos. The existing fresh-water benthic organisms in the shell pit would be covered and smothered by the placement of material and stressed by the inflow of salt water. Freshwater benthic organisms eliminated in pits, long-term would be replaced with increased biodiversity and biomass from estuarine benthic organisms.
- b. Manatees. The auxiliary vessels associated with the transport of the dredged material could impact manatees. In order to reduce this impact, the standard state and Federal manatee protection conditions would be implemented. Included in these conditions are an education requirement, monitoring and avoidance of manatees. This avoidance includes a requirement to shutdown equipment should individuals come close to the equipment.
- c. Wetlands. The project would create approximately 25 acres of *Spartina* wetland, which over time and the availability of seeds from adjacent mangrove wetlands would convert a portion of that to mangroves.
- d. Fisheries. There would be increased seagrass bed growth and a 75-acre increase in estuarine habitat in the Bay from the creation. There would be 50 acres in saltmarsh habitat and 25 acres in open-water habitat. The seagrass bed growth would be due to the increased water quality. The increased estuarine habitat would be from the restoration project. Seagrasses provide cover for juvenile fish and habitat for small species. The new estuary habitat provides cover, nursery areas and spawning habitat for fisheries.
- e. Seagrass. The transportation of dredged material by pipeline could impact seagrass beds. However, the pipeline could be placed to avoid these beds along the recreational boat channel. The return water effluent would receive treatment from the newly formed habitat in the pits and the nutrient uptake provided by the wetland vegetation along the return water channel. This improved water quality entering Cockroach Bay would limit algal growth and increase light penetration, thereby promoting seagrass growth.
- f. Migratory Birds. There could be adverse impact on birds from the transportation of dredged material and placement process if the operation is conducted during migratory bird nesting season. Avoiding work during the nesting season would minimize this impact. If this cannot be done then, the District Migratory Bird Protection policy would be implemented. This includes monitoring and avoided the

nesting areas. There would be some temporary disruption to birds and bird nesting along the pipeline route from placing the pipeline in the recreational navigation channel. There would be some disruption to bird nesting at the placement site. In contrast, there would be increased bird activity at the placement site from the dredged material being placed in the pits. The dredged material would act as a source of food containing benthic organisms. The saltwater would also stress fish and other organisms in the pits killing them and making them available for the birds to eat. The newly formed habitat would create wading, feeding, loafing, nesting areas for the birds in this 50-acre site.

5.4.3 Social.

- a. **Historic Properties.** As discussed in section 3.3.3.a. of this document, the area to be dredged is not likely to contain significant historic properties. An archeological field survey and evaluation has been completed around the mining pits and there will be no impacts to any significant historic properties.
- b. **Recreation.** There would be a short-term minor impact on recreational navigation and fishing from the presence and operation of the dredging equipment in the navigation channel and at the boat-launching ramp. There would be a long-term benefit to fishing and bird watching from the creation of 75 acres of bird and fisheries habitat.
- c. **Aesthetics.** There would be a short-term degradation of the aesthetics of the navigation channel and from the view surrounding the pits from the presence and the noise from the operation of heavy equipment and a disruption of the seascape. The aesthetic impact at the pits would be rather minor since the area is agricultural.

5.4.4 Economic.

- a. **Navigation.** There would be a short-term disruption to commercial navigation from the presence and operation of dredging equipment. There would be a long-term benefit by lengthening the usability of the upland DMMA for Tampa Harbor.
- b. **Economics.** There would be a medium, short-term benefit to the local economy from the sale of goods and services in support of the construction effort. There would be a minor long-term benefit from extending the life of the DMMA and the necessity of rehabilitating the DMMA or finding a new site.

5.4.5 Cumulative effects.

If this action were considered in conjunction with other similar projects, there would be a substantial benefit to Tampa Bay from the increase estuarine habitat created.

5.4.6 Unavoidable effects.

There would be localized turbidity at the placement area and disruption of commercial and recreational navigation in the channel.

5.4.7 Irreversible and Irretrievable Resource Commitments.

There would be an expenditure of fuel from operating the heavy equipment.

5.5 Alternative 5 - SOUTH PIT RESTORATION WITH CULVERTS

5.5.1 Physical.

- a. Water quality. There would be a major impact on water quality in the both pits from the placement of slurried, dredged material into the South pit. The south pit would experience sedimentation from the direct placement while the north pit would provide additional settling before the return water is allowed to enter Cockroach Bay. In the long-term, local agricultural runoff would enter the south pit where nutrients would accumulate in the vegetation prior to the discharge entering Cockroach Bay. The culverts would allow for the exchange of tidally influenced salt water to enter the system.
- b. Hazardous, Toxic and Radioactive Waste (HTRW). There would be no HTRW impacts.

