

The original documents are located in Box 4, folder “Cross Florida Canal - Water Resources Development” of the Norman Ross Files, 1974-75 at the Gerald R. Ford Presidential Library.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material. Norman E. Ross, Jr. donated to the United States of America his copyrights in all of his unpublished writings in National Archives collections. Works prepared by U.S. Government employees as part of their official duties are in the public domain. The copyrights to materials written by other individuals or organizations are presumed to remain with them. If you think any of the information displayed in the PDF is subject to a valid copyright claim, please contact the Gerald R. Ford Presidential Library.

April 1971

CROSS-FLORIDA BARGE CANAL

CASE HISTORY

A waterway across North Florida connecting the Gulf and Atlantic has been advocated by the people of Florida and the nation since the early 1800s.

Although Congress authorized the first study of such a waterway in 1826, Spanish explorers who defeated the French at St. Augustine in 1565 explored the St. Johns River in anticipation that the St. Johns River had an opening on the Gulf coast. Native Indians had told the explorers that such a natural channel existed.

After the 1826 study, Secretary of War Jefferson Davis in 1855 called for additional engineering studies. President Theodore Roosevelt in 1908 endorsed a proposed canal across the state, but the Corps of Engineers in the early days was unable to verify that it would be economically wise to construct such a canal.

By 1933, twenty-six different routes had been studied, nine in detail.

In 1935, during the depression, a sea-level canal was started under a federal appropriation. It was primarily a make-work program for Americans who badly needed employment. Work was stopped on the sea-level canal the following year when Congress failed to appropriate additional funds. At that time the canal was listed as 3 percent complete.

In 1940 the subject was raised again by the people of Florida and the nation, and the Corps was directed by Congress to hold a public hearing and conduct a new engineering investigation.

World War II gave new impetus, and in 1942 the canal was authorized by Congress, primarily as a means of reducing the sinking of oil-carrying merchant vessels off the Florida coast. No work was started on the canal during World War II, but in 1958 the Corps was again directed by Congress to restudy the canal.

By this time the demand for new and cheaper methods of transportation had expanded, along with the population, and the proposed canal construction was found to have sufficient economic justification to make it a viable project. In 1962 the Corps' economic evaluation report was completed and an independent evaluation had been made by an internationally known transportation firm, the A. D. Little Co. of Cambridge, Mass. The Little study showed transportation benefits of \$4.60 for every \$1 invested in cost of construction.

The plan was endorsed by the Florida Game and Fresh Water Fish Commission, the U. S. Fish and Wildlife Service, and other state and federal agencies concerned with environmental aspects.



Construction was started in February 1964 after President John Kennedy had recommended to Congress that funds be appropriated for the job. President Lyndon Johnson set off a symbolic explosion near Palatka, Fla., in February 1964 launching construction on the project.

Some rumblings of discontent about the canal were heard early in the construction period, but it was considered minor since even the Fish and Wildlife agencies reaffirmed their support as late as 1965 and 1966, two years after construction had been started.

Recreational master plans were developed and work proceeded rapidly on construction for the first three years.

In 1966 conservationists demanded and obtained a hearing in the Florida capital city. They insisted that the canal route be drastically altered to avoid the Oklawaha River or abandoned entirely. The Florida Governor and his State Cabinet at the conclusion of the hearing turned down the conservationists' pleas and re-endorsed the canal along the Oklawaha River alignment as planned.

Greater international commitments were believed to be the biggest factor in slowing down appropriations about 1967, and conservation interests were growing stronger. As appropriations for the canal project diminished, the clamor for stopping the canal increased in tempo. Conservationists won some significant battles in other areas of the country and began to add new blasts at the Barge Canal.

National magazines and newspapers took up the battle cry of the conservationists in 1969 and 1970. A group of 150 scientists was formed at the University of Florida in January 1970, calling themselves the Florida Defenders of the Environment. They used the Barge Canal as their No. 1 target.

In September 1969 the Environmental Defense Fund filed suit against the U. S. Army Corps of Engineers demanding that the project be halted. New environmental organizations sprang up in Florida and the nation--calling for a halt to construction.

In November 1969, five years after the canal work had been started, the Florida Game and Fresh Water Fish Commission for the first time openly opposed the canal and issued a report stating their reasons. In March 1970, a few weeks after the U. S. Secretary of the Interior Walter Hickel had suggested a moratorium on canal construction, the Game Commission issued a second report opposing continued construction of the canal. Other public agencies such as the U. S. Fish and Wildlife Service and the scientific community began renewed attacks on the canal project.

