OCTOBER 1997

DREDGE MATERIAL MANAGEMENT AREA
CONSTRUCTION
MIMS SITE (BV-2C)
INTRACOASTAL WATERWAY
BREVARD COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT

US Army Corps
of Engineers
Jacksonville District
South Atlantic Division

DREDGED MATERIAL MANAGEMENT AREA CONSTRUCTION
INTRACOASTAL WATERWAY
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 Environmental Assessment attached hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. The proposed work would not jeopardize the continued existence of any endangered or threatened species.

2. The State Historic Preservation Officer concurred with the U.S. Army Corps of Engineers' determination that there would be no effect on 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. The proposed project has been evaluated pursuant to the Migratory Bird Treaty Act. The District Migratory Bird Protection Policy will be implemented for this project. The Policy has been developed and coordinated with the U.S. Fish and Wildlife Service and the State of Florida.

7. Benefits to the public will be maintenance of the navigation channel and continued local economic stimulus.

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

29 June 1998
Date

JOE R. MILLER
Colonel, Corps of Engineers
Commanding

Fonferek/CESAJ-PD-ER/2803/ljd
Birchett/CESAJ-PD-ER
Dugger/CESAJ-PD-ER
Smith/CESAJ-PD-E
Strain/CESAJ-PD-P
Duke/CESAJ-PD
Burns/CESAJ-DX
DiChiara/CESAJ-CO
Pike/CESAJ-OC
Moore/CESAJ-DD
Miller/CESAJ-DE

Table of Contents

List of Tables

List of Figures

List of Appendices

iii

1.0. PURPOSE OF AND NEED FOR ACTION.

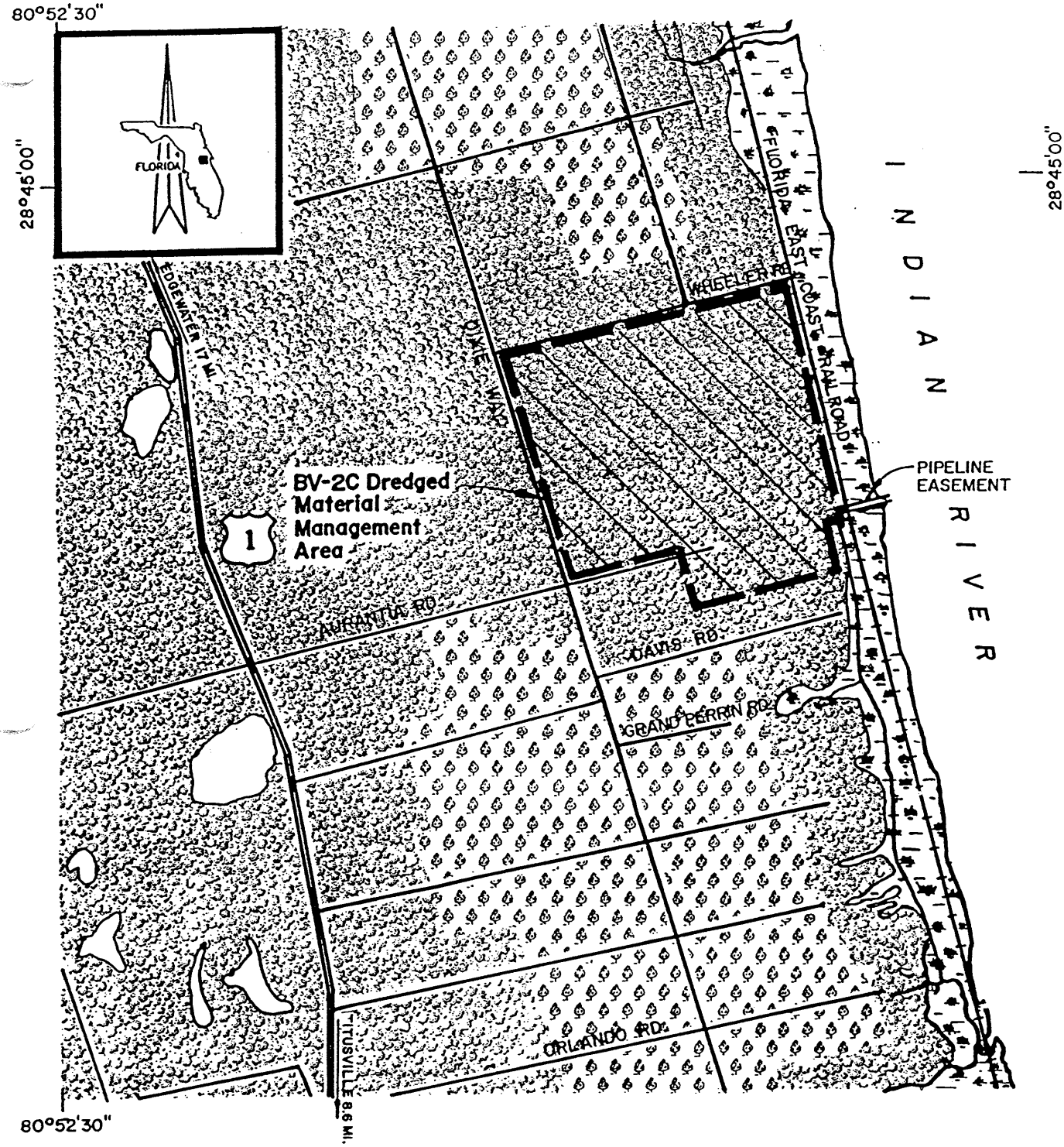
1.1. **INTRODUCTION**. When a Federal navigation project is authorized, it is generally the responsibility of the U.S. Army Corps of Engineers to maintain that channel. As part of that responsibility, the channels are monitored for shoaling and if the situation warrants it maintenance dredging is performed. As part of the Federal standard for the project, disposal areas are acquired by the local sponsor. The disposal option with the least cost is designated the baseline for the project. If the local sponsor should desire another option then, that option is cost shared.