5.5.2 Biological

- a. Benthos. The existing fresh-water benthic organisms in the shell pits would be covered and smothered by the placement of material. Freshwater benthic organisms eliminated in pits, long-term would be replaced with increased biodiversity and biomass from estuarine benthic organisms.
- b. Manatees. The auxiliary vessels associated with the transport of the dredged material could impact manatees. In order to reduce this impact, the standard state and Federal manatee protection conditions would be implemented. Included in these conditions are an education requirement, monitoring and avoidance of manatees. This avoidance includes a requirement to shutdown equipment should individuals come close to the equipment.
- c. Wetlands. The project would create approximately 8.8 acres of *Spartina* wetland, which over time and the availability of seeds from adjacent mangrove wetlands would convert a portion of that to mangroves.
- d. Fisheries. There would be increased seagrass bed growth and a 75-acre increase in estuarine habitat in the Bay from the creation. . There would be 25 acres in saltmarsh habitat and 50 acres in open-water habitat. The seagrass bed growth would be due to the increased water quality. The increased estuarine habitat would be from the restoration project. Seagrasses provide cover for juvenile fish and habitat for small species. The new estuary habitat provides cover, nursery areas and spawning habitat for fisheries.

- e. **Seagrass.** The surface water run-off would receive treatment from the newly formed habitat in the pits and the nutrient uptake provided by the wetland vegetation along the return water channel. This improved water quality entering Cockroach Bay would limit algal growth and increase light penetration, thereby promoting seagrass growth.
- f. **Migratory Birds.** There could be adverse impact on birds from the placement process if the operation is conducted during migratory bird nesting season. Avoiding work during the nesting season would minimize this impact. If this cannot be done then, the District Migratory Bird Protection policy would be implemented. This includes monitoring and avoided the nesting areas. The newly formed habitat would create wading, feeding, loafing, nesting areas for the birds in this 75-acre site.

5.5.3 Social.

- a. **Historic Properties.** As discussed in section 3.3.3.a. of this document, the area to be filled is not likely to contain significant historic properties. An archeological field survey and evaluation has been completed around the mining pits and there will be no impacts to any significant historic properties.
- b. **Recreation.** There would be a short-term minor impact on recreational navigation and fishing from the presence and operation of the dredging equipment in the navigation channel and at the boat-launching ramp. There would be a long-term benefit to fishing and bird watching from the creation of 75 acres of bird and fisheries habitat .
- c. **Aesthetics.** There would be a short-term degradation of the aesthetics of the navigation channel and from the view surrounding the pits from the presence and the noise from the operation of heavy equipment and a disruption of the seascape. The aesthetic impact at the pits would be rather minor since the area is agricultural

5.5.4 Economic.

- a. **Navigation.** There would be a long-term benefit by lengthening the usability of the upland DMMA for Manatee Harbor.
- b. **Economics.** There would be a medium, short-term benefit to the local economy from the sale of goods and services in support of the construction effort. There would be a minor long-term benefit from extending the life of the DMMA and the necessity of rehabilitating the DMMA or finding a new site.

5.5.5 Cumulative effects.

If this action were considered in conjunction with other similar projects, there would be a substantial benefit to Tampa Bay from the increase estuarine habitat created.

5.5.6 Unavoidable effects.

There would be localized turbidity at the placement area and disruption of commercial and recreational navigation in the channel.

5.5.7 Irreversible and Irretrievable Resource Commitments.

There would be an expenditure of fuel from operating the heavy equipment.

5.6 ALTERNATIVE 6 - NORTH AND SOUTH PIT RESTORATION WITH CULVERTS

5.6.1 Physical.

- a. Water quality. There would be a major impact on water quality in the both pits from the placement of slurried, dredged material into the pits. The work would happen sequentially with first one pit being filled first and then the other. The first pit would experience sedimentation from the direct placement while the other pit would provide additional settling before the return water is allowed to enter Cockroach Bay. Then this process would be reversed. In the long-term, local agricultural runoff would enter the pits where nutrients would accumulate in the vegetation prior to the discharge entering Cockroach Bay. The culverts would allow for the exchange of tidally influenced salt water to enter the system
- b. Hazardous, Toxic and Radioactive Waste (HTRW). There would be no HTRW impacts.

