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

REPLY TO
ATTENTION OF

MAINTENANCE DREDGING
FORT PIERCE HARBOR
ST. LUCIE COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) of the proposed action. 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. There will be no significant adverse impacts to endangered or threatened species, if the work is conducted in accordance with the Biological Opinions issued by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service for dredging within Fort Pierce Harbor.

2. In coordination with the State Historic Preservation Officer, it was determined there would be no impacts on sites of cultural or historical significance.

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 maintenance of the navigation channel, continued local economic stimulus, and additional areas for nesting turtles.

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.

24 Jul 96
Date

for TERRY L. RICE
Colonel, Corps of Engineers
Commanding

JAMES A. CONNELL
LTC, Corps of Engineers
Deputy Commander

JULY 1996

MAINTENANCE DREDGING

FORT PIERCE HARBOR
ST LUCIE COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT

US Army Corps
of Engineers
Jacksonville District
South Atlantic Division

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1.0 PURPOSE OF AND NEED FOR ACTION.

1.1. INTRODUCTION. This Environmental Assessment covers the life of the project, or, 10 years, as applied for in the application for Water Quality Certification. Over the next 10 year period, it is estimated that this project may shoal approximately 100,000 cubic yards annually from the entrance and inner channel and 160,000 cubic yards from the turning basin at a three-year interval. Figures 1 and 2 show the locations of the dredging and disposal sites. Since the initial construction, sand and sediments have accumulated in the harbor and channel reducing the navigable capacity of the project. In order to meet the public need as authorized by Congress, the Federal standard must be maintained.

1.2. AUTHORITY. The maintenance of Ft. Pierce Harbor was Congressionally authorized by the Rivers and Harbors Act of 30 August 1935, House Document Number 252, 72nd Congress, 1st Session, and the Rivers and Harbors Commission Document Number 21, 74th Congress, 1st Session.

1.3. DECISION TO BE MADE. The decision to be made is whether to dredge the channel and where it is environmentally and economically feasible to place the material.

1.4. RELEVANT ISSUES: The relevant issues include:

a. Water quality.

b. Manatees.

c. Sea grasses.

d. Sea turtles.

e. Hardbottoms.

f. Historic Properties.

g. Aesthetics.

h. Recreation.

i. Navigation.

j. Economics.

1.5. PERMIT REQUIREMENTS. In accordance with the conditions of the Memorandum of Agreement between the Jacksonville District and the State of Florida, a water quality certification for dredging will be required. In addition, authorization will be required from

the Environmental Protection Agency to dispose of the dredged material in the Ocean Dredged Material Disposal Area.

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 assessment. This included literature searches, coordination with agencies and private groups having expertise in particular areas, and field investigations.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION.

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. The key to this section is the alternative comparison chart, Figure 2.1, page 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. Normally, the material to be removed will be placed either on a beach disposal area south of the inlet or in the Environmental Protection Agency (EPA) Ocean Dredged Material Disposal Site (ODMDS)(EPA, 1992). Placement in the ODMDS has been approved by EPA and Florida DER. A new alternative has been formulated to remove larger shoals that have formed during storm events after normal in between normal maintenance cycles. This alternative involves dredging of sandy material from the entrance channel shoals and redepositing it in hole in the channel. This allows for redredging and disposal during normal maintenance cycles. The composition of the material to be dredged normally is predominately sand with shell and some traces of silt in the channel and sand and silt in the turning basin. Dredging would normally be accomplished by hopper or pipeline dredge. The project will provide for maintenance dredging of the required depths both now and after the channel is deepened as authorized by the 1988 Water Resources Development Act.

PROJECT: A channel 350 feet wide at the 27-foot contour in the ocean, tapering to a width of 200 feet at Sta. 100+00, thence 200 feet wide to Sta. 30+00, and thence flaring to a turning basin 900 feet wide. Entrance channel is 27 feet deep to Sta. 130+00 and thence 25 feet deep to and including the turning basin. Project includes the maintenance of two jetties and shore revetments at the inlet. Length of project is about 3.5 miles.

MEAN TIDAL RANGE: 2.6 feet at entrance and 1.2 foot at terminals.

AUTHORIZATION FOR EXISTING PROJECT		
ACTS	WORK AUTHORIZED	DOCUMENTS
Def. Act of 4 Mar. 1931	Expenditure of $20,000 for dredging channel, maintenance by local interests.	Specified in act
War Dept. Appro. Act, 31 Mar. 1933	Expenditure of up to $30,000 for dredging channel.	Specified in act
30 Aug. 1935	Maintaining channels, jetties, and revetments, and enlarging channels and turning basin to existing project dimensions.	H. Doc. 252/72/1 & R & H Comm Doc. 21/74/1

FORT PIERCE HARBOR, FLA.

SCALE IN MILES

1/2 MI 0 1/2 1 MI

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JACKSONVILLE, FLORIDA 9-30-75

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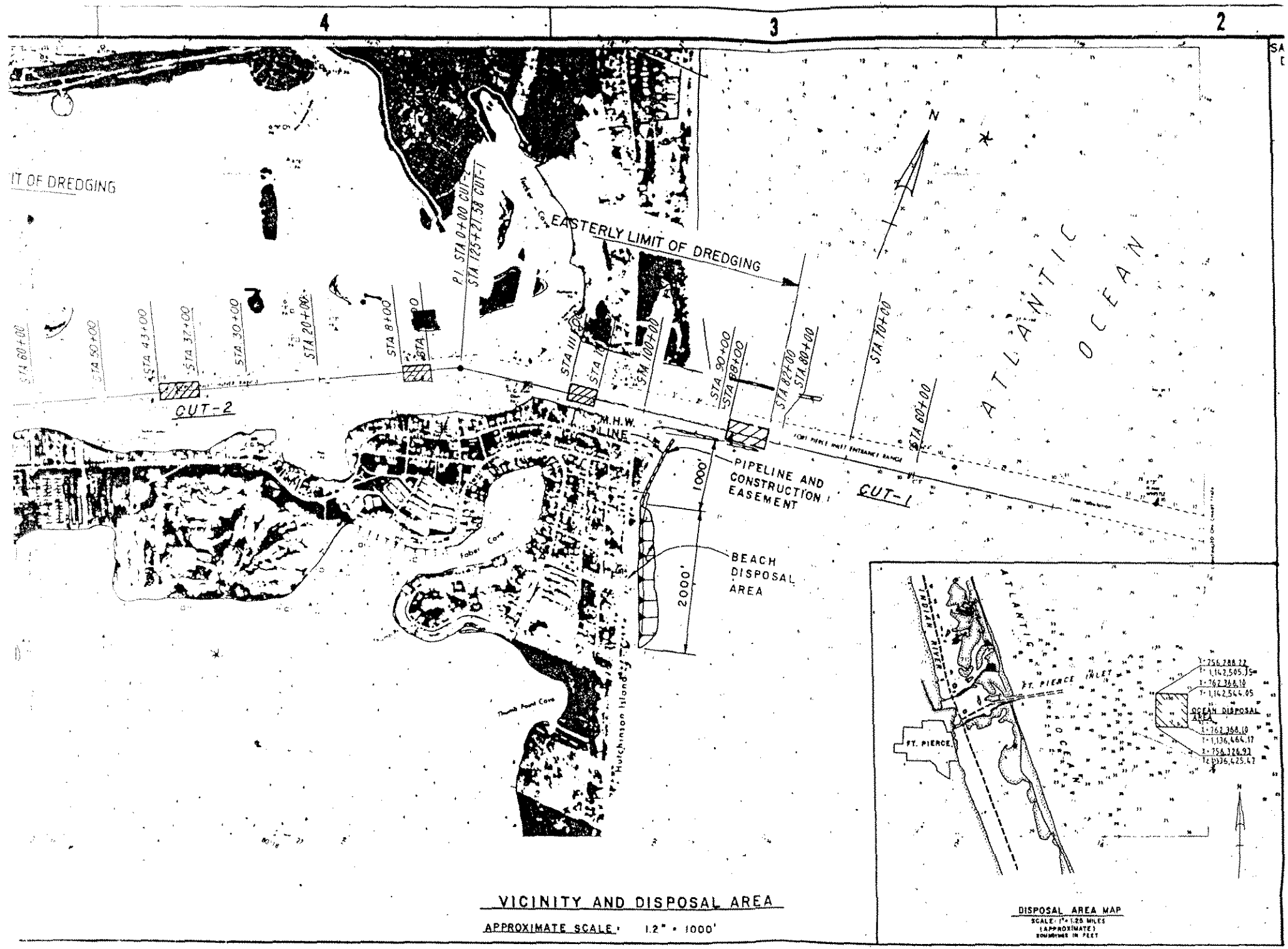
FIGURE 1

2



VICINITY AND DISPOSAL AREA

APPROXIMATE SCALE: 1.2" = 1000'

DISPOSAL AREA MAP

SCALE: 1" = 1.26 MILES
(APPROXIMATE)
COORDINATES IN FEET

2.3. ELIMINATED ALTERNATIVES. Sidecasting of material into open-water areas and using other ocean disposal sites was eliminated due to regulatory requirements by the State of Florida and the US Environmental Protection Agency.

2.4. DESCRIPTION OF ALTERNATIVES.

2.4.1. No Action. There would be no maintenance dredging or disposal operations.

2.4.2. Dredging and Ocean Disposal. The work would include the routine maintenance dredging of Ft. Pierce Harbor which includes turning basin. The material would be placed in accordance with the Site Material and Management Plan for the Ft. Pierce Ocean Dredged Material Disposal Site (ODMDS) (EPA, 1992). The standard manatee precautions would also be implemented during dredging (Appendix II). This includes observers and equipment shutdown should manatees come within 50 feet of the operation. If a hopper dredge is used special precautions would be implemented to protect sea turtles. This includes observers to monitor dredge outputs for incidental take of turtles, and the use of the newly developed turtle excluder draghead.

2.4.3. Dredging and Beach Placement. The work would include the routine maintenance dredging of Ft. Pierce Harbor which includes the entrance channel. The dredged material would be transported to the beach south of the entrance channel. The standard manatee precautions would also be implemented during dredging (Appendix II). This includes observers and equipment shutdown should manatees come within 50 feet of the operation. Special precautions would also be implemented to avoid impacting seagrasses and hardbottoms. In addition impacts to nesting sea turtles would also be mitigated. Beach placement would be limited to avoid placing material during the sea turtle nesting season (15 May through 15 October). If escarpments form as a result of beach placement, landscaping would be implemented. If compaction occurs, tilling would be implemented to eliminate any lenses that may form. If a hopper dredge is used special precautions would be implemented to protect sea turtles. This includes observers to monitor dredge outputs for incidental take of turtles, and the use of the newly developed turtle excluder draghead.

2.4.4. Dredging and Redeposition in the Channel. The work includes the emergency dredging of shoaled material from the entrance channel of Ft. Pierce Harbor and the redeposition of that material into deeper sections of the channel to be later redredged during normal maintenance cycles. The standard manatee precautions would also be implemented during dredging (Appendix II). This includes observers and equipment shutdown should manatees come within 50 feet of the operation. If a hopper dredge is used special precautions would be implemented to protect sea turtles. This includes observers to monitor dredge outputs for incidental take of turtles and the use of the newly developed turtle excluder draghead.

2.5. ALTERNATIVE COMPARISON.

TABLE 2.1

RESOURCES	NO ACTION ALTERNATIVE	DREDGING AND BEACH PLACEMENT	DREDGING AND REDEPOSITION	DREDGING AND OCEAN DISPOSAL
Water quality	Medium short-term increases in turbidity from the propeller wash of the ships using the harbor.	Medium short-term increases in turbidity from the dredging and disposal operations.	Medium short-term increases in turbidity from the dredging and disposal operations.	Medium short-term increases in turbidity from the dredging and disposal operations.
Manatees	No impact.	No impacts on manatees due to the implementation of the standard manatee protection conditions.	No impacts on manatees due to the implementation of the standard manatee protection conditions.	No impacts on manatees due to the implementation of the standard manatee protection conditions.
Seagrasses	No impact.	No impact.	No impact.	No impacts.
Sea turtles	No impact.	No impact during dredging if a hydraulic or clamshell-type dredge is used. If a hopper dredge is used there would be a major impact on sea turtles. This impact would be mitigated by the used of inflow monitoring and using the draghead deflector. There would be a major impact on sea turtle nesting if the material is placed on the beach during turtle nesting season. This impact could be mitigeted by avoiding the turtle nesting season. In addition further nesting impacts could be avoided by implementing a nest monitoring and relocation program outside the normal nesting season. Other measures include compaction testing and tilling and escarpment monitoring and landscaping.	No impact during dredging if a hydraulic or clamshell-type dredge is used. If a hopper dredge is used there would be a major impact on sea turtles. This impact would be mitigated by the used of inflow monitoring and using the draghead deflector.	No impact during dredging if a hydraulic or clamshell-type dredge is used. If a hopper dredge is used there would be a major impact on sea turtles. This impact would be mitigated by the used of inflow monitoring and using the draghead deflector.
Hardbottoms	No impact.	No impact.	No impact.	No impact.
Historic Properties	No effect.	No effect.	No effect.	No effect.
Aesthetics	No impact.	Major short-term impact from the presence and operation of equipment at the dredging and disposal site, the brown turbidity generated at the disposal site and the odor generated by exposing anaerobic sediments to the air.	Major short-term impact from the presence and operation of equipment at the dredging and disposal site, the brown turbidity generated at the disposal site and the odor generated by exposing anaerobic sediments to the air.	Major short-term impact from the presence and operation of equipment at the dredging and ODMDS site and the brown turbidity generated at the ODMDS sita.
Recreation	Minor long-term reduced recreational navigation.	Medium long-term impact from the increased recreational opportunities of the Port. Minor short-term disruption to boat traffic and fishing in the harbor during construction. Medium short-term impact on recreational activities along the beach.	Medium long-term impact from the increased recreational opportunities of the Port. Medium short-term disruption to boat traffic and fishing in the harbor during construction.	Medium long-term impact from the increased recreational opportunities of the Port.

RESOURCES	NO ACTION ALTERNATIVE	DREDGING AND BEACH PLACEMENT	DREDGING AND REDEPOSITION	DREDGING AND OCEAN DISPOSAL
Navigation	Medium long-term adverse impact on the navigable capacity of the harbor.	Major long-term impact on the navigable capacity of the herbor. Minor short-term disruption to navigation in the harbor from presence of construction equipment.	Major long-term impact on the navigable capacity of the harbor. Minor short-term disruption to navigation in the harbor from presence of construction equipment.	Major long-term impact on the navigable capacity of the harbor. Minor short-term disruption to navigation in the harbor from presence of construction equipment.
Economics	Medium long-term adverse impact on the port end local economy from the reduced navigable capacity of the harbor.	Major long-term benefit to the Port from the increased usage by more vessels. Minor long-term economic stimulus to the local economy. Minor short-term stimulus to the local economy from the sale of goods and service in support of the dredging.	Minor short-term benefit to the Port from the increased usage by more vessels. Minor short-term economic stimulus to the local economy. Minor short-term stimulus to the local economy from the sale of goods and service in support of the dredging.	Major long-term benefit to the Port from the increased usage by more vessels. Minor long-term economic stimulus to the local economy. Minor short-term stimulus to the local economy from the sale of goods and service in support of the dredging.

2.6. PREFERRED ALTERNATIVE. The preferred alternative is to dredge the harbor and beneficially place the material on the beach placement area.

3.0. **AFFECTED ENVIRONMENT.**

3.1. 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 base line 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. Manatees.

c. Sea grasses.

d. Sea turtles.

e. Historic Properties.

f. Aesthetics.

g. Recreation.

h. Navigation.

i. Economics.

3.2. DESCRIPTION.

3.2.1. General. Ft. Pierce Harbor is on the Atlantic coast of Florida, approximately 53 miles north of Palm Beach Harbor, and 47 miles south of Melbourne. The harbor is adjacent to the Intracoastal Waterway (IWW), which is located in the Indian River. Shoal material comes from several sources. Upland erosion (including beach) and ocean substrate are probably the source of sand material that collects in the Federal navigation project. Silt material probably originates from upland sources and the Indian River. The mean tidal range at the entrance to Ft. Pierce Harbor is 2.6 feet. At the Harbor's terminals, the mean tidal range is 1.2 feet. The predominant overall littoral drift along the beaches near Ft. Pierce is north to south resulting in net erosion, with some accretion north of the jetties. The most severe erosion has occurred 1,200 feet south of the south jetty.

3.3. RELEVANT FACTORS.

3.3.1. Physical.

a. Water quality. Sources of water pollution in the vicinity of the harbor are Taylor Creek, carrying nutrients and sediment with adsorbed pesticides from agricultural runoff of citrus groves; and Moore Creek, discharging substantial urban runoff and its associated pollutants. Ft. Pierce sewage outfall discharges about 4.6 million gallons per day (gpd) of secondary treated waste water into the Indian River immediately south of the south bridge. Shipping traffic may introduce petroleum base pollutants into the navigation channel through accident or leakage. The waters of Ft. Pierce inlet are designated Class III waters: suitable for "recreation and the propagation and management of fish and wildlife."

Historical resources. An archival and literature review, including a review of the current National Register of Historic Places listing and consultation with the Florida State Historic Preservation Officer (SHPO), was conducted to determine if significant cultural resources are present in the project area. No significant archeological sites or historic properties are recorded in the project area, and the area is judged to have little potential for containing significant cultural resources. In a June 4, 1992 letter, the SHPO's office concurred with our recommendation that no further cultural resources investigations are necessary to meet the requirements of the National Historic Preservation Act (PL 89-665).

3.3.2. Biological.

3.3.2.1. Fort Pierce Harbor. Ft. Pierce Harbor is located in the Indian River adjacent to the city of Ft. Pierce, St. Lucie County. The Indian River is a shallow lagoon estuary extending approximately 120 miles parallel to the coast behind a series of barrier islands (Mosquito Lagoon to St. Lucie Inlet), and connected through several natural and manmade inlets to the Atlantic Ocean. It is one of the least polluted estuaries in the State of Florida. The average depth is approximately 4.6 feet with the maximum depth occurring in dredged channels, harbors, and borrow areas. The river has a relatively high turbidity which varies markedly in association with tidal cycles. The project area supports a wide variety of marine and estuarine fishes and invertebrates, such as shrimp, crabs, and lobsters. Wildlife in the area consists mainly of small mammals, reptiles, amphibians, and a variety of birds, including numerous migratory and resident shore and wading birds. Fishery resources in the study area are extensive and of extraordinary high value. Over 200 species of fish have been collected from the seagrass beds 1 mile north and south of the inlet. Gray, red, and scamp groupers and the lane and mutton snappers are dependent specifically on the seagrass beds near the inlet as juveniles (Gilmore, 1977). The inlet area as well as the offshore reefs are very popular and productive sport fishing sites for many of the same species sought by the commercial fisherman. These, along with numerous other cover species, provide both a source of shelter and food for numerous other invertebrates and fish (over 225 species of fish). Several species of sea turtles may utilize nearby beaches for nesting during the summer months. Immediately north and south of the Ft. Pierce Inlet, bands of lithified anastasia coquina rock outcroppings occur near shore and out to the 350-foot isobath. The rock formations provide suitable habitat for the sabellarid worms in the nearshore zone. It has been shown that these worm reefs form the basis for a complex marine community with a diverse flora and fauna. Over 100 species of fish have been found in association with these reefs. At present, these wormrock reefs are completely covered by sand. Along the undeveloped shoreline of the Indian River are red, black, and white mangrove communities. Several small areas of *Spartina alterniflora* smooth cordgrass occur between the north and south bridges, an area of approximately 6 acres south of Jim Island and a few thousand square feet of marsh around Coon Island and along the western shore of the river just north of Taylor Creek.

3.3.2.2. Beach. The inlet provides important feeding and resting habitat for migratory and wintering gulls, terns, shorebirds, and wading birds. The Ft. Pierce Inlet State Recreation Area has records of 60 species of shorebirds which have been observed at Dynamite Point or on Coon Island and the adjacent sandflats.

3.3.2.5. ODMDS. A field survey and video mapping performed by EPA on January 29-30 1991 (EPA, 1992), revealed a considerable area of low relief, outcrops and ledges and live bottom communities located generally in the northern one-quarter of the interim site. Video observations indicated that the live bottoms consisted of various assemblages of sponges, hydroids, hard corals and octocorals encrusting low relief limestone outcrops. Two artificial reef areas are located in the general ODMDS vicinity. An inshore reef begins

approximately 1 nautical mile (nmi) north of Ft. Pierce Inlet and 1.5 nmi from shore and runs 1 nmi to the NNE. Depths on this reef range from 26- to 28-feet. Another artificial reef area is located approximately 1.5 nmi southeast of the disposal area at a depth of approximately 55 ft. The benthic macroinfauna of the study area are dominated by polychaete worms (51%). Other major groups contributing to benthic community numbers were nematodes (13%), turbellarians (7%), crustaceans (6%), mollusks (6%), oligochaete worms (5%), and echinoderms (4%). Polychaete Families characteristic of the area are Syllidae, Goniadidae, Dorvilleidae, and Eunicidae. Nematodes and harpacticoid copepods were the dominant meiofaunal taxa. Few epibenthic invertebrates were collected in a December 1985 survey of the disposal site vicinity. All epibenthos collected during this survey were echinoderms (sea urchin, starfish, and brittle star). Benthic fish characteristic of the sandy offshore environment were lizardfish, leopard sea robin, and sea catfish. Other fish frequently represented in collections from this environment were spotted flounder, spotted whiff, dusky flounder, and rock sea bass. Reef fish were also common in, but not endemic to, the sandy offshore environs.

a. Manatees. The West Indian manatee, Trichechus manatus, is known to inhabit the area. USFWS has designated most of the Indian River as Critical Habitat for the manatee. During the winter months, manatees congregate around the warm water discharge of the Ft. Pierce power plant just south of south bridge. During the spring and summer months, the manatees disperse, but can be found grazing on seagrass in the area, or traversing the inlet throughout the remainder of the year. No manatee mortalities or encounters with dredges have occurred from the previous maintenance dredging.

b. Seagrasses. Two small areas of seagrasses were found north of the channel (USFWS, 1989). There is an elongated strip of seagrass along the south side of the large spoil island located northeast of the intersection of the IWW and the navigation channel. This strip consists of a narrow band of Cuban shoalgrass extending from mean low water, approximately 31 feet offshore from the island. The shoalgrass grades into manatee grass which extends out approximately 128 feet from shore. The other small area of seagrass on the north side of the channel is located along the shore of Coon Island, approximately 300 feet north of the edge of the channel. This bed consists of two narrow bands, one of shoalgrass and the other of manatee grass, extending a maximum of 85 feet beyond mean high water. Four species of seagrasses are found in the Indian River near the inlet: *Thallasia* sp. (turtlegrass), *Syringodium* sp. (manatee grass), *Halodule* sp. (Cuban shoalgrass), and *Halophila* sp. South of Jim Island is a shallow-water flat with 290 acres densely vegetated by seagrasses. A large portion of the river bottom with depths less than 6.5 feet, both north and south of the area between the two causeways, is vegetated by seagrass.

c. Sea turtles. The following sea turtles are likely to be found near or in the Bay (USFWS, 1987):

green sea turtle ..... Chelonia mydas
hawksbill sea turtle ..... Eretmochelys imbricata
Kemp's Ridley sea turtle ..... Lepidochelys kempii
leatherback sea turtle ..... Dermochelys doriacea
loggerhead sea turtle ..... Caretta caretta

In the vicinity of the proposed disposal area, the ocean beach on Hutchinson Island lying south of the inlet is heavily used by loggerhead sea turtles for nesting, which extends from May through September, with peak nesting occurring during June and early July. It can be predicted that, on average, there would be about 266 loggerhead turtle nests on the 2.7 miles of beach south of Ft. Pierce Inlet. Total nesting on Hutchinson Island averages between 3,000 and 5,000 nests per year (USACOE Feasibility Report, 1986). Minor green turtle and leatherback turtle nesting has also been reported along this stretch of beach. This area on Hutchinson Island is not the proposed disposal area. To date, no hawksbill turtle nests have been documented in St. Lucie County. The one - kilometer stretch of beach directly south of the inlet has not been used heavily for nesting in the past 10 years (enclosure 4). This area has been surveyed annually by Applied Biology for Florida Power and Light Company. Sea turtle nest monitoring and relocation will take place during the disposal operation. If beach disposal occurs during turtle nesting season, tilling of the beach will also occur if the beach quality sand placed on the beach becomes too compacted for sea turtle nesting. No green turtle or leatherback turtle nests were reported in this same section of beach from 1985 to 1990, but both species are known to nest on Hutchinson Island.

d. Hardbottoms. Nearshore hard bottom areas exist both north and south of the Ft. Pierce Inlet. The reef structure is primarily coquinoid limestone formed in the Pleistocene epoch. The nearshore reef occurs in approximately 10 to 20-foot depths. The average distance from the mean high water line to the first reef line is 476 feet (DER, 1992). The reef extends from 150 feet out to 2,000 feet offshore. This forms discontinuous limestone pavement with ledges up to 3-foot relief that parallel the shoreline. In some areas, well developed sabellarid wormrock reefs completely cover the basal limestone. The nearshore reef continues several miles south of the Ft. Pierce Inlet. Approximately 9 miles south near the St. Lucie Power Plant, the reef is only present as an extensive intertidal wormrock reef. But then 1-2 miles north of the St. Lucie Inlet and continuing south, the reef is again present at 10 to 25-foot depths and with 6 to 10-foot relief. Further offshore from the Ft. Pierce area other limestone ledge systems with relief up to 15 feet are known to parallel the coastline in discontinuous patches at depths of approximately 45, 60, and 90 feet. These are similar to the nearshore 10 to 20-foot reefs in structure, flora and fauna. At present, the hard bottom communities along the beach disposal area are completely covered by sand. As the lateral transport of sand occurs in the surf zone through the normal coastal process, rock outcrops are covered and uncovered. During this shifting process, there is a continual shift of fish species and populations

into and out of the area. Some of these hardbottom areas are located adjacent to the disposal area. DER made a benthic survey of this submerged bottom adjacent to the South Jetty Park from 1000' south of the jetty to 3000' south of the jetty October 29, 1992. Transects were snorkeled at 250' intervals along the shoreline. Transects began at the mean high water line and ended 600' waterward of the mean high water line. The southern most transect had the most pronounced reef area, occurs closest to the shoreline (390') and has a greater density and diversity of organisms than the northern transect areas. Reef organisms observed include: Gracillaria sp., Caulerpa sp., Barracuda (Syphraena barracuda), Gray snapper (Lutuanus griseus), Wrasses (Labridae), Blennies (Blenniidae), Porkfish (Arisotrenus virginious), Sheepshead (Archosargus protpgephalus), Sergeant Majors (Abudefdus earatolis), Spiny Lobster (Panulirus argus), Sea Cucumber (Holothuroidea), Bryozoans, Feather Duster Worms (Sabellidae), algae, Sabellariid Worm Rock (Pharagmatopoma lapidosa), Margates, Parrotfish, Gobies, Wrasses, COCO damsels, and sea urchins (DER, 1992).