1.2. **LOCATION**. The proposed action consists of Phases I and II of the construction of BV-2C, an upland dredged material management area serving Reach I (as defined in Taylor and McFetridge, 1991a) of the Brevard County, Florida portion of the Intracoastal Waterway (IWW). Reach I is the northernmost 10 miles of the IWW in Brevard County, extending from IWW mile 126.76 southward to mile 134.07. BV-2C, located about five miles north of Mims, Florida, contains approximately 311 acres. It lies about 600 ft west of the Indian River and is bounded on the west by Dixie Way, on the north by Wheeler Road, and on the east by the Florida East Coast Railroad right-of-way. Lands to the north, south, and west of the site contain a mixture of citrus groves, fallow croplands, and sparse residential development.

1.3. **NEED AND PURPOSE**. The purpose of the project is to create a long-term upland dredged material management facility that would provide adequate capacity for 50 years of maintenance material dredged from the adjacent IWW. Several factors prompt this need for action. First, maintenance dredging in the IWW has been constrained by a lack of suitable sites to place dredged material. Second, existing easements for dredged material management are largely unusable because they are located in wetlands or their upland areas are too small for efficient dredged material management. Third, as the demand for residential and commercial property along the waterway increases, upland sites suitable for dredged material management are becoming scarce. Therefore, it is essential that long-term dredged material management facilities be constructed so that the federal channel can be maintained at its authorized depth.

1.4. **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 in 1945 by House Document 740, 79th Congress, 2nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel and the Florida Inland Navigation District serves as the local sponsor.

1.5. **DECISION TO BE MADE**. The decision to be made is whether to construct a dredged material management facility for Reach I of the IWW in Brevard County.



REFERENCED

USGS MIMS, FLORIDA QUADRANGLE 1949, REVISED 1970.
USGS OAK HILL, FLORIDA QUADRANGLE 1949, REVISED 1970.

TAYLOR ENGINEERING INC
9086 CYPRESS GREEN DRIVE
JACKSONVILLE, FLORIDA 32256

Location of Site BV-2C
Dredged Material Management Area
Brevard County, Florida

PROJECT	C-9004
REVISION	
SHEET	1 of 4
DATE	Aug., 1992

1.6. **RELEVANT ISSUES**. The following issues have been determined to be relevant to the decision to be made:

- water quality
- wetlands
- biological resources
- threatened and endangered species
- migratory birds
- cultural, historical, and archaeological resources
- socioeconomics
- prime farmland
- navigation
- aesthetics
- air quality
- hazardous, toxic, and radioactive materials

1.7. **PERMITS REQUIRED**. Should subsequent consultation with the Florida Department of Environmental Protection determine that state jurisdictional wetlands are involved, then a state Water Quality Certification would be required for construction and operation of the proposed facility. Otherwise, a federal NPDES stormwater permit would be required. Permits to burn the cleared vegetation would be obtained from appropriate local governments.

