

7 APRIL 2003

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**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**HERNANDO BEACH  
HERNANDO COUNTY, FLORIDA  
NAVIGATION STUDY**

**HERNANDO BEACH  
HERNANDO COUNTY, FLORIDA  
NAVIGATION STUDY  
FINDING OF NO SIGNIFICANT IMPACT**

I have reviewed the planning document and the Environmental Assessment of the considered action. This finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment (EA) enclosed herein. Based on information analyzed in the EA, pertinent data obtained and coordinated with Federal and State agencies having jurisdiction by law and/or special expertise, and from the interested public, I conclude that the considered action will have no significant impact on the quality of the human environment.

Reasons for this conclusion are, in summary:

1. Project construction will be conducted in a manner which ensures Federally listed species (i.e., manatee and sea turtles) are not adversely affected by the project's action. Further, the project will not jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of such species critical habitat.
2. Final project design include features which avoid and minimize adverse affects to fish and wildlife species and resources.
3. Approximately 48 acres of essential fish habitat will be created with expansion of an existing artificial reef offshore of Hernando County.
4. Phase II survey and testing are required to evaluate prehistoric site, 8HE403, in the channel, approximately 49 magnetic and sub-bottom anomalies and the offshore disposal area. These investigations will determine National Register significance of any historic properties in the project area. Coordination with the State Historic Preservation Office will continue to evaluate the effects of the project.
5. State water quality will be maintained with turbidity levels monitored to ensure existing standards are not exceeded.

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.

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DATE

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JAMES G. MAY  
COLONEL, U.S. CORPS OF  
ENGINEERS, COMMANDING

**ENVIRONMENTAL ASSESSMENT  
ON  
HERNANDO BEACH  
NAVIGATIONAL STUDY  
HERNANDO COUNTY, FLORIDA**

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## SUMMARY

The U.S. Army Corps of Engineers, Jacksonville District, in partnership with the Hernando County Board of County Commissioners, propose navigation improvements to the main navigation channel at Hernando Beach, Hernando County, Florida. This main channel provides access to the Gulf of Mexico for commercial fishing and recreational vessels.

The Hernando Beach development created from dredged material in the 1960's has a series of east to west canals and two main north to south channels that connect to the main east to west Gulf access channel. Shallow depths, narrow widths, protruding rock outcrops, shifting boulders, and low visibility bends are delaying vessels passage, and creating obstructions and hazardous navigation conditions.

The proposed action would performing the following:

- a. remove existing rock outcrops
- b. increase the channel's bottom width to a consistent 80 feet from the varying width of 35 to 60 feet.
- c. increase the depth to a consistent depth of -8 feet mean lower low water (includes 2 feet of overdepth [1-foot required and 1-foot allowable]) from the varying -5.5 to -6 feet mean low water.
- d. lengthen the westerly seaward length of the main channel to 16,500 from 12,700 linear feet.
- e. create a turning basin at the southeasterly end of the main channel and channelize three blind bends by providing wideners.

Beneficial use is proposed for the 333,000 cubic yards of dredge material to be secured from the proposed action. The material would be used to either 1) restore an identified borrow site within a 7,000-acre Preserve Area (Weeki Wachee Preserve), 2) expand hardbottom habitat at an existing offshore artificial reef, or 3) create wetland habitat diversity and recreational area at north of the main channel near Coon Key Point.

**ENVIRONMENTAL ASSESSMENT  
ON  
HERNANDO BEACH NAVIGATIONAL CHANNEL IMPROVEMENTS  
HERNANDO COUNTY, FLORIDA**

**1.0 PROJECT PURPOSE AND NEED**

**1.1 PROJECT AUTHORITY.**

Authority to undertake the proposed activity is found under Section 107, of the Rivers and Harbor Act of 1960, as amended, and in accordance with the Continuing Authorities Program (CAP) for navigation studies.

**1.1.1 INITIAL AUTHORIZATION.**

In 1994, the Hernando Beach Port Authority requested that the U.S. Army Corps of Engineers (Corps) conduct a study of the Hernando Beach navigation channel for possible channel improvements. Initiation of the study occurred as a result of Congressional funding in the Appropriations Act of 1997 for the Continuing Authority Section 107 Program.

**1.2 PROJECT LOCATION.**

The project site is located about 60 miles north of Tampa, in Hernando Beach, Hernando County. The project site is further located on the central-west Gulf Coast of Florida at the southern terminus of the coastline known as "Big Bend" (see **Figure 1**, Hernando Beach Location Map). The project's site navigation channel (hereafter called "the main channel") extends westerly from the Hernando Beach development to the Gulf of Mexico. (see **Figure 2**, Aerial Map of Project Site and Vicinity1).

**1.3 PROJECT NEED OR OPPORTUNITY.**

The existing Hernando Beach main channel bottom width varies from 35 to 60 feet and the depth varies from -5.5 feet to -6 feet mean low water. Rock outcrops are also protruding above the waterline along several locations, in addition to, containing several blind bends. Conditions are such that shallow depths and protruding rocks are creating hazardous conditions toward safe passage of commercial and recreational vessels. Blind bends and narrow widths create unsafe navigation conditions. The lack of sufficient channel width creates conditions during two-way passage of boat traffic that often result in accidents with injuries, vessel damage, transport delays, vessel groundings, and sinkings. A particular problem area is located at the entrance where the channel nears the shore at Minnow Creek, the turn is narrow and land mass obscures the view of boaters

FIGURE 1: HERNANDO BEACH LOCATION MAP



**DEPARTMENT OF THE ARMY**



U.S. ARMY ENGINEER DISTRICT  
JACKSONVILLE FLORIDA



**HERNANDO BEACH  
NAVIGATION STUDY**

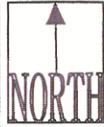
600 0 600 1200 Feet

Figure 1 - Location Map

Figure 2: AERIAL MAP OF PROJECT SITE AND VICINITY

ARIPEKA Quadrangle (NE Quadrant)

BAYPORT Quadrangle (SE Quadrant)



making the turn. Heavy shoaling occurs in distinct locations within the channel. However, only one event of channel maintenance has been documented since the channel's creation in the 1960's (see Paragraph 1.7, Scoping and Issues).

#### **1.4 AGENCY GOAL OR OBJECTIVE.**

The Agency's goal is to provide the City of Hernando Beach with an improved channel with adequate dimensions to provide safe and efficient movement of commercial vessels. This channel would have a navigable bottom width sufficient to allow safe two-way passage of commercial vessels, adequate depth to prevent vessel groundings and transport delays, and channel alignment or top width to prevent blind navigation that currently occurs along three to four bends (see **Figure 3, Existing Channel**).

