DECEMBER 1999

MAINTENANCE DREDGING OF THE INTRACOASTAL WATERWAY HAULOVER CANAL REACH

BREVARD COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT

US Army Corps
of Engineers
Jacksonville District
South Atlantic Division

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

REPLY TO ATTENTION OF

MAINTENANCE DREDGING
HAULOVER CANAL REACH
BETWEEN CUTS BV-1 AND BV-9
Brevard COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

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

a. The work will be conducted in accordance with the Biological Opinion issued by the US Fish and Wildlife Service for impacts to manatees and sea turtles. The proposed action will not jeopardize the continued existence of any threatened or endangered species or adversely impact any designated "critical habitat."

b. A "No Adverse Effect" determination has been made through consultation with the Florida State Historic Preservation Officer (SHPO).

c. An application for State Water Quality Certification (WQC) has been made. Any conditions contained within that WQC will be addressed in the Plans and Specifications. Therefore, the State water quality standards will be met.

d. The proposed project has been determined to be consistent with the Florida Coastal Zone Management Program (CZMP).

e. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

f. Benefits to the public will be maintenance of the navigation channel, continued local economic stimulus, and increased recreational benefits.

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APPENDICES

1.00 PURPOSE AND NEED FOR ACTION

1.1 Introduction. The Jacksonville District U.S. Army Corps of Engineers (Corps) is considering maintenance dredging of the Haulover Canal Reach (Indian River Lagoon) (Figure 1) with the use of cutterhead dredge equipment. The dredging is anticipated to generate approximately 1,000,000 cubic yards of dredged material. The dredging frequency is expected to be every 10-15 years. The area to be dredged includes the portion of the Intracoastal Waterway (IWW) in the vicinity of Haulover Canal Reach from Cuts BV-1 through BV-9, approximately 12.1 miles (Figure 2).

1.2 Authority. Spanning nearly the length of Florida from Jacksonville to Miami, an 8 x 75 ft IWW channel was authorized January 21, 1927 by House Document 586, 69th Congress, 2nd Session. The present channel configuration (12 x 125 ft) was authorized by House Document 740, 79th Congress, 2nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel.

1.3 Decision to be Made. The decision to be made is whether to conduct maintenance dredging and use BV-2C as the disposal site.

1.4 Relevant Issues

a. Water Quality
b. Benthos
c. Seagrass
d. Sea Turtles
e. Marine Mammals
f. Wildlife
g. Cultural Resources
h. Aesthetics
i. Recreation
j Economics

1.5 Permits Required. A Water Quality Certificate (WQC) from the Florida Department of Environmental Protection (FDEP) in accordance with the Memorandum of Understanding between the FDEP and the Corps, and in accordance with Section 401 of the Clean Water Act of 1977, as amended, would be required for the proposed dredging activity.

1.6 Methodology. An interdisciplinary team used a systematic approach to analyze the affected area, to estimate the probable environmental effects, and to prepare the Environmental Assessment (EA). This included literature search, coordination with agencies having expertise in particular areas, and on-site field investigations.

2.00 ALTERNATIVES

2.1 Introduction. This section is based upon concerns for resources and impacts on resources expressed in Section 3.00, Affected Environment, and Section 4.00, Environmental Consequences. The key to this section is the Alternative Comparison Chart (Table 1), pages EA-4 and EA-5. This section has three (3) parts:

a. A description of each alternative.
b. An analysis of the alternatives.
c. Identification of the Preferred Alternative.

2.2 Description of Alternatives

2.2.1 No-Action Alternative. Reach I of the Intracoastal Waterway would not be dredged.

2.2.2 Dredging With Upland Disposal. This alternative would consist of dredging the IWW and the placement of dredged material in the upland disposal site, BV-2C.

2.2.3 Dredging With Beach Placement. This alternative would take the material removed from the Intracoastal Waterway and place it on nearby beaches to augment available sand. The area south of the Canaveral Entrance Channel could benefit from the placement of suitable beach quality material.

2.2.4 Dredging With Ocean Disposal. Material removed from the channel would be transported through the lock at Canaveral Harbor and taken approximately 4 miles to sea where it would be dumped in the Ocean Dredged Material Disposal Site.

2.3 Alternatives Analysis. The positive and/or adverse effects upon the important resources for the alternatives have been reviewed and compared in Table 1, Alternative Comparison Chart. This comparison was utilized in the decision-making process.

2.4 Preferred Alternative. The preferred alternative would be to dredge the Lagoon and dispose of the material in dredged material disposal area BV2C (Figure 3). This would require the shortest distance to transport the material dredged from the channel; it would be the least cost alternative; and, it would be the most suitable method of disposal of the non-beach quality material removed from the channel.

3.00 AFFECTED ENVIRONMENT

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

a. Water Quality
b. Benthos
c. Seagrass
d. Sea Turtles
e. Marine Mammals
f. Wildlife
g. Cultural Resources
h. Aesthetics
i. Recreation
j. Economics

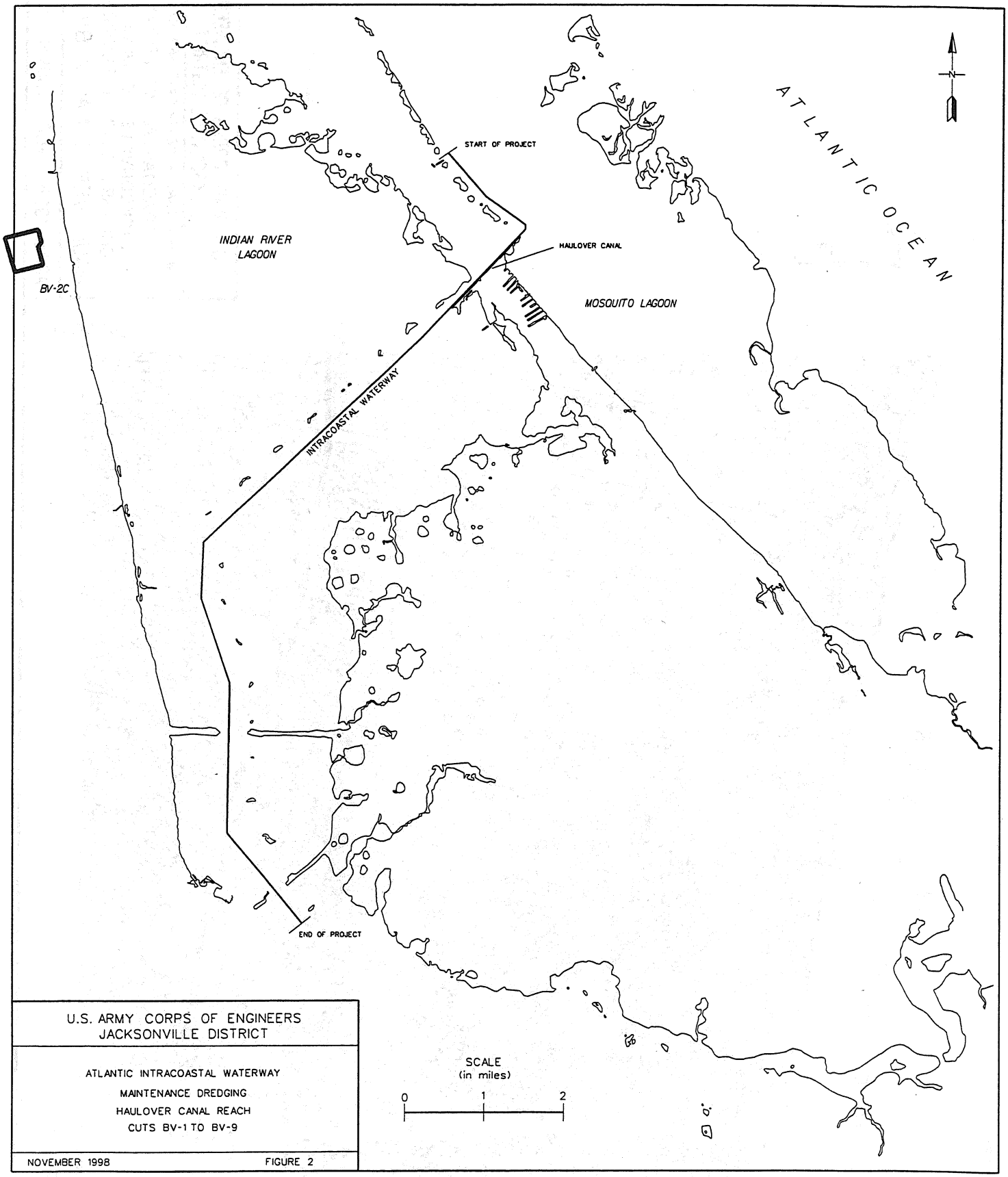
3.2 General Description. Haulover Canal Reach is located in Brevard County on Florida's east coast, approximately 8 kilometers (5 miles) northwest of Cape Canaveral. The area to be dredged runs from the Mosquito Lagoon through the Haulover Canal and south along the Intracoastal Waterway in the Indian River Lagoon. The lands adjacent to the Lagoon and the IWW are intermittently developed for single-family residential, high-density residential, and commercial uses. Some mangrove islands are located adjacent to the IWW.

The IWW is used by a variety of pleasure and commercial watercraft. Shoals and silted-in channels that could develop within the Federal navigation project area under the No-Action Alternative may inhibit navigation and endanger lives.

3.3 Relevant Factors of the Environment that Would be Affected

3.3.1 Physical

a. **Water Quality.** The waters of Indian River Lagoon are used for recreational and commercial fishing, boating, and other recreational uses. The FDEP lists the area's waters as Class III quality (suitable for recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife).



U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

ATLANTIC INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
HAULOVER CANAL REACH
CUTS BV-1 TO BV-9

NOVEMBER 1998 FIGURE 2

TABLE 1: Alternative Comparison Chart

Resource	No-Action Alternative	Dredging with Upland Disposal	Dredging with Beach Placement	Dredging with Ocean Disposal
Water Quality	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated in the IWW. Some temporary increases around the ODMDS during dumping activities.
Benthos	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.
Seagrass	No adverse effects are anticipated.	May cause potential loss of seagrass beds located adjacent to the proposed dredged area.	May cause potential loss of seagrass beds located adjacent to the proposed dredged area.	May cause potential loss of seagrass beds located adjacent to the proposed dredged area.
Sea Turtles	No direct adverse effects are anticipated.	No adverse effects are anticipated.	Unlikely to have adverse effects. Compliance with NMFS and USFWS recommendations should minimize "Incidental Take".	Unlikely to have adverse effects. Compliance with NMFS and USFWS recommendations should minimize "Incidental Take".
Marine Mammals	No direct adverse effects are anticipated.	No adverse effects are anticipated; compliance with NMFS and USFWS recommendations should prevent "Incidental Take".	No adverse effects are anticipated; compliance with NMFS and USFWS recommendations should prevent "Incidental Take".	No adverse effects are anticipated; compliance with NMFS and USFWS recommendations should prevent "Incidental Take". Precautions will be taken to insure vessels do not collide with marine mammals.
Wildlife	No direct adverse effects are anticipated.	No adverse effects are anticipated	No adverse effects are anticipated.	No adverse effects are anticipated.
Cultural Resources	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.
Aesthetics	No adverse effects are anticipated.	No adverse effects are anticipated.	Non-beach quality material would detract from the aesthetics of the beach.	No adverse effects are anticipated.

3.3.2 Biological

a. **Benthos.** All coral species are protected within Florida Waters. On the east coast of Florida, coral species are restricted to the Atlantic Ocean or to bay areas near passes with near-open-water salinities. Corals are limited to hard-bottom substrates, and are not likely to occur in the Intracoastal Waterway of the Indian River Lagoon.