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

2.0. 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. A summary of this comparison is located in the alternative comparison chart, Table 2.1, page 5. 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**. Dredged material management alternatives for the IWW in Brevard County were developed as part of the FIND's long-range dredged material management program. The alternative selected for Reach I must be able to handle 3,162,179 cubic yards of maintenance dredging material, the projected 50-yr disposal requirement. Throughout the alternative evaluation process, federal, state, and local regulatory issues were addressed through continued coordination with appropriate agencies. The long-range dredged material program and alternative evaluation procedures are summarized in Section 1.5 and are documented in Taylor et al. (1989), Taylor and McFetridge (1991a), and Taylor and McFetridge (1991b).

2.3. **ELIMINATED ALTERNATIVES**. The following dredged material management alternatives were considered and eliminated.

2.3.1 Ocean Disposal

Ocean disposal of dredged material requires the use of deep draft ocean barges or hopper dredges. These vessels, because of their size, cannot operate in the relatively shallow depths of the IWW. Therefore, ocean disposal would require multiple handling of dredged material using shallow draft vessels or pumping in combination with seagoing barges. Limited ocean access within the project area would introduce significant increases in transport or pumping distances with associated increases in operational costs. Therefore, ocean disposal is not considered to be a viable alternative.

2.3.2 Beach Placement

The sediments in the portion of the IWW to be served by the BV-2C dredged material management facility are not suitable for beach placement because they contain significant amounts of fine, organic-rich materials (Taylor et al., 1989; Trefry et al., 1990).

2.3.3 Open Water Placement with Habitat Restoration

Open water placement in artificial dikes followed by habitat restoration was the only form of open water placement considered feasible in Brevard County. However, significant difficulties with this alternative include its unproven likelihood of success and the uncertainty of obtaining environmental permits and approval to use submerged state lands. Additionally, this alternative would require increasing acreages of submerged land with each dredging operation. These limitations preclude the use of this alternative as a long-term management strategy.

2.3.4 Other Upland Sites

Several candidate upland sites were evaluated as documented in Taylor et al. (1989), Taylor and McFetridge (1991a), Taylor and McFetridge (1991b), based on the engineering, environmental, and cultural considerations as summarized below:

- Engineering/Operational Considerations
  - Capacity
  - Adequate dike material
  - Pumping distance
  - Pipeline access
  - Upland access
  - Soil properties
- Environmental Considerations
  - Wetland avoidance or minimum wetland impact
  - Wetland quality
  - Minimum upland impacts
  - Ability to provide buffer zone
  - Groundwater contamination potential
- Cultural/Economic Considerations
  - Minimal existing development
  - Ownership
  - Archeological or historical sites

The candidate sites evaluated for Reach I included five existing dredged material placement easements. Each of these sites was eliminated from consideration because it was wholly or partly submerged, too small, lacked road access, or a combination of these factors. Six other upland sites were also evaluated for Reach I but eliminated from consideration. Of these, three sites located in the Merritt Island National Wildlife Refuge were eliminated from further consideration following the withdrawal of U. S. Fish and Wildlife Service support for the use of refuge lands for dredged material management. Two additional sites were eliminated because they possessed inadequate capacity. The remaining site, BV-2A, was designated as a secondary site should the primary site be unusable.

2.4. **DESCRIPTION OF ALTERNATIVES.**

2.4.1 No Action. Under the no action alternative a dredged material management facility for Reach I would not be constructed. No action would preclude future maintenance dredging in the IWW.

2.4.2 Construction of Dredged Material Management Area BV-2C. BV-2C would be an approximately 311 acre site containing a dredged material containment basin, associated perimeter ditch and access road, and buffer area. Construction would occur in two phases. Phase I would consist of clearing and grubbing the site. Phase II would consist of the

construction of the diked containment facility.

2.5. Alternative Comparison. Table 2.1 provides a summary comparison of the two alternatives described above, derived from the information presented in Section 4.

2.6. Preferred Alternative. Construction of BV-2C is the preferred dredged material management alternative for Reach I in Brevard County. The BV-2C dredged material management area would satisfy the dredged material handling requirements for Reach I, would involve fewer property owners than the designated secondary site (BV-2A), and would involve minimal impacts to wetlands and agricultural lands. Further, it would address desires of the community and affected property owners.