Finding beneficial uses for the proposed 333,000 cubic yards of dredged material is also a project objective. The recommended disposal option would promote environmental restoration and ecosystem productivity. The Corps believes these goals and/or objectives can be accomplished with the following:

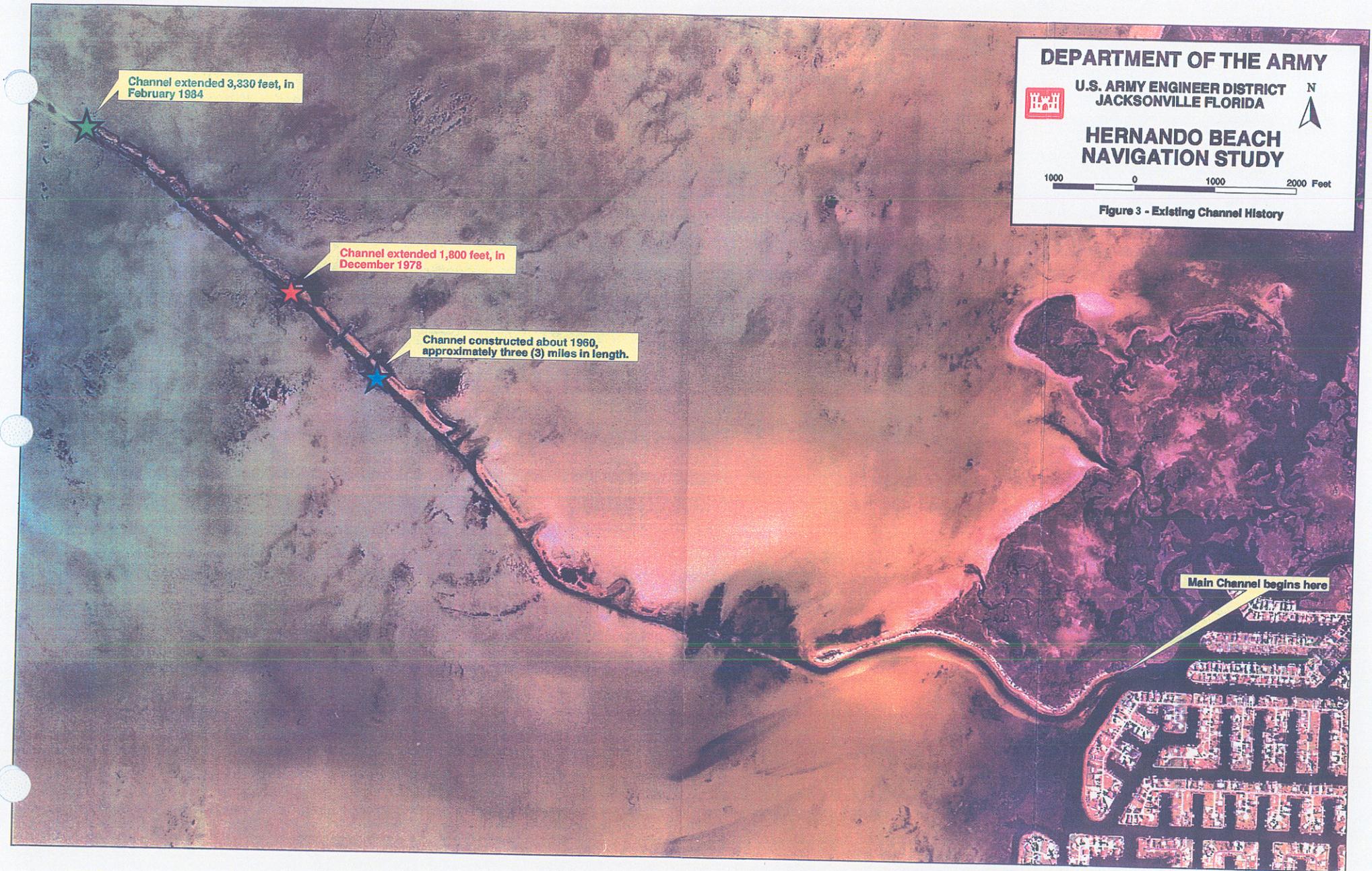
- a. extending the main east to west main channel 3,800 linear feet to the west,
- b. providing a consistent 80-foot bottom width in the main channel,
- c. providing a consistent bottom dept of -8 feet mean lower low water (mllw) in the main channel,
- d. removing limerock that protrudes above mean low water, and
- e. channelizing three blind bends that exist in the north to west portion of the main channel.

Material disposal alternatives under consideration are the following locations:

- a. adjacent to and north of the main channel on existing spoil islands,
- b. south of the main channel and east of South Hernando Beach at Little Lake a 4-acre abandoned mining lake with varying depth of 15 to 38 feet ordinary low water, and
- c. northwest of the main channel 19 miles offshore at an existing artificial reef.

#### **1.5 RELATED ENVIRONMENTAL DOCUMENTS.**

There have been no prior environmental documents, specifically environmental assessments, prepared for Hernando Beach. Federal studies were conducted for the Bayport Channel to the north and the Hudson River Channel to the south. The Bayport study was conducted under Section 107 of the Rivers and Harbors Act of 1960, and terminated in a feasibility report (1970) when a Federal interest in the channel could not be established. The Hudson River Channel received authorization



as a Federal project under the Rivers and Harbors Act of 1950, but was never constructed. Subsequent attempts were made to re-establish the project's economic justification and usage. A later reconnaissance study initiated under the Energy and Water Development Appropriation Act, Public Law 99-141, November 1, 1985, recommended the project for approval and feasibility study. In 1993, the Hudson River feasibility study was terminated without completion.

### 1.6 DECISIONS TO BE MADE.

This project decision requires determining if the necessary channel improvements can be accomplished by dredging of sand and rocks or excavation only to remove existing rock obstructions. Additionally, this decision requires determining if beneficial environmental uses can be accomplished with the dredged material.

### 1.7 SCOPING AND ISSUES.

All attempts were made to involve the public, Federal, State, and local resource agencies, and all interested persons in the early phases of the process. Approximately eighteen (18) problems were identified along with eight (8) opportunities for navigation and environmental improvements. **Table 1** lists Project Problems Identified and **Table 2** lists Project Opportunities

**TABLE 1 PROJECT PROBLEMS IDENTIFIED**

<b>NAVIGATION</b>			
Main channel is too narrow and shallow to allow simultaneous passage of two vessels	Visibility is obstructed along four bends of the main channel	Safe navigation is impeded by rock outcrop left from initial channel construction	Navigation hazards are being created by shifting boulders
Insufficient depth and channel length prevent navigation to the deeper waters of the Gulf	Commercial facilities are separated from service/repair facilities	Commercial fishermen are navigating through residential areas, using residential facilities to dock and unload	Vessel movement to the east is obstructed since a lift is needed between the middle and southern residential canals
Water quality concerns exist within the deep canals of Middle Hernando Beach	Flooding occurs during major storm events	Scattered and substantial seagrass beds are established within the project's scope, adjacent, and surrounding areas	Seagrass losses outside the channel have occurred from boat propeller scarring
<b>DISPOSAL</b>			
Upland disposal options are limited to non-existent	Existing spoil islands are heavily utilized by shore and migratory birds	Restoration of mining pits/lakes within the Preservation Area may be limited due to an insufficient quantity of dredged material	Surface and subsurface soil layers at the existing lakes have been altered, steep slopes and erosional gullies exist

**TABLE 2 PROJECT OPPORTUNITIES IDENTIFIED**

<b>NAVIGATION</b>			
Improve navigation efficiency and safety	Eliminate or reduce vessels delays	Provide channel improvements to widen, deepen, lengthen, straighten, and remove rock outcrops	Reduce vessel damages
			Provide possible resolution of access issues that exist between residents and commercial fishermen
<b>BENEFICIAL USE OF DREDGED MATERIAL</b>			
Environment restoration improvements within Weeki Wachee Preserve Area at existing mining lakes	Habitat expansion at existing offshore artificial reef	Creation of a beach north of the main channel	

**1.7.1 ISSUES EVALUATED IN DETAIL.**

Issues considered relevant for detailed evaluation were identified during scoping and coordination, or identified by the project’s interdisciplinary team of scientists and engineers. (see Appendix C, Correspondence of Detailed Project Report). These issues are as following:

- a. Sea Turtles
- b. manatee
- c. Seagrass
- d. Cultural Resources
- e. Hardbottom

**1.7.2 IMPACT MEASUREMENT.**

The means and rationale for measurement and comparison of impacts for the improvements to the Hernando Beach channel were developed, reviewed, and evaluated by an interdisciplinary team of scientists, engineers, and other technical disciplines. A systematic approach of planning, economics, environmental, project management, engineering, and real estate, was used to provide a project that would deliver reasonably free use of the waterbody for recreational and commercial navigation (see Table 3, Project Objectives and Measures).