Oyster beds are fairly common in the vicinity of the proposed project, usually located adjacent to mangrove islands in the less developed portions of the lagoon.

b. **Seagrass.** Seagrass meadows are a common estuarine habitat on the Florida east coast. There are four species of seagrass common to this area; shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), and widgeon grass (*Ruppia maritima*). Only in that portion of the project located in the vicinity to the Haulover Canal and in the Mosquito Lagoon are the seagrasses near the IWW channel.

c. **Sea Turtles.** The Indian River Lagoon hosts a small population of loggerhead sea turtles (*Caretta caretta*) and green turtles (*Chelonia mydas*). Green turtles are listed as endangered species by both the U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FFWCC), and the loggerhead sea turtle is listed as threatened by the USFWS and the FFWCC. The USFWS, in their Coordination Act Report, said there is the possibility that the Leatherback (*Dermochelys coriacea*), the Atlantic Ridley (*Lepidochelys kempii*) and the Hawkskbill (*Eretmochelys imbricata*) turtles may also be found in the Indian River Lagoon.

d. **Marine Mammals.** Manatees have been documented in the area of the Haulover Canal Reach all year round, but in greater numbers during April through November. The project area lies within a region designated as "Critical Habitat" by the USFWS. Dolphins also utilize the same areas as manatees.

e. **Wildlife.** The Lagoon supports a variety of fish species. These include important game and commercial species such as redfish (*Sciaenops ocellatus*), snook (*Centropomus undecimalis*), sea trout (*Cynscion* spp.), grouper (*Myctopercus* spp., *Epinephelus* spp.), and mullet (*Mugil cephalus*). Sheepshead (*Archosargus probatocephalus*), and pipefish (*Syngnathus scovelli*) are also found in the Lagoon.

a. **Cultural Resources.** The State Historic Preservation Office (SHPO) was consulted about this project. The SHPO responded that after reviewing their files, they determined that there were no significant archaeological or historical sites likely to be present within the project area and that the project would have no effect on historic properties listed, or eligible for listing, in the National Register of Historic Places.

b. **Aesthetics.** The Lagoon project area offers scenic views of estuarine and salt marsh wetlands. The lagoon is utilized for a variety of activities, including fishing and boating. The areas adjacent to the lagoon are developed for high-density residential, single-family residences, and commercial activities.

c. **Recreation.** The Lagoon is used for recreational boat traffic, a travel corridor, sightseeing, fishing, and accessing the Atlantic Ocean. The adjacent beaches are used for a variety of recreational activities such as sunbathing, swimming, surf-fishing, shell and shark tooth collecting, and surfing.

3.3.4 Economics. The areas surrounding the Lagoon are a mixture of residential (single-family and high-density), commercial, and park properties, and has a high generation of revenues. Further, use of the beach by residents and visitors generates a significant amount of revenue for Brevard County and the coastal municipalities. Future economic growth in the project area is currently expected to be based upon residential and commercial land sales, as well as from recreation and tourism-based industries associated with beach utilization, recreational and commercial use of the IWW, and ready access to the Atlantic Ocean.

4.00 ENVIRONMENTAL CONSEQUENCES

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

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

b. **Aesthetics.** There would be no adverse effects upon the aesthetics of the Indian River Lagoon from the No-Action Alternative.

c. **Recreation.** There would be a moderate long-term reduction in recreation resulting from the reduced navigable capacity of the channel. Additionally, recreation beach activities would experience a moderate long-term adverse effect due to the continued loss due to beach erosion.

4.2.4 Economics. If the Lagoon is not dredged, commercial and recreational navigation would be directly impacted by increased shoaling and decreased navigational capacity of the channel. Recreational revenues may also be decreased if beach erosion continues.

4.2.5 Cumulative Effects. The cumulative effect of the implementation of this alternative may be the loss of access to the IWW in the immediate vicinity of Brevard County.

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

4.2.7 Irreversible and Irretrievable Commitments of Resources. There would be no utilization of resources should this alternative be implemented. Therefore, there is no irreversible or irretrievable commitment of resources.

4.2.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity. The No-Action Alternative would prevent use of the IWW by commercial and recreational watercraft. The maintenance and enhancement of the area's long-term productivity could be adversely affected.

4.3 Dredging with Upland Disposal

4.3.1 Physical

a. **Water Quality.** The material to be removed from the channel has a moderately high portion of fine sediments. However, the dredging of the Lagoon is not expected to result in the degradation of local water quality. Additionally, extensive monitoring of turbidity levels in and around the work areas is required by the FDEP. In the event turbidity exceeds acceptable levels, the contractor must take appropriate measure to reduce turbidity including the use of turbidity curtains, modification of operations, and/or stopping of dredging operations if necessary (Best Management Practices).

aesthetics of the area due to the proposed dredging activities. The dredge would be observed in the Lagoon and IWW for several weeks.

c. **Recreation.** Recreational boat traffic would experience temporary delays due to construction traffic congestion. However, recreational boat traffic in the Lagoon would experience a long-term benefit from the increased navigable capacity of the channel once the dredging operation is complete.

4.3.4 Economics. There would be a short-term localized generation of revenues associated with dredge operation. The dredging of the IWW and the Lagoon would result in a moderate long-term secondary benefit by encouraging commercial and recreational navigation.

4.3.5 Cumulative Effects.

4.3.6 Unavoidable Effects. There may be short-term degradation of water quality due to turbidity during dredging and dredged material disposal operations. The potential exists for the "Incidental Take" of sea turtles during dredging operations. However, implementation of State and Federally mandated protective measures should minimize and mitigate for this potential.

4.3.7 Irreversible and Irretrievable Commitment of Resources. Mobilization of equipment, dredging, and on-going maintenance would require the expense of time and resources, such as labor, energy, and project materials, purchased with Federal financial contributions. There is the potential for "Incidental Take" of sea turtles or manatees during dredging and disposal operations. Once lost, these resources could not be recovered. The implementation of a biological observer program in order to avoid or minimize losses of protected species would require additional expenses of time, labor, and resources.

4.3.8 Relationship of Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity. The Indian River Lagoon provides a valuable link for the IWW and is an important factor in the local economy. Impacts resulting from the proposed dredging are expected to be minimal and short-term, while the beneficial effects are expected to be significant.

e. **Wildlife.** The noise inherent to dredging operations may adversely affect wading bird nesting colonies on the Indian River Lagoon. The placement of dredged material in the dredged material management area BV-2C should not adversely affect wildlife.

4.4.3 Social

a. **Cultural Resources.** This alternative would not affect any properties listed on the National Register of Historic Places.

b. **Aesthetics.** The project would have minor effects on the short-term aesthetics of the area during to the proposed dredging activities. The dredge would be seen in the Lagoon and IWW for several weeks.

Air and Noise.

c. **Recreation.** Recreational boat traffic would experience temporary delays due to construction traffic congestion. Minor temporary adverse effects upon recreational beach activities would occur during beach placement of the dredged material. However, recreational boat traffic in the Lagoon would experience a long-term benefit from the increased navigable capacity of the channel. Recreational beach activities would also benefit from an increased beach area following dredging and subsequent beach placement.

4.4.4 Economics. There would be a short-term localized generation of revenues associated with the dredge operation. The dredging of the IWW and the Lagoon would result in a moderate long-term secondary benefit by encouraging commercial and recreational navigation.

4.4.5 Cumulative Effects.

4.4.6 Unavoidable Effects. There may be short-term degradation of water quality due to turbidity during dredging and dredged material disposal operations. The potential exists for the "Incidental Take" of sea turtles and marine mammals during dredging operations. However, implementation of State and Federally mandated protective measures should minimize and mitigate for this potential.

4.4.7 Irreversible and Irretrievable Commitment of Resources. Mobilization of equipment, dredging, and on-going maintenance would require the expense of time and resources, such as labor, energy, and project materials, purchased with Federal financial contributions. There is the potential for "Incidental Take" of sea turtles or manatees during dredging and disposal operations. Once lost, these resources could not

personnel of the potential presence of sea turtles in the project area, the turtle's endangered status, the need for precautionary measures, and the Endangered Species Act prohibition on taking sea turtles; require dredge personnel and Corps' dredge inspectors to monitor the dredging area and spoil for the presence of sea turtles; and inform NMFS immediately should the take of a sea turtle occur.

d. **Marine mammals.** A number of marine mammals have been observed in nearshore and inshore waters of the Florida coast. Of particular interest in the lagoon project area are the manatees and dolphins. Standard manatee construction techniques, including observers, signage, and work crew education would be required. Ocean disposal would increase the possibility of collisions between the transporting vessels and marine mammals during the round trip between Port Canaveral and the ODMDS located about 4 miles offshore.

e. **Wildlife.** The noise inherent to dredging operations may adversely affect wading bird nesting colonies on the Indian River Lagoon. The placement of dredged material in the dredged material management area BV-2C should not adversely affect wildlife.

4.5.3 Social

a. **Cultural Resources.** This alternative would not affect any properties listed on the National Register of Historic Places.

b. **Aesthetics.** The project would have minor effects on the short-term aesthetics of the area during to the proposed dredging activities. The dredge and related equipment would be seen in the Lagoon and IWW for several weeks.

Air and Noise. This work would generate some short-term increases in the noise levels because of the vessels and equipment used. Prevailing winds would quickly dissipate exhaust fumes from the vessels and equipment. Any noise and air pollution generated during the dredging operations would cease once the project is completed.

c. **Recreation.** Recreational boat traffic would experience temporary delays due to construction traffic congestion. Minor temporary adverse effects upon recreational beach activities would occur during beach placement of the dredged material. However, recreational boat traffic in the Lagoon would experience a long-term benefit from the increased navigable capacity of the channel. Recreational beach activities would also benefit from an increased beach area following dredging and subsequent beach placement.

5.00 LIST OF PREPARERS

This EA was prepared by:

Annon I. Bozeman, Environmental Protection Specialist, U.S. Army Corps of Engineers.

6.00 LIST OF REVISORS/REVIEWERS

The following personnel reviewed this document for technical accuracy:

Kenneth R. Dugger, Supervisory Biologist, U.S. Army Corps of Engineers
Thomas C. Birchett, Archeologist; U.S. Army Corps of Engineers
Donald B. Fore, Project Management; U.S. Army Corps of Engineers

7.00 COORDINATION WITH OTHERS

7.1 Introduction. This document was coordinated with appropriate State and Federal agencies as well as the general public through a public notice and mailings. Those comments received that were pertinent were incorporated into the document or otherwise addressed. Appendix I contains copies of the public notice as well as correspondence received about this project.

APPENDIX I

Coordination Letters

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

REPLY TO
ATTENTION OF

AUG 12 1999

Construction-Operations Division
Public Notice NO. PN-CO-IWW-239

PUBLIC NOTICE

TO WHOM IT MAY CONCERN: The District Engineer, Jacksonville District, U.S. Army Corps of Engineers, has forwarded a request to the State of Florida Department of Environmental Protection for a Water Quality Certification, pursuant to Section 401 of the Clean Water Act of 1977, for maintenance dredging of the Intracoastal Waterway (IWW), Cuts BV-1 through BV-9 in the vicinity of Haulover Canal, Brevard Co., Florida. This Federal project 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 30 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 30 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 application, you may contact Mr. Al Fletcher of this office, telephone 904-232-2530.

WATERWAY & LOCATION: Intracoastal Waterway Cuts BV-1 through BV-9, in the vicinity of Haulover Canal, Brevard County, Florida

WORK & PURPOSE: The proposed work consists of periodic maintenance dredging of material from the IWW and placing this material hydraulically into diked upland Dredged Material Management Area (DMMA) BV-2C. Initially, approximately 1,000,000 cubic yards of dredged material will be placed in DMMA BV-2C. However, future maintenance events will occur every 5 to 10 years and should consist of approximately 500,000 cubic yards per event. The large initial maintenance is necessary because maintenance dredging has not been conducted for years due to the lack of a proper placement area. The composition of the material is predominantly silt with some sand and shell.

COASTAL ZONE MANAGEMENT: The proposed project has been evaluated in accordance with the Florida Coastal Zone Management Act and determined to be consistent with the goals and intent of the appropriate State statutes. This determination is based on the Environmental Assessment, the Section 404(b)(1) Evaluation, and the Coastal Zone Consistency Determination. Full compliance will be confirmed by issuance of the Water Quality Certification from the State.

EVALUATION: An Environmental Assessment (EA) is being prepared for this project. Preliminary evaluation of the available information indicates that the proposed project will have no significant impact on the quality of the human environment and an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA) will not be required. A separate Environmental Assessment has previously been prepared for DMMA BV-2C.