In May 1970 the Governor of Florida withheld endorsement of the canal project during his testimony before Congress, saying he would prefer to wait to see what ecological studies of the canal project would show.



In June 1970 the U. S. House of Representatives voted additional funds for the canal construction stating that sufficient studies had been made. Congress however urged that environmental impact of the project be minimized.

Despite assurances from the State geologist and an exhaustive study of the geo-hydrological aspects of the proposed canal project by the U. S. Geological Survey, continued environmental concern was expressed and on January 15, 1971, the U. S. District Court in Washington, D. C., issued a temporary restraining order to halt construction of the project.

Boeing *100-60*
Four days later--on January 19, 1971--President Nixon issued a press release permanently halting construction, based on advice by the President's Council on Environmental Quality. The President's press release said the canal project "could endanger the unique wildlife of the area and destroy this region of unusual and unique natural beauty."

One-third completed and nearly \$60 million in state and federal funds spent at the time of the President's announcement, all work on the project was halted, including four major contracts costing about \$12.6 million.

Permission was later received by the Corps of Engineers to complete three of the four halted contracts in order to bring the work to a logical conclusion.

Conservationists were elated over stopping the canal project, but supporters of the canal, including some Congressmen, began a new campaign to continue construction. Counter suits were filed by the state canal agency and numerous questions were posed on land ownership.

Meanwhile the President had directed the Secretary of the Army to work with the Council on Environmental Quality in developing recommendations for the future of the (Barge Canal) area.

The Corps of Engineers, as designers and builders of the canal at the direction of Congress and the President, is neutral on the subject. The Corps is neither proponent nor opponent--as a federal agency the Corps works for Congress and the President. Since the President, as Commander in Chief of all American forces, has directed the halt of construction, the Corps of Engineers has complied.

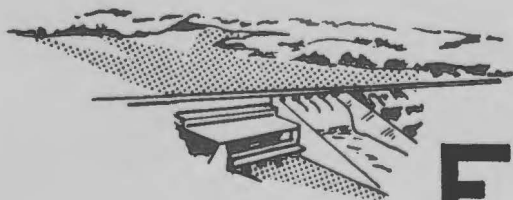
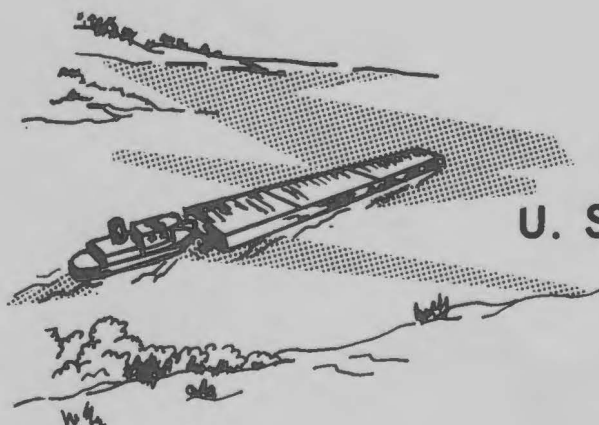
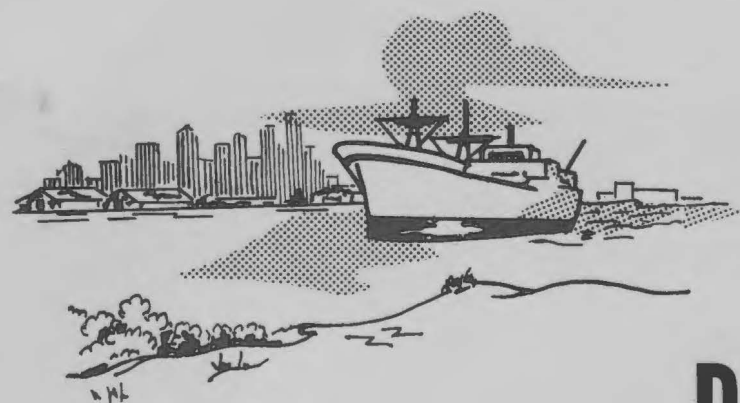