**TABLE 3**

**PROJECT OBJECTIVES AND MEASURES**

<b>OBJECTIVES</b>	<b>MEASURES</b>				
	<b>WIDEN AND DEEPEN CHANNEL</b>	<b>LENGTHEN CHANNEL</b>	<b>REMOVE ROCK OUTCROP</b>	<b>ALIGN BLIND CURVES</b>	<b>IMPROVE COMMEERCIAL FISHING OPPORTUNITIES</b>
Minimize Channel-related Disruptions	Improve general navigation, reduce wrecks or groundings, and provide sufficient navigation depth and width	Provide access via main Channel to Gulf Waters	Eliminate trawling speed needed to navigate channel and eliminates the wait for high tides	Eliminate trawling speed needed to navigate channel f	Enhance navigation to Gulf waters and provide potential increase to fishery opportunities
Minimize Channel-related Traffic Congestion	Remove the need to wait for high tides, and provide width for passage of two vessels	Provide necessary width for passage of two vessels and remove wait for high tides.	Provide depth and width for 2-vessel passage	Improve visibility and reduce delays and accidents.	Reduce navigation time to deeper Gulf waters and increase Fishing opportunities
Improve Navigation Safety	Improve general navigation, reduce wrecks or groundings, and provide width for passage of two vessels	Provide necessary width for passage of two vessels and remove wait for high tides.	Eliminate vessel damage from protruding rocks	Improve visibility and reduce delays and accidents.	Reduce navigation time needed to access channel to deeper Gulf waters and increase Fishing opportunities
Improve Recreation	Improve general navigation, reduce wrecks or groundings, and provide width for passage of two vessels	Provides access via main Channel to Gulf Waters	Eliminate trawling speed needed to navigate channel and eliminates the wait for high tides	Improve visibility and reduce delays and accidents	
Create Hardground					Creates 48 ac. of fishery opportunity with deployment of material at artificial reef site

**1.7.3 ISSUES ELIMINATED FROM DETAIL ANALYSIS.**

The issues identified in **Table 4** were not considered important or relevant to the proposed action or were not cost effective or environmentally preferred:

**TABLE 4 ISSUES ELIMINATED FROM DETAIL ANALYSIS**

Breakwater construction	Removal of lift connecting Hernando Beach and South Hernando Beach and dredging a channel from South Hernando Beach to the Gulf	Construction of bridge to connect service facilities and commercial fishing Facilities	Creation of a shallow depth canal at Middle Hernando Beach
Creation of island for migratory birds at abandon mining lake within the Weeki Wachee Preserve area	Creation of under water conduits to flow from the Preserve Area to the Gulf	Creation of a main channel with a contiguous 100-foot bottom width	Material disposal at: a. Coon Key Point, b. Uplands adjacent to Hernando Beach Road. c. Beach disposal on spoil mounds, d. Openwater areas adjacent to the main channel, e. Filling of prop scars cut through seagrass beds, and f. Filling of deep mining pits within the Weeki Wachee Preserve area

**1.8 PERMITS, LICENSES, AND ENTITLEMENTS.**

Water quality certification is required from the Florida Department of Environmental Protection (FDEP). The Coastal Zone Consistency Statement would be coordinated with the State for concurrence. Coordination with the State Historic Preservation Officer is required with respect to historic resources.

## 2 ALTERNATIVES

This section describes in detail the no-action alternative, the proposed action, and other reasonable alternatives studied in detail. This section also presents the beneficial and adverse environmental effects of all alternatives in comparative form, to provide a clear basis for choice among the options for the decisionmakers and the public.

### 2.1 DESCRIPTION OF DREDGING AND DISPOSAL ALTERNATIVES.

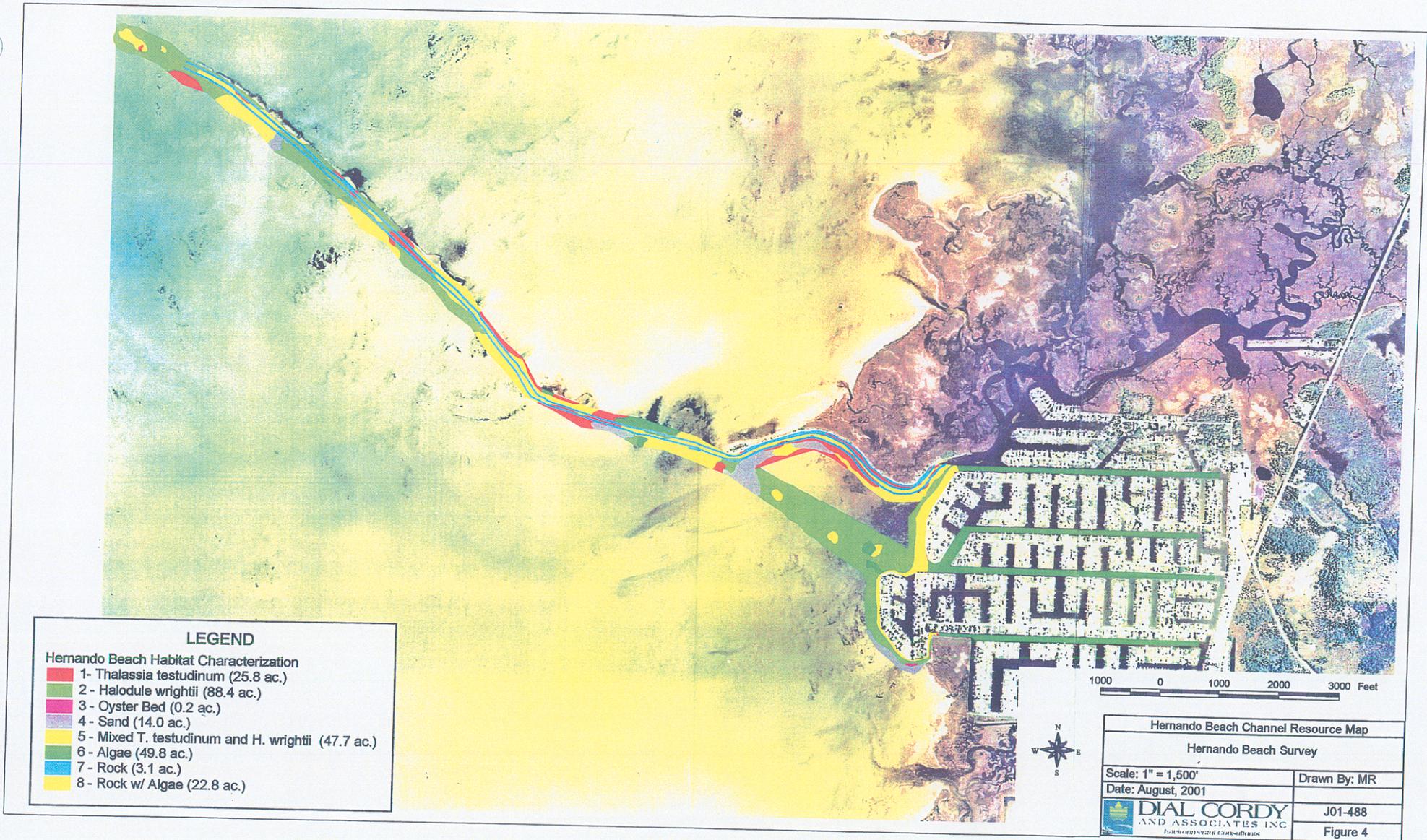
#### 2.1.1 ALTERNATIVE 1, NO ACTION ALTERNATIVE (STATUS QUO)