5.6.2 Biological

- a. Benthos. The existing fresh-water benthic organisms in the shell pits would be covered and smothered by the placement of material. Freshwater benthic organisms eliminated in pits, long-term would be replaced with increased biodiversity and biomass from estuarine benthic organisms.
- b. Manatees. The auxiliary vessels associated with the transport of the dredged material could impact manatees. In order to reduce this impact, the standard state and Federal manatee protection conditions would be implemented. Included in these conditions are an education requirement, monitoring and avoidance of manatees. This avoidance includes a requirement to shutdown equipment should individuals come close to the equipment.
- c. Wetlands. The project would create approximately 33.8 acres of *Spartina* wetland, which over time and the availability of seeds from adjacent mangrove wetlands would convert a portion of that to mangroves.
- d. Fisheries. There would be increased seagrass bed growth and a 75-acre increase in estuarine saltmarsh habitat in the Bay from the creation. The seagrass bed growth

would be due to the increased water quality. The increased estuarine habitat would be from the restoration project. Seagrasses provide cover for juvenile fish and habitat for small species. The new estuary habitat provides cover, nursery areas and spawning habitat for fisheries.

- e. **Seagrass.** The surface water run-off would receive treatment from the newly formed habitat in the pits and the nutrient uptake provided by the wetland vegetation along the return water channel. This improved water quality entering Cockroach Bay would limit algal growth and increase light penetration, thereby promoting seagrass growth.
- f. **Migratory Birds.** There could be adverse impact on birds from the placement process if the operation is conducted during migratory bird nesting season. Avoiding work during the nesting season would minimize this impact. If this cannot be done then, the District Migratory Bird Protection policy would be implemented. This includes monitoring and avoided the nesting areas. The newly formed habitat would create wading, feeding, loafing, nesting areas for the birds in this 75-acre site.

5.6.3 Social.

- a. **Historic Properties.** As discussed in section 3.3.3.a. of this document, the area to be filled is not likely to contain significant historic properties. An archeological field survey and evaluation has been completed around the mining pits and there will be no impacts to any significant historic properties.
- b. **Recreation.** There would be a short-term minor impact on recreational navigation and fishing from the presence and operation of the dredging equipment in the navigation channel and at the boat-launching ramp. There would be a long-term benefit to fishing and bird watching from the creation of 75 acres of bird and fisheries habitat.
- c. **Aesthetics.** There would be a short-term degradation of the aesthetics of the navigation channel and from the view surrounding the pits from the presence and the noise from the operation of heavy equipment and a disruption of the seascape. The aesthetic impact at the pits would be rather minor since the area is agricultural.

5.6.4 Economic.

- a. **Navigation.** There would be a long-term benefit by lengthening the usability of the upland DMMA for Manatee Harbor.
- b. **Economics.** There would be a medium, short-term benefit to the local economy from the sale of goods and services in support of the construction effort. There would be a minor long-term benefit from extending the life of the DMMA and the necessity of rehabilitating the DMMA or finding a new site.

5.6.5 Cumulative effects.

If this action were considered in conjunction with other similar projects, there would be a substantial benefit to Tampa Bay from the increase estuarine habitat created.

5.6.6 Unavoidable effects.

There would be localized turbidity at the placement area and disruption of commercial and recreational navigation in the channel.

5.6.7 Irreversible and Irretrievable Resource Commitments.

There would be an expenditure of fuel from operating the heavy equipment.

6. LIST OF PREPARERS.

The following professionals prepared the Environmental Assessment.

<u>NAME</u>	<u>DISCIPLINE</u>	<u>EXPERIENCE</u>	<u>ROLE IN PREPARING EA</u>
William J. Fonferek	Biologist	25 years environmental impacts assessment	NEPA Coordinator, Biological Impact Assessment, Endangered Species Consultation, Study Manager
Jonas White	Civil Engineer	7 years experience	Planning Technical Leader
Paul Stevenson	Landscape Architect	12 years experience recreation design, construction and development	Recreation Resources Analysis and Mitigation Development
Tommy Birchett	Archeologist	21 years historic property management and assessment	Historic Property Analysis and Assessment
Glen Schuster	Environmental Engineer	21 years	Water Quality Investigations and Impact Assessment
Peter Besrutchko	Environmental Engineer	5 Years	HTRW Assessment

7. CONSULTATION WITH OTHERS - PUBLIC INVOLVEMENT PROCESS.

7.1 Pre-study Support.

The Southwest Florida Water Management District submitted letters of support from the Tampa Bay environmental community along with the Letter of Intent. Letters included in their response came from the National Marine Fisheries Service, Cockroach Bay Restoration Alliance, Hillsborough County Environmental Protection Commission, Hillsborough County Parks and Recreation Department, Florida Department of Environmental Protection Environmental Restoration Program and Tampa Bay Aquatic Preserve Manager, the Tampa Bay Estuary Program and the Tampa Bay Regional Planning Council's Agency on Bay Management.