3.3.3. Social.

a. Aesthetics. The project area channel and turning basin possess valuable background scenery of water and land. Residential and commercial development dot the project area to the south and near the turning basin area. Residential development is in scale with the existing tree line and blends with it when viewed from a distance. The potential beach disposal area is developed commercially and residentially and appears to be severely eroded. Temporary erosion control fabric has been used and aesthetics in this area are low as a result.

b. Recreation. The entrance channel provides access to the Intracoastal Waterway for ocean going vessels seeking marina facilities and transitting the AIWW during heavy seas. The jetties provide fishing opportunities to the local residents. The potential beach disposal area is used for swimming, walking, running, surfing and snorkeling. The entrance channel is also used for boat fishing. The potential beach disposal area is severely eroded. Erosion control fabric has been installed to prevent further dune erosion and dune walkover undermining.

3.3.4. Economics

a. Navigation. The navigation channel allows transportation of international and domestic cargo to and from the Ft. Pierce Harbor. This provides long-term economic stimulus to the economy of Ft. Pierce area and the generation of revenues from the sale of goods and services to public. The inlet through which the navigation channel extends is a manmade opening cut through the barrier island approximately 2.7 miles south of where an ephemeral inlet existed. Excavation of the inlet was begun in 1920 to 4 feet deep and 100 feet wide. It became a Federal project in 1935 with initial work completed three years later. Jetties of Florida

limestone were constructed north and south of the inlet to protect the entrance channel with the banks protected by riprap. Sebastian Inlet is 29 miles north of Ft. Pierce, Hutchinson Island lies to the south, extending approximately 21 miles southward to the St. Lucie Inlet.

b. Economics. In 1980, there were approximately 34,000 persons residing in Ft. Pierce. The largest number of jobs occurred in services, retail, trade, agriculture, and construction. The navigation channel allows transportation of international and domestic cargo to and from Ft. Pierce Harbor. This provides long-term economic stimulus to the economy of Ft. Pierce metropolitan area and generation of revenues from the sale of goods and services to public. The economy of St. Lucie County, Ft. Pierce in particular, is geared to recreation and tourism. Inland areas are devoted largely to farming, cattle, dairy interests and fruit farming. Beside the citrus carrying vessels, the harbor is also used by international and domestic cargo carrying vessels transporting other commercial goods: foreign import of aragonite, and import/export of sand, gravel, and crushed rock; petroleum products, primarily residual fuel oil, followed.

4.0 **ENVIRONMENTAL CONSEQUENCES.**

4.1. 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.

4.1.1. 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).

4.1.2. 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.

4.2. NO ACTION ALTERNATIVE.

4.2.1. Physical.

a. Water Quality. There would be sporadic, major increases in water quality due to the mooring of ships caused by the propeller wash disturbing the bottom sediments.

b. Historic Properties. The no action alternative will have no effect on significant historic properties.

4.2.2. Biological

a. Manatees. There would be no impacts on manatees from the no action alternative.

b. Sea grasses. There would be no impact on seagrasses.

c. Sea turtles. There would be no impact on sea turtles.

d. Hardbottoms. There would be no impact on hardbottoms.

4.2.3. Social

a. Aesthetics. There would be no impact.

b. Recreation. There would be a low level of recreational opportunities from the few cruise ships and charter boats using the facility.

4.2.4. Economic

a. Navigation. There would be reduced navigation to the port due to the shoaling in the channel.

b. Economics. There would be a negative economic stimulus due to the reduced navigability of the channel and harbor.

4.2.5. Cumulative effects. If this no action alternative is continually repeated, the channel would shoal in and no longer be effective, essentially closing the port.

4.2.6. Unavoidable effects. If the harbor is not maintained, there would be reduced navigable capacity of the channel and loss of revenues from the reduced commercial use of the port.

4.2.7. Irreversible and Irretrievable Resource Commitments. The only commitment of resources would be the expenditure of fuels for the construction equipment.

4.3. DREDGING AND OCEAN DISPOSAL

4.3.1. Physical.

a. Water Quality. Dredging operations will result in some temporary changes in water quality. Turbidities in the area of dredging will be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site. Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships.

b. Historic Properties. There would no impact on historic resources. If during maintenance activities the contractor observes resources that might have historical or archeological value, and these resources may be affected by further work activities, these resources shall be reported to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

4.3.2. Biological. Dredging would result in the loss of benthic organisms at the sites designated for maintenance. These communities will reestablish themselves upon completion of the work. Temporary disruption of normal activity of marine life in the vicinities of the dredging and disposal areas return water is likely. Commercial fisheries existing at or near the disposal areas should not experience adverse effects. Most animal life will relocate to surrounding areas during disposal operations. As a result of dredging impacts, seagrasses could experience inhibited growth due to increased nutrient levels which causes algae blooms, increased turbidity and reduced photosynthesis. The benthic fauna would be smothered by the placement of dredged material at the ODMDS site. Fish would avoid the turbidity plumes to the extent possible. Some species of fish would be attracted to the suspension of benthic organisms in the water column contained in the material. The disposal mounds would be avoided by the dumping operations, thereby, avoiding impacts to

the calcareous algae, sponges, ascidians and tube coral that have colonized the area.

a. Manatees. Based on manatee monitoring reports from previous dredging episodes within the navigation channel, we have determined that there would be no effect on this species provided the most recent Department of Natural Resources special conditions for manatee protection are included within the plans and specifications. USFWS concurred with this determination in letter dated August 6, 1992.

b. Seagrasses. There are no seagrasses in the vicinity of the dredging or disposal area. Therefore, there would be no impact on this resource.

c. Sea turtles. There would be no impacts on sea turtles from the use of hydraulic or clam-shell type dredging equipment and from the placement of material at the ODMDS. However, there may be potentially harmful impacts on sea turtles from the use of a hopper dredge. This impact would be mitigated by the implementation of the incidental take requirements in the recent Regional Biological Opinion issued by the National Marine Fisheries Service for hopper dredging along the southeastern United States. These requirements included the inflow monitoring of dredged material for turtle takes and the use of the newly developed turtle deflector draghead.

d. Hardbottoms. There would be no impact on hardbottoms.

4.3.3. Social.

a. Aesthetics. Air pollution, water turbidity, and noise pollution increases can be expected during project construction. Temporary construction impacts will not adversely affect the existing aesthetics found in the Ft. Pierce Harbor area. Aesthetic resources of Ft. Pierce Harbor could be minimally impacted with the deposit of the project's dredged material in the ODMDS.

b. Recreation. No recreational activities would be affected by the dredging or disposal operations. The increased navigable capacity of this harbor would provide for major recreational benefits derived from cruise ships using the port. There would be a short-term minor disruption to the boat traffic during the dredging episode.

4.3.4. Economic

a. Navigation. The proposed work will result in some temporary disruption of normal vessel traffic in the channel. The completion of work will have a favorable impact on the port with resulting beneficial effects to the local and regional economies.

b. Economics. There would be a minor short-term stimulus to the local economy from the sale of goods and services in support of the dredging. Any expansion to the movement of commodities through Ft. Pierce would be expected to be a stimulus for attracting new business and small industry to the area including commercial interests directly or indirectly associated with shipping. This should increase employment in the area. Little effect is expected on future county population growth. Transportation cost savings would be derived through use of deeper draft vessels and from potential new commodity movements which would utilize Ft. Pierce Harbor instead of a more distant port.

4.3.5. Cumulative effects. There would be no cumulative effects from the maintenance dredging and disposal operations.

4.3.6. Unavoidable effects. There would be turbidity generated at both the dredging and disposal sites. The excavation of the material would eliminate benthic organisms within the dredging cut and cover the benthic organisms at the disposal site.

4.3.7. Irreversible and Irretrievable Resource Commitments. A long-term commitment has been previously been made concerning the designation of the ODMDS, and the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable.

4.4. DREDGING AND BEACH PLACEMENT.

4.4.1. Physical.

a. Water Quality. Dredging operations will result in some temporary changes in water quality. Turbidities in the area of dredging will be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site. Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging of the project would result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships. The reduced water depths in the lake would provide a long-term benefit to water quality

by allowing sunlight penetration to the bottom and the growth of oxygen replenishing vegetation.

b. Historic properties. There would no impact on historic resources. If during maintenance activities the contractor observes resources that might have historical or archeological value, and these resources may be affected by further work activities, these resources shall be reported to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

4.4.2. Biological. There would be no identified project impact on the sandbar adjacent to Coon Island which serves as a concentration point for resting shorebirds. The sandbar is likely to change in the future as a result of natural forces, such as storms, or, changes in the worm reefs. The bird rookeries on mangrove islands north of the North Beach Causeway would not be affected by any channel maintenance since they are outside any impact area. Organisms occurring on the reef systems farther offshore could be impacted by sedimentation of fine/silt dredged material. The organisms which inhabit the coquina rock reefs that occur just outside the surf zone south of the inlet will be affected to some degree by beach fill work. Any algae or benthic organisms such as coral and sponges, which have recovered since or were not destroyed during previous beach restoration work, would be the most severely affected; mitigation should not be required. High turbidities in the inlet itself or continued disturbances caused by dredging activities could interfere with the spawning migrations of snook, channel bass, spot, shrimp, and many other species which use the inlet to migrate to and/or from the Indian River. Modifications of current patterns and velocities could also affect fish migrations through the inlet.

a. Manatees. Based on manatee monitoring reports from previous dredging episodes within the navigation channel, we have determined that there would be no effect on this species provided the most recent Department of Natural Resources special conditions for manatee protection are included within the plans and specifications. USFWS concurred with this determination in letter dated August 6, 1992.

b. Seagrasses. There would be no impacts on seagrasses from the dredging or beach placement.

c. Sea turtles. The beach could be improved for turtle nesting provided the fill material matches beach material grain size and the fill is not overly compacted (nourished beaches will be plowed to a depth of at least 36 inches immediately following completion of beach nourishment if sand compaction is greater than 500 cone penetrometer units), escarpments will be mechanically leveled to natural beach

contour and beach disposal is conducted outside the nesting season (October 16 through May 14). If the work is conducted during turtle nesting season (May 15 through October 15), the placement of the pipeline will deter the turtles from reaching the nesting site, the placement of sand on the beach will cover existing turtle nests and the placed material will be more compacted than natural material and will make nesting sites unsuitable. A No Effect Determination has been received from NMFS and USFWS for nesting sea turtles if dredging is conducted outside the turtle nesting season (May 15 through October 15), as stated in letters dated June 3, 1992 (NMFS) and August 6, 1992 (USFWS).

d. Hardbottoms. There would be no impacts on hardbottoms.

4.4.3. Social.

a. Aesthetics. The channel and turning basin aesthetics will not be affected by the proposed maintenance dredging. The South Jetty Park beach aesthetics will be improved with the deposit of the dredged material if it is beach quality sand. Temporary construction impacts to aesthetics could include some increase in noise pollution and air pollution. Some temporary increase in water turbidity could also occur.

b. Recreation. If beach use is suspended during the disposal of dredge material on the beach south of the jetty, recreation will be temporarily affected. The disposal of the material on the beach will be contingent on availability of beach quality sand. Material in the Entrance Channel is usually beach quality.

4.4.4. Economic

a. Navigation. The proposed work will result in some temporary disruption of normal vessel traffic in the channel. The completion of work will have a favorable impact on the port with resulting beneficial effects to the local and regional economies.

b. Economics. There would be a minor short-term stimulus to the local economy from the sale of goods and services in support of the dredging. Any expansion to the movement of commodities through Ft. Pierce would be expected to be a stimulus for attracting new business and small industry to the area including commercial interests directly or indirectly associated with shipping. This should increase employment in the area. Little effect is expected on future county population growth. Transportation cost savings would be derived through use of deeper draft vessels and from potential new commodity movements which would utilize Ft. Pierce Harbor instead of a more distant ports.

4.4.5. Cumulative effects. Cumulative benefits to the turtle nesting population in the area

may be gained through the disposal operation by providing a wider berm for nesting turtles. If sand placement takes place during turtle nesting season, a sea turtle monitoring and nest relocation program will be implemented at the beginning of the season and continue through the completion of sand placement or conclusion of the nesting season.

4.4.6. Unavoidable effects. There would be turbidity generated at both the dredging and disposal sites. The excavation of the material would eliminate benthic organisms within the dredging cut and cover the benthic organisms at the disposal site.

4.4.7. Irreversible and Irretrievable Resource Commitments. A long-term commitment has been made concerning the designation of the beach placement area, and the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable.

4.5. DREDGING AND REDEPOSITION IN THE CHANNEL

4.5.1. Physical.

a. Water Quality. Dredging operations will result in some temporary changes in water quality. Turbidities in the area of dredging will be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site. Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships.

b. Historic Properties. There would be no impacts on historic properties. If during maintenance activities the contractor observes resources that might have historical or archeological value, and these resources may be affected by further work activities, these resources shall be reported to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such

resources.

4.5.2. Biological. Dredging would result in the loss of benthic organisms at the sites designated for maintenance. These communities will reestablish themselves upon completion of the work. Temporary disruption of normal activity of marine life in the vicinities of the dredging and disposal areas return water is likely. Commercial fisheries existing at or near the disposal areas should not experience adverse effects. Most animal life will relocate to surrounding areas during disposal operations. As a result of dredging impacts, seagrasses could experience inhibited growth due to increased nutrient levels which causes algae blooms, increased turbidity and reduced photosynthesis. The benthic fauna would be smothered by the placement of dredged material at the ODMDS site. Fish would avoid the turbidity plumes to the extent possible. Some species of fish would be attracted to the suspension of benthic organisms in the water column contained in the material. The disposal mounds would be avoided by the dumping operations, thereby, avoiding impacts to the calcareous algae, sponges, ascidians and tube coral that have colonized the area.

a. Manatees. Based on manatee monitoring reports from previous dredging episodes within the navigation channel, we have determined that there would be no effect on this species provided the most recent Department of Natural Resources special conditions for manatee protection are included within the plans and specifications. USFWS concurred with this determination in letter dated August 6, 1992.

b. Seagrasses. There are no seagrasses in the vicinity of the dredging or disposal area. Therefore, there would be no impact on this resource.

c. Sea turtles. Sea turtles are known to inhabit the areas around the mouth of the Bay as they migrate to nesting and forage areas. If a hopper dredge is used for the work, there could be an impact on sea turtles in the area. In order to minimize this impact special conditions would be implemented during dredging to avoid taking sea turtles. These conditions include the use of the new prototype draghead with the turtle excluder device, predredge trawling to determine turtle population numbers and monitoring of the equipment to insure proper design and use.

d. Hardbottoms. There would be no impact on this resource.

4.5.3. Social.

a. Aesthetics. Air pollution, water turbidity, and noise pollution increases can be expected during project construction. Temporary construction impacts will not adversely affect the existing aesthetics found in the Ft. Pierce Harbor area.

b. Recreation. No recreational activities would be affected by the dredging or disposal operations. The increased navigable capacity of this harbor would provide

for major recreational benefits derived from cruise ships using the port.

4.5.4. Economic

a. Navigation. The proposed work will result in some temporary disruption of normal vessel traffic in the channel. The completion of work will have a favorable short-term impact on the port with resulting beneficial effects to the local and regional economies.

b. Economics. There would be a minor short-term stimulus to the local economy from the sale of goods and services in support of the dredging. There would be a long-term minor impact on the regional economy from the increased safe passage of all types of commercial vessels into this port area.

4.5.5. Cumulative effects. There would be no cumulative effects from the maintenance dredging and disposal operations.

4.5.6. Unavoidable effects. There would be turbidity generated at both the dredging and disposal sites. The excavation of the material would eliminate benthic organisms within the dredging cut and cover the benthic organisms at the disposal site.

4.5.7. Irreversible and Irretrievable Resource Commitments. A long-term commitment has been previously been made concerning the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable.

5.0. LIST OF PREPARERS

NAME	DISCIPLINE	EXPERIENCE	ROLE IN PREPARING EA
William J. Fonferek	Biologist	17 years environmental impacts assessment	O&M NEPA Coordinator, Environmental Impact Assessment, Endangered Species Coordination
Janice E. Adams	Archeologist	8 years experience NEPA documentation,	Cultural Resources Analysis
Paul C. Stevenson	Landscape Architect	7 years landscape architect, field and design work	Aesthetic and Recreational Resource Analysis
Matthew Miller	Environmental Engineer	15 years professional engineer	Water Quality Impacts

6.0 CONSULTATION WITH OTHERS - PUBLIC INVOLVEMENT PROCESS.

6.1. Public Notice Number PN-FPH-168, dated 1 July 92 (see Appendix IV for coordination mailing list), received several comments.

6.2. National Marine Fisheries Service responded with letter dated July 7, 1992. They concluded that work could adversely impact fishery resources for which they are responsible. Comments and recommendations submitted by USFWS also represent those of NMFS. USFWS did not concur with the No Effect determination for threatened and endangered sea turtles in a letter dated August 6, 1992. Their Biological Opinion, dated October 30, 1990, addressing the possible effects of beach disposal of dredged material on nesting sea turtles remains valid.

6.3. State Historic Preservation Office responded with letter dated July 20, 1992. They conclude no significant archaeological or historical sites are recorded for or considered likely to be present within the project area. Therefore, it is their opinion that the proposed project will have no effect on historic properties listed, or eligibility for listing in the National Register of Historic Places.

6.4. Office of the Ft. Pierce City Manager responded with letter dated July 9, 1992. They do not agree with location of disposal site; the city requests the South Jetty Beach be given priority during placement of material on the beach. This section of beach is not sand-tightened and we will not be placing sand in this area, as this would allow sand to re-enter the channel.

6.5. A public notice (PN-FPH-208) was issued on 27 June 1996 for the dredging and redeposition of material in the channel (Appendix IV).

6.6. Mr. John Iliff, National Marine Fisheries Service, responded to the public notice by telephone inquiry dated 10 July 1996 requesting additional information on seagrasses and hardbottoms. He was referred to the Supplemental EIS for the Ft. Pierce Navigation Study dated October 1993.

7.0. INDEX.

8.0. **REFERENCES**

National Marine Fisheries Service. August 25, 1995. *Regional Biological Opinion, Hopper Dredging, South Atlantic Coast.*

U.S. Fish and Wildlife Service. 1987. *Endangered and Threatened Species of Southeastern United States. Region 4, Atlanta, Georgia.*

U.S. Army Corps of Engineers, Jacksonville District. 1986. Ft. Pierce Harbor, Florida. Feasibility Report. Channel Improvement for Navigation.

U.S. Army Corps of Engineers. 1991 Memorandum from CESAJ-CO-ON to CESAJ-PD.

U.S. Army Corps of Engineers, Jacksonville District. 1982. Finding of No Significant Impact with Accompanying Environmental Assessment, Maintenance Dredging and Operations at Ft. Pierce Harbor and Vicinity, St. Lucie County, Florida.

U.S. Army Corps of Engineers, Jacksonville District. 1992. Draft Environmental Impact Statement for the Designation of an ODMDS located off Ft. Pierce Harbor, Florida.

U.S. Fish and Wildlife Service, Division of Fish and Wildlife Enhancement. 1989. City

of Ft. Pierce, Florida Channel Improvement for Navigation Report Planning Aid Report.

United States Environmental Protection Agency, Region IV, 1996. ODMDS Final Environmental Impact Statement Fort Pierce Ocean Dredged Material Disposal Site Designation.

U.S. Army Corps of Engineers, Jacksonville District. October 1993. Supplemental Environmental Information for State Coordination (Ft. Pierce Harbor, Florida). General Design Memorandum.

U.S. Army Engineer Waterways Experiment Station. April 1978. Dredged Material Research Program Technical Report D-78-14. Colonial Bird Use and Plant Succession of Dredged Material Islands in Florida. Vol. I: Sea and Wading Bird Colonies.

U.S. Army Engineer Waterways Experiment Station. December 1978. Dredged Material Research Program. Development and Management of Avian Habitat on Dredged Material Islands.

U.S. Army Engineer Waterways Experiment Station. December 1978. Dredged Material Research Program. An Introduction to Habitat Development on Dredged Material.

APPENDIX I

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS.