The main channel to the Hernando Beach development has an east to west orientation and providing access to the deeper waters of the Gulf of Mexico. Three main interior channels with an east -west orientation provide access within the development to a main north to south channel that connects the main channel leading to the Gulf. A submerged aquatic vegetation and oyster bed survey performed by Dial Cordy and Associates (October 2001) documents a total 88.4 acres of seagrasses established within the three main east-west residential channels, the north-south access channels, the east-west main channel, and vicinity (see **Figure 4**, Seagrass Location Map). A no action alternative would maintain current conditions, avoiding the proposed 14 acres of impacts to marine seagrasses and other established resources such as rock, algae, and attachment surfaces that encrusting fauna and flora utilize.

A no action alternative, however, would preclude waterway improvements that are needed at this location. Waterway depths are shallow; the width is too narrow to allow safe and simultaneous passage of two vessels, in addition to hazardous conditions that are created by blind bends and protruding rock outcrops. These conditions are creating hazardous conditions that contribute to vessel groundings, sinkings, other damages, and loss of life. The no action alternative would also preclude restoration efforts that propose creation of essential fish habitat for marine species.

The Hernando Beach main channel is important to the nation as a major means of commercial navigation in this area. As such, a Federal interest has been established in the main entrance and access channel. The "no action" alternative would not be in keeping with the Corps' mission to provide reasonable free use of the waterway for navigation purposes.

FIGURE 4 SEAGRASS LOCATION



### **2.1.2 ALTERNATIVE 2, NON-DESIGNED CHANNEL WITH EMERGENT HABITAT CREATION AND ARTIFICIAL REEF EXPANSION**

This alternative would widen the main channel to an 80-foot bottom width, deepen the channel to -6-foot mean lower low water depth, extend the channel to the 6-foot contour, create shallow water and littoral zone habitat at Little Lake (see Figure 5, Little Lake Location Map), and create hardbottom habitat at an offshore artificial reef site, Richardson Reef (see Figure 6, Richardson Reef Location Map).

### **2.1.3 ALTERNATIVE 3, NON-DESIGNED CHANNEL WITH DISPOSAL ON EXISTING SHORELINE AND ARTIFICIAL REEF EXPANSION**

This alternative would widen the channel to an 80-foot bottom width, deepen the channel to -6 feet mllw, extend the channel to the 6-foot contour, place material along the shoreline at the eastern end of the Gulf of Mexico, and create hardbottom habitat at the offshore Richardson Reef.

### **2.1.4 ALTERNATIVE 4, NON-DESIGNED CHANNEL WITH ARTIFICIAL REEF EXPANSION (PREFERRED ALTERNATIVE).**

This alternative would widen the main channel to an 80-foot bottom width and create a design depth of -6 feet mllw (final channel depth would be -8 feet mllw which include 1 foot of required overdepth and 1 foot of allowable overdepth). This alternative would also extend the channel to the 6-foot contour, create wideners north and south of the main channel (near Minnow Creek) at the eastern end, provide a 175-foot turning basin south of the main channel at the eastern end with navigation aids, and would place all material at an offshore reef (a.k.a., Richardson Reef). Figure 7 provides a plan-view of the proposed channel alignment and gulf extension.

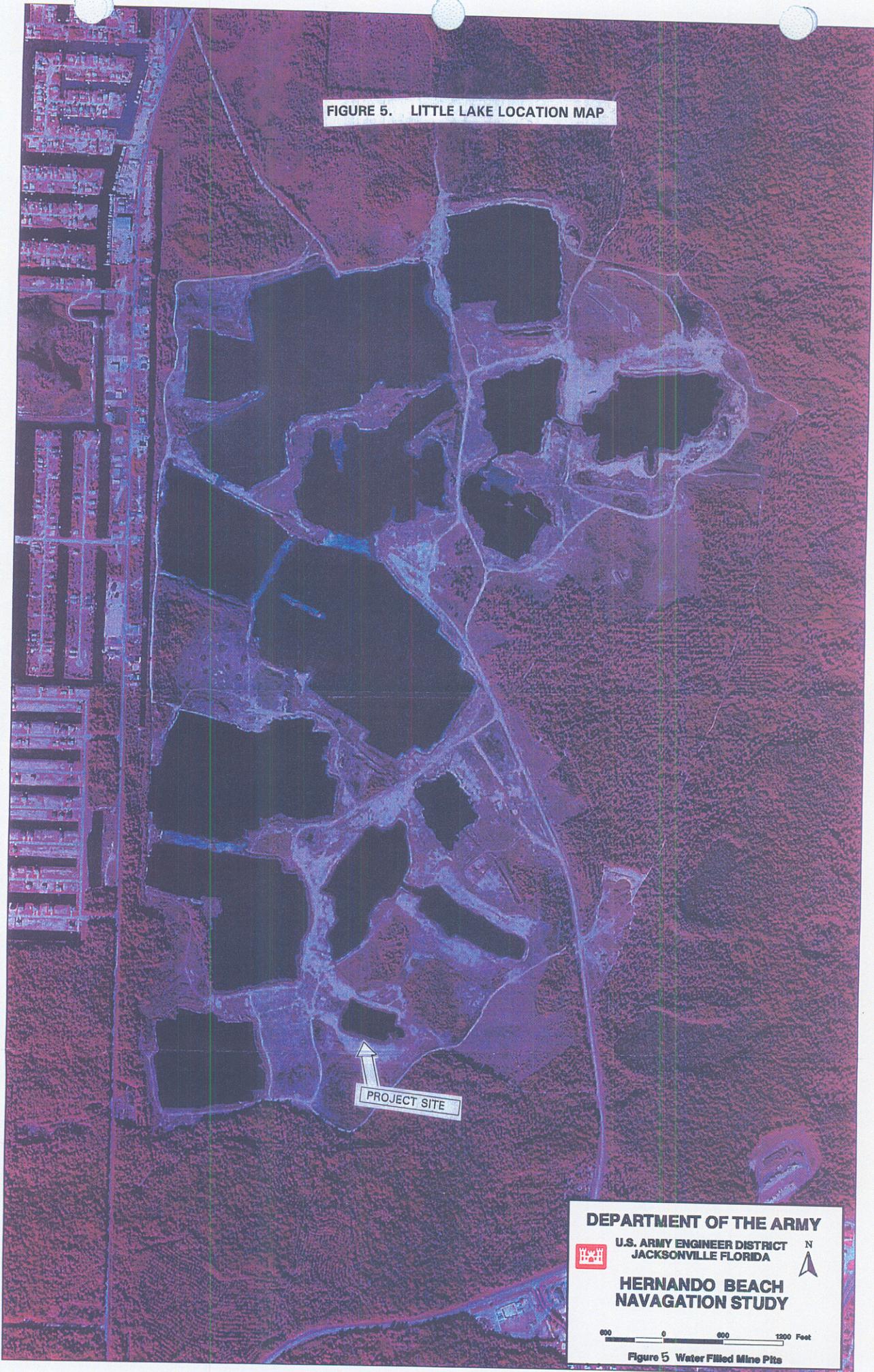
## **2.2 ISSUES AND BASIS FOR CHOICE**

Any proposed channel improvements would avoid or minimize impacts to existing submerged aquatic resources (SAV) and would meet the U.S. Army Corps of Engineers (Corps) design criteria formulated for this particular project. The recommended alternative for channel improvement would contribute to national economic development and would provide environmental restoration consistent with national environmental statutes and applicable laws. (See Table 7 and Table 8 in the Detail Project Report).