2.5. **ALTERNATIVE COMPARISON.**

TABLE 2.1, ALTERNATIVE COMPARISON

RESOURCE/ISSUE	NO ACTION ALTERNATIVE	CONSTRUCTION OF DREDGED MATERIAL MANAGEMENT AREA BV-2C
Water Quality	No impact.	Short-term minor inclusion of salt water into the groundwater aquifer. This impact would be mitigated by the design of the dikes to avoid affecting this resource. Wells would be placed around the perimeter to monitor this potential impact.
Wetlands	No impact.	There would be no impacts on wetlands.
Biological Resources	No impact.	There is no significant wildlife habitat at the site.
Threatened and Endangered Species	No impact.	No impact.
Migratory Birds	No impact.	The construction activities would have a short-term impact on migratory bird nesting. These impacts would be mitigated through the implementation of the District's Migratory Bird Protection Policy.
Cultural Resources	No impact.	No impact.
Navigation	Short-term minor adverse impact during reformulation of alternatives.	Long-term benefit to navigation by providing adequate disposal facilities for this reach of the IWW.

RESOURCE/ISSUE	NO ACTION ALTERNATIVE	CONSTRUCTION OF DREDGED MATERIAL MANAGEMENT AREA BV-2C
Socioeconomics	Short-term minor adverse impact during reformulation of alternatives.	Short-term stimulus to the local economy from the sale of goods and services in support of the construction. Short-term secondary stimulus to the local economy during dredging and disposal activities.
Prime Farmland	No impact.	The project would eliminate approximately 87.2 acres of citrus groves considered to by unique farmland y the SCS.
Aesthetics	No impact.	Short-term medium noise impacts from the presence and operation of heavy equipment. Since residential areas are close by impacts could be mitigated by daytime only construction. Short-term visual construction impacts, permanent visual landscape change from project construction. Long-term medium impact from the presence of the dike structure. Impacts would be mitigated by the creation of vegetative (tree) buffer.
Air Quality	No impact.	Short-term medium impact from burning of on-site vegetation during clearing and grubbing Short-term medium impact from fugitive dust during construction of dikes. Short-term medium impact from odors during dredging episodes.
Hazardous Toxic Wastes	No impact.	No impact.

2.6. **PREFERRED ALTERNATIVE**. The preferred alternative would be to construct Dredged Material Management Area BV-2C in Brevard County, Florida.

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:

- water quality
- wetlands
- biological resources
- threatened and endangered species
- migratory birds
- cultural, historical, and archaeological resources
- socioeconomics
- prime farmland
- navigation
- aesthetics
- air quality
- hazardous, toxic, and radioactive materials

3.2. **GENERAL DESCRIPTION**. BV-2C, located about five miles north of Mims, Florida, contains approximately 311 acres. It lies about 600 ft west of the Indian River and is bounded on the west by Dixie Way, on the north by Wheeler Road, and on the east by the Florida East Coast Railroad right-of-way. Lands to the north, south, and west of the site contain a mixture of citrus groves, fallow croplands, and sparse residential development. During preparation of the long-range dredged material management plan for Brevard County, Mosura (1991) characterized the environmental setting of BV-2C. The environmental characterization includes descriptions and maps of land cover and vegetative communities, characterization of wildlife communities, and discussion of jurisdictional wetlands.

3.3. **RELEVANT ISSUES**.

3.3.1. **Physical**.

a. Cultural, historical, and archaeological resources. The National Register of Historic Places was consulted and no properties eligible for or listed on the Register are located in the area. The Florida Department of State, Division of Historical Resources, reviewed the Florida Master Site File to determine whether significant archaeological or historical sites are recorded in the project area. No such sites are recorded in the project area (Appendix VII). In addition, a literature search of and reconnaissance level survey of the site was conducted (Bense and Phillips, 1990). It was determined that this site had a low probability for cultural resources.

b. Agricultural lands. The total acreage of BV-2C is 311.4 acres, 219.3 acres of which fall under the purview of the Farmland Protection Policy Act (FPPA). Of

those 219.3 acres, 87.2 are citrus groves, 93.8 are fallow cropland, and 38.3 are herbaceous rangeland. The Corps filed a Farmland Conversion Impact rating with the U.S. Department of Agriculture National Resource Conservation Service by letter dated March 6, 1995. The Conservation Service responded by letter dated March 21, 1995 which stated that the 87.2 acres of citrus groves are considered unique farmland.