ENDANGERED SPECIES: Consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act is underway. Preliminary evaluation indicates a determination of "No Effects" will be reached concerning impacts to sea turtles and manatees within the dredging and beach placement areas.

All standard conditions and protection practices for the sea turtles, manatees, whales, migratory birds, and all other local threatened or endangered species will be adhered to during the dredging and disposal operations.

EVALUATION FACTORS: All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic resources, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, seagrasses, 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 are of the people.

HISTORICAL RESOURCES: The National Register of Historic Resources is currently being consulted to determine if any resources are present which may be affected by the project operations. Preliminary determination is that no archeological, historical, or cultural resources are listed in the project area. However, if such resources are found within the project area prior to or

ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
FLORIDA STATE CLEARINGHOUSE
FLORIDA MARINE PATROL
BUREAU OF STATE PLANNING
FLORIDA DIVISION OF RECREATION
NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL
HABITAT CONSERVATION SERVICE
FLORIDA STATE CONSERVATION SERVICE

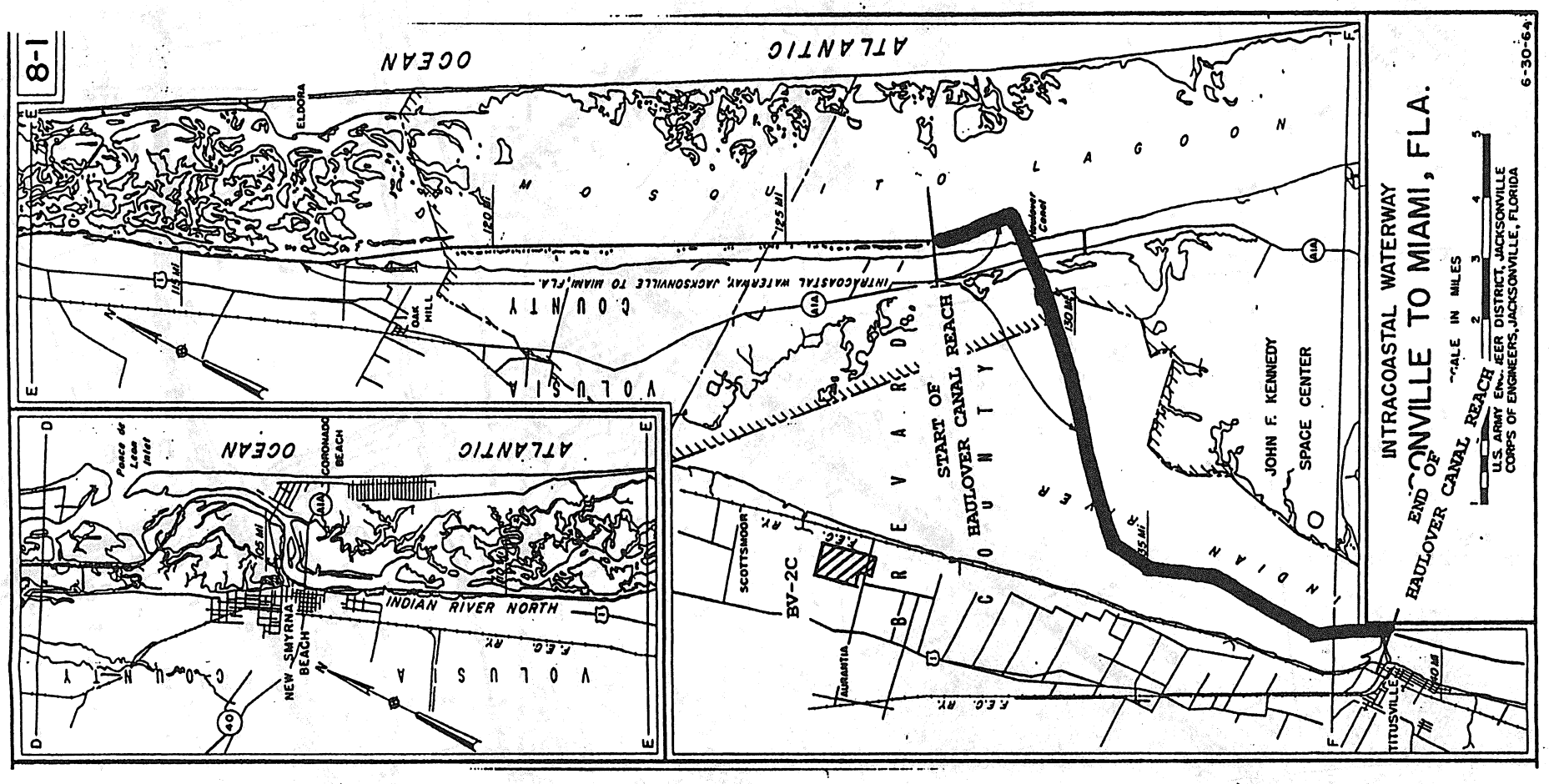
ENVIRONMENTAL ORGANIZATIONS:
FLORIDA AUDUBON SOCIETY
FLORIDA WILDLIFE FEDERATION
SIERRA CLUB
FLORIDA DEFENDERS OF THE ENVIRONMENT
NATIONAL ESTUARY PROGRAM

LOCAL GOVERNMENTS AND ORGANIZATIONS:
BOARD OF COMMISIONERS, BREVARD COUNTY
DEPARTMENT OF ENVIRONMENTAL RESOURCE MANAGEMENT
FLORIDA INLAND NAVIGATION DISTRICT
SOUTH FLORIDA REGIONAL PLANNING COUNCIL

LOCAL MEDIA:
FLORIDA TODAY
MERRITT ISLAND PRESS

FOR THE COMMANDER:

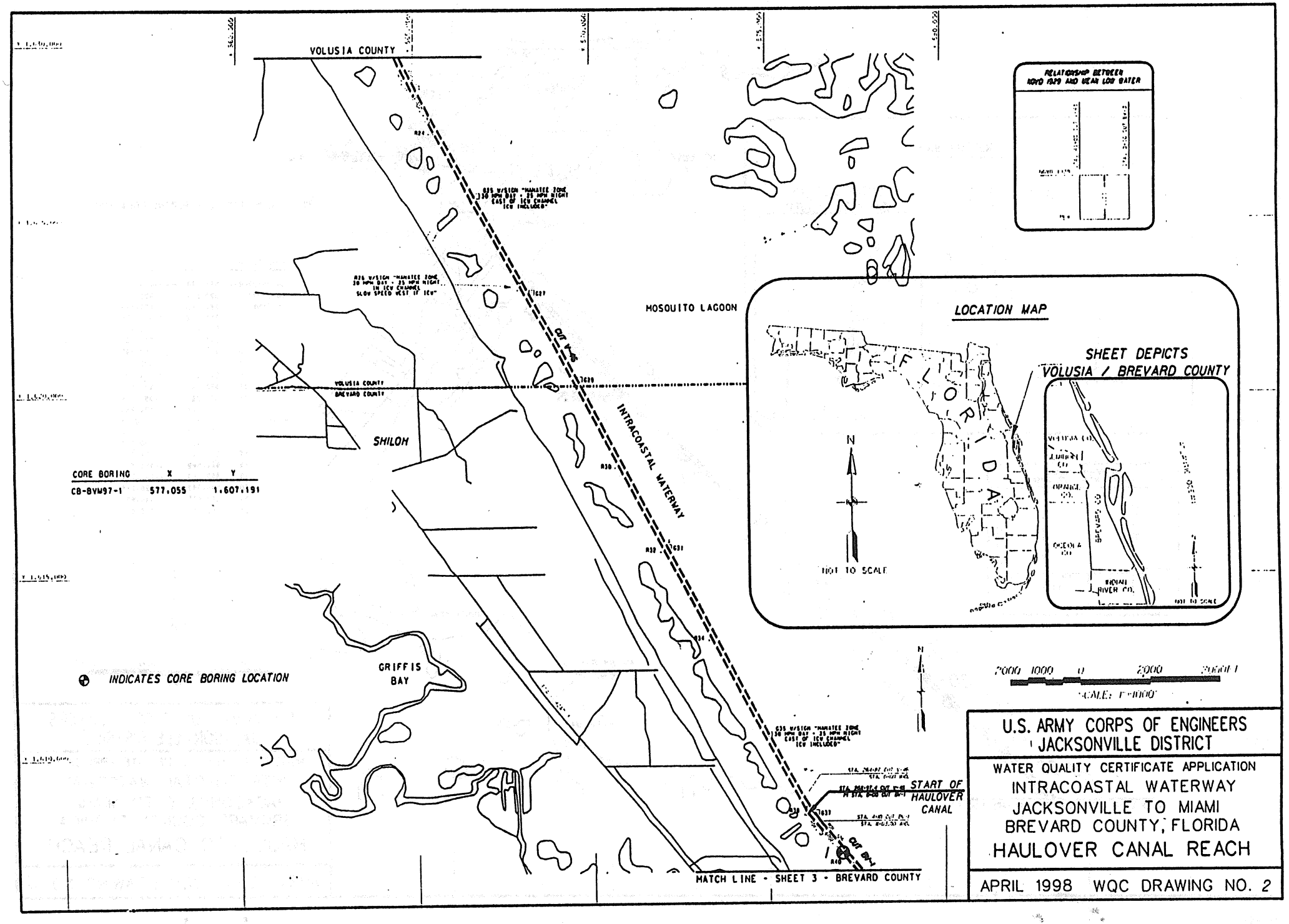
Charles J McGehee
CHARLES J. McGEHEE
Acting Chief, Construction-
Operations Division



U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

WATER QUALITY CERTIFICATE APPLICATION
INTRACOASTAL WATERWAY
JACKSONVILLE TO MIAMI
BREVARD COUNTY, FLORIDA
HAULOVER CANAL REACH

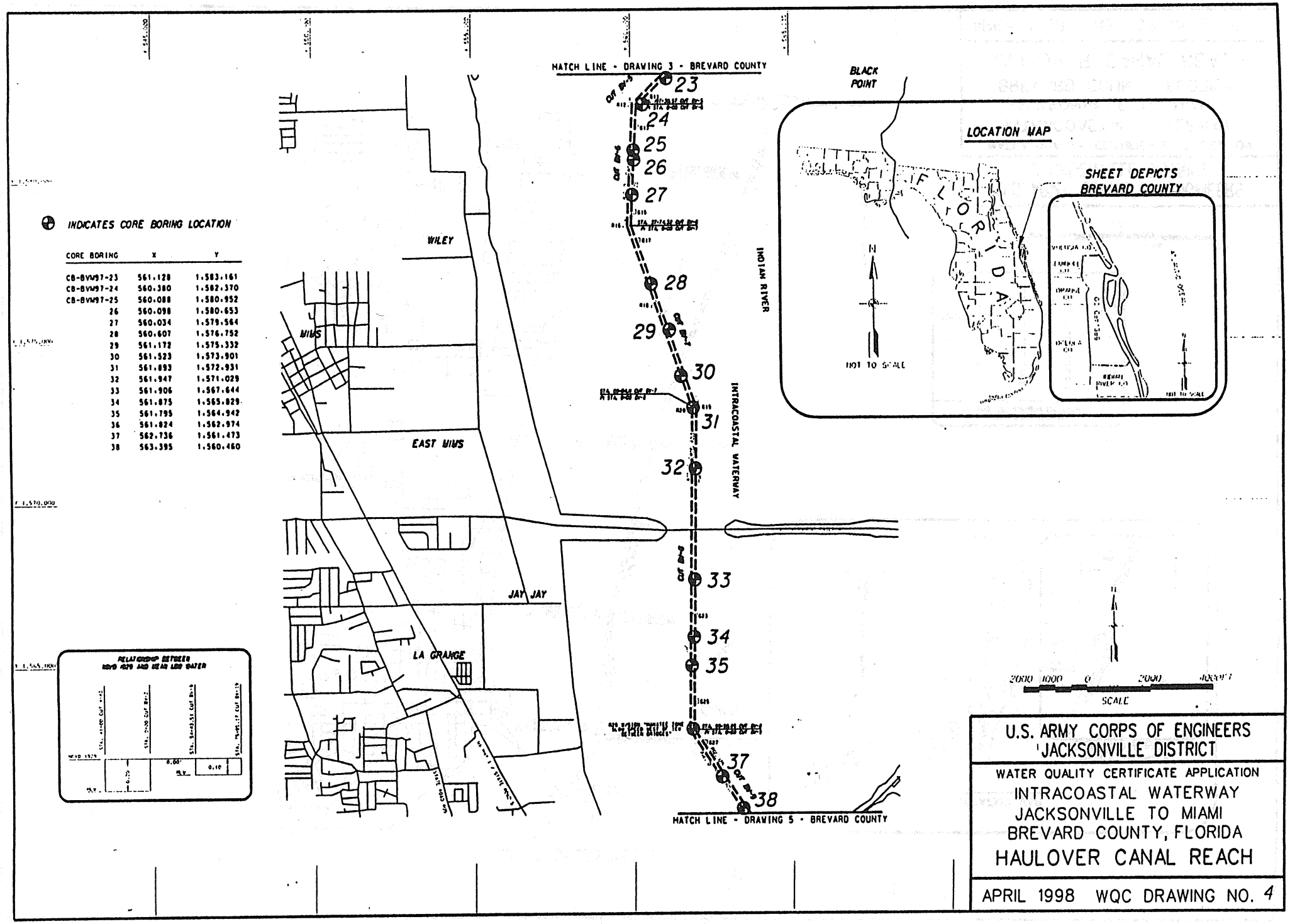
APRIL 1998 WQC DRAWING NO. 1A



U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

WATER QUALITY CERTIFICATE APPLICATION
INTRACOASTAL WATERWAY
JACKSONVILLE TO MIAMI
BREVARD COUNTY, FLORIDA
HAULOVER CANAL REACH