1.0 National Environmental Policy Act of 1969, as amended. Environmental information on the project has been compiled and the Environmental Assessment is available for review by the public in compliance with Regulation 33 CFR Parts 335-338. These regulations govern the Operations and Maintenance of U.S. Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged or Fill Material into Waters of the US or Ocean Waters. Public Notices PN-FPH-168 dated 1 July 1992 and PN-FPH-208 dated 27 June 1996 were issued soliciting comments from all interested parties (Appendix IV). Information and issues received from these responses are used in preparation of the environmental assessment. This public coordination and environmental impact assessment complies with the intent of NEPA. The process will fully comply with the Act once the Finding of No Significant Impact has been signed by the District Commander.

2.0 Endangered Species Act of 1973, as amended. Consultations with the NMFS and USFWS was conducted previously by letter dated 14 May 1992 (Appendix I). Previous consultation, a No Effect Determination, and concurrences were referenced concerning the above listed species for previous dredging episodes. The NMFS has responded by letter dated 3 June 1992, referencing the COE 1990 Biological Assessment (BA) for channel dredging activities. The 1990 BA was incorporated by reference pursuant to Section 7 of the Endangered Species Act of 1973. Standard precautions will be taken during maintenance activities to protect manatees and turtles. The USFWS responded verbally 17 June 1992 with a concurrence in the No Effect Determination for species under their jurisdiction and with letter dated August 6, 1992. Consultation was reinitiated with NMFS and USFWS to include hopper dredges with letters dated August 18, 1992. NMFS responded with letter dated September 18, 1992 concurring with our No Effect Determination, providing that a monitoring and survey program be implemented for hopper dredges. During a subsequent dredging event, a sea turtle was inadvertently taken. New consultation was initiated. A new Regional Biological Opinion was issued for the Southeastern United States regarding the use of hopper dredges dated 25 August 1995. This required the monitoring of inflow screening and the use of the draghead deflector. USFWS responded with letter dated September 28, 1992 concurring in our No Effect Determination, providing beach nourishment begin after October 15th and be completed before May 15th in order to avoid the peak sea turtle nesting and hatching season. This project is considered fully coordinated under the Endangered Species Act with receipt of written concurrence of the No Effects Determination from USFWS and NMFS.

3.0 Fish and Wildlife Coordination Act of 1958, as amended. The project has been coordinated with the USFWS during the public

notice periods. No responses was received.

4.0. National Historic Preservation Act of 1966, as amended (PL 89-655). State Historic Preservation Office responded with letter dated July 20, 1992. They concluded no significant archaeological or historical sites are recorded for or considered likely to be present within the project area. Therefore, it is their opinion that the proposed project will have no effect on historic properties listed, or eligibility for listing in the National Register of Historic Places. Cultural resource investigations and coordination with the SHPO is in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, the Archeological and Historic Preservation Act, and Executive Order 11593.

5.0. Clean Water Act of 1972, as amended.

5.1. Section 401. A Water Quality Certification has been issued for the project by letter dated 15 January 1993 by the Florida Department of Environmental Regulation.

6.0 Clean Air Act of 1972, as amended. No air quality permits will be required for this project. Therefore, this Act would not be applicable.

7.0 Coastal Zone Management Act of 1972, as amended. The project has been evaluated in accordance with Section 307 of the Coastal Zone Management Act. It has been determined that the project would have no unacceptable impacts and would be consistent with the Florida Coastal Management Plan (Appendix III). In accordance with the 1979 Memorandum of Understanding and the 1983 Addendum to the Memorandum concerning acquisition of water quality certifications and other State of Florida authorizations, a preliminary Environmental Assessment, a Coastal Zone Management Consistency Determination and Section 404(b)(1) Evaluation will be submitted to the State to show consistency with the Florida Coastal Zone Management Plan. Final acceptance by the State is acknowledged by the issuance of the water quality certification.

8.0 Farmland Protection Policy Act of 1981. No prime or unique farmland will be impacted by implementation of this project. This act is not applicable.

9.0 Wild and Scenic River Act of 1968, as amended. No designated Wild and Scenic river reaches will be affected by project related activities. This act is not applicable.

10.0 Marine Mammal Protection Act of 1972, as amended. The work will be coordinated with the US Fish and Wildlife Service during the public notice period and during Section 7 Consultation pursuant to the Endangered Species Act. The West Indian manatee

could be located in the project area. Standard manatee protection conditions, developed by the State of Florida, will be required during construction (Appendix II). These conditions are accepted by the State and the USFWS as measures to protect the species.

11.0 Federal Water Project Recreation Act, as amended. There is no recreational development proposed for this project. Therefore, this Act does not apply.

12.0 Toxic Substances Control Act of 1976, (PL 94-469; U.S.C. 2601, et seq. This law has been determined not to apply as there are no items regulated under this act being disposed of or affected by this project.

13.0 E.O. 11990, Protection of Wetlands. No wetlands would be affected by this project. Therefore, this project is in compliance with the goals of this Executive Order.

14.0. E.O. 11988, Floodplain Management. There would be no impact on the floodplain or floodplain values and it would not encourage any development of the floodplain, therefore this project is in compliance with the goals of this Executive Order.

15. Marine Protection, Research and Sanctuaries Act of 1972 (33 USC 1401 et seq. In accordance with Section 102(c), the Ocean Dredged Material Disposal Site has been designated by the Environmental Protection Agency by final rule published in the Federal Register dated 11 May 1995 (Appendix IV). A Section 103 Report was prepared on 5 September 1979. No other information is available on previous dredging. Since, the material is to be placed in an upland area, this act is not applicable.

APPENDIX II

ENDANGERED SPECIES CONSULTATION

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

December 29, 1992

Colonel Terrence Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Att: Planning Division

Dear Colonel Salt:

The Fish and Wildlife Service has received your letter of December 11, 1992 regarding the Biological Opinion provided to the Corps of Engineers (Corps) to address potential impacts on threatened and endangered sea turtles as a result of the proposed maintenance dredging of Fort Pierce Harbor.

We find no reason to reinitiate Section 7 consultation at this time or to revise our Biological Opinion of October 30, 1990 (FWS Log No. 4-1-91-212) as you requested. Our letter of September 28, 1992 was not written in error as you implied. As already stated, the Terms and Conditions contained in our Biological Opinion remain requirements of the proposed Federal action.

As the current schedule calls for beach disposal in the first quarter of 1993, consistent with the terms and conditions in our Biological Opinion, we do not understand why this request is being made by the Corps. Further, with conditions within the inlet being amenable to dredging operations year round, summer disposal would result in needless sea turtle nest relocation and subsequent incidental take.

Sincerely yours,

David L. Ferrell
Field Supervisor

cc:
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FG&FWFC, Tallahassee, FL
FG&FWFC, Vero Beach, FL
DER, Tallahassee, FL
DNR, Tallahassee, FL
FWS, Jacksonville, FL

file

December 11, 1992

Planning Division
Environmental Branch

Mr. David L. Ferrell
Field Supervisor
U.S. Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Ferrell:

This is in reference to the proposed maintenance dredging of Fort Pierce Harbor, with beach disposal south of the inlet, currently scheduled for 1st quarter 1993 and previously coordinated with your agency with our letter dated August 18, 1992 (Biological Opinion, FWS Log No: 4-1-91-212, dated October 30, 1992). I would like to reinitiate consultation. The Biological Opinion currently in effect requires all nourishment activities to occur between October 15 and May 15 for the Maintenance Dredging operations.

Due to lack of habitat, this is a very low nesting density beach (Enclosure 1); monitoring and relocation requirements should be sufficient. Possibly, the B.O. was written with Maintenance Dredging of Palm Beach Harbor in mind, as we received only one response letter that referenced both projects (see your letter dated September 28, 1992). Palm Beach disposal area south of the inlet is a high density nesting beach, unlike the disposal area south of the inlet at Fort Pierce Harbor.

Based on previous dredging episodes within the navigational channel, we have determined that there would be no effects on the sea turtle population provided the following special conditions are included within the plans and specifications:

When beach disposal activities occur between March 1 and May 15, nest surveys and relocation must begin 65 days prior to the beginning of beach disposal activities or by March 1, whichever is later. When beach construction activities occur between October 16 and November 30, nest surveys and relocation must begin 65 days prior to the initiation of beach construction and continue until October 15.

We request that Item 1 of the Terms and Conditions listed in the October 30, 1990 Biological Opinion, FWS Log No: 4-1-91-212, for maintenance dredging of Fort Pierce Inlet, specifically be

modified so that all disposal work on the beach to be started after October 15 and completed before May 15 is deleted, or, downgraded to a conservation recommendation.

Changing this requirement would allow the Corps of Engineers to perform this maintenance dredging operation in an environmentally conscientious and cost-effective manner.

Your response to this notification is requested. If you have any questions concerning this matter please contact Ms. Tracy Tevington at telephone 904-232-3332.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

Copy Furnished:

U.S. Fish and Wildlife Service, Jacksonville FL
~~DER, Marlene Stern, Tallahassee, FL~~
DNR, WETSTEIN (Tallahassee)
Tevington/CESAJ-PD-ES/1690
Fonferek/CESAJ-PD-ES
Kurzbach/CESAJ-PD-ES
Smith/CESAJ-PD-E
Bonner/CESAJ-DP-I 12/14
Davis/CESAJ-PD-A
Salem/CESAJ-PD

file

October 5, 1992

Planning Division
Environmental Branch

Mr. David L. Ferrell
Field Supervisor
US Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Ferrell:

Reference the Biological Opinions for the Fort Pierce and Palm Beach Harbors Maintenance Dredging both dated October 3, 1990. We would like to re-initiate consultation on both projects.

It has come to our attention that Condition Number 6 of the Terms and Conditions is not attainable under the US Army Corps of Engineers (Corps) contracting procedures or during normal construction scenarios. If the Corps is required to contract for services to monitor fall turtle nesting prior to initiation of maintenance dredging work, the contractor for the maintenance dredging work will not have been selected, and would not be available to participate in such a meeting.

In addition, if the work is scheduled for the winter period, a subcontractor may not be hired until it is known that the work would indeed enter the spring portion of the nesting season. Therefore, the requirement for a meeting prior to construction start could not be attained.

Also, once a contractor is selected, he is given notice to proceed with the work, normally within 30 days of award. Therefore, the 90 day period required in the B.O. would delay construction beyond established or acceptable timeframe.

If the intent of this condition was to reemphasize the conditions of the Biological Opinion, we point out that we include these conditions in the Plans and Specifications of the contract. There is also a pre-construction meeting with the selected contractor prior to commencement of work. In addition, the contractor must submit an Environmental Protection Plan detailing how compliance with the Environmental portion of the Plans and Specifications will be attained.

Therefore, we propose that this condition is not workable, and we recommend that it be deleted. If you would like to participate in the pre-construction meeting with the contractor or with the turtle monitoring sub-contractor, we would gladly arrange for you to attend. If you have any questions concerning this request, please contact Bill Fonferek at 904-232-2803.

Sincerely,

A. J. Salem
Chief, Planning Division

Fonferek/CESAJ-PD-ES
Manners/CESAJ-PD-ES
~~Kilczbach/CESAJ-PD-ES~~
~~Smith/CESAJ-PD-E~~
Beasley/CESAJ-CO→
~~DiChiara~~/CESAJ-CO
Davis/CESAJ-PD-A
Salem/CESAJ-PD

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

September 28, 1992

Colonel Terrence Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

Dear Colonel Salt:

We have received your letters, both dated August 18, 1992, regarding maintenance dredging of Fort Pierce Inlet and Palm Beach Harbor. We understand that your intention in sending these letters was to inquire as to whether or not our Biological Opinions regarding project impacts to threatened and endangered sea turtles (as revised by letter dated October 25, 1991) are still applicable. Your letter states that the project has been modified to include the possibility that a hopper dredge may be used. Our previous Biological Opinions still apply, and we do not wish to reinitiate consultation. We do not expect the equipment used to affect the quality of the material deposited on the sea turtle beaches nesting or the suitability of those beaches for nesting. However, the use of a hopper dredge may pose a threat to sea turtles within these inlets, and we recommend that you contact the National Marine Fisheries Service for recommendations on reducing that threat.

We note, however, that in the Biological Information you provided, subparagraphs C.(1)(b) and (c) make provisions for nest relocation should these projects extend into the sea turtle nesting season, after March 1. According to section (c), the project may continue until the contract is completed or until the following November 15th, whichever is earlier. This would allow the contractor to continue dredging operations through the peak sea turtle nesting and hatching season.

Please be advised that the Terms and Conditions contained in our Biological Opinions remain requirements of these Federal actions, specifically, the requirement that all beach

nourishment begin after October 15 and be completed before May 15 to avoid the peak sea turtle nesting and hatching season. Be advised also that the Florida Department of Natural Resources will not issue a permit for sea turtle nest relocation when the timing of the permit is contrary to the Terms and Conditions of our Biological Opinion.

Therefore, your proposed "Conditions Involving the Protection of Sea Turtles" are inadequate to protect listed sea turtles. Moreover, they are contrary to the Terms and Conditions set forth for these Federal actions. Any dredging allowed to continue into the peak nesting period under these conditions would be in non-compliance with the Endangered Species Act.

In conclusion, any contracts issued for these Federal actions should specifically list the Terms and Conditions as requirements of the contract. For simplicity, listing the Terms and Conditions verbatim in the contract would suffice.

Please provide us with a copy of the proposed contract for our review. If you have further questions on this matter, please contact Mr. Chuck Sultzman of my staff (407-562-3909).

Sincerely Yours,

David L. Ferrell
Field Supervisor

cc:
EPA, Atlanta, GA
Wetland Regulatory Section

DNR, Tallahassee, FL
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FG&FWFC, Tallahassee, FL
FG&FWFC, Vero Beach, FL
DER, Tallahassee, FL
FWS, Jacksonville, FL

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

September 18, 1992 F/SE013:TAH

Mr. A. J. Salem
Chief, Planning Division
U.S. Dept. of the Army
Jacksonville District, COE
Post Office Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This responds to your August 18 and September 3, 1992, letters regarding the proposed maintenance dredging of approximately 15,000 cubic yards of beach quality sand from shoals in the Fort Pierce Harbor Entrance Channel, Florida. A Biological Assessment (BA) for dredging activities submitted in September 1990 was incorporated by reference pursuant to Section 7 of the Endangered Species Act of 1973 (ESA). Coordination on this action was conducted previously via your letter dated May 14, 1992 and our response letter dated June 3, 1992.

We have reviewed the BA and concur with your determination that populations of endangered/threatened species under our purview would not be adversely affected by the proposed action. This concurrence is based on the relatively limited scope of this action (15,000 cubic yards of materials to be removed) and the lack of information to suggest that turtles are present in this channel.

Despite the fact that you have determined that dredging will not affect sea turtles, you propose to conduct a monitoring and survey program if hopper dredges are used. This program includes the following:

(1) Dredges will be equipped with inflow screening to sample 100 percent of the hopper inflow for the take of turtles or turtle parts,
(2) sea turtle observers approved by NMFS shall be on board at all times during operation of the dredge,
(3) the observers shall check the inflow screens after each dredging cycle for turtles or turtle parts,
(4) records of the screen contents of each load shall be recorded on the appropriate forms and distributed as required by the job specifications,
(5) pre-dredge trawling shall be conducted, and trawling and relocating sea turtles during dredging activities will be performed as necessary.

September 3, 1992

Planning Division
Environmental Resources Branch

Mr. Charles A. Oravetz
National Marine Fisheries Service
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

This is in reference to the proposed maintenance dredging of Fort Pierce Harbor, with beach disposal south of the inlet, currently scheduled for First Quarter 1993, previously coordinated with your agency via our letter dated May 14, 1992, and your response letter dated June 3, 1992, then amended for hopper dredge use with our letter dated August 18, 1992. Approximately 15,000 cubic yards of beach quality sand from shoals in the Fort Pierce Harbor Entrance Channel may be removed by hopper dredge, as described in our letter dated August 18, 1992.

As Dr. Terry Henwood and Ms. Liz Manners of our respective staffs discussed August 27, 1992 by telephone, we wish to change our determination of "may effect" to "no effect" on sea turtles. Because of the limited scope of the dredging project and the absence of data indicating that sea turtles are present in these channels, we have determined that sea turtles under the jurisdiction of the National Marine Fisheries Service will not be affected if a hopper dredge is used. Accordingly, no turtle take is expected nor authorized for this dredging project.

However, in order to provide statistical data for future consultations on similar dredging projects, we propose to survey these channels prior to dredging and to verify that no dredge take occurs through screening and observer coverage, as described in detail in our letter dated August 18, 1992.

Your written concurrence is requested. Point of contact is Mr. Bill Fonferek at 904-232-1690.

Sincerely,

A. J. Salem
Chief, Planning Division

bcc:

CESAJ-CO-ON

Tevington/CESAJ-PD-ES/3332/lds
Fonferek/CESAJ-PD-ES 9/3
Kurzbach/CESAJ-PD-ES
Smith/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

NMFS considers this monitoring and survey program to be highly responsive to sea turtle/hopper dredge concerns in other channels and encourages the COE to collect this information for future consultation purposes. However, it should be clearly understood that NMFS has concurred with your "no affect" determination, and thus, no take is expected or authorized for this project.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions please contact Terry Henwood, Fishery biologist, at 813/893-3366.

Sincerely yours,

Terry Henwood

for Andrew J. Kemmerer
Regional Director

cc: F/SE02
F/PR2

August 18, 1992

Planning Division
Environmental Branch

Mr. Charles A. Oravetz
National Marine Fisheries Service
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

This is in reference to the proposed maintenance dredging of Fort Pierce Harbor, with beach disposal south of the inlet, currently scheduled for 1st quarter 1993, previously coordinated with your agency via our letter dated May 14, 1992 and your response letter dated June 3, 1992. Approximately 15,000 cubic yards of beach quality sand from shoals in the Ft. Pierce Harbor Entrance Channel may be removed by hopper dredge.

In accordance with 50 CFR 402.12 (g), we wish to incorporate by reference our September 18, 1990, Biological Information and your June 3, 1992 response.

Sea turtles are the only listed species under your jurisdiction that may have the potential to be affected by the projects, as proposed.

We wish to modify our previous assessment of the work to include the use of hopper dredge(s). If a hopper dredge is used, we plan the following: dredges will be equipped with inflow screening to sample 100 percent of the hopper inflow for the take of turtles or turtle parts, sea turtle observers approved by NMFS shall be on board at all times during operation of the dredge, the observers shall check the inflow screens after each dredging cycle for turtles or turtle parts, records of the screen contents of each load shall be recorded on the appropriate forms and distributed as required by the job specifications, turtles and turtle parts shall be identified by species when possible, observers (or their representatives) shall transport injured sea turtles to a rehabilitation facility such as Marineland or Sea World, positively identified turtle parts shall be disposed of, use of deflector devices with 6" by 6" openings shall be installed on all dragheads, pre-dredge trawling shall be conducted, and trawling and relocating sea turtles during dredging activities will be performed as necessary.

The impact on sea turtles of previous dredging activities at Fort Pierce Harbor with a hopper dredge is not available, as turtle monitoring requirements for hopper dredges were not in affect during the 1980's. Phone conversations with DNR indicate strandings summarized in the attached table.

Based on the above information we believe sea turtles under your jurisdiction may be affected by the work, if conducted with a hopper dredge. Please provide your Biological Opinion (BO) on this proposed action at Fort Pierce Harbor. Point of contact is Bill Fonferek at 904-232-1690.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc: CESAJ-CO-ON

Fonferek/CESAJ-PD-ES/1690
~~Kurzbach~~/CESAJ-PD-ES
~~Smith~~/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

August 18, 1992

Planning Division
Environmental Branch

Mr. David L. Ferrell
Field Supervisor
U.S. Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Ferrell:

This is in reference to the proposed maintenance dredging of Fort Pierce Harbor, with beach disposal south of the inlet, currently scheduled for 1st quarter Fiscal Year 1993, previously coordinated with your agency via our letter dated May 14, 1991 and your response letter dated August 6, 1992. Approximately 15,000 cubic yards of beach quality sand from shoals in the Fort Pierce Harbor Entrance Channel may be removed by hopper dredge.

In accordance with 50 CFR 402.12 (g), we wish to incorporate by reference our September 18, 1990, Biological Information and your response dated August 6, 1992. We wish to include the use of a hopper dredge in addition to a hydraulic pipeline dredge.

The addition of a hopper dredge to the approved methods of dredging would most likely not affect manatees but may affect nesting sea turtles. The Biological Opinion for this project appears to be adequate for species under your jurisdiction. We request your concurrence in this determination.

Please provide your Biological Opinion (BO) on this proposed action at Fort Pierce Harbor. Point of contact is Bill Fonferek at 904-232-1690.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc: CESAJ-CO-ON

Tevington/CESAJ-PD-ES/1690
~~Kurzbach~~/CESAJ-PD-ES
~~Smith~~/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

June 3, 1992 F/SE013:TLD

Mr. A. J. Salem
Chief, Planning Division
U.S. Dept. of the Army
Jacksonville District, COE
Post Office Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This responds to your May 14, 1992, letter regarding the proposed maintenance dredging of 15,000 cubic yards of beach quality sand from shoals in the Ft. Pierce Harbor Entrance Channel. A Biological Assessment (BA) for dredging activities submitted in 1990 was incorporated by reference pursuant to Section 7 of the Endangered Species Act of 1973 (ESA).

We have reviewed the BA and concur with your determination that populations of endangered/threatened species under our purview would not be adversely affected by the proposed action. As in our prior consultation, this concurrence is based on implementation of the special provisions identified in your BA.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions please contact Terry Henwood, Fishery Biologist, at 813/893-3366.

Sincerely yours,

Andrew J. Kemmerer
Regional Director

cc: F/SE02
F/PR2

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

August 6, 1992

Colonel Terrence Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Att: Planning Division

Dear Colonel Salt:

The Fish and Wildlife Service has received your letter dated May 14, 1992, regarding maintenance dredging operations in Fort Pierce Harbor. Dredged material, would be disposed of on the beach, south of Ft. Pierce Inlet. You have made "no effect" determinations for the endangered West Indian manatee, and, the threatened and endangered sea turtles. Our position, on these determinations remains the same as expressed in our letter of October 30, 1990. We concur, with your determination of no effect on the West Indian manatee, and we do not concur with your no effect determination for threatened and endangered sea turtles.

Our Biological Opinion, dated October 30, 1990, addressing the possible effects of beach disposal of dredged material on nesting sea turtles remains valid. The Opinion, was amended by letter dated October 25, 1991, and this amendment also applies. Thank you for this opportunity to provide you with our comments.

Sincerely Yours,

C.W. (Bill) Hoeft
Acting Field Supervisor

cc:
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FG&FWFC, Tallahassee, FL
FG&FWFC, Vero Beach, FL
DER, Tallahassee, FL
DNR, Tallahassee, FL
FWS, Jacksonville, FL

file

May 14, 1992

Planning Division
Environmental Resources Branch

Mr. Charles A. Oravetz
National Marine Fisheries Service
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

This is in reference to the proposed maintenance dredging of Ft. Pierce Harbor Entrance Channel, with beach disposal south of the inlet, currently scheduled for 1st quarter 1993. Approximately 15,000 cubic yards of beach quality sand from shoals in the Ft. Pierce Harbor Entrance Channel will be removed by hydraulic pipeline dredge.

Based on the enclosed previous biological information, the U.S. Army Corps of Engineers has determined that the proposed action will not affect any threatened or endangered species or critical habitat. We have previously requested concurrence with a No Effect Determination for the dredging of Ft. Pierce Harbor in FY 90, by letter dated September 18, 1990. Your office responded to that determination and concurred with the attached Biological Opinion for endangered and threatened sea turtles, with letter dated September 27, 1990.

In accordance with 50 CFR 402.12 (g), we wish to incorporate by reference the U.S. Army Corps of Engineers' September 18, 1990, Biological Information.