c. Wetlands. Mosura (1991) first identified and located wetlands using blue line aerial photography (1"=200'), U.S. Department of Interior Wetland Inventory Maps, U. S. Department of Agriculture soil survey, and U.S. Geological Survey topographic maps. The type and extent of wetland communities was verified during field inspections conducted on 1/3/91, 4/16-17/91, and 9/6/91. Wetlands and other vegetative communities were classified according to the *Florida Land Use, Cover, and Forms Classification System* (FDOT, 1985). The eastern portion of the property contains state jurisdictional freshwater and saltwater wetlands and isolated freshwater wetlands (Appendix I). Jurisdictional wetlands on site are classified as Class II waters under Chapter 17-302 F.A.C. An artificial water body bordering a filled roadbed is present in the northeastern portion of the property. It is connected to the Indian River Lagoon through a series of mosquito ditches. Drainage ditches have also been constructed on site to drain land for citrus cultivation. Mosura's (1991) environmental characterization did not include examination of water quality indicators or trends in water quality in these wetlands. It is unlikely that such information is available for the subject site.

d. Water quality. Most residents of the area obtain their potable water from the shallow ground water aquifer (within 30 feet). The quality of the aquifer is relatively poor. Surface water is controlled by ditches running through the orange groves and pasture land before it enters the Indian River marshes and estuary. The quality of this water is dependent on agricultural runoff from the orange groves and pasture land. During stormwater events, the quality declines.

e. Hazardous, toxic and radioactive materials. There does not appear to be any potential for HTRW on this site.

f. Air quality. This site is located in a rural area. The air quality in the area is good only being impacted by fugitive dust and odors from agricultural activities.

3.3.2. **Biological**.

a. General. BV-2C contains four upland vegetative communities — citrus grove, fallow cropland, herbaceous rangeland, and temperate hardwoods. Six wetland communities — shrub marsh/freshwater marsh, shrub marsh/saltwater marsh, non-forested wetlands, freshwater marsh, freshwater/saltwater marsh, and saltwater marsh — are present, along with a mixed hardwood/wetland hardwood community. The

predominant communities, citrus grove and fallow cropland, offer limited wildlife habitat. Upland forest on the site offers moderately good cover and food resources. Small mammals, as well as larger mammals such as opossum, raccoon, bobcat, and armadillo, may be found in this forest. The locations of these communities are shown in Appendix I. Other typical users of this community could include black racers, rough green snakes, yellow rat snakes, diamondback rattlesnakes, eastern box turtles, stinkpots, broadheaded skinks, and ground skinks. Woodpeckers, warblers, and other passerines are common canopy-dwelling birds that could be found in the hardwood forest. The marshes offer abundant food resources which can attract a variety of bird life.

b. Threatened and endangered species. The following species that could be in the construction area are listed as threatened or endangered by the U.S. Fish and Wildlife Service (Mosura, 1991).

Piping plover . . *Charadrius melodus*
Peregrine falcon . . *Falco peregrinus*
Bald eagle . . . . . *Haliaeetus leucocephalus*
Wood stork . . . . *Mycteria americana*

c. Migratory birds. BV-2C is not presently a suitable site for migratory bird nesting. However, construction of the diked containment basin would create suitable habitat for Least terns and other colonial nesting birds. In addition, due to the probability for the containment basin to retain water, the site would attract waterfowl and wading birds. Therefore, some benefit to migratory birds would result from construction of BV-2C.

3.3.3. **Social.**

Aesthetics. BV-2C is situated in a rural area. Most of the land north, west, and south of BV-2C is in citrus production. Exceptions to this general pattern occur at the northeast and southeast corners of the site where forested lands abut the site. The east side of the property is bordered by Florida East Coast Railroad tracks. A narrow band (400 — 600 ft wide) of marsh east of the tracks separates BV-2C from the Indian River Lagoon. The area surrounding BV-2C is sparsely populated. Two structures, apparently mobile homes, are located near the site. One is located about 500 ft north of the site, the other about 250 ft south of the site. Two groups of smaller structures are present within about 150 ft of the western site boundary, one group near the southwest corner and the other near the northwest corner. These structures may be farm buildings or smaller residences. No other structures are apparent within 1,000 ft of BV-2C.

3.3.4. **Economics.**

a. Socio-economics. The areas north, west, and south of BV-2C contain a mixture of citrus groves and fallow croplands. Sparse rural residential development is also present in these areas.

b. Navigation. The major navigation activity on the IWW is recreational. Commercial craft on the waterway include barges, fishing vessels, and excursion boats. Several types of government vessels also use the IWW.

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. Historic, Archeological, and Cultural Resources. There would be no impact on cultural, historical, and archeological resources.

b. Agricultural Lands. There would be no impact to Agricultural lands.

c. Wetlands. There would be no impact to wetlands.

d. Water quality. There would be no impact on water quality.

e. Hazardous, toxic and radioactive materials. There would be no impacts on HTRW.

f. Air quality. Air quality would remain the same.