APRIL 1998 WQC DRAWING NO. 2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HATCH LINE - DRAWING 5 - BREVARD COUNTY
WILEY
MIMS
EAST MIMS
JAY JAY
LA GRANGE
INDIAN RIVER
INTRACOASTAL WATERWAY
BLACK POINT
LOCATION MAP
SHEET DEPICTS BREVARD COUNTY
FLORIDA
NOT TO SCALE
SCALE
U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
WATER QUALITY CERTIFICATE APPLICATION
INTRACOASTAL WATERWAY
JACKSONVILLE TO MIAMI
BREVARD COUNTY, FLORIDA
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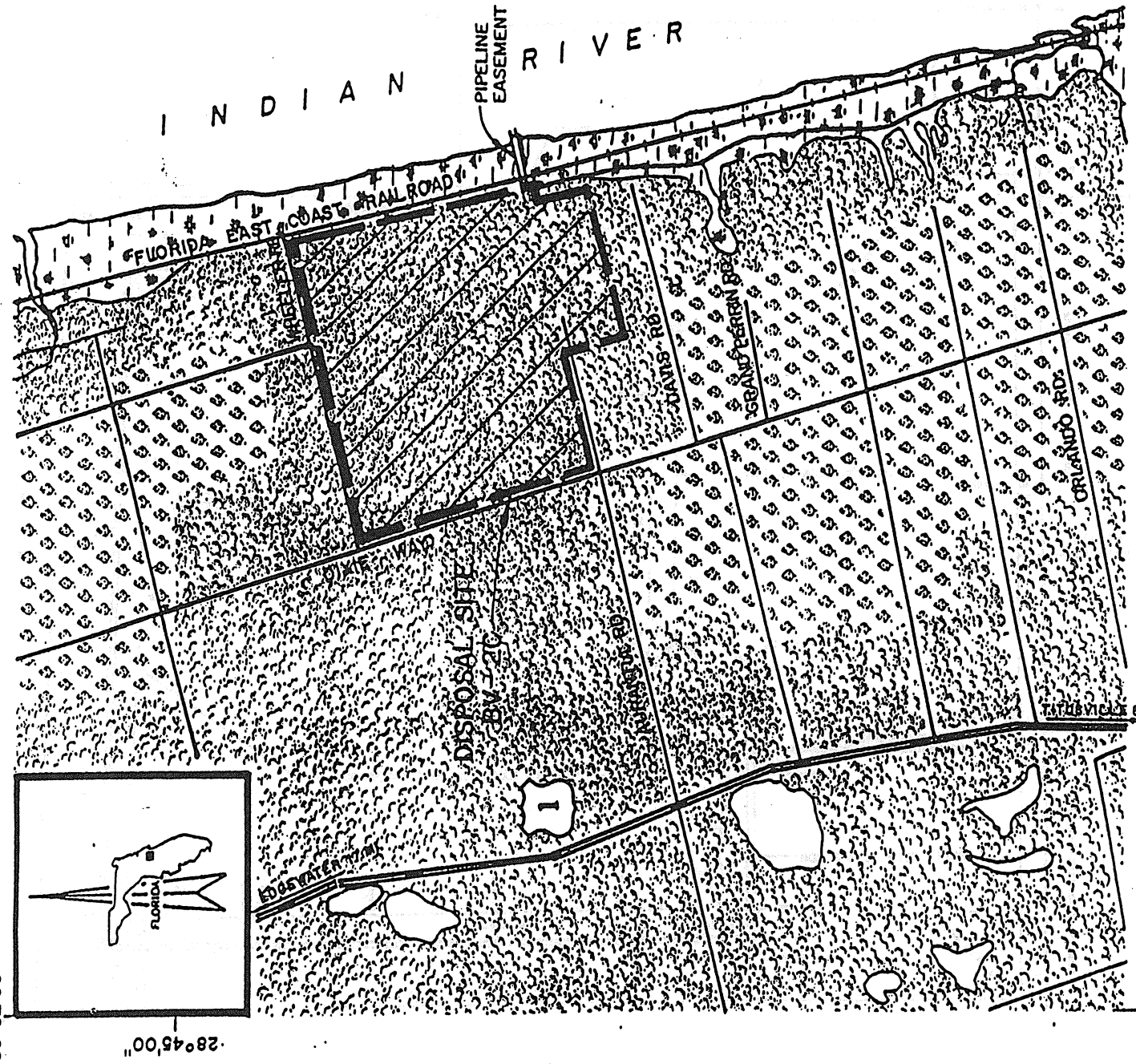
APRIL 1998 WQC DRAWING NO. 4

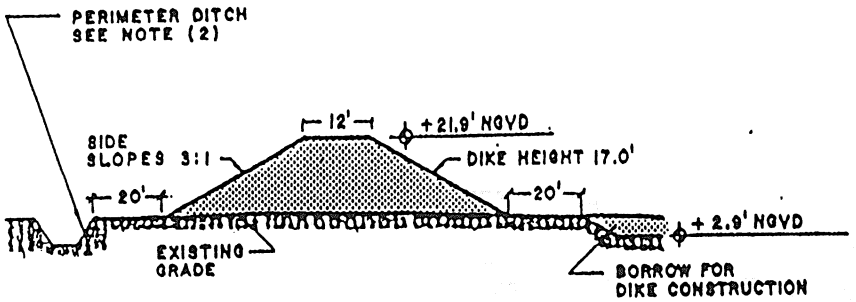


U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

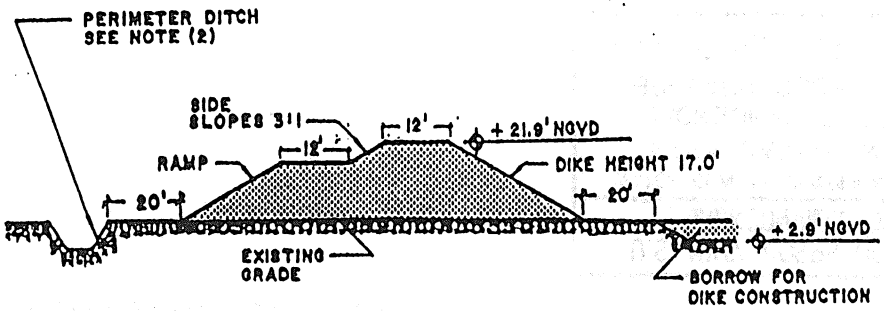
WATER QUALITY CERTIFICATE APPLICATION
INTRACOASTAL WATERWAY
JACKSONVILLE TO MIAMI
BREVARD COUNTY, FLORIDA

HAULOVER CANAL / BV-2C

APRIL 1998 WQC DRAWING NO. 6



SECTION A-A'
N.T.S.



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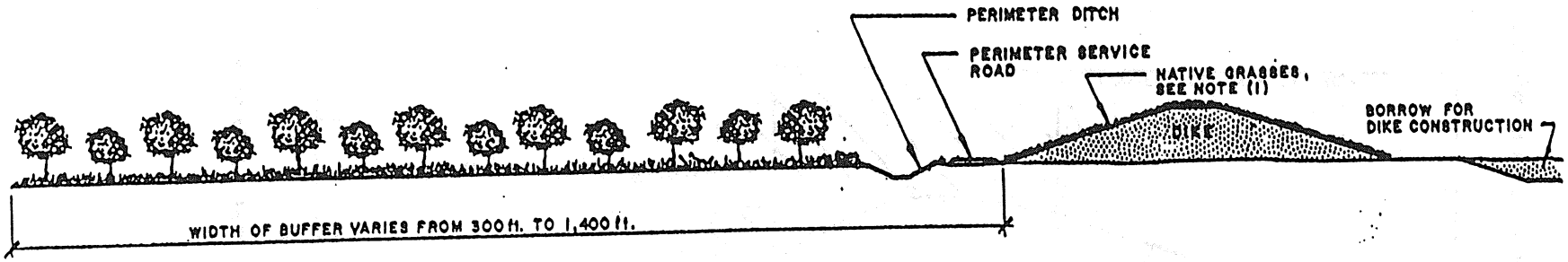

DISPOSAL AREA - VEGETATION PLAN
N.T.S

NOTES:
1. TYPICAL SPECIES INCLUDE:
   PASPALUM VAGINATUM
   SPARTINA PATENS
   SPOROBOLUS SPECIES
2. PERIMETER DITCH:
   SIDE SLOPE: 3:1
   BOTTOM WIDTH: 3 ft.
   MEAN INVERT ELEV.: 2 M.
   BOTTOM SLOPE AS REQUIRED
   FOR DRAINAGE

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

WATER QUALITY CERTIFICATE APPLICATION
INTRACOASTAL WATERWAY
JACKSONVILLE TO MIAMI
BREVARD COUNTY, FLORIDA
HAULOVER CANAL / BV-2C

APRIL 1998 WQC DRAWING NO. 8

IMPACT ON NATURAL RESOURCES: Preliminary review of this application indicates that an Environmental Impact Statement will not be required. Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency, the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area. By means of this notice we are soliciting comments on the potential effects of the project on threatened or endangered species or their habitat.

IMPACT ON CULTURAL RESOURCES: Review of the latest published version of the National register of Historic Places indicates that no registered properties, or properties listed as eligible for inclusion therein, are located at the site of the proposed work. Presently unknown archeological, scientific, prehistorical, or historical data may be lost or destroyed by the work to be accomplished.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, 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, considerations of property ownership, and, in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act of the criteria established under authority of Section 102(a) of the Marine, Protection, Research, and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make or deny this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and Natural Resources permit constitutes compliance with approved Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.

John R Hall

JOHN R. HALL
Chief, Regulatory Division

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

OFFICIAL BUSINESS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

September 8, 1999

Mr. James C. Duck, Chief
Jacksonville District Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Duck:

The National Marine Fisheries Service (NMFS) has reviewed public notice PN-CO-IWW-239, dated August 12, 1999, and the Draft Environmental Assessment and Finding of No Significant Impact (EA/FONSI) provided with your August 10, 1999, letter for the proposed maintenance dredging of the Haulover Canal reach of the Atlantic Intracoastal Waterway in Brevard County, Florida.