## **2.3 ALTERNATIVE ELIMINATED FROM DETAILED EVALUATION**

Past creation attempts were made at the larger and northernmost mining lake in the Weeki Wachee Preserve area. Substantial material would be needed to raise the lake's bottom elevation to a level which allow light penetration and favorable conditions for benthic organisms, submerged or emergent plant species. This alternative was eliminated from further study.

FIGURE 5. LITTLE LAKE LOCATION MAP



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HERNANDO BEACH  
NAVIGATION STUDY

0 600 1200 Feet

Figure 5 Water Filled Mine Pits

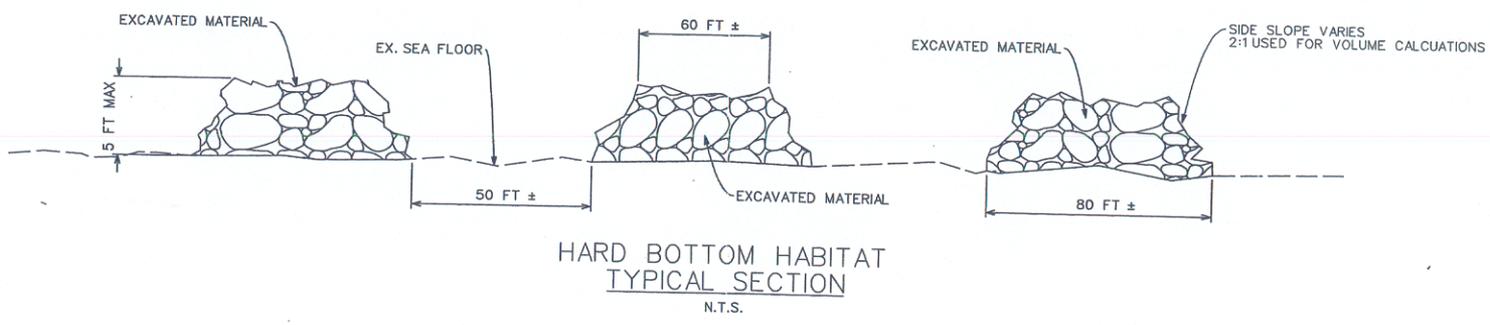
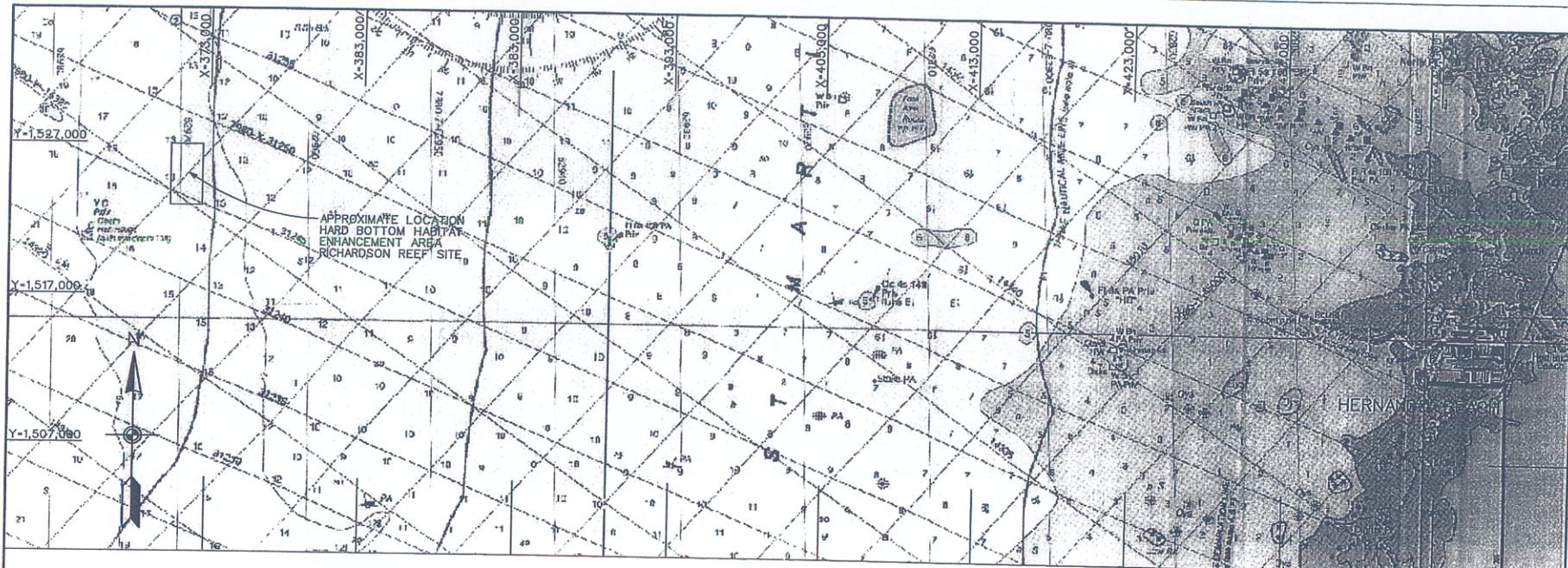
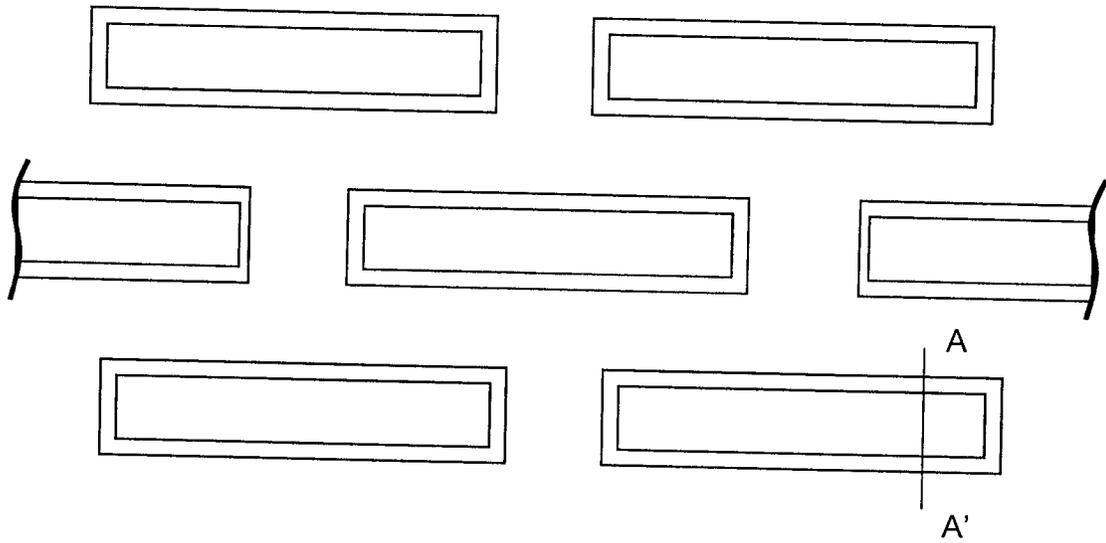