4.2.2. **Biological**.

a. Migratory Birds. There would be no impact on migratory birds.

b. Threatened and Endangered Species. There would be no impact to threatened and endangered species.

4.2.3. **Social**.

a. Aesthetics. There would be no impact to the aesthetic qualities of the area.

4.2.4. **Economic impacts**.

a. Socioeconomics. There would be a long-term impact on economics from the reduction in revenues attributed to the loss of navigable capacity of the channel.

b. Navigation. No action would result in the failure to construct a long-term dredged material management site for the IWW. This failure, in turn, would produce a domino effect that will impact navigation. Maintenance dredging in the IWW would be delayed or curtailed due to lack of suitable sites to place maintenance material. Sediment would continue to accumulate in the channel and gradually reduced depths would impede navigation. Vessels passing through the shallow channel would resuspend sediments causing increased turbidity and reduced water quality along the IWW.

4.2.5. **Cumulative effects**. If this action was considered in conjunction with other similar projects and similar No Actions, there would be a substantial adverse impact on recreation and economics of the State of Florida.

4.2.6. **Unavoidable effects**. There would be an eventual loss of navigable capacity of the waterway from the continual sedimentation of the channel. Vessel traffic in the shoaled IWW would continually resuspend sediments in the waterway, contributing to a decline in water quality.

4.2.7. **Irreversible and Irretrievable Resource Commitments**. There would be no irreversible or irretrievable commitment of resources from the selection of this alternative.

4.3. CONSTRUCTION OF DREDGED MATERIAL MANAGEMENT AREA BV-2C.

4.3.1. Physical

a. Historic, Archeological, and Cultural Resources. The Florida Department of State (SHPO) was contacted regarding cultural resources on the BV-2C. In an August 2, 1991 letter to Taylor Engineering (Appendix IV), the Department stated that the proposed project would have no effect on sites of local, regional, state, or national significance and that the project could proceed without further involvement of the Department. In a letter to the SHPO dated October 20, 1994, the Corps stated it could not concur in that determination based on the information it had because of the upland nature of the site cultural resources may be present and archeological investigations may be necessary. The SHPO responded by letter dated December 6, 1994, stating that due to the results of research conducted by Bense and Phillips, 1990, that this area has a low probability area for containing significant historic properties. Based on this information the Corps determined that significant historic properties would not be affected. In addition, the SHPO also responded to the public notice by letter dated August 10, 1995, stating that the project would have no effect on any historic properties listed or eligible for listing on the National Register of Historic Places. Through the State Clearinghouse the Department also responded like same by letter dated August 22, 1995.

b. Wetlands. Numerous wetlands are interspersed throughout the eastern portion of the site. Of the 78.1 acres of wetlands on site, 8.9 acres are isolated, while 69.2 acres are connected to waters of the state and are therefore subject to the review and permitting authority of FDEP. The containment basin would be configured such that all of the FDEP jurisdictional wetlands would lie within the buffer area and therefore should not be impacted. The site management plan (Taylor et al., 1992 — Appendix III) and *Engineering Narrative* (Appendix II) describe in detail the operating procedures and expected hydraulic performance of the proposed dredged material management facility. As discussed in these documents, the design features and facility operations would ensure that discharge from the containment basin during dredging operations would meet state Class II water quality standards for turbidity and other parameters. The facility design and management also contain provisions to control stormwater runoff between dredging operations. The containment basin would include an interior retention area of sufficient capacity to retain the first inch of stormwater runoff. The site operator would gradually release any ponded stormwater through the weir system into the perimeter ditch. The perimeter ditch, in turn, would connect to the existing on-site drainage ditch or, alternately, to the wetlands in the eastern buffer. Retention and gradual release of stormwater would serve to minimize turbidity and to simulate natural discharge patterns following rainfall. The proposed work would be coordinated with the Florida Department of Environmental Protection (FDEP) to determine whether a water quality certification is needed for the proposed project. Although the design features above should prevent impacts to wetlands in the

buffer, the site management plan includes provisions to monitor the status of these wetlands. The plan recommends that an environmental survey of the site be completed prior to construction to establish baseline habitat and vegetation conditions as they relate to the wetlands. Periodic resurveys would then continue throughout the service life of the site. Degradation of the wetlands related to the interruption of natural drainage patterns, groundwater impacts, or other possible consequences of site construction or operations would be noted, corrective actions taken, and guidelines developed to minimize further adverse impact.