WATER RESOURCES DEVELOPMENT

by the
U. S. ARMY CORPS OF ENGINEERS

in

FLORIDA



U. S. ARMY ENGINEER DIVISION
SOUTH ATLANTIC
1 JANUARY 1973



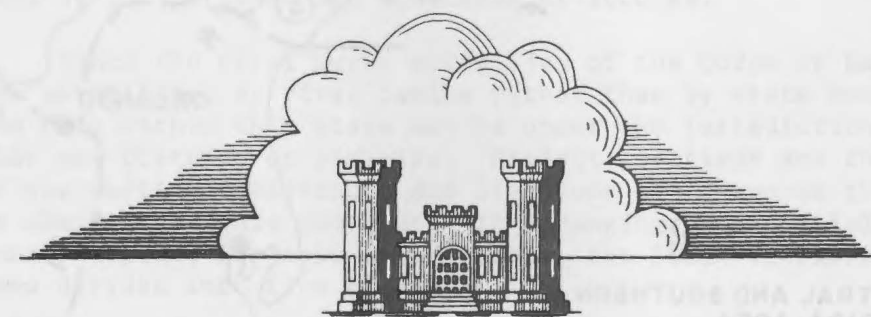
WATER RESOURCES DEVELOPMENT

BY THE

U.S. ARMY CORPS OF ENGINEERS

IN

FLORIDA



JANUARY 1973

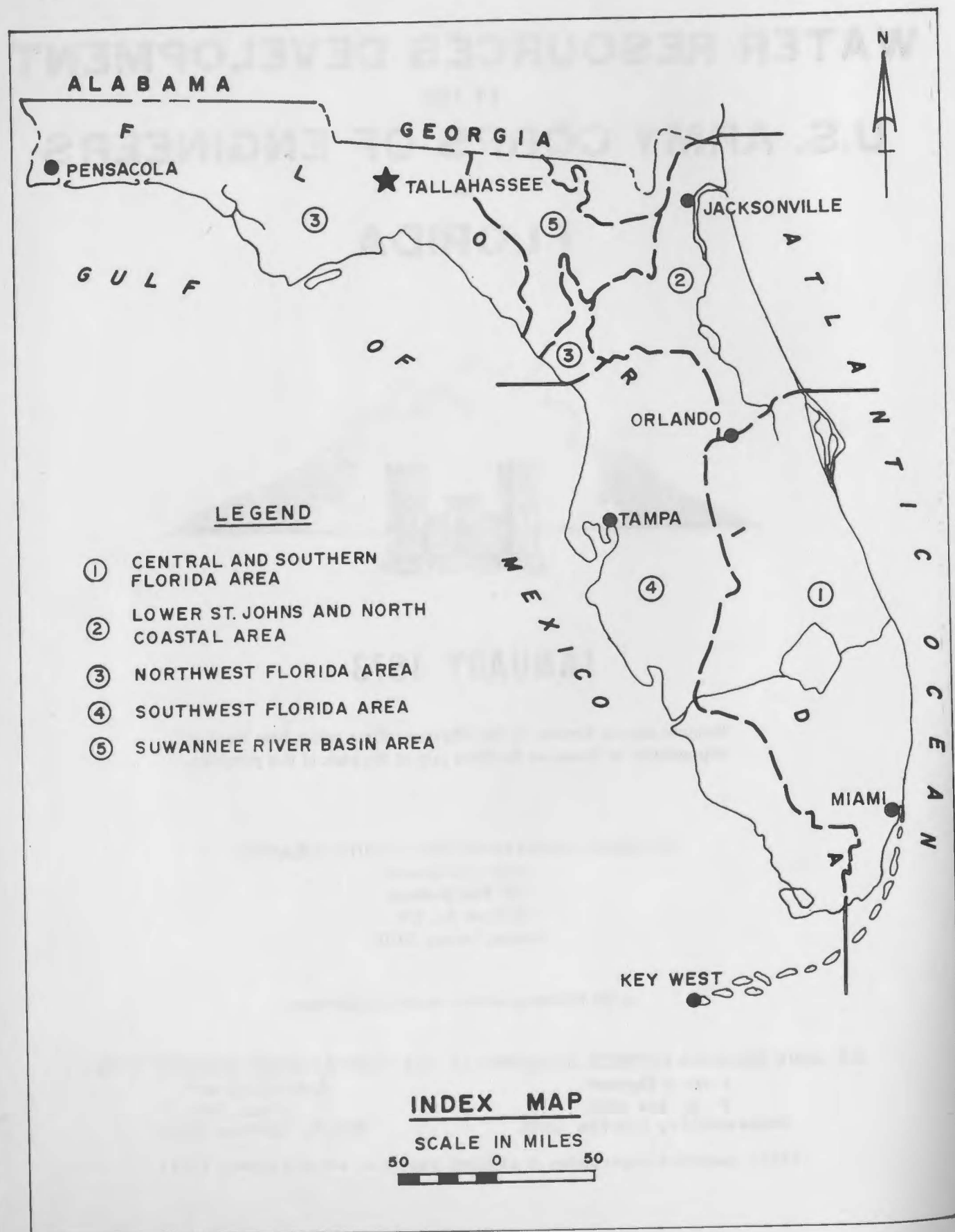
Inquiries may be directed to the following offices, which have limits of responsibility as shown on the State map at the back of this pamphlet.