The Draft FONSI/EA does not make a determination on potential impacts to Essential Fish Habitat as required by the Magnuson-Stevens Fishery Conservation and Management Act. If the Corps determines that the project will not adversely impact EFH then no further consultation with the NMFS is required. The Corps' EFH determination of no adverse impact or a summary of EFH consultation should be provided in Appendix V. Otherwise, the Draft FONSI/EA and public notice adequately describe the project, identify the affected environments, and identify potential impacts to NMFS trust resources that are anticipated from implementation of this maintenance dredging project. We anticipate that any adverse effect that might occur on marine and anadromous fishery resources would be minimal and, therefore, do not object to the proposed project.

If we can be of further assistance, please advise. Related comments, questions or correspondence should be directed to Mr. David N. Dale in St. Petersburg, Florida. He may be contacted at 727/570-5311 or at the letterhead address above.

Sincerely,

for Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX (727) 570-5517

AUG 4 1999

F/SER3:EGH

Mr. James C. Duck
Chief, Planning Division
Army Corps of Engineers, Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Duck:

This responds to your July 22, 1999 letter and the August 3, 1999 fax and telephone conversation between Mr. Annon Bozeman of your staff and National Marine Fisheries Service (NMFS) biologist Mr. Eric Hawk of my Protected Resources Division, concerning U.S. Army Corps of Engineers (ACOE) maintenance dredging in the Intracoastal Waterway in the vicinity of the Haulover Barge Canal in Brevard County, Florida. NMFS responded to your request for section 7 consultation under the Endangered Species Act (ESA) on July 27, 1999. Thank you for submitting the additional information requested.

The ACOE plans to dredge approximately 12.1 miles of the Intracoastal Waterway in the vicinity of Haulover Canal Reach using a hydraulic cutterhead-type dredge. Approximately 1 million cubic yards of material will be dredged over a 14-month period. The dredging frequency is expected to be every 10–15 years. NMFS concurs with your determination that use of a non-hopper type—specifically, a cutterhead dredge—is unlikely to adversely affect listed species of sea turtles under NMFS jurisdiction because of the slow speed of the dredge.

This concludes NMFS consultation responsibilities under section 7 of the ESA. 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. We appreciate the opportunity to comment on this project and work with the ACOE. Please contact Mr. Eric Hawk if you have any questions or if we may be of assistance.

Sincerely,

William T. Hogarth. Ph.D.
Regional Director

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File: 1514-22 f.1. FL
cc: F/PR3

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX (727) 570-5517

F/SER3:EGH

JUL 27 1999

Mr. James C. Duck
Chief, Planning Division
Army Corps of Engineers, Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Duck:

This responds to your July 22, 1999 letter concerning U.S. Army Corps of Engineers (USACE) maintenance dredging in the Intracoastal Waterway in the vicinity of the Haulover Barge Canal in Brevard County, Florida. The dredging method will be a cutterhead type dredge.

The National Marine Fisheries Service (NMFS) has previously determined that use of a non-hopper type dredge is unlikely to adversely affect listed species of sea turtles under NMFS jurisdiction because of the slow speed of the dredge. Nevertheless, we would appreciate receiving additional information on where exactly the project will take place, how much material will be dredged, and where the dredged materials will be placed, prior to making a final determination. Your submission did not include project maps or amounts of materials to be dredged.

We appreciate the opportunity to comment on this project and work with the USACE. Please contact Mr. Eric Hawk if you have any questions or if we may be of assistance.

Sincerely,

David Bernhart

for Charles A. Oravetz
Chief, Protected Resources Division

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File: 1514-22 f.1. FL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 18 1999

District Engineer, Jacksonville
P.O. Box 4970
Jacksonville, FL 32232

ATTN: **Mr. James Duck, Chief**
Planning Division

Subject: **Environmental Assessment (EA) for the Maintenance Dredging of the Intracoastal Waterway, Haulover Canal Reach in Brevard County, FL**

Dear Sir:

Pursuant to Section 309 of the Clean Air Act, EPA, Region 4 has reviewed the proposal to dredge approximately 1,000,000 cubic yards of silty material in the Indian River Lagoon between Cuts BV-1 to BV-9, a distance of 12.1 miles. The dredging cycle is expected to be 10-15 years in duration and will use cutterhead equipment. Since the material from the Lagoon is fine textured and not suitable for beach nourishment, it will be placed in disposal area BV2C. With the exception of the potential for turbidity adversely affecting some nearby oyster reefs and seagrass beds were a pipeline break/leak to occur, the environmental risks associated with this maintenance dredging should be within acceptable limits.

On the basis of the scope of this work and its anticipated limited, detrimental effects, we have no significant objections to the use of an EA as the evaluative model to examine this project's impacts in lieu of the more comprehensive environmental impact statement format.

Thank you for the opportunity to comment on this action. If we can be of further assistance, Dr. Gerald Miller (404-562-9626) will serve as initial point of contact.

Sincerely,

For Gerald T. Miller

Heinz J. Mueller, Chief
Office of Environmental Assessment
Environmental Accountability Division

Florida Fish and Wildlife Conservation Commission

September 10, 1999

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, DIRECTOR
620 South Meridian Street
Tallahassee, FL 32399-1600
www.state.fl.us/fwc
(850)488-6661
FAX (850)922-5679
TDD (850)488-9542

Ms. Cherie Trainor, Director
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Re: SAI #FL9908180673C, Brevard County, COE-Draft Environmental Assessment-Maintenance Dredging of the ICW-Haulover Canal

Dear Ms. Trainor:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission has reviewed the referenced project and offers the following comments.

Our review of the project indicates that there may be impacts to the endangered West Indian manatee and/or its habitat. We are currently reviewing the DEP permit application for this project and have requested additional information. The proposed project is located in Brevard County, which provides critical manatee habitat throughout the year and is used by the majority of the east coast manatee population. Manatees use the ICW and the Haulover Canal throughout the year as a travel corridor. This is particularly true during spring and fall migrations as manatees travel to and from warm water refuge sites. Manatee concerns for this project will focus on potential impacts to manatees from dredge equipment and work boat movements during the in-water work, seagrass impacts from dredging, and the temporary impacts to the existing boat traffic patterns. Protective measures will be needed during the in-water work, and we will provide more specific recommendations through the permitting process, when construction details are available.

APPENDIX II

Florida Coastal Zone Management Program
Federal Consistency Determination

Florida Coastal Zone Management Program
Federal Consistency Determination 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 which are located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed work would not be seaward of the mean high water line and would not affect shorelines or shoreline processes. Information would be submitted to the state for a permit in compliance with this chapter.

2. Chapters 186 and 187, State and Regional Planning

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

Response: The proposed work has been coordinated with state agencies.

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: Dredging of this 12.1 mile stretch of the IWW in Brevard County would be consistent with continued maintenance dredging in the IWW, thus ensuring a navigable waterway which could be used in emergency situations. Therefore, this work would be consistent with the efforts of the 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 artificial reefs.

Response: The proposed work would not affect state lands.

This chapter directs the state to preserve, manage, and protect the marine, crustacean, shellfish, and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen 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 and economic studies and research.

Response: Dredging of the IWW would not adversely affect saltwater living resources.

11. Chapter 372, Living Land and Freshwater Resources

This chapter establishes the Game and Freshwater Fish Commission (now the Florida Fish and Wildlife Conservation 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 that provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: Maintenance dredging of the IWW would impact no significant living land or freshwater resources. Therefore, the work will 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: The proposed 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: The proposed work does not involve the transportation or discharging of pollutants.

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.

APPENDIX III

ENDANGERED SPECIES CONSULTATION

FISH AND WILDLIFE COORDINATION ACT REPORT

Maintenance Dredging - Intracoastal Waterway
Haulover Canal Reach

U. S. Fish and Wildlife Service
Ecological Services Division
Jacksonville, Florida

November 1999

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0912

REPLY REFER TO:
FWS/R4/ES-JAFL

Mr. Hanley K. Smith
Chief, Environmental Branch
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

ATTN: Annon Bozeman

Dear Mr. Smith:

Please find attached the final Fish and Wildlife Coordination Act Report (CAR) on the proposed maintenance dredging of the Haulover Canal Reach of the Intracoastal Waterway, Brevard County. We submit the document in accordance with the FY 99 Scope of Work and funding agreement dated July 23, 1998.

Our office point of contact for this response is John Milio (904)-232-2580, x112.

Sincerely yours,

for David L. Hankla
Field Supervisor

Attachment

R:milihaulcov2.wpd\acm

Table of Contents

EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (Service) assessed potential natural resource impacts resulting from maintenance dredging of a 19.5 km (12.1 mi) section of the Intracoastal Waterway (IWW) known as the Haulover Canal Reach, in Brevard County, Florida. The assessment also covered spoil transport methodology. The proposed project is within portions of the Mosquito and northern Indian River Lagoons. Work included field surveys of fish, wildlife, and various habitats within the project area, and review of pertinent literature. Major resource areas covered included marine resources, special habitats, threatened or endangered species, water quality, migratory birds, and fisheries.

The Service does not object to the proposed maintenance dredging operation and spoil transport through aquatic, fully submerged metal or plastic pipelines to an upland coastal disposal site located on the western shore of the north Indian River. Additional recommendations, intended to avoid or minimize impacts to roosting, nesting, and feeding birds, submerged aquatic vegetation, and benthic invertebrates, included positioning of the support vessels, designating preferred pipeline routes, and a regular daily inspection of pipelines for leaks. Recommendations for expected unavoidable impacts to seagrass beds and intertidal wetlands include restoration of the affected habitat.

The Service determined through section 7 consultation that the proposed project is not likely to adversely affect the following federally listed species within our jurisdiction and occur in the project area: the Florida manatee (*Trichechus manatus latirostris*), bald eagle (*Haliaeetus leucocephalus*), wood stork (*Mycteria americana*), and Atlantic salt marsh snake (*Nerodia clarkii taeniata*). In order to further minimize the potential for any project impacts to manatees, the Service recommended that a number of actions, including the standard construction precautions, be incorporated into the project plans. The entire project area is within federally designated critical habitat for the Florida manatee. The Service further determined that the proposed maintenance dredging and spoil transport is not likely to result in the destruction or adverse modification of critical habitat.

The green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), Atlantic ridley sea turtle (*Lepidochelys kempii*) and loggerhead sea turtle (*Caretta caretta*) also may occur within the project area. The agency having jurisdiction and responsibility for consultation on these species while in open water is the National Marine Fisheries Service.

1.0 INTRODUCTION

The Intracoastal Waterway (IWW) along Florida's Atlantic Coast spans nearly the entire length of the peninsula from Jacksonville to Miami. The 69th Congress originally authorized an 8-foot deep by 75-foot wide Federal channel in 1927. Ten years later, Congress authorized an increase in its depth and width to the present 12 foot by 125 foot configuration. The U.S. Army Corps of Engineers, Jacksonville District, (Corps) is responsible for maintenance of the channel.

The Corps proposes to maintenance dredge a section of the IWW in Brevard County, Florida known as the Haulover Canal Reach. Dredging will restore the channel's 12-foot operating depth, plus an additional two feet of overdredge. The last dredging of this section occurred between 20 and 30 years ago. Since then, sedimentation has reduced the actual depths in some portions of the reach to less than 10 feet below Mean Low Water (MLW).

2.0 AUTHORIZATION

In July, 1998, the U.S. Fish and Wildlife Service (Service) entered into an agreement with the Corps to assess impacts on fish and wildlife resources associated with the planned maintenance dredging of the Haulover Canal Reach. The scope of work required the Service to conduct field studies and literature review sufficient to characterize the impacts, and develop recommendations to protect, conserve, or enhance potentially affected resources through impact avoidance and minimization, or resource compensation. A copy of the agreement with the scope of work is included in Appendix A. The study emphasized marine resources, areas of importance to fish and wildlife, occurrence of threatened or endangered species, water quality, migratory birds, and fisheries. The Service has included its findings and recommendations in this Coordination Act Report (CAR). The submission of this CAR is in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

3.0 PROJECT DESCRIPTION

The proposed project is located in Brevard County and covers parts of two estuaries, the Mosquito and Indian River Lagoons, and adjacent coastal land. The Corps proposes to use a barge-mounted, hydraulic cutter-head dredge to remove approximately 1,000,000 cubic yards of sediment from a 12.1 mile section of the Intracoastal Waterway (IWW). The dredge will convey this sediment through 18 inch metal or plastic pipes across the Indian River to a newly approved spoil disposal site. This 311 acre site (BV-2C) is located on the east shore of the Indian River about 2.5 miles south of the city of Scottsmoor (Figure 1).