c. Agricultural lands. Approximately 24.5 acres of herbaceous rangeland, 70.7 acres of fallow cropland, and 72.8 acres of citrus groves will be directly converted by dike construction. A buffer zone of approximately 142 acres will surround the containment basin. It is anticipated that citrus production will continue in this area under lease agreement between the Florida Inland Navigation District and local citrus growers.

d. Water quality. There would be a short-term major impact on surface water from increase in turbidity and sedimentation runoff into the estuary during construction. This impact would be mitigated by the used of erosion control techniques. There would be a long-term, short duration impact on the subsurface water quality from the intrusion of salt water into the aquifer during dredging and disposal events. This impact would be mitigated by the design of perimeter ditches around the disposal area to control this intrusion. In addition wells would be constructed around the DMMA to monitoring saltwater intrusion. If salt water is detected, the dredging would be shut down until impacts are eliminated and the intrusion corrected.

e. Hazardous, toxic and radioactive materials. There would be no impacts.

f. Air quality. There would be a short-term medium impact on air quality from the construction activities. This would be mitigated by the use of best management practices such as watering to control fugitive dust on roads and disturbed surfaces.

4.3.2. **Biological**.

a. Migratory Birds. Dredged material management sites provide desirable nesting habitat for migratory birds such as terns, laughing gulls, and plovers. However, since present land cover on BV-2C does not provide favorable habitat for nesting, no impacts on migratory birds would be anticipated during Phase I (clearing and grubbing) or Phase II (dike construction). Nevertheless, the dredged material management area would be constructed in accordance with the Jacksonville District Corps of Engineers district-wide migratory bird protection policy (COE, 1993), a summary of which is given below. The purpose of the migratory bird protection policy is to "provide protection to nesting migratory bird species that commonly use the dredged material disposal sites within Jacksonville District while facilitating

disposal of dredged material to meet the Federal standard for navigation channel and harbor maintenance as authorized by Congress" (pg. 1). Construction activities at the disposal site would not take place during the migratory bird nesting season (April 1 through September 1). Should construction during this time be unavoidable, then the site protection plan described in the migratory bird protection policy would be implemented. The site protection plan provides for education of contractor personnel, daily monitoring for nesting activity, steps to deter nesting in the construction area, avoidance of nests that may be present and, if necessary to protect nesting birds, cessation of construction activities. Alternatives that may be considered to prevent impacts to nesting birds include creation of undesirable habitat (e.g., flagging construction area, placement of ground cover, seeding or sodding exposed areas), dissuasion through noise or activity, or creation of alternative nesting sites. A final alternative, incidental take, is undesirable and would not be considered unless an emergency situation exists.

b. Threatened and Endangered Species. Construction on BV-2C would not impact species listed by the USFWS.

4.3.3. **Social**.

a. Aesthetics. Site construction activities would have a temporary, adverse impact on the aesthetic resources of the site. A minor, temporary increase in noise could be expected during construction. Following construction, however, the dredged material management area would be inactive except during dredging or dredge material removal which is projected to take place at five to ten year intervals. There would be no significant long-term increase in noise. The site management plan (Taylor et al., 1992 — Appendix III) and *Engineering Narrative* (Appendix II) describe steps — vegetating the dikes and maintenance of a buffer area — that would minimize aesthetic impacts. The containment basin dikes are low-profile dikes with a crest elevation of 17.0 ft (+21.9 ft NGVD) above the existing mean site elevation. The dikes would be planted with native grasses to further reduce their visual impact. As described in Section 4.2.1, the containment basin would be separated from neighboring properties by a 300 ft wide buffer on the north, west, and south and a 500 to 1,000 ft wide buffer on the east. The buffer would occupy about 152 acres (46%) of the 311 acre site. Existing vegetation in the buffer would be left in place to screen the dikes from sight. Citrus production would continue in parts of the buffer area while other parts of the buffer would include rangeland, cropland, and marsh. If necessary, additional vegetation would be planted in the buffer to achieve desired screening. Thus, the site, when viewed from neighboring properties, would appear similar to its pre-construction condition. No permanent disruption of significant aesthetic value would be expected. The site would be fenced to protect the integrity of the dikes, provide public safety, and to dissuade illegal trash dumping.

4.3.4. **Economic**.

a. Socio-economics. There would be a long-term medium benefit to local economics from revenues generated because of a viable recreational navigation channel. There would be a short-term minor stimulus to the local economy from the sale of goods and services in support of the construction.

b. Navigation. The construction of the BV-2C dredged material management facility would have long-term benefits to navigation on the IWW by facilitating maintenance dredging.