U.S. ARMY ENGINEER DIVISION, SOUTH ATLANTIC
Corps of Engineers
510 Title Building
30 Pryor St., S.W.
Atlanta, Georgia 30303

or the following districts under its supervision:

<i>U.S. ARMY ENGINEER DISTRICT, JACKSONVILLE</i>	<i>U.S. ARMY ENGINEER DISTRICT, MOBILE</i>
<i>Corps of Engineers</i>	<i>Corps of Engineers</i>
P. O. Box 4970	P. O. Box 2288
Jacksonville, Florida 32201	Mobile, Alabama 36628

(This pamphlet supersedes a similar pamphlet dated January 1971)



FOREWORD

This pamphlet gives current information on the scope and progress of water-resource projects and studies by the Corps of Engineers within the State of Florida. It describes briefly the role of the Corps of Engineers in the planning and building of water-resources improvements, and explains the procedure for initiating studies leading to authorization of such projects. It gives the status of various projects, whether construction has been completed, is underway, or not started, together with data on the purposes and schedules of studies.

Since the civil works activities of the Corps of Engineers are established by river basins rather than by state boundaries, the work within this state may be under the jurisdiction of more than one District or Division. Project locations and the limits of the pertinent Districts and Divisions are shown on the maps at the back of this pamphlet. In arranging the material presented herein, for ease of reference, the State of Florida has been divided into five areas:

1. Central and Southern Florida area
2. Lower St. Johns River and North Coastal area
3. Northwest Florida area
4. Southwest Florida area
5. Suwannee River Basin

Each section includes a general map of the area, together with a small vicinity map.

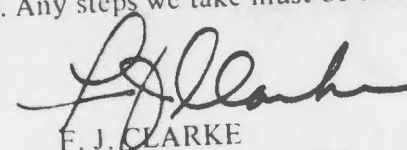
TO OUR READERS:

Many responsible citizens are concerned today about the conservation and enhancement of our environment. We in the Army Corps of Engineers are concerned also. For almost two centuries the Corps, as the principal planner and developer of America's water resources, has responded to the changing needs of the Nation for the various benefits of water resources development. In this tradition, we are determined to remain sensitive to the American people's growing awareness of the importance of environmental quality. We are scrutinizing and revising our planning techniques to insure that they accurately reflect our concern for environmental values. The problems, while complex, are not insurmountable.

The Corps will continue to seek balance in meeting the environmental and developmental needs of our Nation. Merely determining whether or not a specific engineering solution is economically justified is not enough. We shall encourage and support efforts to bring the best existing ecological knowledge and insights to bear on planning, developing, and managing the Nation's water and related land resources. Environmental values will receive full consideration along with economic, social, and technical factors.

To realize the goals of environmental conservation, we must have active public participation in the planning process. We shall provide governmental and nongovernmental agencies and the public with timely information opportunities, consequences, benefits and costs — financial and environmental. Before making recommendations, we shall actively solicit the views of those affected by our proposals.

As a citizen interested in the future of this State's water resources, you have opinions that are of value to the Corps of Engineers. Any steps we take must be taken together.



F. J. CLARKE
Lieutenant General, USA
Chief of Engineers

CONTENTS

INTRODUCTION

Functions of the Corps of Engineers.....	i
Navigation.....	i
Flood Control.....	ii
Beach Erosion Control.....	ii
Hurricane Protection.....	iii
Water Supply.....	iv
Water Pollution Control.....	iv
Hydroelectric Power.....	iv
Recreation.....	v
Flood Plain Information.....	v
Other Special and Continuing Authorities.....	v
Environmental Quality Policy.....	vi
How Corps of Engineers Projects are Initiated, Authorized, and Constructed.....	vii

CENTRAL AND SOUTHERN FLORIDA AREA PROJECTS

BEACH EROSION CONTROL

Brevard County, Fla.....	2
Broward County and Hillsboro Inlet, Fla.....	3
Cape Florida State Park, Key Biscayne, Fla.....	4
Dade County, Fla.....	5
Fort Pierce, Fla.....	6
Palm Beach County, Fla., from Lake Worth Inlet to South Lake Worth Inlet.....	8
Palm Beach County, Fla. from Martin County Line to Lake Worth Inlet and from South Lake Worth Inlet to Broward County Line, Fla.....	8
Virginia Key and Key Biscayne, Fla.....	9