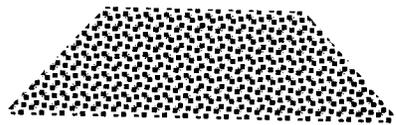
FIGURE 6. RICHARDSON REEF LOCATION

<p>US Army Corps of Engineers Jacksonville District</p>	
<p>DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA</p>	
<p>Designed by: [blank] Scale: AS SHOWN</p>	<p>Per scale: [blank] Per toon: [blank]</p>
<p>Reference files: [blank]</p>	<p>Date: February 2003 ENGINEERING APPENDIX</p>
<p>HERNANDO BEACH, FLORIDA SECTION 107 - NAVIGATION STUDY <b>OFFSHORE PLACEMENT PLAN</b> ENGINEERING APPENDIX</p>	

**FIGURE 6A CROSS-SECTION OF RICHARDSON REEF**



**Plan View**



**Cross-section A-A'**

**LEGEND**



Limerock, varying diameters

Not To Scale

**Hernando Beach Navigation Study**

**Hardbottom habitat schematic**

## **2.4 COMPARISON OF ALTERNATIVES**

**Table 5** lists the alternatives considered and summarizes the major features and consequences (direct and indirect impacts) of the proposed action and alternatives. See section 4.0 Environmental Effects for a more detailed discussion of alternative and impacts.

## **2.5 MITIGATION**

The alternative which proposed a channel with a bottom width of 100 feet proposed impacts to about 33 acres of seagrass and essential fish habitat. Reducing the channel to 80 feet eliminate impacts proposed to 45 percent or 14 acres of submerged aquatic resources (see **Figure 4**, Seagrass Location Map). Providing in-kind seagrass replacement or creating seagrass habitat is not a part of the proposal. The Corps anticipate project impacts to be temporary and as such should not require compensatory mitigation. This assessment is based on seagrass recovery from similar construction and impacts at the Bayport Channel north of the project area.

Following channel dredging the Bayport Channel was monitored for 5 years to determine the rate of seagrass recovery, beginning with a baseline monitoring report in 1995. Monitoring requirements were completed in 2000. Seagrass recruitment occurred within and outside the dredged channel. Percent coverage and stem density were close to or equal to pre-dredging conditions. Monitoring reports for the Bayport Channel can be found in Appendix D, Supplemental Information of the Detailed Project Report.

## **3 AFFECTED ENVIRONMENT**

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

**TABLE 5 SUMMARY OF DIRECT AND INDIRECT IMPACTS**

<b>ALTERNATIVES ENVIRONMENTAL FACTORS</b>	<b>NON-DESIGNED CHANNEL WITH EMERGENT HABITAT CREATION AND ARTIFICIAL REEF EXPANSION</b>	<b>NON-DESIGNED CHANNEL WITH DISPOSAL ON EXISTING SHORELINE AND ARTIFICIAL REEF EXPANSION</b>	<b>NON-DESIGNED CHANNEL WITH ARTIFICIAL REEF EXPANSION (PREFERRED ALTERNATIVE)</b>	<b>DISPOSAL AT LITTLE LAKE</b>	<b>DISPOSAL ON MOUNDS NEXT TO CHANNEL</b>	<b>RICHARDSON REEF</b>
<b>PROTECTED SPECIES</b>	Potential Manatee Impacts	Potential Manatee Impacts	Potential Manatee Impacts	No adverse Effects	Potential Sea Turtle and Manatee Impacts	Potential Sea Turtle and Manatee Impacts
<b>OTHER FISH AND WILDLIFE RESOURCES</b>	No Adverse Effects Anticipated	No Adverse Effects Anticipated	No Adverse Effects Anticipated	No Adverse Effects Anticipated	Potential impact To Wading and Shore Birds	See Hardgrounds
<b>HISTORIC PROPERTIES</b>	Potential impact Exist per Survey Data	Potential impact Exist per Survey Data	Possible Impact (No Survey Performed)	No Adverse Effects (previous mining lake)	No Effect	Being Investigated Impacts would be Mitigated
<b>MIGRATORY BIRDS</b>	Temporary Impacts (April 1 - Sept 1)	Temporary Impacts (April 1 - Sept 1)	No Adverse Effect	No Adverse Effect	Potential Impact	Potential Impact
<b>NAVIGATION</b>	Temporary Impact	Temporary Impact	No Effect	No Effect	No Effect	No Effect
<b>HARDGROUNDS</b>	No Adverse Effect Positive effect with creation of 48 ac of habitat	No Adverse Effect Positive effect with creation of 48 ac of habitat	No Adverse Effects Positive effect with creation of 48 ac of habitat	No Effect	Potential Effect	Creation of 48 acres with reef expansion
<b>SEAGRASS</b>	Potential Adverse Effect to +20acre	Potential Adverse Effect to +14 acres	No Effect	No Effect	Potential Adverse Effect to + 10 ac.	Potential Adverse Effect to + 10 ac.

**HERNANDO BEACH MAIN CHANNEL**

would be affected by the alternatives, if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the baseline conditions for determining the environmental impacts of the proposed action and reasonable alternatives.

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that

would be affected by the alternatives, if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the baseline conditions for determining the environmental impacts of the proposed action and reasonable alternatives.

### 3.1 GENERAL ENVIRONMENTAL SETTING

The project is located in a minimal energy and wave coastal area having a tidal range of about 2 1/2 feet. The project area consists of a combination of marine, freshwater and upland habitats within the Minnow Creek basin. Portions of the saltmarsh and associated tidal creeks were filled and channelized to provide residential development and boating facilities. A public boat ramp is located at the eastern terminus of the channel. The mouth of Minnow Creek meets the boat ramp channel approximately one mile to the west at the Gulf of Mexico, and continues along the shoreline of Coon Key Point (see **Figure 8**, Hernando Beach Existing Conditions).

The U.S. Fish and Wildlife Service (FWS) conducted an on-site investigation on May 20 and 21, 1997 and described the area as follows in their Coordination Act Report (CAR). Salt marsh and material from previous dredging events cover the interior of Coon Key Point and other proposed disposal areas. Intertidal and subtidal depths vary from zero to minus ten feet, with bottom sediments composed of quartz sand, shell hash and scattered rock, vegetated with patchy macroalgae beds and seagrasses. Species composition and abundance was consistent throughout the project area. Algal species *Dictyola* spp. and *Sargassum* spp. were located sporadically on either side of the channel, growing in a clump-like fashion. Extensive beds of *Acetubularia calyculus*, *Dasycladus vermicularis*, shoalgrass *Halodule wrightii* (shoal grass), and *Thalassia testudinum* (turtle grass) were found. Such areas support invertebrates (including shrimp and crabs and a diverse assemblage of fishery species).

The largest and healthiest beds of vegetation are located on the north side of the channel, 100 to 150 feet beyond the rocky shoals, beginning at marker 29 and extending gulfward over an extensive area. Most of these beds lie in 4 to 6 feet of water. Southeast of the navigation channel, seagrass and algal beds begin occurring at markers 3 and 4A and extend eastward to the areas of proposed channel realignment. These seagrass beds are sporadic and sparser than those north of the main channel.