7.2 Regional Cooperation.

The Southwest Florida Water Management District and Jacksonville District have signed an intergovernmental agreement to implement a Comprehensive Conservation and Management Plan (CCMP) for the Tampa Bay estuary with the National Estuary Program. The CCMP is a blueprint for Bay restoration and protection. It is the result of 5 years of scientific research into Tampa Bay's most pressing problems and strategies to address them. Beneficial uses of dredged material are an integral part of the CCMP's Dredged Material Management Plan. The Cockroach Bay Restoration Project is a high priority of the CCMP. The beneficial uses plan for the shell pits would demonstrate a commitment to environmentally sound usage of dredged materials by the District. In addition, this estuarine creation project is a Coastal America (CA) partnership project. Partners in this project include the Southwest Florida Water Management District, Hillsborough County, Tampa Bay National Estuary Program, the State of Florida, U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Fish and Wildlife Service, National Marine Fisheries Service, City of Tampa, Tampa Bay Regional Planning Council, Peninsula Design & Engineering, Inc. and Cockroach Bay User's Group. In 1991, the CA Gulf of Mexico Regional Implementation Team endorsed the proposed project.

7.3 Issue Identification.

A scoping letter dated January 26 1998 was sent to local governments and citizens and State and federal agencies having an interest in the project (Appendix V).

- a. The State Clearinghouse assigned the project review number SAI# FL9801280032C.
- b. The National Marine Fisheries Service responded by letter dated February 24, 1998, stating that they are a member of the Cockroach Bay Restoration Alliance and supports this effort.
- c. The US Fish and Wildlife Service responded by letter dated January 29, 1998, stating support for the project.

- d. The Tampa Bay Regional Planning Council responded to the State Clearinghouse by letter dated February 13, 1998, Stating that the project would be discussed at Council's Clearinghouse Review Committee Meeting on February 23, 1998.
- e. The Clearinghouse Committee Review comments dated February 23, 1998, were submitted to the clearinghouse and copies furnished to the Corps. The comments include a description of the project and benefits to be obtained. It also states that the work would be strongly encouraged as it meets Policy 4.7.2 of the *Future of the Region: A Strategic Regional Policy Plan for the Tampa Bay Region*.
- f. Captain Stephen Cropper responded by letter dated February 17, 1998, stating support for the project.
- g. The Cockroach Bay Aquatic Preserve Management Advisory Team responded by letter dated March 3, 1998, stating support for the project and expressed concerns for the transportation of material to the site and the impacts that it could have on mangroves, seagrasses or other natural areas.

RESPONSE: The potential transportation corridors have been looked at by the Corps and the US Fish and Wildlife Service in the Coordination Act Report (CAR). The material would be truck hauled to the site and therefore, would not impact any wildlife resources.

- h. The State Clearinghouse responded by letter dated March 12, 1998, stating that the project at this juncture is consistent with the Florida Coastal Management Program. They also included comments from the Department of Environmental Protection expressing concerns for the impacts from sediment transportation and the quality of the sediments used.

RESPONSE: Regarding transportation please see previous response. The preferred material would be from Alafia River Navigation Project Dredged Material Management Area Offloading.

- i. The Draft Environmental Assessment and Finding of No Significant Impact was coordinated with the public (See attached mailing list) by cover letter dated March 29, 2002. The following comments were received and are attached in Appendix V.
- j. The US Department of Interior responded by letter dated April 5, 2002, requesting a time extension for comments until May 13, 2002.
- k. Hillsborough County, Florida, responded by letter dated April 10, 2002, responded with the following comments:

- Page 19, Section B. Alternative 2, Environmental Considerations. Line states "Detailed in Table 5." Table 5 is located on page 42 and is labeled "Table 5: Construction Cost Estimate." There is an apparent reference error.

RESPONSE: This will be corrected.

- Page 41, Section 84. This section states that, "Costs for any mitigation needed to replace environmental resources lost during construction...no mitigation costs were necessary to be computed." The report lacks any documentation from Hillsborough County Environmental Protection Commission (EPC) to corroborate this statement. The EPC Wetlands management Division should be contacted in order to secure a statement of "No Impacts" or an exemption from such mitigation.

RESPONSE: This is a Federal project not subject to local laws and regulations. We do however take into consideration any local input concerning the utilization of resources.