4.3.5. **Cumulative effects**. There would be no cumulative effects from the selection of this alternative.

4.3.6. **Unavoidable effects**. No significant adverse impacts have been identified. Minor impacts would include long-term loss of upland habitat and short-term reduction in air quality from burning.

4.3.7. **Irreversible and Irretrievable Resource Commitments**. There would be no irreversible or irretrievable commitment of resources from the selection of this alternative.

5.0. **LIST OF PREPARERS**. The following professionals prepared and provide input into the Environmental Assessment.

NAME	DISCIPLINE	EXPERIENCE	ROLE IN PREPARING EIS
William J. Fonferek	Biologist	16 years environmental impacts assessment	NEPA Coordinator, Biological Impact Assessment, Endangered Species Consultation
Paul C. Stevenson	Landscape Architect	Registered Landscape Architect 11 years aesthetic assessments and mitigation plans	Recreation Resources Analysis and Mitigation Development
Janice E. Adams	Archeologist	10 years cultural resources assessment	Cultural Resources
Matthew Miller	Environmental Engineer	3 years	HTRW and Water Quality Investigations and Impact Assessment
Paul M. DeMarco	Biologist	1 year Environmental Impact Assessment experience	Biological Impact Assessment, Endangered Species Consultation

Table 5.1 List of Preparers for the Draft EA, Taylor Engineering

Name	Discipline	Experience	Role in Preparing EA
Steven J. Schropp, Ph.D.	Environmental Scientist	Five years with the FDER CZM program; three years as an environmental consultant — environmental audits and sediment and water quality evaluations	Assembled and formatted information on BV-2C for the EA
R. Bruce Taylor, Ph.D., P.E.	Coastal Engineer	Twenty years as consulting engineer — dredged material management, environmental impact assessment, mathematical modeling.	Project Manager for FIND long-term dredged material management program
William F. McFetridge	Coastal Engineer	Nine years as consulting engineer specializing in dredged material management issues, identification and evaluation of dredged material management areas, and design of dredged material management facilities	Identified and evaluated candidate sites, designed dredged material management facility
Michael L. Cochrane	Civil Engineer	Five years as consulting engineer specializing in the identification and evaluation of dredged material management	Identified and evaluated candidate sites, designed dredged material management facility

6.0. **CONSULTATION WITH OTHERS - PUBLIC INVOLVEMENT PROCESS.** A public notice (PN-IWW-205) dated 13 July 1995 was issued for the project. It was later reissued on 28 August 1995 due to a printing error. The following comments were received:

6.1. Mr. Robert V. Cheney responded to the public notice by stating he would be affected by the construction of the facility adjacent to his home by the odor from the disposal, the increased bird presence. He stated that the FIND would make right any damages from decreased property values and impact from salt water intrusion to the groundwater but that FIND has reneged on that offer. He also requested a public hearing.

RESPONSE: There would be an increase in odor during the use of the site during maintenance dredging. This would occur approximately once every ten years and last for approximately 3 to 4 months. The odor would be comparable to the nearby estuary during low tide. During dredged material disposal birds would be attracted to the disposal site. This should not have any short-term or long-term effect on this adjacent property. Loss of property values attributed from the construction of the facility would be responsibility of the local sponsor. The impacts on groundwater intrusion from the salt water in the dredged material would be minimal because the design of the facility would minimize that impact. In addition, the groundwater would be monitored during disposal operations. Should tests indicate an impact, dredging would be shut down until a solution is found to alleviate the situation. A public meeting was held with all interested parties.

6.2. Mr. Patrick M. Maggio responded to the public notice by a FAXed letter dated 27 September 1995. He asked the following questions:

a. Would access to his property be cut off?

b. Would Aurantia Road be abandoned east of the boundary line?

c. Will a gate be installed to allow access?

d. Will the east-west ditch on the north side of the Aurantia Road be abandoned?

RESPONSE: After reviewing the needs of the project, a design was developed that would not block Aurantia Road. All construction would be north of the road. Drainage on the site would be controlled to keep the drainage system functional.

6.3. Mr. Frank Warren responded to the public notice by telephone on 11 September 1995 stating that he would sustain a property loss and requests a public hearing. Mr. Warren also wrote a letter dated 18 October 1995 requesting restitution for the losses envisioned.

RESPONSE: A public meeting was held to discuss the issues. Any losses would be the responsibility of the local sponsor.