FIGURE 8. HERNANDO BEACH EXISTING CONDITIONS



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HERNANDO BEACH  
NAVIGATION STUDY

000 0 600 1200 Feet

Beach habitat consists of a mixture of rock, rubble and sand and is largely unvegetated. Vegetation is limited to the edge of existing disposal islands and extends the length of the navigation channel. Upland disposal areas inland of the beaches support a variety of native and exotic vegetation, including saltbush, Australian pine, Brazilian pepper, red cedar, marsh elder and cabbage palm. Numerous shore and wading birds use the beaches and disposal areas for a variety of activities.

### 3.2 VEGETATION

Vegetation within the intertidal and subtidal areas of the main channel consists primarily of seagrass and macroalgae. Species composition and abundance were consistent throughout the project area. Seagrass and algae species decrease along the seaward extent of the proposed channel extension. The small beach area (created from dredged material) is unvegetated. **Table 6** lists the vegetation occurring at the spoil islands and mounds adjacent and on Coon Key Point and **Table 7** lists the vegetation on spoil islands occurring immediately adjacent to the main channel.

**TABLE 6 VEGETATION AT COON KEY POINT AND SURROUNDING SPOIL ISLAND**

SCIENTIFIC NAMES	COMMON NAMES
<i>Avicennia germinans</i>	black mangroves
<i>Batis maritime</i>	Saltwort
<i>Borrchia frutescens</i>	sea oxeye daisy
<i>Distichlis spicata</i>	saltgrass
<i>Juncus roemerianus</i>	black needlerush
<i>Lycium carolinianum</i>	Christmasberry
<i>Salicornia virginica</i>	Glasswort
<i>Sesuvium frutescens</i>	sea purslane
<i>Spartina alterniflora</i>	saltmarsh cordgrass

Source: USFWS, CAR 1997

**TABLE 7 VEGETATION ADJACENT MAIN CHANNEL**

SCIENTIFIC NAMES	COMMON NAMES
<i>Baccharis halimifolia</i>	Saltbush
<i>Casuarina litorea</i>	Australian pine
<i>Iva frutescens</i>	marsh elder
<i>Juniperus silicicola</i>	southern red cedar
<i>Sabal palmetto</i>	cabbage palm
<i>Schinus terebinthifolius</i>	Brazilian pepper

Source: USFWS, CAR 1997

Other islands adjacent the main channel have eroded and support no vegetation (see Appendix C, Supplemental Information, USFWS, CAR)

### 3.2.1 SEAGRASS.

Dial Cordy and Associated contracted by the U.S. Army Corps of Engineers, Jacksonville District, conducted a marine seagrass and oyster bed for the initial proposed channel alignments. This survey performed prior to the revisions to the proposal does not include area of additional extension into the Gulf. **Figure 9** shows the survey area for the initially proposed channel alignments. Refer to **Figure 4** for location and acreage of seagrass within the study/survey area. This survey documents the presence or absence of marine seagrass and oyster beds in five survey areas within the Hernando Beach vicinity. Three of the survey areas are existing features and include the main channel, three entrance channels, and a perimeter channel (see **Figure 10**). The three survey areas are scheduled for maintenance dredging by Hernando County. The two remaining survey areas consist of the eliminated 500-foot extension of the northwest section of the main channel and the eliminated channel realignment. Appendix C, Supplemental Information, provides the full survey report. **Table 8** and provides the occurrence of resources (type and acreage) within the surveyed areas of the proposed and later eliminated channel alignments

**TABLE 8** **RESOURCE TYPE AND ACREAGE WITHIN PROPOSED CHANNEL WIDTH EXTENSION**

LOCATION	RESOURCE TYPE	PROPOSED CHANNEL EXTENSION WIDTH		
		60-Foot	25-Foot	85-Foot
		ACRES		
Main Channel	Thalassia Testudinum (TURTLE GRASS)	1.89	0.70	2.59
Main Channel	Halodule wrightii (CUBAN SHOAL GRASS)	3.29	1.83	5.12
Main Channel	Sand		0.02	0.02
Main Channel	Mixed Seagrass	2.75	0.88	3.63
Main Channel	Algae	1.14	0.33	1.47
Main Channel	Rock	0.26		0.26
Main Channel	Rock with algae	2.80	0.66	3.46
Main Channel Proposed-Fill Area (PFA)	Thalassia testudinum	2.81	NA	NA
Main Channel PFA	Halodule wrightii	0.65	NA	NA
Main Channel PFA	Sand	0.89	NA	NA
Main Channel PFA	Rock	<0.01	NA	NA

**RESOURCE TYPE AND ACREAGE WITHIN PROPOSED  
CHANNEL WIDTH EXTENSION**

**TABLE 8**

Main Channel PFA	Rock with algae	2.80	NA	NA
Perimeter Channel Area	Halodule wrightii	2.06	1.94	4.00
Perimeter Channel Area	Oyster Bed	0.04	0.16	0.20
Perimeter Channel Area	Sand	0.01	0.01	0.02
Perimeter Channel Area	Algae	0.19	0.06	0.25
Perimeter Channel Area	Rock w/algae	3.64	1.37	5.01
Proposed Channel Extension area	Halodule weightii			0.13
Proposed EA	Mixed Seagrass			0.28
Proposed Channel Realignment Area (CRA)	Halodule wrightii			3.08
Proposed CRA	Sand			0.80
Proposed CRA	Mixed Seagrass			0.01
Proposed CRA	Rock w/algae			0.03

Source: Dial Cordy and Associates, 2001

**MEAN SEAGRASS FREQUENCY OF OCCURRENCE, ABUNDANCE, AND  
TABLE 9 DENSITY VALUES FOR HERNANDO BEACH SURVEY TRANSECTS**

LOCATION	FREQUENCY			ABUNDANCE			DENSITY		
	HW*	TT*	SF#	HW	TT	SF	HW	TT	SF
MAIN C	0.37	0.31	0.018	0.43	0.29	0.036	0.43	0.29	0.036
Perimete	0.27	0.20	NA	0.29	0.005	NA	0.29	0.004	N
500 E	0.22	0.84	N	0.70	0.60	Na	0.32	0.73	N
Channel Real	0.43	0.44	N	0.64	1.0	Na	0.23	0.70	N