Your response to this notification is requested. If you have any questions concerning this matter please contact Mr. Bill Fonferek at telephone 904-791-1690.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc: CESAJ-CO-ON

Fonferek/CESAJ-PD-ES/1690
sdm 5/14/92
Kurzbach/CESAJ-PD-ES
Smith/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

w/c 16/6/92

file

May 14, 1992

Planning Division
Environmental Resources Branch

Mr. David L. Ferrell
Field Supervisor
U.S. Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Ferrell:

This is in reference to the proposed maintenance dredging of Ft. Pierce Harbor Entrance Channel with beach disposal south of the inlet, currently scheduled for 1st quarter 1993. Approximately 15,000 cubic yards of beach quality sand from shoals in the Ft. Pierce Harbor Entrance Channel will be removed by hydraulic pipeline dredge.

Based on the enclosed previous biological information, the U.S. Army Corps of Engineers has determined that the proposed action will not affect any threatened or endangered species or critical habitat. We have previously requested concurrence with a No Effect Determination for the dredging of Ft. Pierce Harbor in FY 90, by letter dated September 21, 1990. Your office responded to that determination with the attached Biological Opinion for endangered and threatened sea turtles, dated October 23, 1990 (FWS Log No. 4-1-91-211). Later, Item Number 3 in the section of your Biological Opinion entitled "Terms and Conditions" was revised by your letter dated October 25, 1991. In accordance with 50 CFR 402.12 (g), we wish to incorporate by reference the U.S. Army Corps of Engineers' September 21, 1990, Biological Information, and your October 30, 1990, and October 25, 1991, Biological Opinions (BO).

Based on previous dredging episodes within the navigation channel, we have determined that there would be no effects on the manatee provided special conditions are included within the plans and specifications.

Based on previous dredging episodes within the navigational channel, we have determined that there would be no effects on the sea turtle population provided the following special condition is included within the plans and specifications: when beach disposal activities occur between March 1 and May 15, nest surveys and relocation will begin 65 days prior to the beginning of beach disposal activities or by March 1, whichever is later.

When beach disposal activities occur between October 16 and November 30, nest surveys and relocation will begin 65 days prior to the initiation of beach construction and continue until October 15. All work on the beach will be started after October 15 and completed before May 15.

Your response to this notification is requested. If you have any questions concerning this matter please contact Mr. Bill Fonferek at telephone 904-791-1690.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc: CESAJ-CO-ON

Tevington/CESAJ-PD-ES/1690
sdm 5/14/92
~~Gurzbach~~/CESAJ-PD-ES
Smith/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

October 25, 1991

Colonel Terrence C. Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Bill Fonferek, Planning Division

Dear Colonel Salt:

In response to a recent telephone conversation between Mr. Fonferek and me, the Service has reviewed the Terms and Conditions provided in our Biological Opinion (FWS Log No. 4-1-91-211), dated October 23, 1990. The Corps of Engineers questioned the requirement to conduct sea turtle nest relocation until November 30. Since issuance of that Biological Opinion, the Service has revised the requirements for nest relocation for beach renourishment activity occurring in the fall.

Please replace Item Number 3 in the section of the Biological Opinion entitled "Terms and Conditions" with the following:

3. When beach nourishment activities occur between March 1 - May 15, nest surveys and relocation must begin 65 days prior to the beginning of beach construction activities or by March 1, whichever is later. When beach construction activities occur between October 16 - November 30, nest surveys and relocation must begin 65 days prior to the initiation of beach construction and continue until October 15.

All of the other terms and conditions of our original Biological Opinion remain in effect, including the condition that work on the beach be started after October 15 and completed before May 15.

If you have further questions on this matter, please contact Mr. Robert Pace of my staff (407-562-3909).

Sincerely yours,

David L. Ferrell
Field Supervisor

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

October 30, 1990

Colonel Bruce A. Malson
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

FWS Log No: 4-1-91-212

Dear Colonel Malson:

This responds to your letter of September 21, 1990, in accordance with Section 7 of the Endangered Species Act of 1973, as amended, on the proposed maintenance dredging of Fort Pierce Inlet as part of the Fort Pierce Harbor project, St. Lucie County, Florida.

The Corps of Engineers has determined that this action would have "no effect" on the endangered manatee and threatened and endangered species of sea turtles. Based on our preliminary review, we are able to concur with one of these determinations, and not the other, as explained below.

Since the Project Manager has assured us all standard manatee construction precautions will be included in the dredging plans and contracts, we concur with your determination of "no effect" for the West Indian manatee. If standard measures for protection of manatees cannot be implemented for any reason, this concurrence would be invalid and your agency would be required to re-initiate consultation with the Fish and Wildlife Service.

Since the biological information supplied has not assured us that the project will be constructed exclusively during the winter months, sea turtles could be nesting on the beach at the time of construction. We, therefore, cannot concur with your determination of "no effect" on sea turtles, and the following Biological Opinion is provided for endangered and threatened sea turtles.

PROJECT DESCRIPTION

The proposed work will consist of placing approximately 26,000 cubic yards of sandy dredged material along 2,000 feet of beach, beginning 1,000 feet south of the south jetty. Sand will be placed in a berm 125 feet in width, extending from one foot below mean high water to seaward. The sand will be dredged from three shoal areas within the inlet and offshore. The silt content of this sand should be very low because the inlet area is well flushed by tidal currents.

FISH AND WILDLIFE RESOURCES

Fish and wildlife habitats in the project area which could be affected by this beach erosion control project include the intertidal beach zone, and the supralittoral beach which serves as nesting habitat for up to four species of threatened or endangered sea turtles.

Community Description

Intertidal Beach Zone. The beaches of St. Lucie County are typical of other east-central Florida beaches which are subject to the full force of ocean waves. These beaches usually have low species diversity, but populations of individual species are often very large. Species such as coquina clams, ghost crabs, mole crabs and sand drum are highly specialized to survive in this high energy environment.

PROJECT IMPACTS

Beach zone. Since sandy beaches are populated by small, short-lived organisms with great reproductive potential, in most instances, these communities recover quickly from most environmental disturbances. The impacts of this maintenance dredging project on the beach zone fauna depends primarily on the quality of the nourishment material. Since sand with similar grain size and composition to the natural beach will be used, recovery of the beach fauna should occur in a few months or less.

Sea Turtles. At least three, and possibly four, species of threatened and endangered sea turtles nest on the beaches within the project area, the extent to which these turtles utilize Fort Pierce Beach and the anticipated impact by the project on sea turtles is discussed in detail in the following Biological Opinion.

CONSULTATION HISTORY

By letter dated September 21, 1990, the Corps of Engineers (Corps) determined the proposed action would not affect sea turtles. The Service does not concur with that determination and notified the Corps of our intent to prepare a Biological Opinion by telephone on October 10, 1990.

BIOLOGICAL OPINION

This represents the Biological Opinion of the Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act. An administrative record of this consultation is on file in the Vero Beach, Florida, Field Office.

A. Species Affected.

Four species of sea turtles are known to nest in Florida: the loggerhead (Caretta caretta), green (Chelonia mydas), leatherback (Dermochelys coriacea), and hawksbill (Eretmochelys imbricata). The loggerhead turtle is expected to be by far the most common nesting species at the project site. Nesting by green turtles and leatherback turtles is relatively low along Florida's Atlantic Coast, but some nesting by these species occurs in St. Lucie County beaches. Nesting of hawksbill turtles has not been recorded in St. Lucie County, but has been observed in Volusia, Martin, and Dade Counties. There is a slight chance that the species could nest on the presently considered stretch of beach.

Please refer to our Biological Opinion (Consultation Number 4-1-90-274) dated August 3, 1990, regarding the City of Delray Beach beach nourishment project for more detailed accounts of the biology of each species.

B. Potential Adverse Impacts.

We are concerned with the timing of the harbor maintenance activities and the possible compaction of the beach from nourishment material. We believe that if maintenance and beach nourishment is undertaken during the nesting season, even with a relocation program, some nests will most likely remain undetected and subsequently buried by the nourishment material or crushed by heavy equipment. In spite of the best intentions and efforts by persons relocating nests; wind, rain, and tides can quickly obscure tracks and prevent workers from finding nests. In addition, turtles' activities can often obscure nest locations, making interpretation of the site difficult, and depending on the experience and motivation of workers, some nests will remain undetected. Also, the physical impact of the construction equipment must be considered.

We object to disposal of sand on the beach during the main part of the nesting season. A nest relocation program must be conducted in the project area if the work is conducted at the beginning or end of the nesting season, as detailed below in Terms and Conditions.

It is the Service's Biological Opinion that the project is not likely to jeopardize the continued existence of listed sea turtles. We do believe, however, that adverse impacts to sea turtles could result, particularly when viewed cumulatively in the context of other nourishment projects planned on sea turtle nesting beaches in Florida this year. The Reasonable and Prudent Measures provided with the Incidental Take Statement will reduce these possible impacts.

INCIDENTAL TAKE

Section 7(b)(4) of the Act requires that when a proposed agency action is found to be consistent with Section 7(a)(2) of the Act and the proposed action is likely to result in the take of some individuals of the listed species incidental to the action, the Service will issue a statement that specifies the impact (amount or extent) of such incidental taking. It also states that reasonable and prudent measures, coupled with terms and conditions to implement these measures, be provided to minimize such impacts. The Service must also specify procedures to be used to handle or dispose of any individual specimens taken. Reasonable and prudent measures are requirements of the action agency.

We have reviewed the biological information and other information relevant to this action, and based on our review, incidental take is authorized for all nests missed by a nest relocation program within the project boundary. This is inclusive of the direct impacts of nest burial and crushing and the indirect impacts of aberrant nests and broken eggs which may result from sand compaction in nesting seasons subsequent to nourishment activities.

REASONABLE AND PRUDENT MEASURES

The Service considers the following reasonable and prudent measures are necessary and appropriate to minimize the take of threatened and endangered sea turtles:

1. Construction activities will not occur during the main portion of the nesting season.

2. During periods of lower nesting activity near the beginning and end of the overall turtle nesting season, relocation of nests will be required.

3. Nourished beaches will be tilled if compaction or escarpments occur.

TERMS AND CONDITIONS

Section 9 of the Endangered Species Act prohibits the taking of listed species without a special exemption. In order to be exempt from the prohibitions of Section 9 of the Act, the following terms and conditions, which implement the reasonable and prudent measures described above, must be complied with.

1. The sea turtle nesting and hatching season in this area is between March 1 and November 30. To minimize the need for nest relocation and, therefore, reduce the possibility of nest burial or crushing of missed nests, maintenance dredging and beach nourishment will be started after October 15 and completed before May 15 (preferably after November 5 and before May 1).

2. Nourished beaches will be plowed to a depth of at least 36 inches immediately following completion of beach nourishment if sand compaction is greater than 500 cone penetrometer units. (In consideration of the grain size of the dredged material, it appears unlikely that compaction will exceed this figure, but it must be tested.)

3. Nest relocation activities must begin 65 days prior to nourishment activities which occur within the nesting and hatching season (March 1 - November 30) or by March 1, whichever is later. Nest relocation must also be extended to November 30 or completion of the project (which ever is sooner) if any disposal occurs after October 15.

4. Nest surveys and relocations will be conducted by personnel with prior experience and training in nest survey and relocation procedures, and with a valid Florida Department of Natural Resource permit. This is essential to reduce the number of undetected nests.

5. Nests shall be relocated between sunrise and 10 a.m. each day, and the relocation will be to a nearby self-release beach hatchery in a secure setting where artificial lighting will not conflict with hatchling orientation.

6. The Corps will arrange a meeting with the participation of the contractor, the Fish and Wildlife Service, and the Florida Department of Natural Resources, 90 days prior to commencing work on this project. This will allow the agencies to explain the turtle protection measures to the contractor.

7. A report describing the actions taken to implement the terms and conditions will be submitted to this office within 60 days of completion of the proposed work for each year when activity has occurred. This report will include dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, description and location of hatcheries, nest survey and relocation results and hatching success of nests.

In the event a turtle nest is dug up by beach construction activities, the following procedure should be followed:

1. Immediately notify the Florida Department of Natural Resources-permitted individual responsible for nest relocation on the project for removal of the nest to the beach hatchery. Before eggs are relocated, the top of each egg will be marked with a non-toxic felt-tipped pen and individually and gently placed on 2-3 inches of moist sand in a rigid-walled container, being careful not to change the axis of the eggs. Eggs will be covered with a fine nylon mesh and then 2-3 inches of moist sand, shaded from the sun, and immediately transported to the hatchery. Eggs will be placed one at a time in the artificial nest chamber, while ensuring that the orientation of each egg remains as in the natural nest.

This concludes consultation under Section 7 of the Act, as amended. If there are modifications made to these projects or if additional information becomes available relating to threatened or endangered species, re-initiation of consultation may be necessary.

Sincerely yours,

David L. Ferrell
Field Supervisor

Enclosure
cc:
FWS, Jacksonville, FL (Attention: E. Possardt)
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FG&FWFC, Tallahassee, FL
FG&FWFC, Vero Beach, FL
DER, Tallahassee, FL
DNR, Tallahassee, FL
DNR, Stuart, FL (Attention: Barbara Schroeder)

APPENDIX III

COASTAL ZONE MANAGEMENT CONSISTENCY DETERMINATION

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

1. **Chapter 161, Beach and Shore Preservation.**

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The discharge would occur between the mean high and low tide lines. The discharge will not adversely impact natural shoreline processes. Therefore, the discharge will comply with the intent of the Chapter. The proposed disposal of material along the beach area will help preserve the integrity of the shoreline and will not interfere with existing coastal processes. Information will be submitted to the state for a permit in compliance with this chapter. Final compliance will be achieved be receipt of the State Water Quality Certification.

2. **Chapters 186 and 187, State and Regional Planning.**

These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. It's purpose is to define in a broad sense, goals, and policies that provide decision-maker directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed work will be coordinated with the State during public notice period and during the water quality certification process.

3. **Chapter 252, Disaster Preparation, Response and Mitigation.**

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The dredging and disposal of material on the beach south of the inlet and in the ODMDS will protect the navigation channel which could be used in emergency situations for transportation purposes in the area. The berm created in the beach disposal will protect adjacent property in time of hurricane. Therefore, this work would be consistent with the efforts of Division of Emergency Management.

4. **Chapter 253, State Lands.**

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and natural and artificial reefs.

Response: The maintenance dredging and use of the beach disposal site and the ODMDS have been previously accomplished. The use of these submerged lands has been approved by the state. No significant adverse impacts on submerged resources are anticipated. Therefore, the proposed work would comply with the intent of this chapter.

5. **Chapters 253, 259, 260, and 375, Land Acquisition.**

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: Since the affected property already is in public ownership, this chapter would not apply.

6. **Chapter 258, State Parks and Aquatic Preserves.**

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed work would not affect any parks or preserves, and would, therefore, be consistent with this chapter.

7. **Chapter 267, Historic Preservation.**

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: The maintenance of the existing navigation channel has been coordinated with the State Historic Preservation Officer. Procedures will be implemented to avoid impacts on unknown archeological resources within the navigation channel. Therefore, the work will be consistent with the goals of this chapter.

8. **Chapter 288, Economic Development and Tourism.**

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The maintenance dredging of the navigation channel and the continued maintenance of a viable beach would promote tourism and economic development of Ft. Pierce Harbor and its adjacent beaches. Therefore, the work would be consistent with the goals of this chapter.

9. **Chapters 334 and 339, Public Transportation.**

This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: The maintenance dredging of the navigation channel promotes commercial and recreational navigation within Ft. Pierce Harbor.

10. **Chapter 370, Saltwater Living Resources.**

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fisherman and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, studies and research.

Response: The maintenance dredging of this area would not adversely affect saltwater living resources. Based on the overall impacts of the work, the work is consistent with the goals of this chapter.

11. **Chapter 372, Living Land and Freshwater Resources.**

This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic and economic benefits.

Response: No living land or freshwater resources would be impacted by the maintenance dredging. Therefore, the work would comply with the goals of this chapter.

12. **Chapter 373, Water Resources.**

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This work does not involve water resources as described by this chapter.

13. **Chapter 376, Pollutant Spill Prevention and Control.**

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This work does not involve the transportation or discharging of pollutants. Special conditions have been added to the contract specifications to control inadvertent spill of pollutants during construction. Therefore, the work will comply with the intent of the Act.

14. **Chapter 377, Oil and Gas Exploration and Production.**

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This work does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore does not apply.

15. **Chapter 380, Environmental Land and Water Management.**

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The maintenance dredging of the navigation channel has been coordinated with the local regional planning commission. Prior to project authorization, the project will be coordinated with local and state agencies with issuance of a Public Notice. Therefore, the work would be consistent with the goals of this chapter.

16. **Chapter 388, Arthropod Control.**

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The work would not further the propagation of mosquitoes or other pest arthropods.

17. **Chapter 403, Environmental Control.**

This chapter authorizes the regulation of pollution of the air and waters of the state by the DER.

Response: There will not be any air quality degradation. Effects of the operation of construction equipment on air quality would be minor. No permits will be required. Therefore, the work is complying with the intent of this chapter.

18. **Chapter 582, Soil and Water Conservation.**

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the work. Particular attention will be given to work on or near agricultural lands.

Response: The proposed work is not located near or on agricultural lands and therefore, this chapter would not apply.

LAST ITEM

APPENDIX IV

COORDINATION DOCUMENTATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

January 14, 1993

A. J. Salem
Chief, Planning Division
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

Per your request, this letter provides concurrence for maintenance dredging for the Fort Pierce Harbor entrance channel cut 1 and between stations 00+00 and 50+00 of cut 2. It is understood that this dredging is for the shoals identified by the attached dredging limits and attached map supplied by the Jacksonville District. This letter of concurrence is only for this dredging cycle beginning January 1993.

The Corps of Engineers' 103 Evaluation request for concurrence of dredge material from Fort Pierce Harbor and the entrance channel to the harbor is under review by EPA Region IV staff.

Sincerely,

Robert B. Howard
Chief, Coastal Regulatory Unit

enclosures

Ft. Pierce Tribune

1/1/93

No. 82983
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO
ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a permit (File No. 562144859)to the Corps of Engineers, c/o Richard Bonner, P.E., P.O. Box 4970, Jacksonville, FL 32232, to maintenance dredge the turning basin and Cuts 1 and 2 of the Ft. Pierce entrance channel.

The project site is located in Ft. Pierce Inlet, Indian River Lagoon, South Hutchinson Island, St. Lucie County, Section 36, Township 34 South, Range 40 East, and Section 1, Township 35 South, Range 41 East, Class III waters, not in an aquatic preserve.

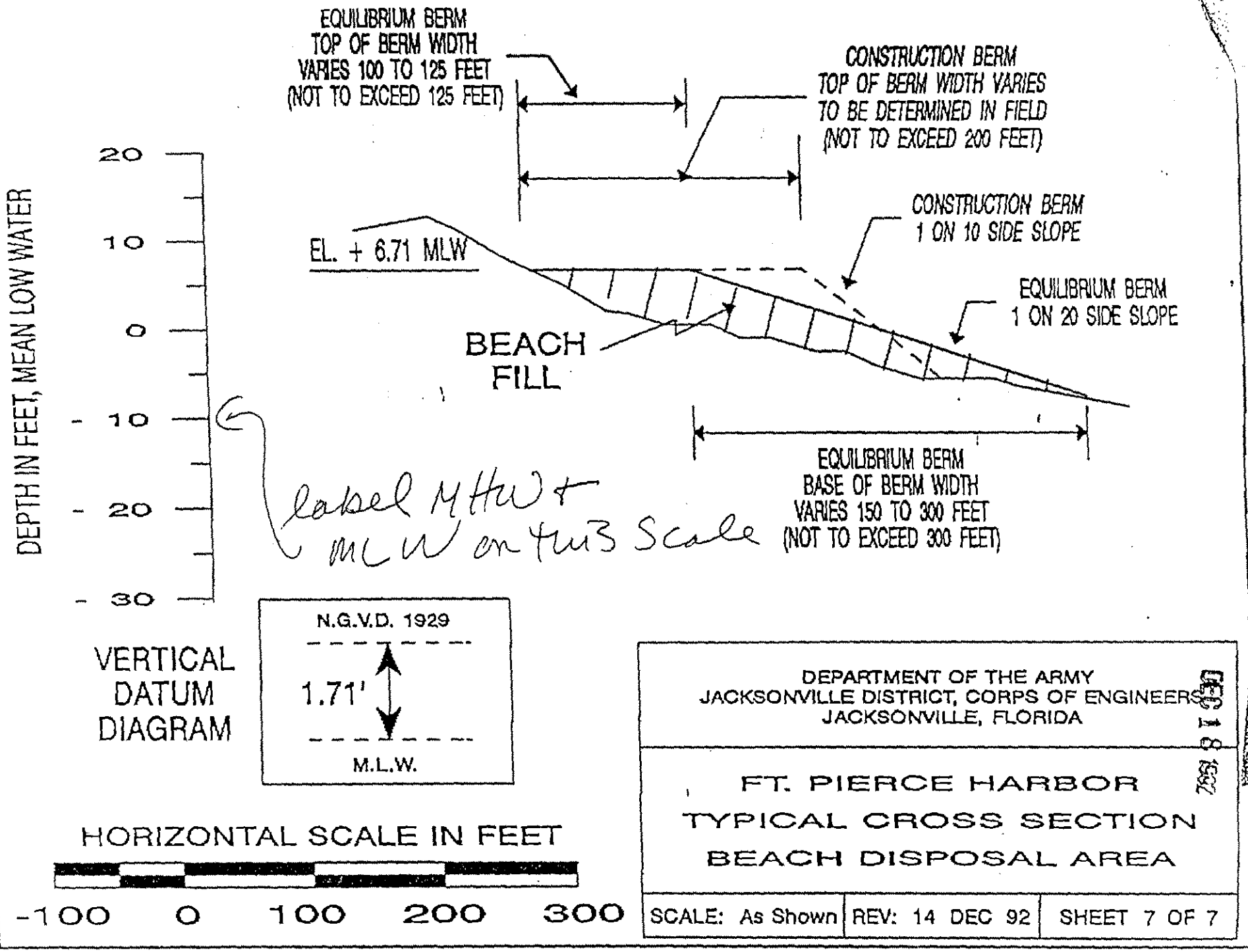
A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action of proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action of proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Publish: January 1, 1993