4.0 FISH AND WILDLIFE COORDINATION ACT

DESCRIPTION OF THE AFFECTED ENVIRONMENT

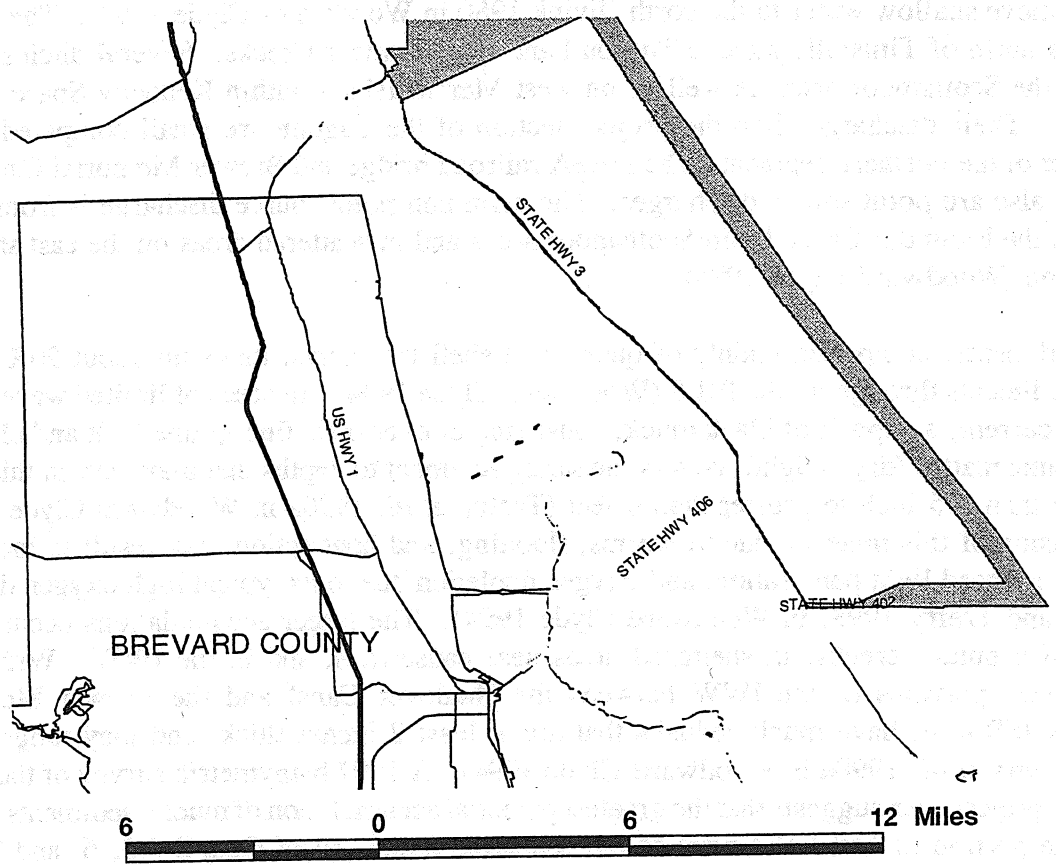
Physical

The Haulover Canal reach of the IWW extends approximately 12.1 miles through the Mosquito and Indian River Lagoons in Brevard County(Figure 1). The reach contains nine cuts (BV 1-9), with the northernmost cut (BV-1) beginning in Mosquito Lagoon in the vicinity of navigational aid R38 (Lat. 28° 45' 28.88", Lon. 080° 45' 45.71"), approximately 1.5 miles northwest of the eastern entrance to Haulover Canal . The southernmost cut (BV-9) ends at navagational aid G29 (Lat. 28° 37' 03.92", Lon. 080° 47' 42.74") about 0.3 mile southeast of the Brewer Memorial Causeway (SR 406) east of the city of Titusville. The reach occurs within the boundaries of two Federal landholdings: Canaveral National Seashore (National Park Service) and Merritt Island National Wildlife Refuge (U.S. Fish and Wildlife Service) (Figure 2). In addition, the project area is included in the Indian River Lagoon National Estuary Program (IRLNEP). The National Estuary Program is a state grant program within the U.S. Environmental Protection Agency that incorporates scientific research into planning activities for estuaries designated as nationally significant (Adams *et al.* 1996).

Mosquito Lagoon is a relatively long, shallow estuary that originates in Volusia County and extends into Brevard County. Its surface waters total 37, 853 acres (Woodward-Clyde 1994). It is one of three water bodies that comprise the Indian River Lagoon System (IRLS). Its sole connection to the Atlantic Ocean is through Ponce de Leon Inlet, located at northern end of the Lagoon. Due to the inlet's position, flushing of Mosquito Lagoon is relatively slow, though its physiography promotes a fair degree of mixing through wind action (Paulic and Hand 1994). Freshwater inflow results primarily from direct land runoff, a number of short, natural creeks and streams, some minor, man-made drainage ditches, and wastewater treatment plants and septic tanks associated with the cities of Edgewater and New Smyrna Beach (Rao 1987, Paulic and Hand 1994, Woodward-Clyde 1994). Haulover Canal, excavated in 1854, links Mosquito Lagoon with the north Indian River Lagoon (Woodward-Clyde 1994). About 20.4 acres of the Mosquito Lagoon are in the project area. The adjacent land is largely undeveloped due to its inclusion within the boundaries of Kennedy Space Center.

The Indian River Lagoon originates in Volusia County and extends to Jupiter Inlet in Palm Beach County. More than half its length occurs in Brevard County. Surface waters total 42,123 acres (Woodward-Clyde 1994). Together with the Mosquito Lagoon and Banana River, it makes up the Indian River Lagoon complex. Four natural or man-made, stabilized inlets control the transport and flushing rates within the various Lagoon segments. The naturally occurring variations in these rates resulting from inlet changes over time have diminished due to shoreline stabilization (Woodward-Clyde 1994). Freshwater inflow occurs from precipitation and overland flow, creeks, streams, drainage canals, ditch systems, wastewater treatment plants, septic tanks, and the numerous causeways constructed over the lagoon (Rao 1987, Paulic and Hand 1994, Woodward-Clyde 1994).

Figure 2. Boundaries of Canaveral National Seashore and Merritt Island National Wildlife Refuge



attributes, such as temperature and contaminants, that are not expected to impact human health or significantly degrade the natural resources within Florida surface waters. All surface waters in Florida are classified in one of five categories. Water quality within those sections of the project area that include the Mosquito Lagoon and North Indian River Lagoon north of the NASA railroad bridge, is classified as good, and fully supports their designation as Class II (suitable for shellfish harvesting and propagation) waters (Paulic and Hand 1994). The Mosquito Lagoon section and the easterly portion of the North Indian River Lagoon section are designated Outstanding Florida Waters. This state designation refers to water bodies having either exceptional recreational or ecological significance, and which are afforded a high degree of protection corresponding to a level of " no significant degradation"(Paulic and Hand 1994). These project sections are within the boundaries of Canaveral National Seashore, National Park Service, and Merritt Island National Wildlife Refuge, U.S. Fish and Wildlife Service. Waters within the project section extending from the NASA bridge to the project's southern terminus south of the Brewer Causeway are fair, Class III waters (Paulic and Hand 1994). Class III waters are of slightly lower quality than Class II waters, but are of sufficient quality to support recreation as well as the propagation and maintenance of a "healthy, well-balanced population of fish and wildlife." (Chapter 17-302, FAC in Woodward Clyde 1994). Local conditions, such as high fecal coliform bacteria levels, may result in temporary downgrading of certain Class II water areas.

Trocine and Trefry (1993 in Woodward-Clyde 1994) surveyed the entire Indian River Lagoon in 1992 for certain trace metals within water, sediment, and shellfish. Four of the samples represented the area from Titusville northward. Their survey revealed that concentrations of the dissolved trace metals cadmium, copper, and lead (except for the Titusville sampling station) in the water column area were at or below FDEP surface water quality standards. Sediment samples analyzed for aluminum, cadmium, chromium, copper, iron, lead, manganese, mercury, silver, and zinc found all metals, except for silver in the Titusville area, were at or below background concentration levels for natural sediments. Data on trace metals in organisms within the IRLS is limited, particularly the portion encompassing the project area. Trocine and Trefry (1993 in Woodward-Clyde 1994) used the filter-feeding hard clam (*Mercenaria mercenaria*) to evaluate bioaccumulation within the system. Though limited, the results of their study suggested that, with the exception of copper in the Titusville area, metal levels in tissues of hard clams taken from the area encompassing the proposed dredging, in general did not appear to be at levels known to cause damage to clams.

Biological

Biological diversity within the IRLS is high; approximately 2,500 species occur within the Lagoon itself (Swain *et al.* 1994 in Adams 1996). This diversity represents one of the most productive aquatic faunas within the continental United States (Gilmore 1985 in Woodward-Clyde 1994). The system's diversity of habitats and biotic communities is thought to be the result of its encompassing a warm-temperate, subtropical, and tropical climatic transition zone (Gilmore 1977 in Woodward-Clyde 1994), a gradient of aquatic conditions, and a variety of landforms and benthic substrates (Woodward-Clyde 1994). Overall diversity within the lagoon system generally

information that exists on the benthic community of the Indian River Lagoon. Among the several hundred species known to occur within the IRLS, polychaete(segmented) worms, crustacea such as amphipods, isopods, crabs, and shrimp, and molluscs such as snails and clams dominate both the epifaunal and infaunal communities over vegetated as well as unvegetated substrate (Woodward-Clyde 1994). These communities naturally may vary substantially over time and space. Benthic organisms play an important role in the IRLS, serving as prey for higher animals, providing a commercially valuable resource, and converting plant and detrital material into forms available to higher level consumers. Commercially important shellfish include the hard clams (*Mercenaria mercenaria* and *M. campechiensis*), American oyster (*Crassostrea virginica*), and blue crab (*Callinectes sapidus*).

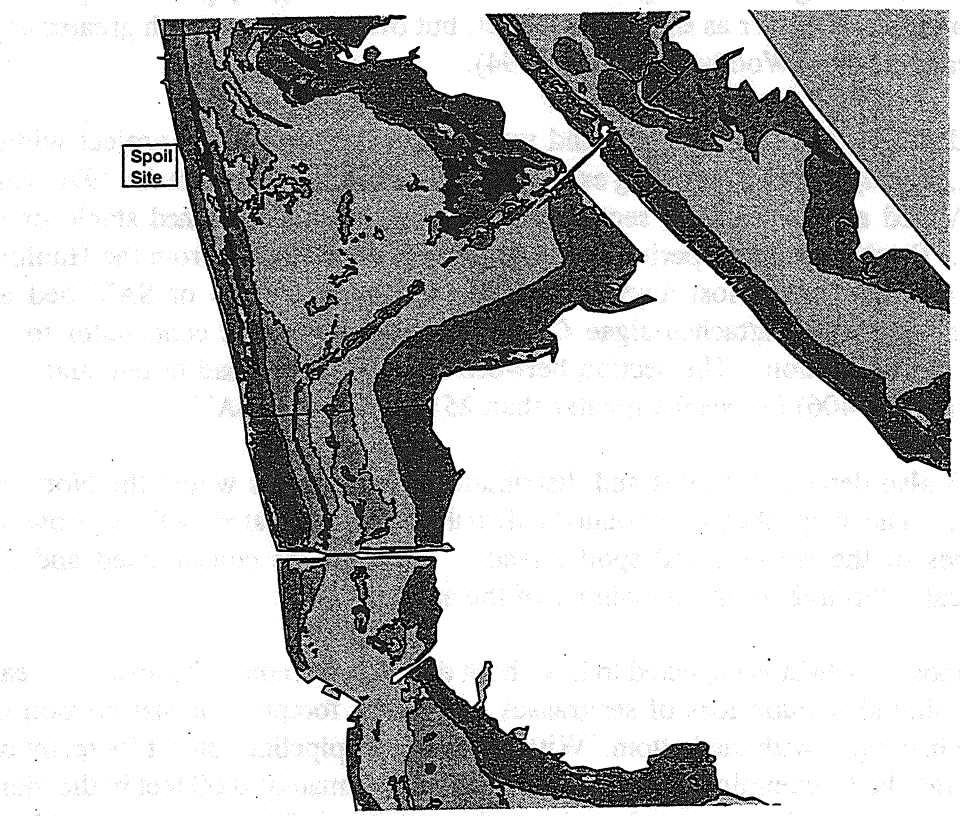
The maintenance dredging and pipeline transport of spoil will impact the benthic community in a number of ways. The hydraulic dredge will remove from the system all infauna and sessile or slow-moving epifauna within the IWW and in the dredge path. The estimated impact area is 183.3 acres. An 18-inch submerged pipeline having 12 inches in contact with the bottom substrate directly impacts a 2.2 acre area. The pipeline may smother or crush infauna and sessile epifauna within that footprint, and restrict and redirect the movement of slow-moving organisms, particularly in water depths less than two feet. Where the pipeline crosses beds of submerged aquatic vegetation, the pipeline footprint will result in some loss of epifauna, particularly amphipods, that are a significant part of the seagrass bed community. The minimum estimated impact area within beds of submerged aquatic vegetation is 0.55 acre. Spoil leaking from the pipeline is another potential impact to the benthos. Expected effects would be similar to that of the pipeline footprint. Differences in spoil texture and organic content from the surrounding substrate may have an impact on the composition of the benthic community that is likely to recolonize the spill site.