- Page 41, Section 85. The documents states that the estimated first costs are in Table 5 and are located in Table 6.

RESPONSE: This will be corrected.

- Page 42, Table 5. Table 5 appears to be omitted from the report.

RESPONSE: The proper labels will be applied to the report.

1. The Hillsborough County Environmental Protection Commission responded by letter dated April 11, 2002, with the following comments:
 - The letter states that the project contains EPC jurisdictional wetlands. Construction activities must be approved by EPC. All plans must be coordinated with EPC.
 - The letter references EPC rules, Chapter 1-11.01 regarding mitigation approval.
 - Impact justification and mitigation must be submitted to EPC and the Tampa Port Authority
 - The project must meet certain water quality requirements including erosion control.
 - Wetland integrity must be maintained unless authorized by the EPC.

RESPONSE: As stated earlier, this is a Federal project and not subject to local laws and regulations. Wetland impacts and the regulation of the placement of dredged or fill materials into waters of the United States is subject to Executive Order 11990 and

Section 301 of the Clean Water Act. The later is administered by the US Army Corps of Engineers under regulations promulgated by the Environmental Protection Agency. A Water Quality Certificate has been applied for from the Florida Department of Environmental Protection and no further water quality authorization is required.

- m. The National Marine Fisheries Service responded by letter dated April 26, 2002. NMFS stated that impacts would be minimal and have no objections to the project. They also concurred in our determination that no Essential Fish Habitat would be affected.
- n. The US Department of interior responded by letter dated May 7, 2002, asking that we coordinate with the Seminole and Miccosukee Tribes regarding cultural or historic significance.

RESPONSE: We will coordinate the project as requested.

- o. The US Department of the Interior responded with comments by letter dated May 8, 2002, stating that there was a discrepancy between the source of material sited in the EA and in the Section 404(b)(1) Evaluation.

RESPONSE: This will be corrected as the source was changed from Alafia to Manatee Harbor.

- p. The Florida State Clearinghouse responded stating they would provide comments by June 3, 2002.
- q. On May 4, 2002, the Tampa Tribune Outdoors columnist Frank Sargent, published an article entitled "Proposal Should Help Enrich Cockroach Bay". The article summarized the proposal and his recognition of the positive benefits to the Tampa Bay fisheries.
- r. On April 14, 2002, the Tampa Tribune published an article on their website at www.TBO.com entitled "Port Dredging Project Would Boost Ongoing Cockroach Bay Restoration". The article summarized the Corps' presentation to the Agency on Bay Management, with interviews with Southwest Florida Water Management District and the Corps representatives.
- s. The Florida Department of Community Affairs acting as the State Clearinghouse responded by letter dated June 24, 2002, stating that the project was in compliance with the Florida Coastal Zone Act at this stage. The following comments were provided:
 - The Florida Department of Environmental Protection recommended that the Corps coordinate with the Office of Beaches and Coastal Systems, the Southwest Florida Water Management District (SWFMD), and Mr. Allen Burdett of the

DEP's Southwest District Office. It also suggested that all submerged and anchorage areas be identified and that Best Management Practices be implemented.

RESPONSE: The SWFMD, our local sponsor has been coordinating with DEP regarding the necessary permits for the work. Mr. Burdett is on our mailing list for the project and report coordination. We have mapped the seagrass beds along the potential pipeline route for placement of the dredged material. We have committed to not allow anchorage in those areas.

- The Florida Fish and Wildlife Conservation Commission (FWC) recommended that the dredged material be placed in the pits outside the migratory bird nesting window unless the Corps implements the District's Migratory Bird Protection Policy and encouraged that the Corps coordinate with the FWC regarding authorization for impacts to nesting birds.

RESPONSE: The Corps has committed to implementing the District's Migratory Bird Protection Policy. If nesting impacts are encountered we will coordinate with the FWC.

8. COMMITMENTS

8.1 Manatee Protection.

The standard State and Federal manatee protection condition would be implemented.

8.2 Migratory Bird Protection.

The District migratory Bird Protection Plan would be implemented. If impacts to nesting are anticipated, the District will coordinate with the Florida Fish and Wildlife Conservation Commission.

8.3 Seagrass Protection

Seagrass bed impacts would be avoided. The contractor would not be allowed to anchor equipment or place equipment in seagrass beds.

8.4 Water Quality.

The effluent from the pits entering the Bay would meet state water quality standards.

8.5 Wetlands.

Approximately 33.8 acres of nearshore area and uplands would be planted with *Spartina*.

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