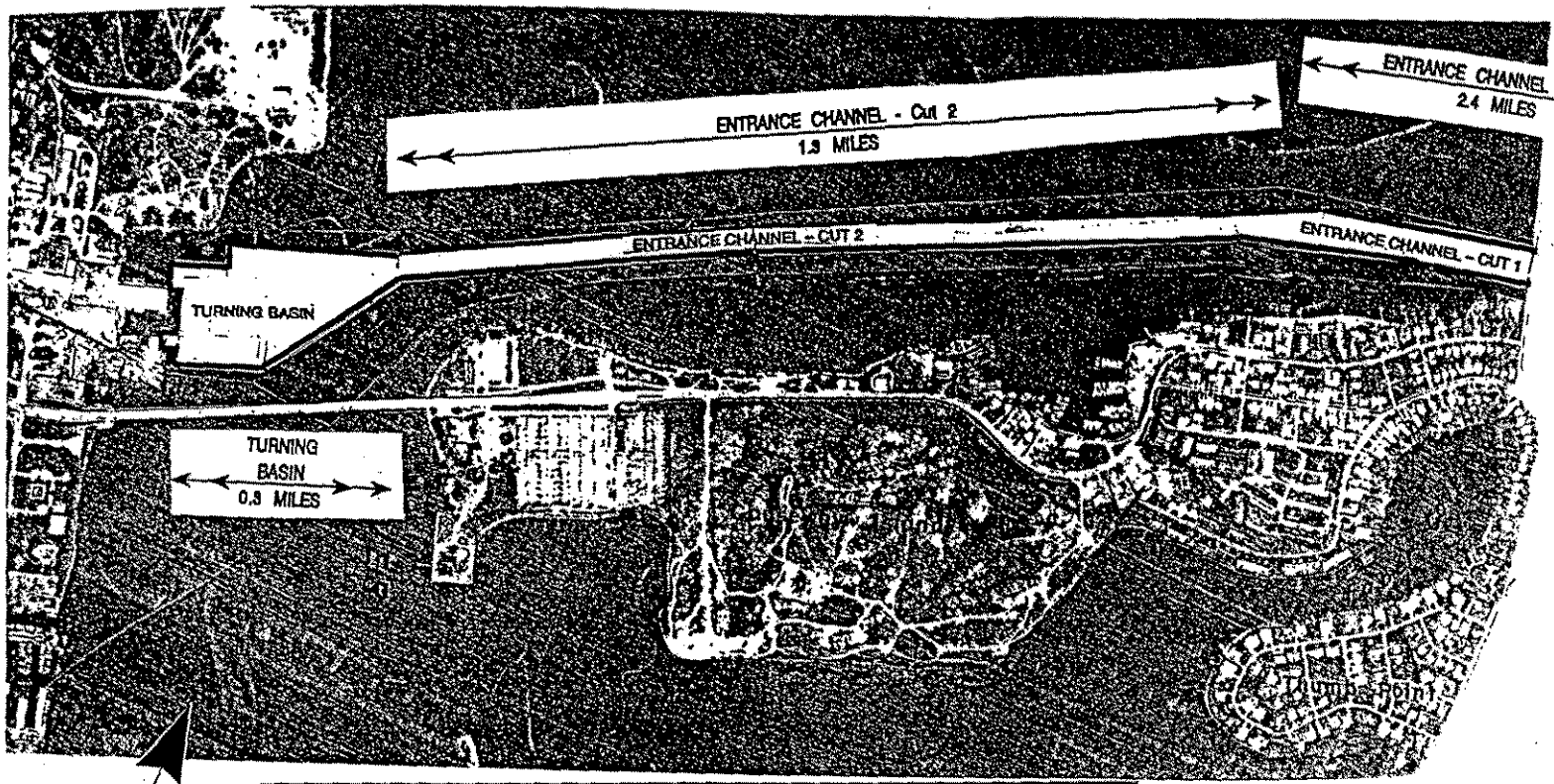


DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
BEACH DISPOSAL AREA

SCALE: As Shown	REV: 14 DEC 92	SHEET 7 OF 7

DEC 18 1992



PROJECT DIMENSIONS

SECTION	LENGTH	CHANNEL WIDTH	AUTHORIZED PROJECT DEPTH	ADVANCED MAINTENANCE DEPTH	REQUIRED DREDGING DEPTH
ENTRANCE CHANNEL – CUT 1	5,700'	350'	27'	3'	30'
	6,600'	NARROWS TO	27'	3'	30'
CUT 2	5,000'	200'	25'	5'	30'
	1,976'	200'	25'	2'	27'
TURNING BASIN	936'	WIDENS TO	25'	2'	27'
	700'	900'	25'	2'	27'

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
PROJECT LOCATION

SCALE: As Shown	DATE: Apr 92	SHEET 1 OF

Jill

CESAJ-PD-ES 8 October 1992

MEMORANDUM FOR Chief, Construction-Operations Division

SUBJECT: Surveys To Determine Relative Abundance of Sea Turtles in Ft. Pierce and Palm Beach Harbor Channels and Ft. Pierce Turning Basin, Florida

1. Per your verbal request, we have investigated the possibility of conducting trawl surveys at Ft. Pierce and Palm Beach Harbor Channels and Ft. Pierce Turning Basin before the end of December 1992. The purpose of the surveys would be to assess the relative abundance of sea turtles during December 1992 in the Ft. Pierce and Palm Beach Harbor Channels and Ft. Pierce Turning Basin.

2. Waterways Experiment Station (WES) could, for $2,000 per day, provide all personnel, personal services, and equipment (special nets, tags, blood sampling equipment and analyses, etc.) necessary to conduct the trawl surveys. It is estimated that 2 days would be necessary to survey the 4-mile Ft. Pierce Harbor project and an estimated 2 days to survey the 1.5-mile Palm Beach Harbor project. Funds ($8,000) should be transmitted to WES by MIPR. POC is Mr. Dave Nelson at 601-634-4016.

3. A research vessel would be required, and may be provided by the University of Georgia, Marine Extension Center in Brunswick, Georgia or Captain Eddie Chadwich of Canaveral Harbor, Florida, depending on availability. Estimated cost is $2,000 per day ($8,000).

4. The trawl survey could be conducted by the above parties the third week in December 1992. However, funds would need to be transferred immediately to avoid problems with meeting this time frame.

5. A scope of work (SOW) for the surveys is enclosed. Ms. Liz Manners (ext. 1691) is the POC for technical matters. Any questions, problems, or suggested changes to the SOW must be coordinated through her. Please provide to CESAJ-PD-ES (Manners) copies of all transactions involving the contracts for trawl surveys. It is understood that CESAJ-CO will be administering the contract.

Encl

A. J. SALEM
Chief, Planning Division

Tevington/CESAJ-PD-ES/3332/km 10/8/92
~~Kurzbach/CESAJ-PD-ES~~
~~Smith/CESAJ-PD-E~~ 10x92
Davis/CESAJ-PD-A
Salem/CESAJ-PD

CESAJ-CO-ON (1130) 24 September 1992

MEMORANDUM FOR CESAJ-~~EN~~ PD-E

SUBJECT: ~~NEPA~~ EBA Documentation, Maintenance Dredging Palm Beach Harbor and Fort Pierce Harbor

1. Reference discussion concerning subject projects between:

Tracy Tevington	CESAJ-PD-ES
Patricia Hanson	CESAJ-CO-ON

2. Request ~~NEPA~~ EBA documentation be revised to include use of hopper dredge for both projects and dredging of the Fort Pierce Turning Basin with disposal in the overlapping sections of the existing Ocean Dredged Material Disposal Site (ODMDS) and the new site.

3. Contact Dan Beasley, extension 2071, concerning cost codes.

for GIRLAMO DiCHIARA
Chief, Construction-Operations
Division

CF:
CESAJ-DP-I
CESAJ-EN-LW
CESAJ-CT

Lo-O

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250
Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

July 20, 1992

Mr. Charles J. McGehee, Chief
Construction-Operations Division
Environmental Resources Branch
US Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019

In Reply Refer To:
Susan Hammersten
Historic Sites
Specialist
(904) 487-2333
Project File No. 922002

Re: PN-FPH-168
Annual Maintenance Dredge of Fort Pierce Harbor
Fort Pierce, St. Lucie County, Florida

Dear Mr. McGehee:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the above referenced project(s) for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

A review of the Florida Site File indicates that no significant archaeological or historical sites are recorded for or considered likely to be present within the project area. Furthermore, it is the opinion of this agency that because of the project location and/or nature it is unlikely that any such sites will be affected. Therefore, it is the opinion of this office that the proposed project will have no effect on historic properties listed, or eligible for listing in the National Register of Historic Places and the project may proceed.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

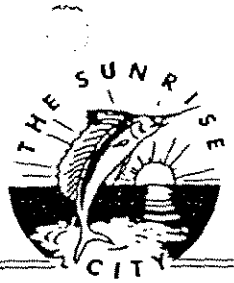
Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Hsh

CITY OF FORT PIERCE
Florida



1. JS
2. CS CAS
RM Lets
tal CAS

OFFICE OF THE CITY MANAGER
CITY HALL, 100 NORTH U.S. 1
P.O. BOX 1480
FORT PIERCE, FLORIDA 34954-1480

TEL. (407) 460-2200

July 9, 1992

Ms. Marlene Stern, Environmental Specialist
Wetland Resource Regulation, DER
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Mr. Richard E. Bonner, Deputy District Engineer
Project Management, Army Corps of Engineers
P. O. Box 4970
Jacksonville, FL 32232-0019

Re: Standard Form Application (File 562144859 - CESAJ-PD-EE)

Dear Ms. Stern and Mr. Bonner:

On June 15, 1992, Mayor William R. Dannahower received a standard form application, above referenced, that involved dredge and fill activities in waters of the State within the City's jurisdiction, submitted by Marlene Stern, addressed above. Specifically, this application involves dredging of the Fort Pierce Inlet entrance channel and the Port of Fort Pierce turning basin. According to a description of the project, Annex A of the application, beach quality material will be placed in the beach disposal area that is 1,000 feet south of the South Jetty and 2,000 feet long. This disposal area does not include the heavily eroded South Jetty Beach, located 1,000 feet south and adjacent to the South Jetty.

When we received the DER notice on June 15th, our City Engineer, Hector P. Arias, P.E., contacted Ms. Hanson at the Army Corps, to call their attention to the fact that the South Jetty Beach section (1,000 feet south and adjacent to the South Jetty) was not going to be used for beach material disposal. Ms. Hanson was informed by Mr. Arias that we had a very critical situation in that particular section of South Beach, due to extreme erosion. She was told that the City would be very appreciative to learn that the beach material dredged from the entrance channel will be placed on the South Jetty Beach. On July 1st, Ms. Hanson contacted Mr. Arias' office (Gary L. Basham, P.E., Assistant City Engineer) and stated that since the South Beach area had not been "sand tightened," no dredging material would be disposed of in this area, as it would just erode away.

According to our Director of Public Works, all the material dredged out of the inlet for the last several years, rather than go to sea, have been placed within the first 1,000 feet of the Jetty. There was one exception to this and only one. That was as specified 1,000 feet south of the Jetty, extending for the next 2,000 feet. This was done on one trial basis with the hope that some of the Northern drift of sand would relocate near the Jetty, in front of the park. This was done and did not work. It quickly eroded, and all the sand went out to sea with no build-up further to the north or the south.

On July 6, 1992. the City of Fort Pierce received a Public Notice from the Army Corps in reference to the same above application, distributed by Charles J. McGehee, Chief, Construction-Operations Division of the Army Corps of Engineers. The notice lists Ms. Pat Hanson as the Army Corps contact for any questions concerning this proposed project and describes that beach quality material dredged from the entrance channel will be placed on a 3,000 foot section of beach south of the inlet, beginning at the Jetty. The Notice shows that "proposed work consists of annual removal of 100,000 cubic yards of sandy shoal material from the entrance channel;..."

On April 21, 1992, our City Attorney, John T. Brennan, sent a letter to Mr. Bonner at the Army Corps, requesting assistance concerning shore protection along the shore zone south of Fort Pierce Inlet, due to storm effects. On June 16th, Mr. Bonner responded to City Attorney Brennan. In the last paragraph of the second page of his letter, Mr. Bonner says, "This fall, suitable material from the maintenance dredging of the navigation project at Fort Pierce will be placed along the beach south of the inlet. The shorefront south of the inlet is considered the current priority location for the disposal of dredging material. This shorefront will also receive a priority for the disposal of suitable material from the deepening of the project which is scheduled for late 1994. At that time it is estimated that about 108,000 cubic yards of material will be available for disposal."

Inasmuch as we are very much in favor of the proposed dredge and fill Army Corps of Engineers Navigation Project, we would like to make you aware that we don't agree with the location of the beach material disposal area shown on the Army Corps permit application. However, we do agree with the location of the beach material disposal area that is shown on the Public Notice issued by the Corps of Engineers in reference to the same permit application.

The South Jetty Beach is in a desperate need of renourishment, and on behalf of the City of Fort Pierce, I am requesting the beach quality material from the entrance channel be placed on the 3,000 foot section of beach south of the inlet, beginning at the South Jetty. Furthermore, I am requesting that the South Jetty Beach be given priority during placement of the beach quality material.

Sincerely,

James A. "Bo" Powell
City Manager

JAP/HPA:alf
cc: Mayor and Members of the City Commission
City Attorney
City Engineer
Director of Public Works

CO-O

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

GL

July 7, 1992

904/234-5061

Colonel Terrence C. Salt
District Engineer, Jacksonville District
Department of the Army, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Salt:

We have reviewed the project plans as advertised in the following public notice(s).

In our assessment of the project(s), coordinated with the U.S. Fish and Wildlife Service (FWS), we have concluded that the work could adversely impact fishery resources for which the National Marine Fisheries Service (NMFS) is responsible. Therefore, comments and recommendations submitted to you by the FWS also represent those of the NMFS.

Should there be subsequent changes in the plans, please notify us directly so that we may reconsider our position on these matters.

NOTICE NO.	COUNTY	APPLICANT	NOTICE DATE	DUE DATE
PN-FPH-168	St. Lucie	COE	7/1/92	7/31/92

Sincerely,

Edwin J. Kopper

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SE02

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

REPLY TO
ATTENTION OF

onstruction-Operations Division
ublic Notice No. PN-FPH-168

1 July 1992

PUBLIC NOTICE

O WHOM IT MAY CONCERN: The District Engineer, Jacksonville District, .S. Army Corps of Engineers, has forwarded an application to the State f Florida Department of Environmental Regulation pursuant to Section 04 of the Clean Water Act of 1977. Accordingly, this Federal project s being evaluated and coordinated pursuant to 33 CFR 209.145.

omments regarding the project should be submitted in writing to the istrict Engineer at the above address within 30 days from the date of nis notice. Any person who has an interest which may be affected by ne construction of this project may request a public hearing. The equest must be submitted in writing to the District Engineer within 30 ays of the date of this notice and must clearly set forth the interest nich may be affected and the manner in which the interest may be ffected by this activity.

f you have any questions concerning this proposed project, you may ontact Ms. Patricia Hanson of this office, telephone 904-232-3729.

ATERWAY & LOCATION: Fort Pierce Harbor, St. Lucie County, Florida.

ORK & PURPOSE: The proposed work consists of annual removal of 100,000 ubic yards of sandy shoal material from both Cut 1 and Cut 2 of the ntrance Channel; and removal of 160,000 cubic yards of silty shoal aterial from the Turning Basin at a three year interval.

a. Dredging Parameters: Dredging will be to a required depth based n the authorized project depth plus the advanced maintenance depth as isted below.

Authorized Project Dimensions
(In Feet)

Section	Length	Channel Width	Project Depth	Advanced Maint Depth	Required Dredging Depth
ntrance Channel - Cut 1	5,700	350	27	3	30
	6,800	Narrows To	27	3	30
ntrance Channel - Cut 2	5,000	200	25	5	30
	1,978	200	25	2	27
rning Basin	936	Widens To	25	2	27
	700	900	25	2	27

b. Dredging Equipment:

1) Pipeline Dredge: A pipeline dredge will primarily be used for dredging this project.

2) Hopper and Clamshell Dredges: Hopper and clamshell dredges may be used when they are environmentally and economically acceptable.

c. Dredging Disposal:

1) Beach Disposal: Beach quality material from Cut 1 and Cut 2 of the Entrance Channel will be placed on a 3,000-foot section of beach south of the inlet, beginning at the jetty.

2) Ocean Disposal: Non-beach quality (silty) material will be placed in the Environmental Protection Agency (EPA) interim approved Ocean Dredged Material Disposal Site (ODMDS) located at the following coordinates.

Corner Point	Longitude Deg.	Min.	Sec.	Latitude Deg.	Min.	Sec.
1	27	28	20	80	12	33
2	27	28	20	80	11	27
3	27	27	20	80	11	27
4	27	27	20	80	12	33

PROJECT AUTHORIZATION: Act of 30 August 1935, House Document 252, 72nd Congress, 1st Session; and House Document 21, 74th Congress, 1st Session.

EVALUATION:

a. Disposal Alternatives: Designation of the proposed disposal site for dredged material associated with this Federal project shall be made through the application of guidelines promulgated by the Administrator, EPA, and in conjunction with the Secretary of the Army. If these guidelines alone prohibit the designation of this proposed disposal site, any potential impairment to the maintenance of navigation, including any economic impact on navigation and anchorage which would result from the failure to use this disposal site, will also be considered.

b. Cultural, Historical, and Archeological Resources:

1) The National Register of Historic Places, including the latest supplement to the Register, and the Florida State Historic Preservation Officer (SHPO) were consulted. No significant archeological sites or historic properties are recorded in the project area. In addition, the area is judged to have little potential for containing significant cultural resources. The SHPO's office in their letter of 4 June 1992, stated that no further cultural resource investigations are necessary to meet the requirements of the National Historic Preservation Act (PL 89-665).

2) However, if during construction activities the Corps observes unusual items that might have historical or archaeological value, such observations shall be reported as soon as practicable and precautions taken to preserve all such resources as they existed at the time they were located.

c. Fish and Wildlife Resources: Construction activities will be kept under surveillance, management, and control to minimized interference with, disturbance to, and damage of fish and wildlife. The surveillance, management, and control will be performed by either Corps or Contractor depending upon who is performing the work. Contract work is under the supervision of the Corps.

d. Threatened and Endangered Species:

1) Manatees: Manatees should not be impacted. Monitoring reports from previous dredging episodes indicate there should be no mortalities or injuries to manatees. However, the Department of Natural Resources (DNR) standard manatee protection precautions will be required as part of the plans and specifications.

2) Sea Turtles: To avoid impacting Sea Turtles, beach disposal will not occur during the sea turtle nesting season; i.e., May 15 through October 15. In addition, if after beach disposal, cone penetrometer readings indicate the sand is overly compacted for sea turtles (i.e., more than 500 cone penetrometer units) the sand will be plowed to a depth of at least 36 inches.

f. Impact on Coastal Zone: It has been determined through this evaluation and the guidelines found in 15 CFR 930 that the proposed activity will be consistent to the maximum extent possible with the State of Florida Coastal Zone Management Program.

APPLICABLE LAWS: The following laws are, or may be, applicable to the review of the proposed disposal sites and to the activities affiliated with this Federal project:

1. Section 404 of the Clean Water Act of 1977 (PL 95-217) (33 U.S.C 1344).

2. Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532) (33 U.S.C. 1413, 86 Stat. 1052).

3. Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972(PL 92-532, 86 Stat. 1052).

4. The National Environmental Policy Act of 1969 (PL 91-190) (42 U.S.C. 4321-4347).

5. Section 307(c)(1) and (2) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1456(c)(1) and (2), 86 Stat. 1280).

6. The Fish and Wildlife Act of 1956 (16 U.S.C. 472a et seq).

7. The Migratory Marine Game-Fish Act of 1959 (16 U.S.C. 760c-760g).

8. The Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661-666c).

9. The Endangered Species Act of 1973 (PL 93-205) (16 U.S.C. 668aa-668cc-6, 87 Stat. 884).

10. The National Historic Preservation Act of 1966 (16 U.S.C. 470, 80 Stat. 915).

11. Section 313 of the Clean Water Act of 1977 (33 U.S.C. 1323, 82 Stat. 816).

DISSEMINATION OF NOTICE: You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have an interest in this matter.

COORDINATION: This notice is being sent to, and coordinated with, the following agencies:

FEDERAL AGENCIES:

Commander, Seventh Coast Guard District, Miami, FL
Director, Atlantic Marine Center, National Ocean Service, Norfolk, VA
FDA, Regional Shellfish Specialist, Atlanta, GA
Director, National Park Service, Southeast Region, Atlanta, GA
Regional Director, National Park Service, Southeast Region, Atlanta, GA
Regional Director, Fish & Wildlife Service, Atlanta, GA
Field Supervisor, Fish & Wildlife Service, Jacksonville, FL
Field Supervisor, Fish & Wildlife Service, Vero Beach, FL
Regional Hydrologist, U.S. Geological Survey, Atlanta, GA
District Chief, U.S. Biological Survey, WRD, Tallahassee, FL
Regional Hydrologist, NOAA, National Weather Service, Ft. Worth, TX
Southeast River Forecast Center, NOAA, National Weather Service, Atlanta, GA
Environmental Protection Agency, EA Branch, Review Section, Atlanta, GA
Environmental Protection Agency, Ofc of Fed Activities, Washington, DC
Federal Energy Regulatory Commission, Atlanta, GA
National Marine Fisheries Service, EA Branch, Panama City, FL
National Marine Fisheries Service, EA Branch, St. Petersburg, FL
Federal Maritime Commission, Ofc of Energy & Environ. Impact, Washington, DC
SDA, Soil Conservation Service, Gainesville, FL
Federal Highway Administration, Tallahassee, FL

STATE AGENCIES:

Executive Director, DNR, Tallahassee, FL
DNR, Division of Beaches & Shores, Tallahassee, FL
Florida Game & Fresh Water Fish Commission, Lakeland, FL
Secretary, Department of Environmental Regulation, Tallahassee, FL
Depart of Agriculture, Bureau of Soil & Water Conservation, Gainesville, FL
Director, Florida Games & Fresh Water Fish Commission, Tallahassee, FL
Director, Div. of Archives, History & Records Management, Tallahassee, FL
Secretary, Department of Transportation, Tallahassee, FL
Sanitary Engineer, Department of HRS, Jacksonville, FL

ENVIRONMENTAL ORGANIZATIONS:

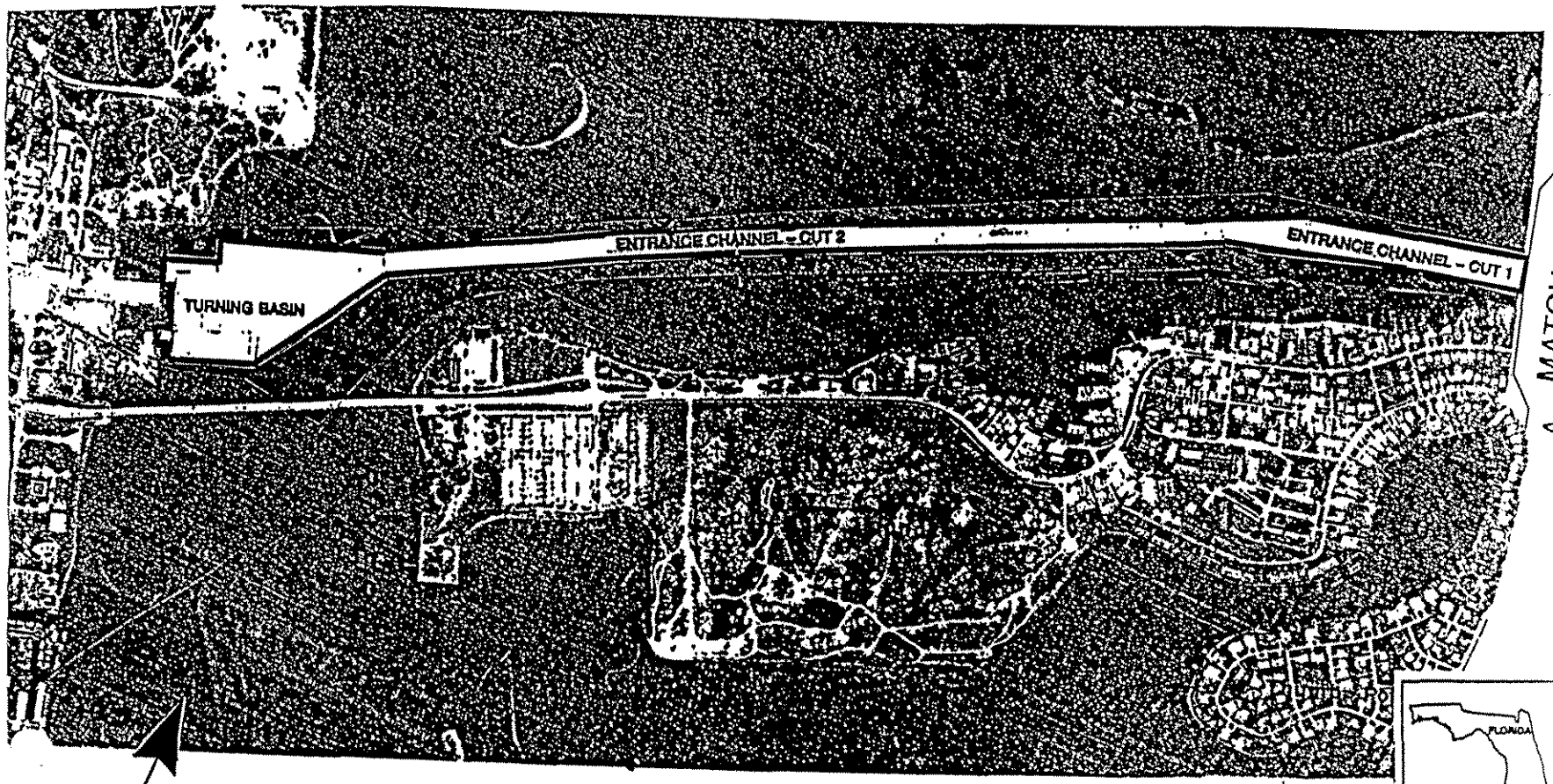
Executive Director, Florida Audubon Society, Maitland, FL
Executive Director, Florida Wildlife Federation, West Palm Beach, FL