The Service anticipates that adverse impacts to benthic infauna and epifauna will be temporary, due to the likelihood for reuse and recolonization of the impact area following project completion by organisms from the surrounding, unimpacted habitat. Composition of the benthic community within the IWW may change due to the change in the upper layer of bottom sediment from predominantly muck to primarily silty sand. As organic material and other sediments are redeposited within the channel over time, the composition of the benthic infaunal and epifaunal community may change, and at some point resemble the pre-dredging community. Comments on minimizing expected and potential impacts to the benthic community are included in the " Alternatives, Options, and Recommendations" subsection.

Submerged Aquatic Vegetation - Algae

Submerged aquatic vegetation (SAV) includes algae and seagrasses. Woodward-Clyde (1994) summarized the reports documenting the importance of SAV in the ecological stability and productivity of estuarine systems. SAV perform such diverse functions as stabilization of sediments, prevention of re-suspension of particulate matter, and providing cover and food for fish and wildlife.

Figure 3. 1996 Density and Distribution of Submerged Aquatic Vegetation



Intertidal Wetlands

The two types of coastal estuarine wetlands within the IRLS are salt marshes and mangrove forests. The site visit and review of National Wetland Inventory maps revealed that salt marshes predominate throughout much of the project area, with scattered mangrove stands located primarily along the western shore of the northern Indian River and on some spoil islands. Black (*Avicennia germinans*) and white (*Laguncularia racemosa*) mangrove are the typical mangrove species of this area. The invasive exotic Brazilian pepper (*Schinus terebinthefolius*) occurs in sometimes large stands along both shorelines as well as on spoil islands. Both high and low salt marsh occur within the project area. The low marsh consists primarily of smooth cordgrass (*Spartina alterniflora*), where the high marsh supports a greater diversity of flora such as black needlerush (*Juncus roemerianus*), salt meadow cordgrass (*S. patens*), saltwort (*Salicornia virginica*), salt grass (*Distichlis spicata*), sea ox-eye (*Borrichia frutescens*), and salt jointgrass (*Paspalum vaginatum*).

Both wetland types support a variety of vertebrate and invertebrate fauna and are essential ecological components of the estuary. Woodward-Clyde (1994) provide examples of the associated fauna, which include both the adults and juveniles of a number of commercially valuable finfish.

Potential impacts to intertidal wetlands may occur from the spoil pipeline section that transports material from the anticipated stationary booster barge to the land-based spoil discharge pipe. This section of pipe is expected to enter the disposal site through an existing tidal drainage ditch that is surrounded by low and high salt marsh. If submerged, likely direct pipeline impacts include crushing/smothering of benthic invertebrates within the expected 12-inch pipeline footprint or further as a result of leaking spoil, and possible physical damage to vegetated marsh from equipment used to initially position and eventually remove the pipeline. An additional possible direct impact includes some adverse habitat modification as a result of possible altering of an existing adjacent railroad bed to allow for a straight line connection of the pipeline with the drainage ditch on the landward side of the railroad bed. A potential indirect impact is some water displacement within the ditch that may affect hydrology of the adjacent salt marsh.

The impacts to the benthos are expected to be temporary, as are any hydrologic changes resulting from water displacement. Direct impacts to salt marsh may range from slight to severe. Compensation for unavoidable impacts are provided in the "Alternatives Options, and Recommendations" subsection.

Birds, Mammals, Amphibians, and Reptiles

Woodward-Clyde (1994) and Virnstein and Campbell (1987) provide summaries, as well as reference lists, of the birds, mammals, reptiles, and amphibians associated with the IRLS. Brown-Peterson and Eames (1990) reported on bird use of 137 spoil islands within the IRLS. The spoil islands, coastal marshes and flats, and adjacent shallow waters within the project area are

(*Centropomus unidecimalis*).

The proposed project is not expected to have a significant direct or indirect impact on fish within the dredge footprint. Whether floating or submerged, the spoil transport pipeline is not expected to directly impact fish communities in waters greater than 3.1 feet. Direct impacts may occur at shallower depths where the pipeline can become a barrier to natural fish movement. Potential impacts include added energy expenditure needed to bypass the pipeline, and concentration and increased predation of smaller, schooling species by larger species, as well as by dolphins and fish-eating birds. Some indirect impacts may occur as a result of impacts to seagrass beds within the pipeline footprint. Because the shallow water impact area is proportionally very small compared to the deeper water pipeline route, and surrounding shallow water habitat, the potential impacts are not expected to be significant.

ALTERNATIVES, OPTIONS, AND RECOMMENDATIONS

The essential features of the projected maintenance dredging of the Haulover Canal Reach of the IWW are removal and transportation of spoil material to an upland disposal site (BV-2C) located along the western shore of the north Indian River. The proposed method involves removing the material using a barge-mounted, hydraulic cutterhead dredge, and transporting the spoil across the northern Indian River into the land-based spoil disposal site through 18 inch pipeline sections. Because of the transport distance, the project would require a stationary and movable booster barges, in addition to standard dredge support vessels and equipment, to maintain pressure and spoil movement within the pipes. As a result, expected and potential impacts to natural resources include portions of various biotic communities as well as federally listed species.

Alternatives

Major alternatives to the standard proposed method are the partial or full replacement of the aquatic pipeline with spoil barges. Partial replacement involves use of light-loaded standard barges and mini-barges (to negotiate the Haulover Canal) to transport spoil from the dredge site to a stationary booster barge about 0.75 mile due east of the soil disposal site entrance canal, in about 5 feet of water (MLW). That barge would hydraulically off-load the spoil barge, and transport the spoil via pipeline the remaining distance to the entrance ditch. This alternative would not avoid the expected impacts to the densest sections of seagrass along the western edge of the northern Indian River. This method also would require use of a clam shell dredge, whose operation would add more turbidity to the water than the hydraulic cutterhead dredge. In addition, tugboats would be needed to ferry the barges. Tug prop wash may damage the benthos in the mainly shallow waters outside the IWW. The significant increase in vessel use increases the risk of accidents and groundings which could further damage the aquatic environment. More vessels also may increase the risk of collisions with manatees, especially during the migration season.

needed. In addition, two other floats are required on each side of the section connections. The floats are anchored by guide wires attached to two, 500-pound boat anchors on either side of the float. Wind and waves acting on the pontoon floats can result in significant anchor drag. This could result in widening the anchor footprint of impact to the benthos. In addition, the guide wires may injure marine animals, and shading from the pontoon floats may adversely impact seagrass beds. Vessels and equipment needed to construct the floating pipeline in shallow water can further damage the benthos and seagrass beds.

Pipeline Routes

The number and location of pipeline routes from the IWW to the proposed stationary booster barge is primarily determined by two factors, operational capabilities and the presence and abundance of SAV. Figure 4 shows a GIS-generated map with 1995 coverages of seagrass and other SAV throughout most of the project area (Provancha *et al.* 1995). A review of 1992 infrared aerials of the project area north of the IWW along the western shoreline revealed that the density and width of SAV in the vicinity of the spoil site entrance canal to be nearly identical in size to the contiguous community depicted on the GIS map. Figure 5 also shows expected and potential pipeline routes along the IWW and across the northern Indian River. The proposed location of the stationary booster barge is about 0.75 mile due east of the coastal railroad ROW.

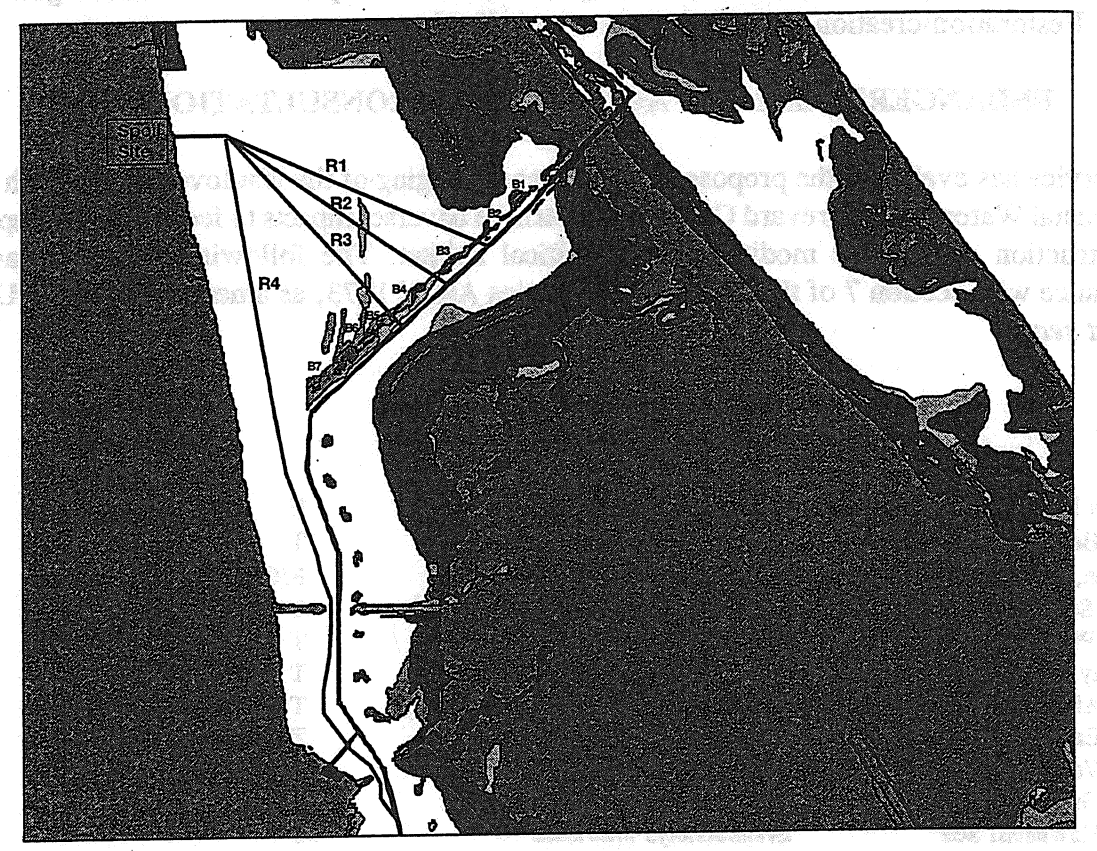
The potential pipeline routes extend through areas that range from no SAV present to densities approaching 100% coverage of the bottom substrate. The longest, most linear route extends about 8.97 miles from the southern end of the proposed project to the stationary booster barge. Minimum depth along this route is estimated at 4 feet. The pipeline is not expected to have any direct impacts on seagrass beds throughout this route. All other routes are shorter.