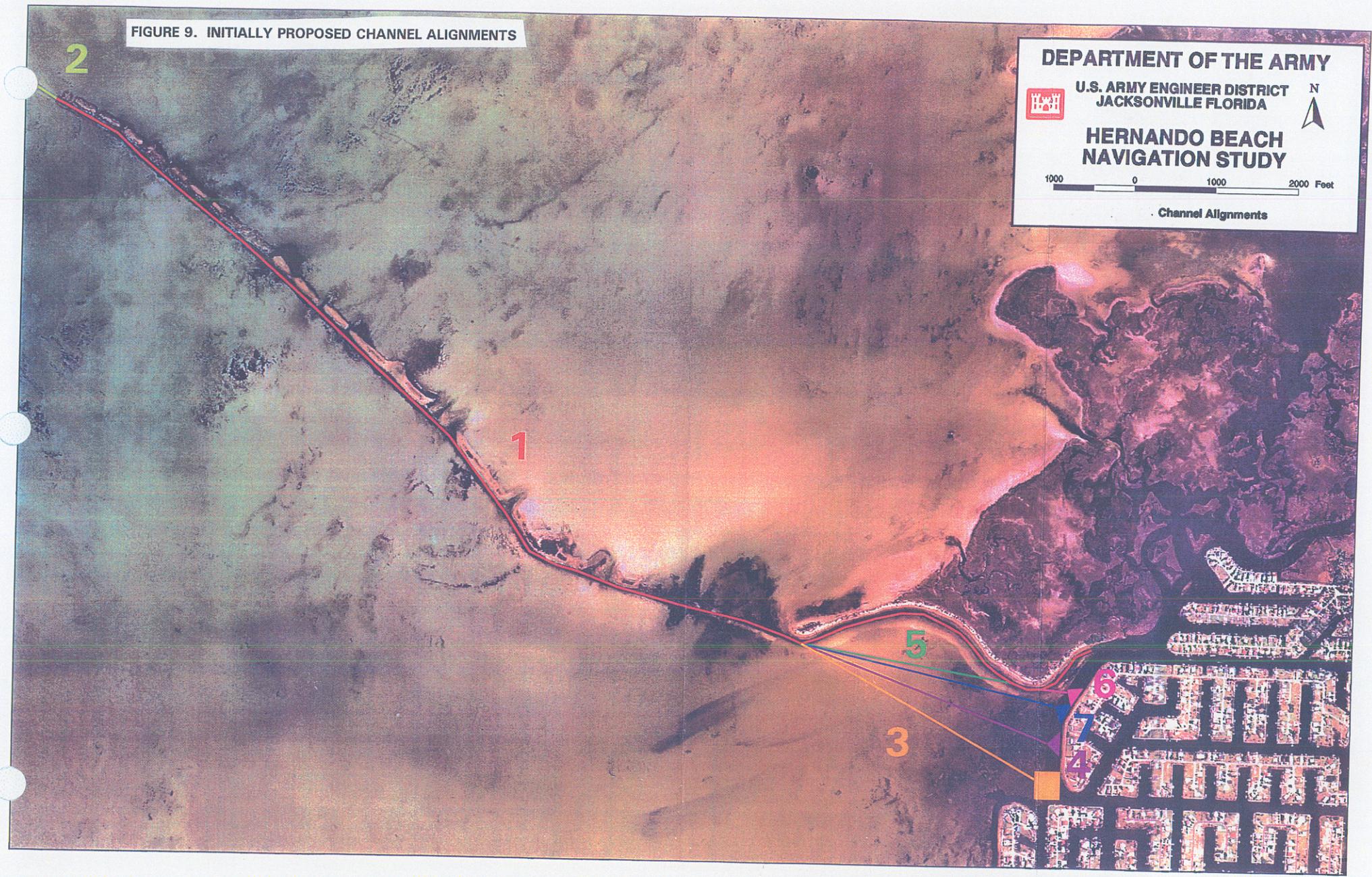
Source: Dial Cordy and Associates, 2001

\*HW = Halodule Wrightii (Cuban Shoal Grass)

\*TT = Thalassia testudinum (turtle grass)

\*SF = Syringodium filiforme (manatee grass)

FIGURE 9. INITIALLY PROPOSED CHANNEL ALIGNMENTS

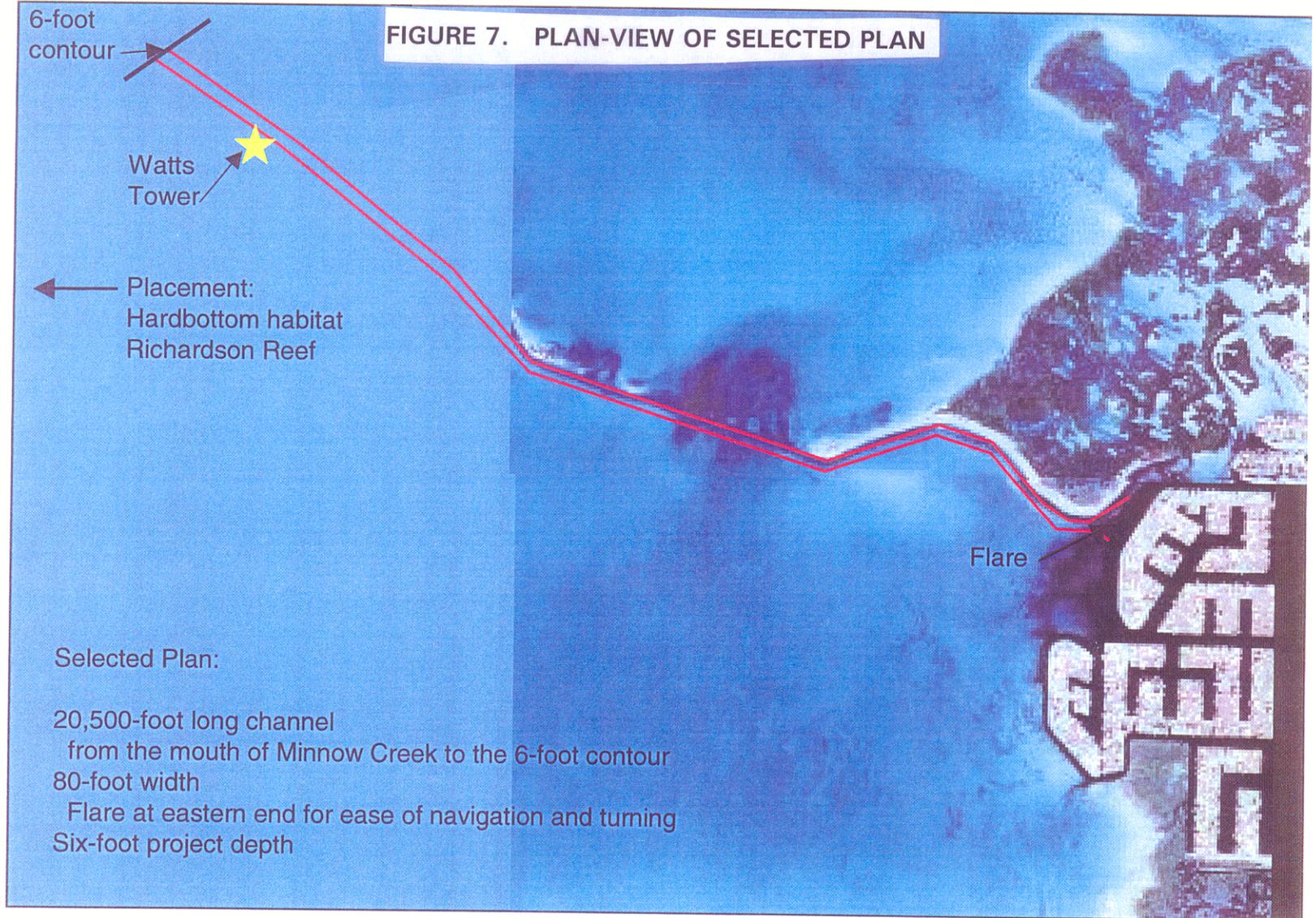


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JACKSONVILLE FLORIDA

**HERNANDO BEACH  
NAVIGATION STUDY**

1000 0 1000 2000 Feet

Channel Alignments



Hernando Beach Navigation Study

Figure 7 . Selected Plan

**FIGURE 10. CHANNEL ALIGNMENT OF SEAGRASS AND OYSTER SURVEY REPORT**



Areas Surveyed	
Hernando Beach Survey	
Scale: 1" = 2,500'	Drawn By: MR
Date: August, 2001	
	J01-488
	Figure 2