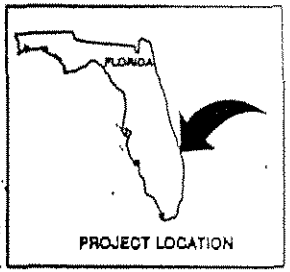
LOCAL GOVERNMENTS:

Fort Pierce Port and Airport Authority
Mayor, Fort Pierce, Florida
County Engineer, St. Lucie County, Florida

FOR THE COMMANDER:

CHARLES J. MCGEHEE
Chief, Construction-Operations
Division



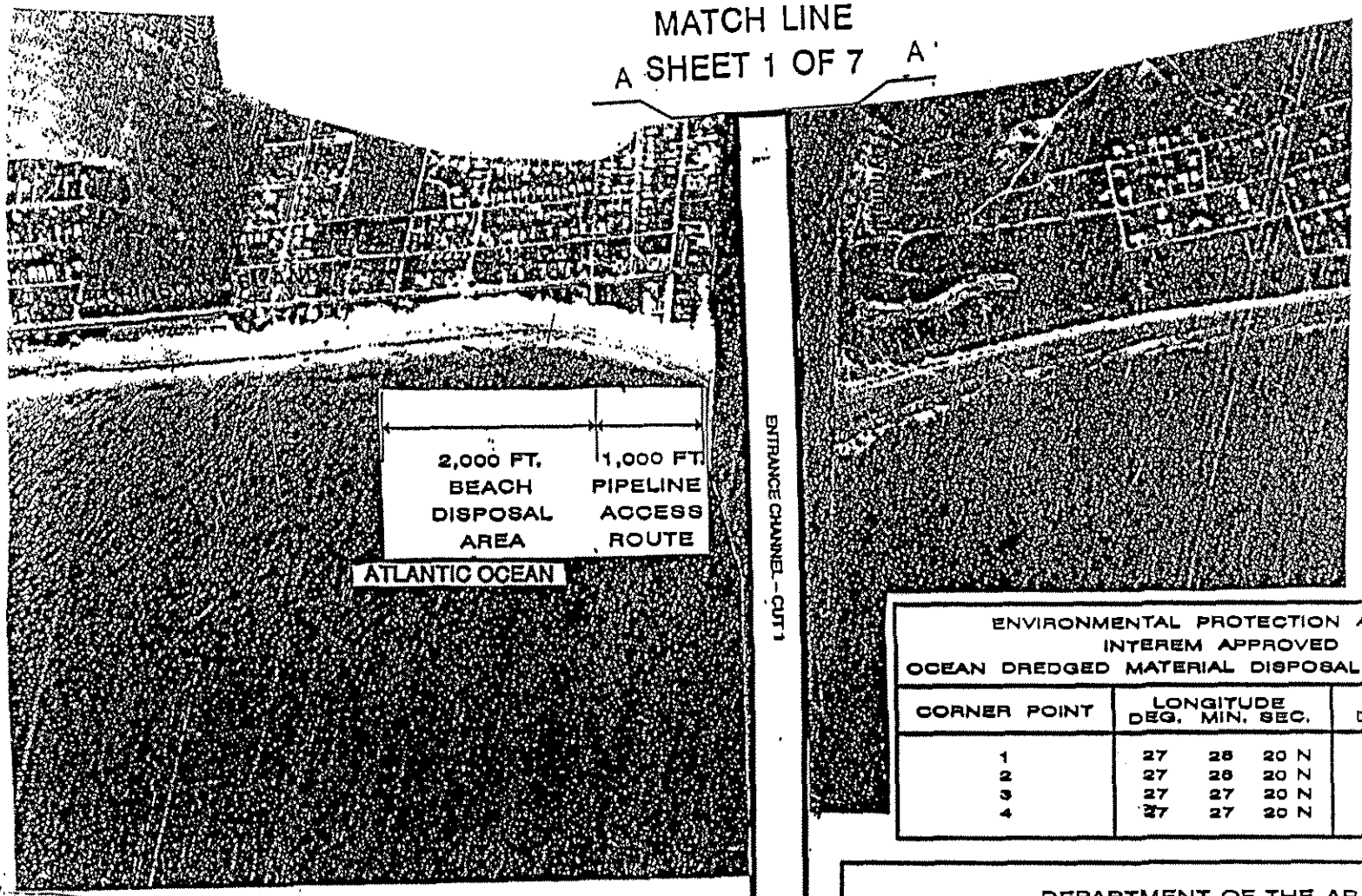


N

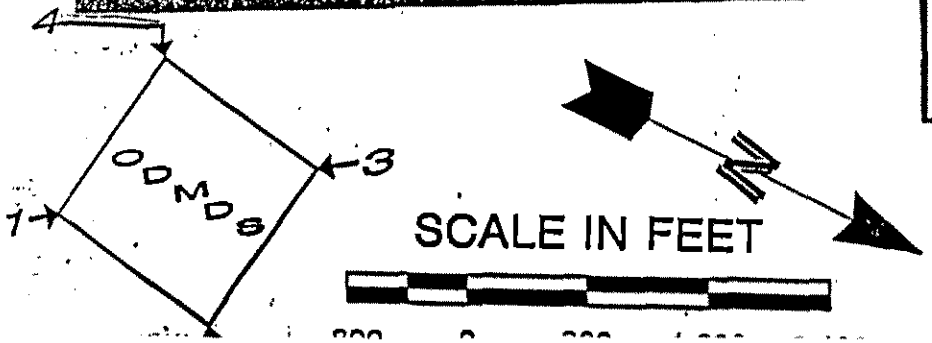
PROJECT DIMENSIONS					
SECTION	LENGTH	CHANNEL WIDTH	AUTHORIZED PROJECT DEPTH	ADVANCED MAINTENANCE DEPTH	REQUIRED DREDGING DEPTH
ENTRANCE CHANNEL – CUT 1	5,700'	350'	27'	3'	30'
	6,800'	NARROWS TO	27'	3'	30'
CUT 2	6,000'	200'	25'	5'	30'

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
PROJECT LOCATION
&
DISPOSAL AREA MAP



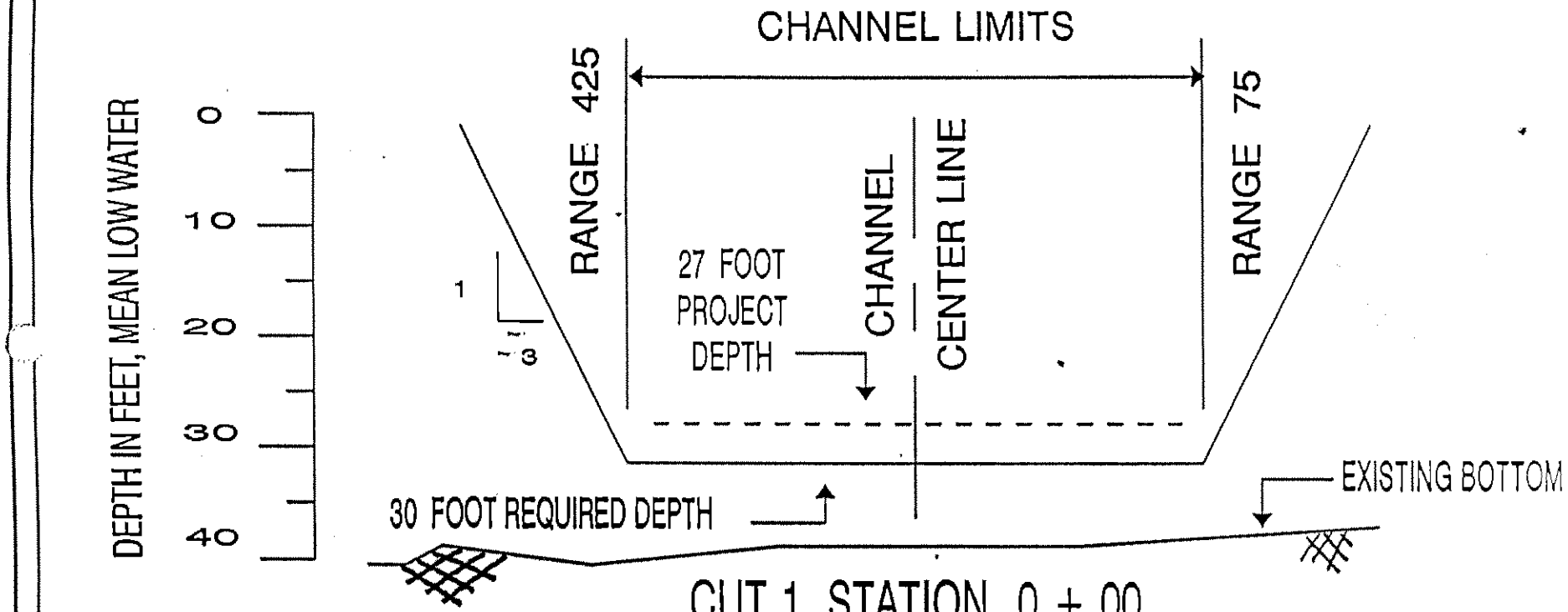
ENVIRONMENTAL PROTECTION AGENCY INTEREM APPROVED OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS)							
CORNER POINT	LONGITUDE DEG.	MIN.	SEC.		LATITUDE DEG.	MIN.	SEC.
1	27	28	20	N	80	12	33 W
2	27	28	20	N	80	11	27 W
3	27	27	20	N	80	11	27 W
4	27	27	20	N	80	12	33 W



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR PROJECT LOCATION & DISPOSAL AREA MAP

SCALE: As Shown	DATE: Apr 92	SHEET 2 OF 7



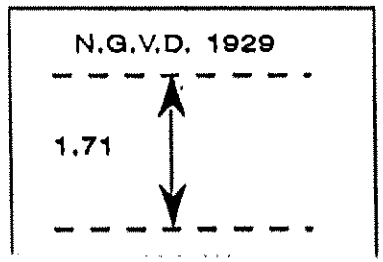
CUT 1, STATION 0 + 00

NOTE: CUT 1 NARROWS IN WIDTH FROM 350 FT. AT THE BEGINNING OF CUT 1 TO 200 FT. AT INTERSECTION WITH CUT 2.

HORIZONTAL SCALE IN FEET

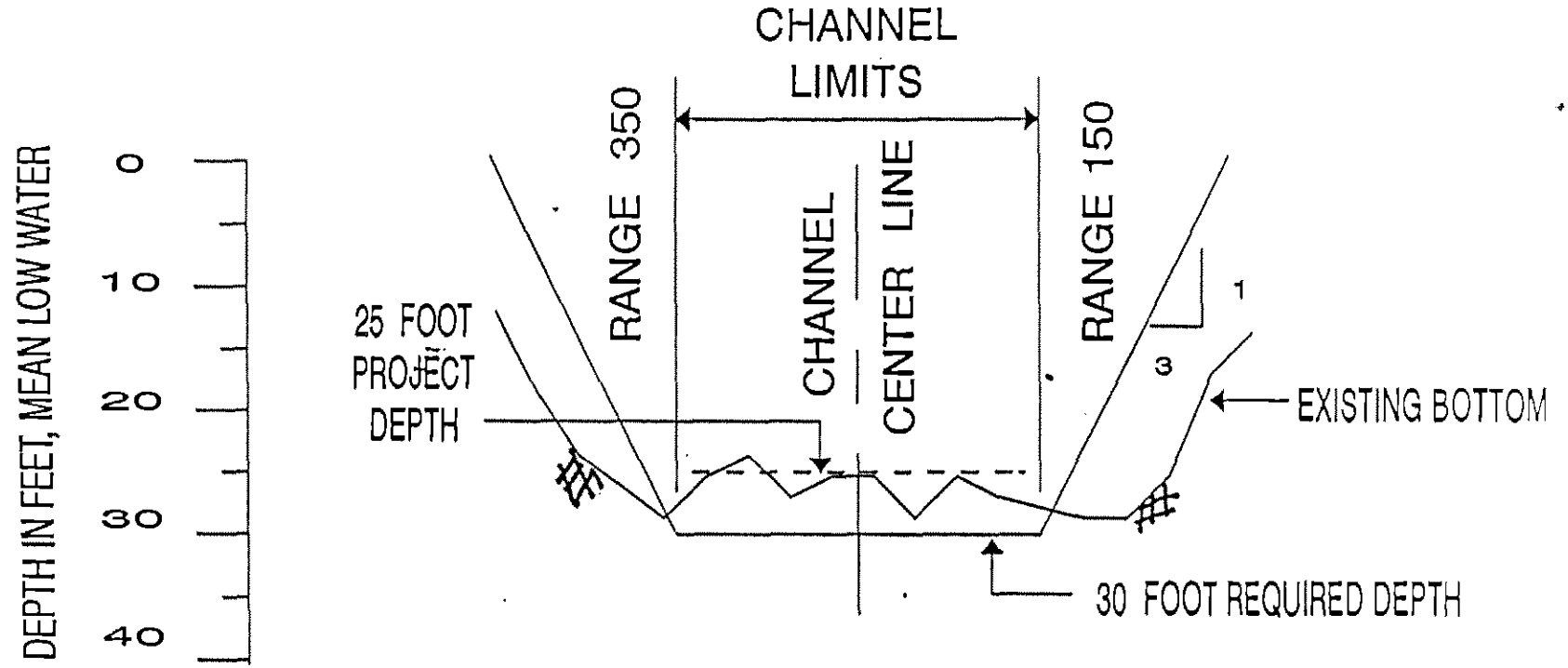
-100 0 100 200 300

VERTICAL DATUM DIAGRAM



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
ENTRANCE CHANNEL - CUT 1

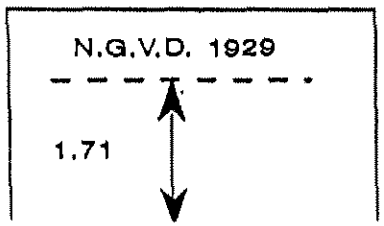


CUT 2, STATION 39 + 00

HORIZONTAL SCALE IN FEET

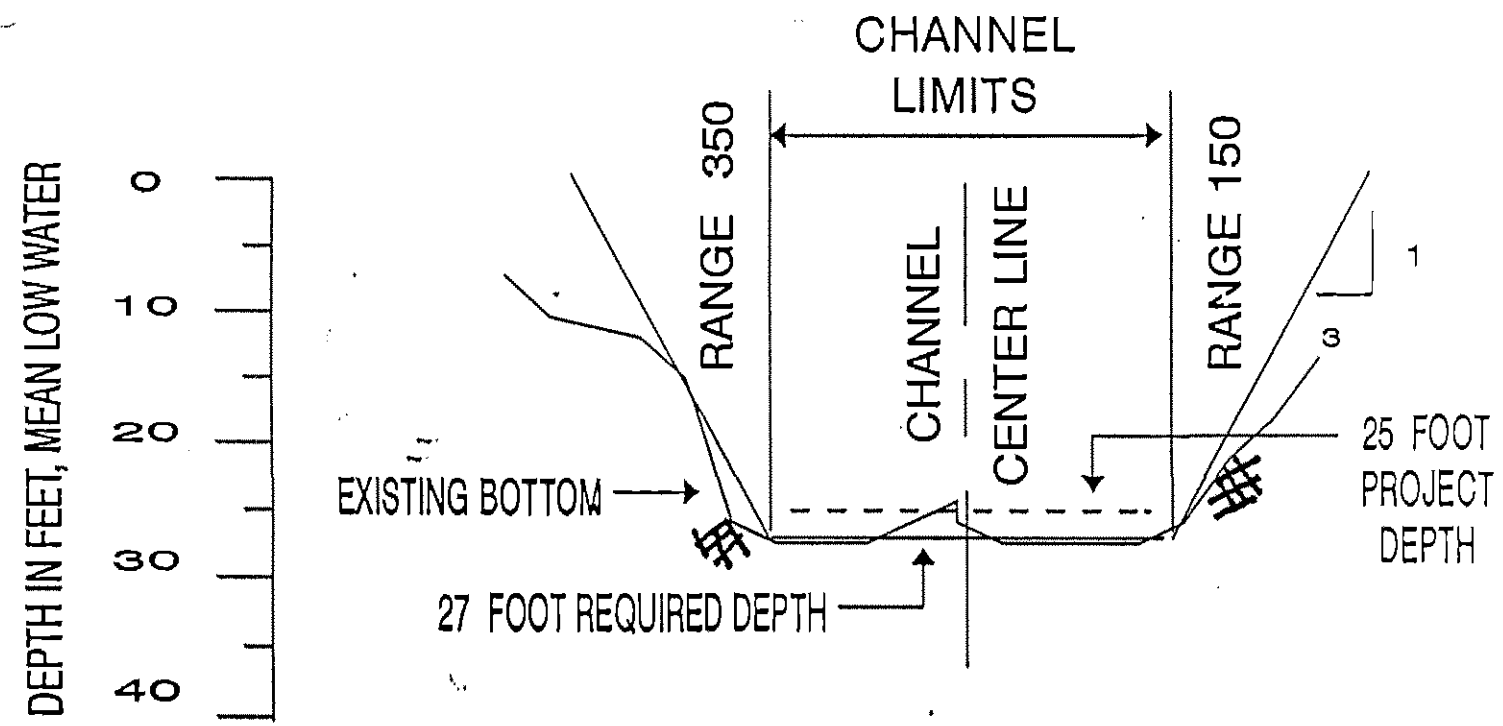
-100 0 100 200 300

VERTICAL DATUM DIAGRAM



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
ENTRANCE CHANNEL - CUT 1
STATION 0 + 00 TO 50 + 00

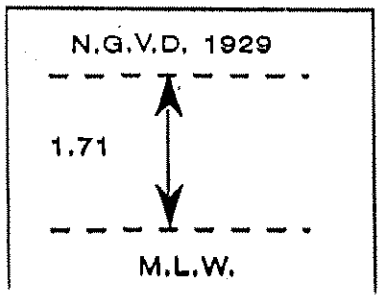


CUT 2, STATION 53 + 00

HORIZONTAL SCALE IN FEET

-100 0 100 200 300

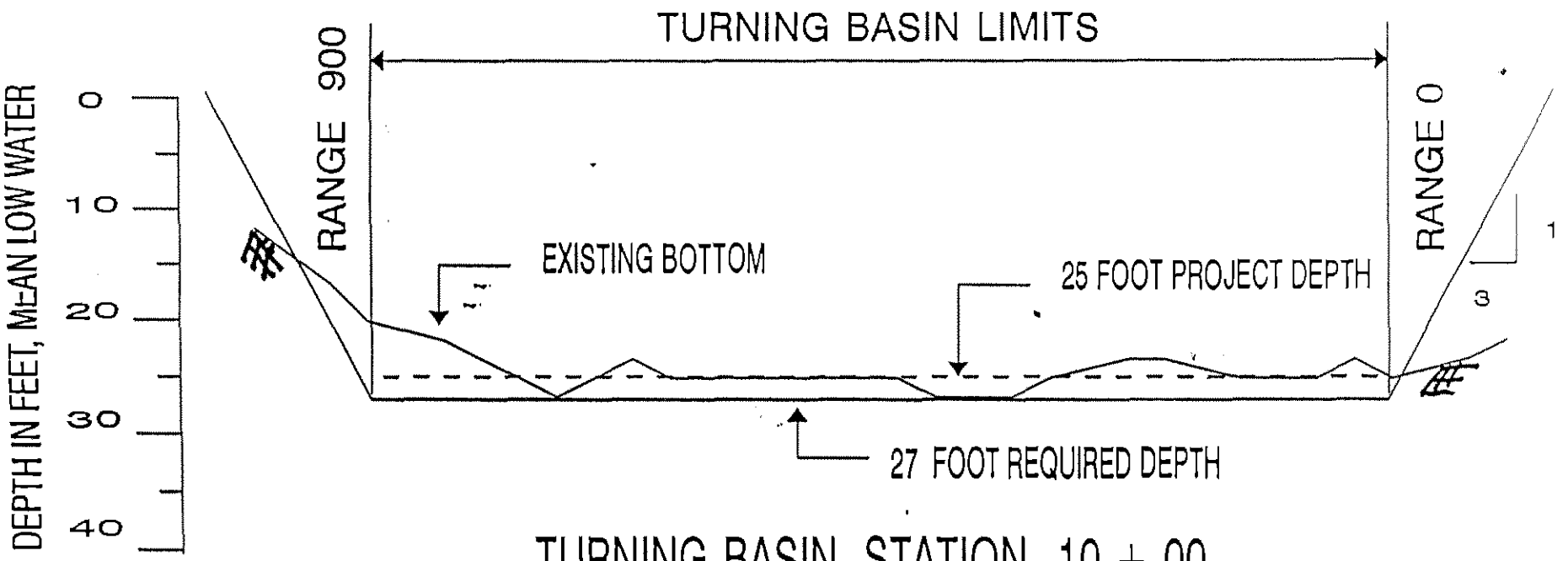
VERTICAL DATUM
DIAGRAM



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
ENTRANCE CHANNEL - CUT 1
STATION 50 + 00 TO 69 + 78