Recommendations

The following recommendations represent the preferred operational alternative as well as other actions intended to avoid, minimize, and compensate for expected and potential impacts to natural resources.

1. Use a hydraulic, cutterhead dredge to remove material and a fully submerged, metal and/or collared plastic pipeline to transport the resulting spoil from the IWW to the BV-2C spoil disposal site via the stationary booster barge. Metal pipe may be used where pipe pressures are greatest and subject to wide fluctuations. Plastic pipe may be incorporated within areas of relatively stable, moderate pipe pressures. Limit pipeline paths from the IWW to the stationary booster barge to no more than three routes. One preferred route starts from the southern end of the project, parallel to the IWW, and across the north Indian River west of spoil island B7, heading due north to the stationary booster barge.

Figure 4. 1995 Density and distribution of submerged aquatic vegetation (sav) with potential pipeline routes across the North Indian River



3 0 3 6 Miles

Pipeline Routes (R #)

Spoil Islands (B #)

Intracoastal Waterway
Land
Open Water
Ocean
Undetermined
sav density <10%
sav density 10-40%
sav density 40-70%
sav density 70-100%

N
W E
S

protection". Sea grasses represent the primary forage for manatees and are abundant in shallow waters along the coast lines of both the Mosquito and Indian River Lagoons, as well as many spoil islands.

Species

Florida Manatee

Relatively large numbers of manatees are found in Brevard County, although their range varies seasonally. During summer months, the species disperses widely throughout both the Indian River and Mosquito Lagoons (Woodward-Clyde 1994). During two years of aerial surveys, Shane (1981 in Beeler and O'Shea 1988) found that manatee use of the northern Indian River and Mosquito Lagoon was the lowest in the county. Activity was generally limited to the IWW, around the spoil islands, and the Haulover Canal. Service biologists conducting a reconnaissance of the project area on August 25, 1998 observed manatees only within the Haulover Canal boat ramp basin. Most of the basin supported a robust growth of sea grasses. Shane (1981 in Beeler and O'Shea 1988) considered Big Flounder Creek, approximately 1mile north of the BV-2C site, to be an important source of freshwater for manatees. The area of the Indian River Lagoon most heavily used by manatees extends from the cities of Titusville to Rockledge (Shane 1981, 1983 in Beeler and O'Shea 1988). The southern end of the Haulover Canal reach is within about 3 miles of the Orlando Utilities Commission Power Plant. Large numbers of manatees congregate within the plant's warm water effluent canal during the winter (Beeler and O'Shea 1988).

Since 1974, 21 manatee carcasses have been recovered from within the project area (Florida Department of Environmental Protection 1999). More than half (11) were the result of collisions with watercraft, with no cause of death determined for seven of the remaining ten bodies. Most of the watercraft-related mortalities were in the vicinity of the IWW, spoil islands, and Haulover Canal. The other cluster of carcasses occurred within a half mile north and south of the SR 406 causeway east of Titusville.

Bald Eagle

Brevard County supports the second highest number of nesting bald eagles along Florida's Atlantic coast (Kale 1988 in Woodward-Clyde 1994). Nesting generally occurs in tall pines or cypress trees, with some mangroves used in coastal locations (Woodward Clyde 1994). Within the Indian Lagoon watershed, fewer nests occur in the immediate vicinity of Lagoon, west of Interstate 95. There are no nests within the project area. Bald eagles likely forage within the Indian River and Mosquito Lagoons, and may use temporary roosts on spoil islands and forested uplands and wetlands adjacent to these waterbodies .

operating within speed zones designated in the Brevard County Manatee Protection Plan, or as otherwise posted. Use of the Florida Marine Patrol to enforce speed zones while dredging is occurring in the Haulover Canal is suggested.

- a limit on all ships, vessels, and boats traveling outside of designated speed zones, but not over grass beds, to speeds of 10 MPH or less

- a limit to idle speed (3-5 MPH) for all boats traveling over sea grass beds

- prohibit dredging within the Haulover Canal during spring (April-May) and fall (November) manatee migration periods.

- attachment of bumpers on flat-sided barges that are moored together in order to provide a minimum stand-off distance of four feet.

Critical Habitat

The expected and potential direct and indirect impacts to seagrasses were reviewed and discussed in Section 4. Because of the abundance of seagrasses throughout the shallow areas contiguous and adjacent to the project area, and the actions recommended in this document to avoid, minimize and/or mitigate for those measures, the Service finds that the proposed project will not adversely affect manatee critical habitat.

6.0 COASTAL BARRIER RESOURCES ACT

BACKGROUND

The Coastal Barrier Resources Act (CBRA), first enacted in 1982 (16 U.S.C. 3502 et seq.), was reauthorized and amended by the Coastal Barrier Improvement Act (CIBA) of 1990 (16 U.S.C. 3501). Its purpose, as stated in section 2(b), is "...to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to fish, wildlife, and other natural resources associated with the coastal barriers..." CBRA established the Coastal Barrier Resources System, (CBRS) a mapped series of undeveloped coastal barriers on the Atlantic and Gulf coasts, including the Great Lakes Region, Virgin Islands, and Puerto Rico. Areas within the system are designated as either "units" or "otherwise protected areas" (OPA's). Section 5(a) prohibits all new federal expenditures and financial assistance within unit boundaries, with some exceptions as determined through a process of consultation.

7.0 LITERATURE CITED

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APPENDIX A

SCOPE OF WORK
FISH AND WILDLIFE COORDINATION ACT
INTRACOASTAL WATERWAY, BREVARD COUNTY, FLORIDA
MAINTENANCE DREDGING, HAULOVER CANAL REACH

1.0 Project Title: Maintenance Dredging of the Intracoastal Waterway, Haulover Canal Reach

2.0 Project Description: The Corps is preparing to dredge the Intracoastal Waterway in the vicinity of the Haulover Canal in Brevard County, Florida. In doing so, the Corps will remove approximately 1,000,000 cubic yards of material in the 12.1 miles of Federal channel between cuts BV-1 and BV-9. Dredging will be to a depth of -12 feet Mean Lower Low Water. Material removed from the channel will be placed in BV-2C. The pipeline route to carry the dredged material to BV-2C will cross seagrass beds.

3.0 Authorization Status: Spanning nearly the length of Florida from Jacksonville to Miami, an 8 x 75 ft IWW channel was authorized January 21, 1927 by House Document 586, 69th Congress, 2nd Session. The present channel configuration (12 x 125 ft) was authorized by House Document 740, 79th Congress, 2nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel.

4.0 Work Required of the U.S. Fish and Wildlife Service (FWS):

4.1 Conduct field studies and literature review necessary to assess project impacts on fish and wildlife resources, particularly to seagrass beds, and to recommend (a) measures to protect and/or to enhance fish and wildlife resources, and (b) mitigation options, if needed.

4.2 Coordination Act Report (CAR). Emphasis will be placed on the following: marine resources, areas of importance to fish and wildlife, occurrence of threatened or endangered species, water quality, migratory birds and fisheries. The CAR will:

7.0 Agreement: In accordance with the enclosed itemized cost estimate, the undersigned certify intention to perform respective tasks within the time frames stated in this Scope of Work.

DAVID HANKLA
Field Supervisor
U.S. Fish and Wildlife Service

DATE: 7/23/98

HANLEY K. SMITH
Chief, Environmental Branch
U.S. Army Corps of Engineers

DATE: 7/16/98

COST ESTIMATE
INTRACOASTAL WATERWAY, BREVARD COUNTY, FLORIDA
MAINTENANCE DREDGING, HAULOVER CANAL REACH

COST ESTIMATE (FY-1998)

1. Conduct field trips to the site.	
1 Biologist: 3 days @ $335/man day	$1340
3 Divers: 2.0 days @ $418 man day	$2508
Boat rental	$500
Vehicle: 5 days @ $60/day =	$300
Per diem (7 days @ $118/day)=	$826
2. Literature search.	
1 Biologist: 4days @ $335/man day	$1340
3. Prepare Draft Coordination Act Report.	
1 Biologist: 10 days @ $335/man day	$3350
4. Review, edit, and finalize CAR.	
1 Biologist: 5 days @ $335/man day	$1675
SUBTOTAL	$11339
5. FWS Overhead (38%)	$4309
TOTAL COST	$15648
ROUNDED COST	$15650

APPENDIX B

FACSIMILE TRANSMITTAL HEADER SHEET

COMMAND	NAME OFFICE SYMBOL	TELEPHONE NUMBER	AUTHORIZED RELEASER'S SIGNATURE		
FROM: Annon I. Bozeman Environmental Protection Specialist	CESAJ-PD-ER	904-232-1688			
TO: Don Palmer ATTN John Milio	USFWS	904 232 2404	DATE-TIME 15/1030	MONTH July	YEAR 1999
CLASSIFICATION unclassified	NO. PCS 2	PRECEDENCE	REMARKS:		
SPACE BELOW FOR COMMUNICATIONS CENTER USE ONLY					
DA Form 3918-R 1 Aug 72					

MESSAGE:

Thanks for the CAR! It's great and we've only got minor comments. (see attached)

Annon

U. S. Army Corps of Engineers
Jacksonville District

Planning Division
Environmental Branch

400 West Bay Street
Mail: P. O. Box 4970
Jacksonville, FL 32232-0019

Phone: (904) 232-1688
Fax: (904) 232-3442

Please call us if you have had any problems receiving or if there are any pages missing.

CESAJ-PD-ER (Bozeman/1688) 15 July 1999

MEMORANDUM FOR THE RECORD

SUBJECT: Coordination Act Report for Maintenance Dredging of the IWW, Haulover Canal Reach

1. The Figures and Appendix A were missing from the draft CAR provided on 14 July 1999. Please include them in the final.

2. The following comments are keyed to the appropriate section of the CAR.

a. The scientific name for the Atlantic Ridley Sea Turtle was not in italics on page 2 and page 19.

b. In the first full paragraph on page 12, second sentence, the last word, "increase," needs to be deleted.

c. Page 20, second full paragraph. The numbers do not add up correctly. Twenty one minus eleven does not leave 7 as implied by the text. Please check.

ANNON I. BOZEMAN
Environmental Protection Specialist

APPENDIX IV

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

1. **National Environmental Policy Act of 1969, as amended.** Environmental information on the project has been compiled and the draft Environmental Assessment was made available for public review through public notice in compliance with 33 CFR Parts 335-338. These regulations govern the Operations and Maintenance of US Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged or Fill Material into Waters of the US or Ocean Waters. This public coordination and environmental impact assessment complies with the intent of NEPA. The process will fully comply with the Act once the District Commander has signed the Findings of No Significant Impact.

2. **Endangered Species Act of 1973, as amended.** Consultation with the U.S. Fish and Wildlife Service was initiated in 1998 for the purposes of Section 7 Coordination in conjunction with maintenance dredging of the Intracoastal Waterway. By letter dated July 14, 1999 (Appendix III), the USFWS determined that there would be no impacts any listed endangered species.

This project was fully coordinated under the Endangered Species Act; therefore, this project is in full compliance with the Act.

3. **Fish and Wildlife Coordination Act of 1958, as amended.** The project has been coordinated with the USFWS. It has previously prepared a Coordination Act Report for the project. Therefore, the project is in compliance with the Act.

4. **National Historic Preservation Act of 1966, as amended (PL 89-665).** We have coordinated our no effect determination with the Florida State Historic Preservation Officer (SHPO). The SHPO concurred with the determination that significant historic properties will not be effected by the proposed Dredge Material Management Area construction. Therefore, the project is in compliance with this Act and with the Archeological and Historic Preservation Act, as amended (PL 93-291).

5. **Clean Water Act of 1972, as amended.**

5.1. Section 401. The Water Quality Certificate has been applied for with the Department of Environmental Protection.

5.2. Section 404 (b)(1). This project will not involve the discharge of material into any wetlands or other waters of the United States. Therefore, the activity is not subject to this act.

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

Channel Improvements (Section 6(a)(2)), the maintenance dredging and disposal are exempted from the Act.

18. **Magnuson-Stevens Fishery Conservation and Management Act.** This act requires that Essential Fish Habitat be considered when undertaking any dredging project. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or Federally managed fisheries. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.