SCALE: As Shown	DATE: Apr 92	SHEET 5 OF 7

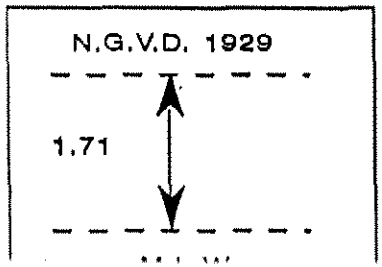


TURNING BASIN, STATION 10 + 00

HORIZONTAL SCALE IN FEET

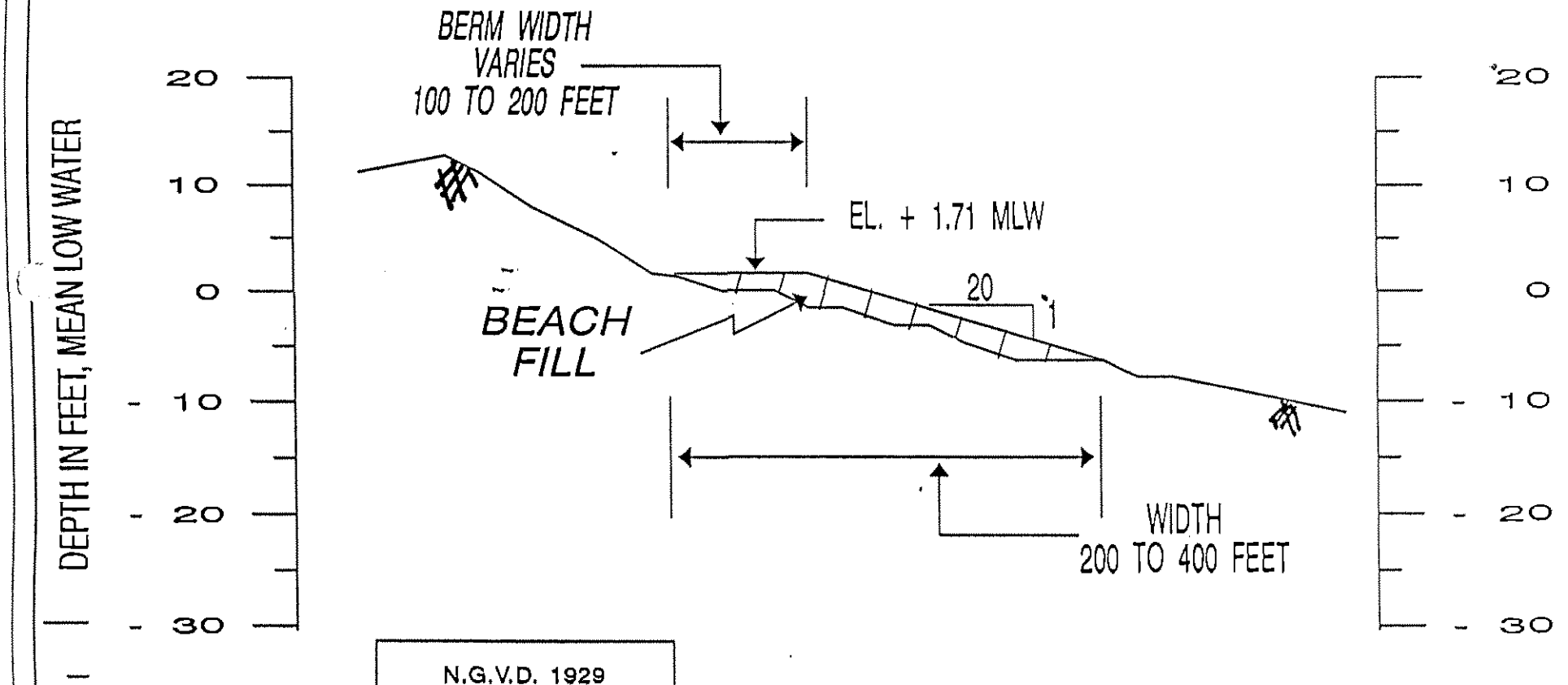
-150 0 150 300 450

VERTICAL DATUM DIAGRAM

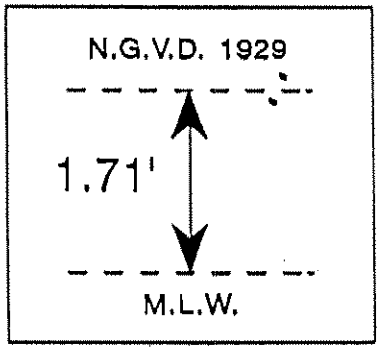


DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
TURNING BASIN



VERTICAL DATUM DIAGRAM



HORIZONTAL SCALE IN FEET

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FT. PIERCE HARBOR
TYPICAL CROSS SECTION
BEACH DISPOSAL AREA

CESAJ-PD-ES (1110-2-1150a) 22 June 1992

MEMORANDUM FOR Chief, Engineering Division

SUBJECT: Palm Beach (33 and 35 Foot Project) and Ft. Pierce (25 and 27 Foot Project) Harbors Maintenance Dredging; Environmental Input to Plans and Specifications

1. As per your request in Memorandum dated 1 June 1992, attached is the environmental input into plans and specifications for Palm Beach and Ft. Pierce Harbors (Enclosure 1) maintenance dredging using hydraulic pipeline dredge.

2. If a hopper dredge is used, further coordination is required with National Marine Fisheries Service, as we only are in possession of a Biological Opinion for hydraulic pipeline dredge. Per request from CO-ON and EN-DL, we have asked National Marine Fisheries Service for a Biological Opinion for use of a hopper dredge; a written reply could take up to 90 days.

3. The turtle, whale, and manatee specifications apply to both projects. The Migratory Bird specifications may only apply to Palm Beach Harbor, although both projects involve beach disposal. Migratory Bird investigation will be made for both projects in July, 1992.

4. Section 7 Consultation was initiated by letter 14 May 1992 with US Fish and Wildlife Service and National Marine Fisheries Service. As of this date, verbal coordination of a concurrence has been received for both projects. In lieu of a written confirmation from these agencies, this environmental input to the Plans and Specifications should be considered only preliminary. This office will provide final input to Plans and Specifications upon receipt of a written Biological Opinion from US Fish and Wildlife Service and National Marine Fisheries Service; we expect this written notice to arrive in the next 30 days.

5. Vessel operators are responsible for avoiding impacts (especially collisions) with whales and should be advised of this important responsibility. The sea turtle nest monitoring and relocation requirements would apply for a hydraulic pipeline dredge if the project involves beach disposal and if construction occurs during the sea turtle nesting season. Based on the previous Biological Opinion, beach disposal operations must occur after October 15 and be completed before May 15. When beach nourishment activities occur between March 1 - May 15, nest surveys and relocation must begin 65 days prior to the beginning of beach disposal activities or by March 1, whichever is later. Please pay special attention to required terms and conditions described in the attached environmental input to specifications.

CESAJ-PD-ES
SUBJECT: Palm Beach (33 and 35 Foot Project) and Ft. Pierce (25 and 27 Foot Project) Harbors Maintenance Dredging; Environmental Input to Plans and Specifications

6. At present, the Migratory Bird Protection Plan **may only apply to Palm Beach Harbor:** Migratory birds, their eggs, nests and hatchlings are protected by the State of Florida and U.S. Fish and Wildlife Service pursuant to the Migratory Bird Treaty Act of 1977. If dredging occurs during the Migratory Bird Nesting Season (1 April through 31 August), the Migratory Bird Protection Plan should be included in the Plans and Specifications for Palm Beach Harbor. Presence of Migratory Birds will be investigated during the Public Notice period, probably September 1992.

7. All contractors should be advised that turtles, whales, and manatees are protected under the Endangered Species Act and impacts to them should be avoided. Any incidents involving any of these protected animals should be immediately reported to the Corps' inspector who in turn should immediately contact the Environmental Resources Branch.

8. The **Preliminary Environmental Assessments** are available from PD-ES.

9. If you have further questions, please contact either Bill Fonferek or Tracy Tevington, extension 1690.

Encls

A. J. SALEM
Chief, Planning Division

CF: CESAJ-CO-ON (Hanson)

Tevington/CESAJ-PD-ES/1690/km
~~Kurzbach/CESAJ-PD-ES~~
~~Smith~~/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

CESAJ-PD-ES (1130) 9 June 1992

MEMORANDUM FOR Chief, Construction Operations Division

SUBJECT: Fort Pierce Harbor, Maintenance Dredging, St. Lucie County, Florida

1. Reference CESAJ-CO-ON memorandum dated 18 March 1991 requesting Preliminary NEPA documentation be provided.

2. Enclosed is the Preliminary Environmental Assessment and attached appendices. This documentation is to be used in the preparation of the public notice.

3. Please provide CESAJ-PD-ES a copy of the draft public notice to review, prior to transmittal, to insure environmental impacts have been adequately addressed.

4. The point of contact for this project is Tracy Tevington at extension 1690.

Encl

A. J. SALEM
Chief, Planning Division

Tevington/CESAJ-PD-ES/km
~~Kurzbach/CESAJ~~-PD-ES
Smith/CESAJ-PD-E
Davis/CESAJ-PD-A
Salem/CESAJ-PD

92-14
Suspense 4/3/92

CESAJ-CO-ON (1130) 25 February 1992

MEMORANDUM THRU CESAJ-PD

FOR CESAJ-PD-E

SUBJECT: Initiation of DER Water Quality Certification Application for Fort Pierce Harbor, Florida

1. References are made to the following documentation provided to you in May 1991 by Mark Skarbek:

a. Department of Environmental Regulation (DER), Water Quality Certification (WQC) Number 560391089 for Maintenance Dredging the Fort Pierce Harbor, issued on July of 1982 which expired on 30 June 1992.

b. Examination Survey of Fort Pierce Harbor.

c. Sediment data and core boring location map for Fort Pierce Harbor.

d. Environmental documentation including Environmental Assessment, 404b, and 103.

e. Application for WQC for maintenance dredging, Fort Pierce Harbor.

2. Reference the 1988 Water Resources Development Act (WRDA) (PL-100-676) of 17 November 1988, authorizing the following improvements to Fort Pierce Harbor as shown on the enclosed plan view:

a. Widening the existing entrance channel to 400 feet wide and 30 feet deep;

b. Widening the interior channel to 250 feet wide and 30 feet deep;

c. Enlarging the existing turning basin to 1,100 feet square and 20 feet deep; and,

d. Providing a channel extension 1,250 feet long, 250 feet wide, and 28 feet deep immediately north of the main turning basin.

3. Request your office submit WQC application as soon as possible. The project is presently maintained to required depths of 30 feet mean low water (mlw) in the outer reaches of the channel and 27 feet mlw in the inner reaches and turning basin based on project depths of 27 feet mlw and 25 feet mlw. However, the WQC should provide for maintenance dredging of the required depths both now and after the channel is deepened as authorized by the 1988 Water Resources Development Act as referenced in paragraph 2.

4. Dredging and disposal criteria.

a. Required depths (both now and after the channel is deepened):

Location	Station From	Station To	Pre Deepening Required Depth	Post Deepening Required Depth
Cut 1	0+00	110+00	30	32
	110+00	125+00	30	30
Cut 2	0+00	50+00	30	30
Cut 2	50+00	69+78	27	30
Turning Basin			27	30
North Channel Extension			N/A	28

b. Shoaling rates: Existing shoaling rates require dredging approximately 100,000 cubic yards of material from the entrance and inner channel annually and 160,000 cubic yards from the turning basin at a three-year interval. Shoaling rates for the north channel extension cannot be determined until after construction.

c. Dredging Equipment: Dredging will be accomplished by either hopper dredge with direct pumpout or pipeline dredge.

d. Material Type: In accordance with reference 1d, material from the Entrance Channel through the Inner Channel is beach quality. Material from the turning basin is not beach quality. The type of shoal material from the north channel extension can not be determined until shoaling actually begins after construction. Prior to the first maintenance dredging of the north channel extension, samples will be taken and the sedimentation analysis will be submitted to DNR.

e. Disposal: Disposal will be as previously authorized under the WQC referenced in 1b:

CESAJ-CO-ON (1130)
SUBJECT: Initiation of DER Water Quality Certification Application for Fort Pierce Harbor, Florida

1) Beach quality material will be placed by pipeline in the beach disposal area.

2) Non-beach quality material will be placed in the Environmental Protection Area (EPA) designated Ocean Dredged Material Disposal Site (ODMDS).

5. Final WQC should be obtained by 1 October 1992.

6. Point of contact for this matter is Pat Hanson at extension 3729.

GIRLAMO DICHIARA
Chief, Construction-Operation Division

CF:
CESAJ-EN-DL

CESAJ-CO-ON (1130) 18 March 1991

MEMORANDUM FOR CESAJ-PD

SUBJECT: Section 7 Consultation and Environmental Documentation for Ft. Pierce Harbor, Florida

1. References:

a. Annotated project map for Ft. Pierce Harbor, enclosure 1.

b. Public Notice PN-FPH-126, dated 5 October 1984, enclosure 2.

c. Water Quality Certificate # 560391089, issued 9 July 1982, expiring 30 June 1992, enslosure 3.

d. Findings of Compliance with accompanying Factual Determination and 404b Evaluation for Maintenance Dredging Activities at Ft. Pierce Harbor.

e. FONSI, with accompanying EA for Maintenance Dredging Operations of Ft. Pierce Harbor Entrance Channel, dated 8 November 1990.

2. A maintenance dredging project is scheduled to be advertised for Fort Pierce Harbor, 20 July 1991.

3. The scope of work is: Removal of approximately 30,000 cubic yards of material from shoals in the entrance channel with disposal on the beach south of the inlet.

4. Request:

a. You review the enclosed environmental documentation and provide us a final EA , FONSI and 404b.

b. Contact appropriate agencies and conduct section 7 consultation for subject project.

5. Requested action is required to be finalized and provided to this office by 20 July 1991.

6. Charge number: Ft. Pierce Harbor - CAFPH-34210-00091.

CESAJ-CO-ON (1130)
SUBJECT: Section 7 Consultation and Environmental Documentation for Ft. Pierce Harbor, Florida

7. Point of Contact for this project is Mark Skarbek, extension 1131.

3 Encls

GIRLAMO DiCHIARA
Acting Chief
Construction-Operations Division

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

REPLY TO
ATTENTION OF

Construction-Operations Division
Public Notice Number PN-FPH-208

JUN 27 1996

PUBLIC NOTICE

TO WHOM IT MAY CONCERN: The District Engineer, Jacksonville District, U.S. Army Corps of Engineers, is scheduling a contract with the Government hopper dredge "McFarland" to dredge the shoaled areas in the entrance channel (Cut 1 and Cut 2) to depths ranging from 28 feet to 33 feet. Coordination with the State of Florida Department of Environmental Protection is ongoing and a modification to the existing Water Quality Certificate will be required. This Federal work is being evaluated and coordinated pursuant to 33 CFR 335 through 338.

Comments regarding the project should be submitted in writing to the District Engineer at the above address within 15 days from the date of this notice. Any person who has an interest which may be affected by the construction of this project may request a public hearing. The request must be submitted in writing to the District Engineer within 15 days of the date of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity.

If you have any questions concerning this proposed project, you may contact Ms. Diana Bisher of this office, telephone 904-232-1131.

WATERWAY & LOCATION: Fort Pierce Harbor, St. Lucie County, Florida

WORK & PURPOSE: The purpose of the work is to provide required depths in the navigation channel. The work consists of dredging approximately 20,000 cubic yards of sand from the shoaled areas. Dredging will be conducted to depths ranging from 28 feet to 33 feet. Shoal material will be placed in deeper areas of the channel. All environmental provisions that exist in the State Water Quality Certificate and as special conditions of the Endangered Species Act Biological Opinion for Fort Pierce Harbor shall apply to this work.

PROJECT AUTHORIZATION:

River and Harbor Act, 30 August 1935, House Document 252, 72nd Congress, 1st Session; and House Document 21, 74th Congress, 1st Session.

EVALUATION:

A preliminary determination of the impacts of the project has lead us to conclude that an Environmental Impact Statement pursuant to the National Environmental Policy Act is not required.

APPLICABLE LAWS: The following laws are, or may be, applicable to the activities affiliated with this Federal project:

1. Section 404 of the Clean Water Act of 1977 (PL 95-217) (33 U.S.C. 1344).

2. Section 302 of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532, 86 Stat. 1052).

3. The National Environmental Policy Act of 1969 (PL 91-190) (42 U.S.C. 4321-4347).

4. Sections 307(c) (1) and (2) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1456 (c)(1) and (2), 86 Stat. 1280).

5. The Fish and Wildlife Act of 1956 (16 U.S.C. 472a et seq.).

6. The Migratory Marine Game-Fish Act of 1959 (16 U.S.C. 760c-760g).

7. The Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661-666c).

8. The Endangered Species Act of 1973 (PL 93-205) (16 U.S.C. 668aa-668cc-6, 87 Stat. 884).

9. The National Historic Preservation Act of 1966 (16 U.S.C. 470, 80 Stat. 915).

10. Section 313 of the Clean Water Act of 1977 (33 U.S.C. 1323, 82 Stat. 816).

COASTAL ZONE MANAGEMENT: The proposal has been evaluated in accordance with the Florida Coastal Zone Management Act and was determined to be consistent with the goals and intent of the appropriate State statutes. This determination is based on a Preliminary Environmental Evaluation, the Section 404(b)(1) Evaluation, and the Coastal Zone Consistency Determination. Full compliance will be achieved by issuance of the necessary permits from the State.

ENDANGERED SPECIES: Consultation was previously conducted with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act. Loggerhead, Hawksbill, Leatherback, and Green Sea Turtles could also be found in the project region. The proposed work will be in compliance with the Regional Biological Opinion for the South East United States for hopper dredges. West Indian Manatees (Trichechus manatus) could be located in the project area. The proposed work will implement the standard manatee protection conditions.

OTHER IMPORTANT RESOURCES: Other important resources considered in the environmental assessment include seagrasses, nearshore hardbottoms, migratory bird nesting, and recreation.

EVALUATION FACTORS: All factors which may be relevant to the modification will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people.

DISSEMINATION OF NOTICE: You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have an interest in this matter.

COORDINATION: This notice is being sent to, and coordinated with, the following agencies:

FEDERAL AGENCIES:
Commander, Seventh Coast Guard District, Miami, FL
Director, Atlantic Marine Cnt., NOAA, Norfolk, VA
FDA, Regional Shellfish Specialist, Atlanta, GA
Director, National Park Service, Southeast Region, Atlanta, GA
Regional Director, National Park Service, SE Region, Atlanta, GA
Regional Director, Fish & Wildlife Service, Atlanta, GA
Field Supervisor, Fish & Wildlife Service, Jacksonville, FL
Field Supervisor, Fish & Wildlife Service, Vero Beach, FL
Regional Hydrologist, U.S. Geological Survey, Atlanta, GA
District Chief, U.S. Geological Survey, WRD, Tallahassee, FL
Regional Hydrologist, NOAA, National Weather Ser., Fort Worth, TX
Southeast River Forecast Cnt., NOAA, National Weather Service, Atlanta, GA
Environmental Protection Agency, Office of Federal Activities, Washington, D.C.
Environmental Protection Agency, Region IV, Atlanta, GA
Federal Energy Regulatory Commission, Atlanta, GA
National Marine Fisheries Service, EA Branch, Panama City, FL
National Marine Fisheries Service, EA Branch, St. Petersburg, FL
Federal Maritime Commission, Office of Environmental Impact, Washington, D.C.
USDA, Soil Conversation Service, Gainesville, FL
Federal Highway Administration, Tallahassee, FL
Water Resources Coordinator, National Marine Fisheries Service, Tallahassee, FL

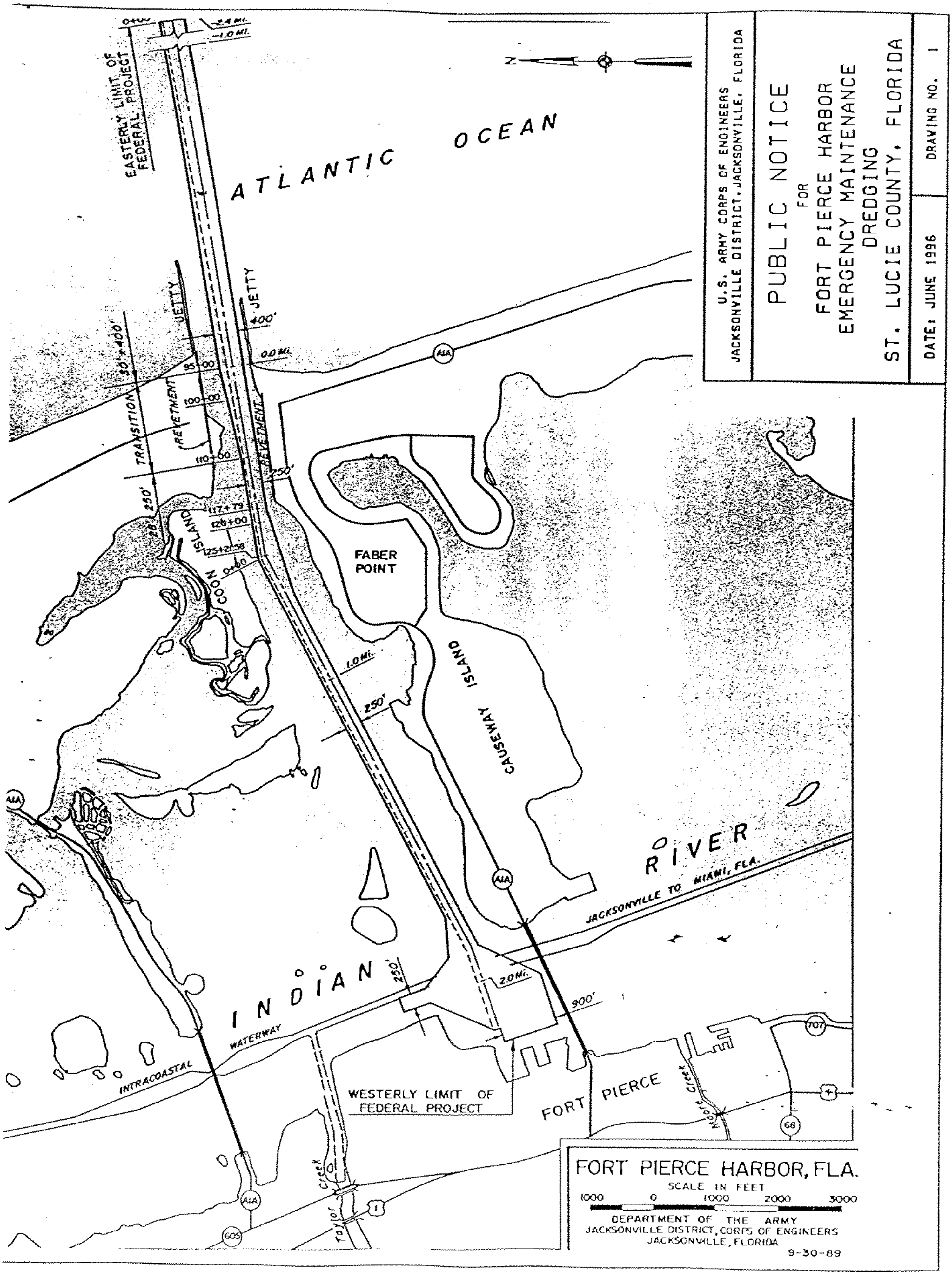
STATE AGENCIES:
Executive Director, DEP, Tallahassee, FL
DEP, Division of Beaches and Shores, Tallahassee, FL
Florida Game & Fresh Water Commission, Lakeland, FL
Secretary, Dept of Environmental Protection, Tallahassee, FL
Department of Agriculture, Bureau of Soil & Water Conservation, Gainesville, FL
Florida Dept of State, Division of Historical Resources, Tallahassee, FL
Director, Div of Archives, History & Records Management, Tallahassee, FL
Secretary, Department of Transportation, Tallahassee, FL
State Clearinghouse, Office of Planning & Budgeting, Tallahassee, FL
South Florida Water Management District, West Palm Beach, FL

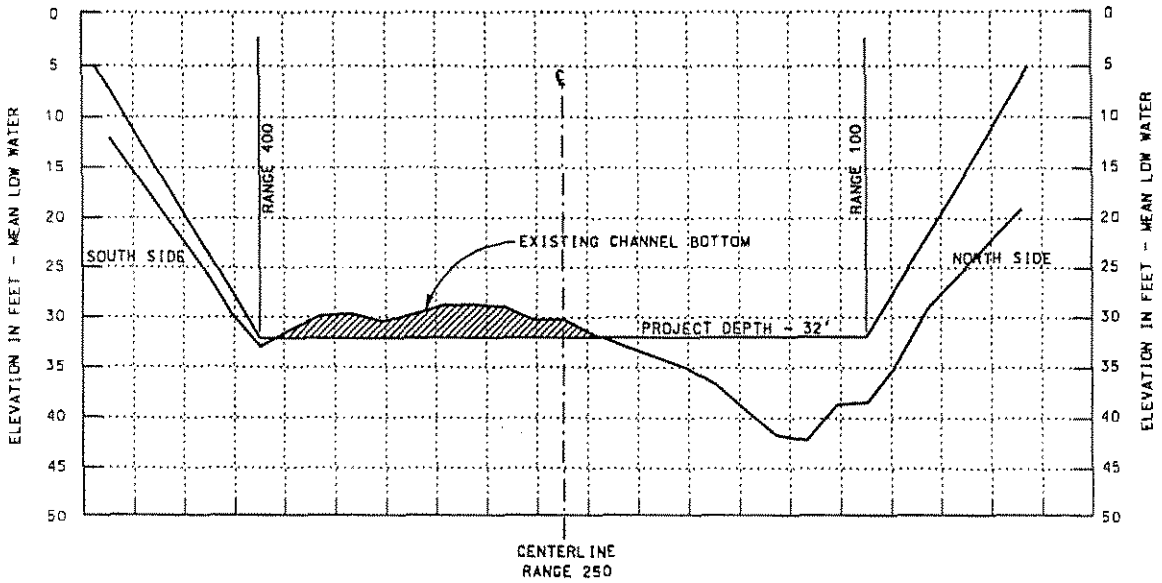
ENVIRONMENTAL ORGANIZATIONS:
Executive Director, Florida Audubon Society, Maitland, FL
Executive Director, Florida Wildlife Federation, West Palm Beach, FL

LOCAL GOVERNMENTS:
Fort Pierce Port and Airport Authority, FL
Mayor, Fort Pierce, FL
County Engineer, St. Lucie County, FL

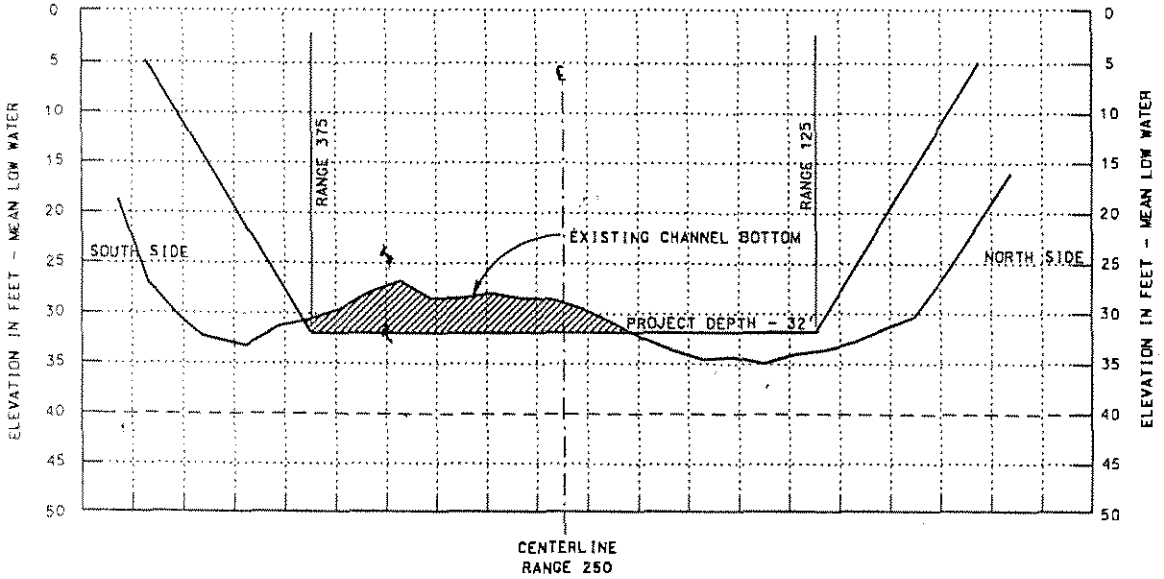
FOR THE COMMANDER:

GIRLAMO DiCHIARA
Chief, Construction-Operations
Division


U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT, JACKSONVILLE, FLORIDA
PUBLIC NOTICE
FOR
FORT PIERCE HARBOR
EMERGENCY MAINTENANCE
DREDGING
ST. LUCIE COUNTY, FLORIDA
DATE: JUNE 1996
DRAWING NO. 1
N
ATLANTIC OCEAN
EASTERLY LIMIT OF
FEDERAL PROJECT
JETTY
JETTY
400'
0.0 Mi.
TRANSITION 30' x 400'
REVETMENT
REVETMENT
95+00
100+00
110+00
250'
28' 250'
117+79
120+00
125+21.58
0+00
COON ISLAND
FABER POINT
CAUSEWAY ISLAND
1.0 Mi.
250'
A1A
INDIAN RIVER
JACKSONVILLE TO MIAMI, FLA.
INTRACOASTAL WATERWAY
250'
2.0 Mi.
900'
WESTERLY LIMIT OF
FEDERAL PROJECT
FORT PIERCE
Moore Creek
Taylor Creek
707
4
68
1
605
FORT PIERCE HARBOR, FLA.
SCALE IN FEET
1000 0 1000 2000 3000
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
9-30-89



TYPICAL CROSS SECTION
FOR
CUT 1 @ STA. 85+00



TYPICAL CROSS SECTION
FOR
CUT 1 @ STA. 109+00

GRAPHIC SCALES

25' 0 25' 50' (HOR.)

5' 0 5' 10' (VER.)

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT, JACKSONVILLE, FLORIDA

PUBLIC NOTICE

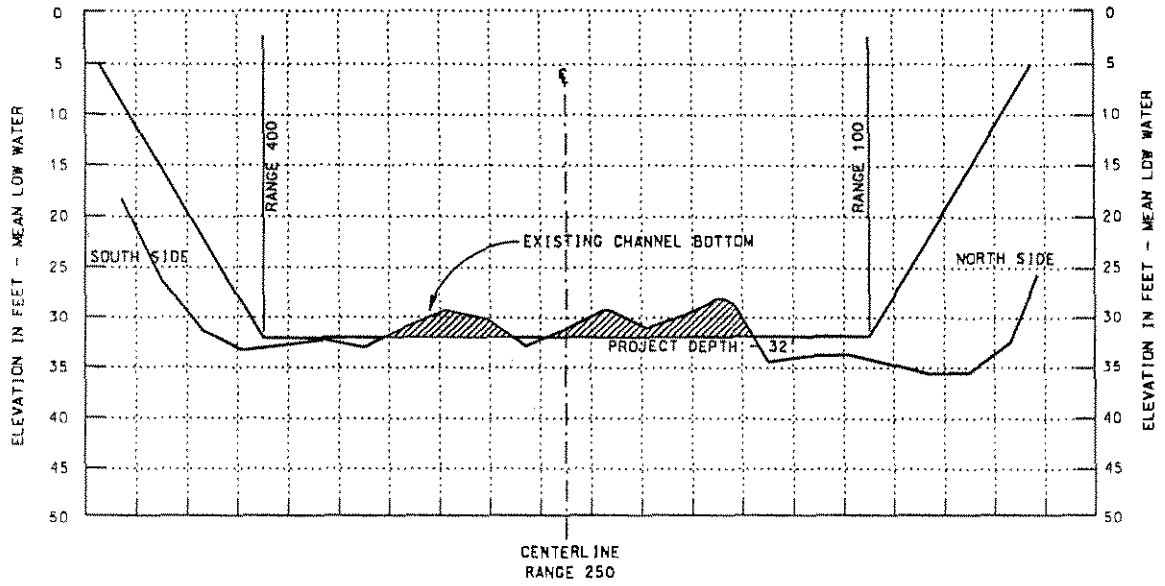
FOR

FORT PIERCE HARBOR EMERGENCY MAINTENANCE DREDGING

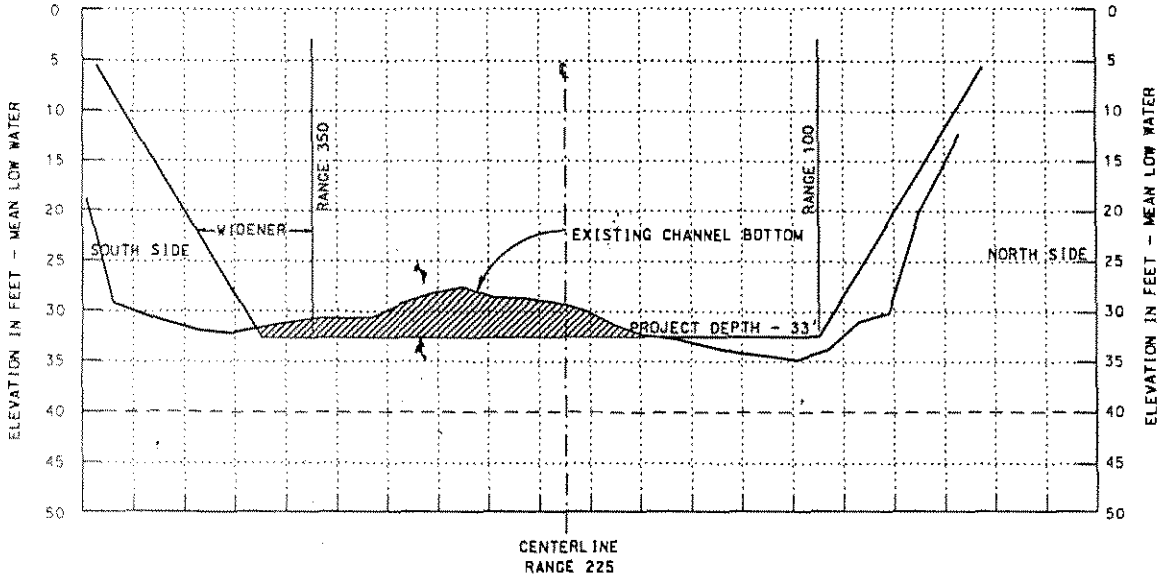
ST. LUCIE COUNTY, FLORIDA

DATE: JUNE 1996

DRAWING NO. 2



TYPICAL CROSS SECTION
FOR
CUT 1 @ STA. 78+00



TYPICAL CROSS SECTION
FOR
CUT 2 @ STA. 6+00

GRAPHIC SCALES

25' 0 25' 50' (HOR.)

5' 0 5' 10' (VER.)

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT, JACKSONVILLE, FLORIDA

PUBLIC NOTICE

FOR

FORT PIERCE HARBOR
EMERGENCY MAINTENANCE
DREDGING
ST. LUCIE COUNTY, FLORIDA

DATE: JUNE 1996

DRAWING NO. 3

Author: Diana R Bisher at CO
Date: 7/10/96 11:06 PM
Priority: Normal
TO: William J Fonferek at PD
CC: Kenneth R Dugger at PD
CC: John F Adams
CC: Matthew J Miller at PD
CC: James J McAdams at PD
CC: Diana R Bisher
Subject: Fort Pierce Public Notice

---------- Message Contents ----------

John Iliff of National Marine Fisheries, (305)595-8352, called to discuss the Fort Pierce Public Notice dated 27 June 1996. John had questions of whether hard bottoms or sea grasses would be affected. I referred him to the Fort Pierce GRR and SEIS, revised June 1994, as recommended by Bill Fonferek. I stated that the SEIS addressed the channel location, dimensions, and depths, and the only change is that we are placing the material in the deeper areas of the channel. I said we would be referencing the SEIS in our EA.

John said he would review the SEIS and indicated that there should not be a problem with our proposed work with the McFarland. He will send us a letter.

Diana

APPENDIX V

SECTION 404(B)(1) EVALUATIONS

SECTION 404(b)(1) EVALUATION
DREDGED MATERIAL

I. **Project Description.**

a. Location. Ft. Pierce Harbor, St. Lucie County, Florida.

b. General Description. The Water Resources Development Act (WRDA) (PL-100-676) of 17 November 1988, authorizes the following improvements to Fort Pierce Harbor, as shown on the enclosed plan view: Widening the existing entrance channel to 400 feet wide and 30 feet deep; Widening the interior channel to 250 feet wide and 30 feet deep; Enlarging the existing turning basin to 1,100 feet square and 20 feet deep; Providing a channel extension 1,250 feet long, 250 feet wide, and 28 feet deep immediately north of the main turning basin. The project is presently maintained to required depths of 30 feet mean low water (mlw) in the outer reaches of the channel and 27 feet mlw in the inner reaches and turning basin based on project depths of 27 feet mlw and 25 feet mlw. This project shoals approximately 100,000 cubic yards annually from the entrance and inner channel and 160,000 cubic yards from the turning basin at a three-year interval. The channel and turning basin will be maintained to a depth of -30 and -32 feet mlw with a maximum allowable overdepth of 2 feet after channel deepening.

The material to be removed will be placed on a beach disposal area south of the inlet, as previously authorized by Water Quality Certificate # 560391089, issued 9 July 1982, and expiring 30 June 1992. The composition of the material to be dredged is predominately sand with shell and some traces of silt in the channel and sand and silt in the turning basin. Dredging will be accomplished by pipeline or hopper dredge. The project will provide for maintenance dredging of the required depths as authorized by the 1988 Water Resources Development Act.

c. The Authority and Purpose of the Project. The maintenance of Ft. Pierce Harbor was Congressionally authorized by the Rivers and Harbors Act of 30 August 1935, House Document Number 252, 72nd Congress, 1st Session, and the Rivers and Harbors Commission Document Number 21, 74th Congress, 1st Session. Since the initial maintenance, sand and sediments have periodically accumulated in the channel reducing the navigable capacity of the project. Dredging and disposal have previously been conducted to maintain the channel. In order to meet the public need as authorized by Congress, the Federal standard must be maintained.

The Harbor is used by pleasure and commercial craft. Shoals that develop in the

Federal navigation project may inhibit citrus and concrete carrying vessels having drafts of 23 feet or greater from using harbor facilities. This is the primary reason for maintaining the Federal Project. Large vessels whose cargo consist of citrus frequent the harbor area from October to June; winter storms tend to shoal in the channel. Dredging has historically taken place in January through March.

d. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. The material to be dredged for placement on the beach south of Ft. Pierce Inlet is predominantly sand and compatible with the existing beach.

(2) Quantity of Material. Approximately 100,000 cubic yards of predominantly sandy material will be dredged from Cuts 1 and 2 every 18 months and deposited on the beach south of Ft. Pierce Inlet. Approximately 160,000 cubic yards of material will be dredged from the Turning Basin every 3 years. Any silty material encountered during maintenance operations would be placed in the Environmental Protection Agency (EPA) interim approved Ocean Dredged Material Disposal Site (ODMDS). This gives a project total of approximately 260,000 cubic yards of material to be dredged each dredging event. The upcoming FY 93 dredging event includes only 9,000 cubic yards of sandy material, which shall be disposed in the ODMDS.

(3) Source of Material. The source of beach fill material will be the Ft. Pierce (Cuts 1 & 2) navigation channel and seaward extension thereof.

e. Description of the Proposed Disposal Site. The material will be placed on the beach beginning 1000' (length of pipeline and construction easement) south of the south jetty at Ft. Pierce Inlet and extending 1800' southward forming a project beach 125' wide. The berm would be at elevation +6.71 feet mean low water with a 1 on 20 side slope down to mean low water. The equilibrium base berm width will vary from 150 to 300 feet, but not to exceed 300 feet. The equilibrium top berm width will vary from 100 to 125 feet, but not to exceed 125 feet. The construction top berm width will be determined in the field, but not to exceed 200 feet.

(1) Size and Location. The beach disposal site begins 1000' south of the south jetty at Ft. Pierce Inlet and extends 1800' south.

(2) Type of Site. The disposal site is a Atlantic beach area with material compatible with the material from the channel.

(3) Type of Habitat. The beaches of St. Lucie County are typical of other

east-central Florida beaches which are subject to the full force of ocean waves. The disposal site is an eroded beach with material compatible with the material from the channel. The disposal site is a sandy beach with low productivity. Since sandy beaches are populated by small, short-lived organisms with great reproductive potential, in most instances, these communities recover quickly from most environmental disturbances. The impacts of this maintenance dredging project on the beach zone fauna depends primarily on the quality of the nourishment material. Since sand with similar grain size and composition on the natural beach will be used, recovery of the beach fauna should occur in a few months or less.

(4) Timing and Duration of Discharge. Dredging will be conducted annually, normally during the winter months and is expected to last approximately 3 months or less.

f. Description of Disposal Method. All sand, would be hydraulically pumped through a pipeline onto the beach and shaped by earth-moving equipment, if beach disposal is conducted. A hopper dredge with direct pump-out capability would be used by docking at a mono buoy and pumping to the beach from there if beach disposal is used.

II. FACTUAL DETERMINATIONS

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The berm would be at elevation +6.71 feet mean low water with a 1 on 20 slope down to mean low water.

(2) Sediment Type. The material to be dredged for placement on the beach south of Ft. Pierce Inlet is predominantly sand and compatible with the existing beach. The FY 93 dredging event of 9,000 cubic yards is predominantly sand, and will be placed one-time only in the ODMDS.

(3) Dredged/Fill Material Movement. The similarity between the materials being disposed and the disposal site substrate should preclude any significant impacts from the disposal operations. There will be substrate changes to the bottom elevations and contours along the disposal site if beach disposal operations occur. These changes could result from the direct deposition of the material and from sand relocation due to tidal currents and wave action. Substrate composition in the borrow area and along the beach will be basically unchanged.

(4) Physical Effects on Benthos. No significant adverse effects are expected from the effluent return. The beach disposal of material will

have a minimal impact on the substrate of the aquatic ecosystem. Individual organisms using the substrate in the vicinity of the project may be covered, but will easily burrow to the surface. Motile forms will avoid the turbidity plume and relocate to similar habitat nearby. The proposed berm width of the disposed material has been limited to 125 feet with placement along the mean high water line to minimize impacts to surrounding habitat. The beach disposal of material will have a minimal impact on the substrate of the aquatic ecosystem. Organisms in the vicinity of the project may be covered. Motile forms may relocate to adjacent habitat within the water column. Some infaunal animals will be smothered. Recovery is expected to begin as soon as work is completed.

(5) Other Effects. Nearshore hardbottom communities offshore of the beach disposal area may be affected if sedimentation of suspended fines increases beyond the capability of the corals to cleanse themselves.

(6) Actions Taken to Minimize Impacts.

The discharge material will be placed in a manner to prevent standing bodies of water. Placing the material along the mean high water line and restricting the disposal berm width to approximately 125 feet will minimize any adverse effects. Water quality monitoring will ensure compliance with State standards. Other precautionary measures relating to threatened and endangered species may be found in the Dredging and Discharge Conditions section of the EA for this project.

b. Water Circulation, Fluctuation and Salinity Determinations

(1) **Water**

(a) Salinity. No impacts to salinity at disposal site.

(b) Water Chemistry. Effluent out of the return water discharge pipe will meet State water quality criteria.

(c) Clarity. Effluent out of the return water pipe will meet State water quality criteria for turbidity.

(d) Color. There would be a temporary minor turbidity plume created within the surf zone.

(e) Odor. No odor problems are anticipated.

(f) Taste. Not applicable.

(g) Dissolved Gas Levels. The dredged material does not have the potential to contain and release gas.

(h) Nutrients. The sandy dredged material would have little potential for containment of nutrients.

(i) Eutrophication. The material will be disposed of within the surf zone and therefore, eutrophication potential does not exist.

(2) **Current Patterns and Circulation.** No circulation problems are anticipated.

(3) **Normal Water Level Fluctuations.** Not applicable.

(4) **Salinity Gradients.** Not applicable.

(5) **Actions That Will Be Taken to Minimize Impacts.** The disposal operation will be operated to maintain state water quality standards. Turbidity monitoring will be conducted at the disposal sites.

c. Suspended Particulate/Turbidity Determinations

(1) **Expected Changes in Suspended Particulate and Turbidity Levels in Vicinity of Disposal Site.** There will be a short-term increase in level of the suspended particulate/turbidity in the return water discharge. Levels will be monitored and should not exceed state standards.

(2) **Effects (degree and duration) on Chemical and Physical values.**

(a) Light penetration. Slight light penetration reduction will be temporarily experienced at the disposal site water return.

(b) Dissolved Oxygen. Dissolved oxygen (D.O.) levels in return water should not be affected because the effluent is returned to a well aerated surf zone.

(c) Toxic Metals and Organics. Since the dredged material is composed of mostly sand and shell fragments and there are no known sources of pollution, there would be no potential for

contamination with organics or enriched levels of heavy metals.

(d) Pathogens. Not Applicable.

(e) Aesthetics. The proposed discharge site is located along a segment of public access beach. Since it is located in a residential area, there would be some short-term reduction in aesthetics from the presence and operation of heavy equipment, the placement of pipeline along the beach, and the physical alteration of the beach surface from the placement and distribution of sand. Upon project completion, aesthetics will be increased with beach being less eroded.

(f) Others as Appropriate. None.

(3) **Effects on Biota** (consider environmental values in sections 230.21, as appropriate)

(a) Primary Production, Photosynthesis. The turbidity plume from the released discharges would not affect photosynthetic processes in the surf zone.

(b) Suspension/Filter Feeders. Little or no impact is expected.

(c) Sight Feeders. Little temporary or no impact is expected.

(4) **Actions taken to Minimize Impacts.** Not applicable.

d. Contaminant Determinations. Because of the sandy nature of the dredged material, the high energy nature of the Ft. Pierce inlet, and the lack of sources of pollution in the project area, significant levels of contaminants or enriched level of heavy metals are not expected to be found in this material. No testing is proposed.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton. No significant effects.

(2) Effects on Benthos. There would minor impacts on benthos in the dredge and disposal area covered by sediments settling from discharge plume. Recovery would be fairly rapid upon construction completion.

(3) Effects on Nekton. There would be no significant impact on the

nekton community within the project from this dredging and disposal occurrence.

(4) Effects on Aquatic Food Web. There would be no significant impact on the aquatic food web within the project area from this dredging and disposal occurrence.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges. Not applicable.

(b) Wetlands. Not applicable.

(c) Mud Flats. Not applicable.

(d) Vegetated Shallows. None would be affected.

(e) Coral Reefs. None impacted.

(f) Rifle and Pool Complexes. Not applicable.

(6) Threatened and Endangered Species. The area is used by loggerhead turtles for nesting during the summer season (15 May - 15 October). The discharge of the dredged material will be scheduled to avoid the nesting season. Therefore, there would be no adverse impacts on this species. Manatees are known to inhabit the area and all precautions and protection measures will be taken to avoid contact.

(7) Other Wildlife. None would be affected.

(8) Actions to Minimize Impacts. Precautions will be taken to avoid impacting manatees within the work area. Specific requirements will be listed in construction plans and specifications. Precautions will be taken to minimize impacts to nesting sea turtles, including dredging outside of the main portion of the sea turtle nesting season. Dredging will be started after October 15 and completed before May 15. Nest surveys and relocations will be conducted by personnel with prior experience and training and with valid Florida Department of Natural Resources permit. The contractor will be informed of all procedures required in the construction plans and specifications.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. Not applicable.

(2) Determination of Compliance with Applicable Water Quality Standards. The discharge of effluent out of the discharge pipe at the disposal area must comply with State water quality standards.

(3) Potential Effects on Human Use Characteristics

(a) Municipal and Private Water Supply. Not applicable.

(b) Recreational and Commercial Fisheries. There will be no adverse impacts on these resources from discharge operations.

(c) Water Related Recreation. The immediate beach disposal area will be restricted from public use during project operations.

(d) Aesthetics. No long-term adverse impact on aesthetic values is anticipated.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. Not applicable.

g. **Determination of Cumulative Effects on the Aquatic Ecosystem.** There would be no long-term adverse cumulative impacts from this work.

h. **Determination of Secondary Effects on the Aquatic Ecosystem.** Not applicable.