FLOOD CONTROL

Central and Southern Florida.....	11
-----------------------------------	----

NAVIGATION

Bakers Haulover Inlet, Fla.....	14
Canaveral Harbor, Fla.....	15
Courtenay Channel, Fla.....	16
Eau Gallie Harbor, Fla.....	17
Everglades Harbor, Fla.....	17
Fort Pierce Harbor, Fla.....	17
Intracoastal Waterway, Jacksonville to Miami, Fla.....	18
Intracoastal Waterway, Miami to Key West, Fla.....	18
Kissimmee River, Fla.....	19
Melbourne Harbor, Fla.....	19
Miami Harbor, Fla.....	19
New River, Fla.....	22
Okeechobee Waterway, Fla.....	22
Orange River, Fla.....	24
Palm Beach Harbor, Fla.....	24
Port Everglades Harbor, Fla.....	25
St. Lucie Inlet, Fla.....	26

STUDIES

BEACH EROSION CONTROL

Indian River County, Fla.....	27
Key Biscayne, Fla.....	27
Fort Pierce Harbor, Fla.....	27
Palm Beach Harbor, Fla.....	27

FLOOD CONTROL

Caloosahatchee River, Fla.....	27
Canal 17 and Adjacent Areas, Fla.....	27
Canal 18, Area West of, and Jupiter Inlet and Loxahatchee River Area, Fla.....	28
Canal 21-A, Fla.....	28
Econlockhatchee River, Fla.....	28
Greater Miami Area (Area B), Fla.....	28
Hillsboro Canal (East of Conservation Areas Nos. 1 and 2), Fla.....	28
Lake Istokpoga, Highlands County, Fla.....	28
Lake Okeechobee, Additional Outlet Capacity, Fla.....	28
Reedy Creek Basin, Fla.....	28
South New River Canal, Fla.....	28
Upper St. Johns River Basin, Fla.....	28
Wekiva River Basin, Fla.....	28
C&SF Water Supply, Fla.....	29
Southern Florida.....	29

NAVIGATION

Boca Raton Inlet, Fla.....	29
Canaveral Harbor, Fla.....	29
Fort Pierce Harbor, Fla.....	29
Intracoastal Waterway, Jacksonville to Miami (Fort Pierce to Miami Reach), Fla.....	29
Intracoastal Waterway, Miami to Key West, Fla.....	29
Miami Harbor (Miami River Cleanup).....	29
Miami River, Fla. Locks and Dams.....	29
New River, Fla.....	29
Okeechobee Waterway, Fla.....	29
Okeechobee Waterway-Side Channel and Turning Basin at Clewiston, Fla.....	30
Port Everglades Harbor, Fla.....	30
St. Lucie Inlet, Fla.....	30
Sanford-Titusville Canal, Fla.....	30
Sebastian Inlet, Fla.....	30
Wiggins Pass, Fla.....	30

LOWER ST. JOHNS AND NORTH COASTAL AREA PROJECTS

BEACH EROSION CONTROL

Duval County, Fla.....	32
------------------------	----

FLOOD CONTROL

Hogtown Creek, Fla.....	33
-------------------------	----

NAVIGATION

Atlantic Intracoastal Waterway Between Norfolk, Va. and St. Johns River, Fla.....	33
Cross-Florida Barge Canal, Fla.....	34
Fernandina Harbor, Fla.....	34
Jacksonville Harbor, Fla.....	35
Lake Crescent and Dunns Creek, Fla.....	36
Oklawaha River, Fla.....	36
Ponce de Leon Inlet, Fla.....	37
Rice Creek, Putnam County, Fla.....	37
St. Augustine Harbor, Fla.....	38
St. Johns River, Fla., Jacksonville to Lake Harney, Fla....	38

STUDIES

FLOOD CONTROL

Orange Lake Basin, Fla.....	40
Streams in St. Johns, Flagler, and Putnam Counties, Fla....	40
Streams in Brevard and Volusia Counties, Fla.....	40
Streams in Seminole County, Fla.....	40

MULTIPLE PURPOSE

Mills Creek (Callahan), Fla.....	40
----------------------------------	----

NAVIGATION

Jacksonville Harbor, Fla.....	40
St. Augustine Harbor and Vicinity, Fla.....	40
St. Johns River, Jacksonville to Lake Harney, Palatka, Fla.	40
Side Channel.....	40

NORTHWEST AREA

PROJECTS

FLOOD CONTROL

Jackson County, Fla.....	42
--------------------------	----

NAVIGATION

Apalachicola Bay, Fla.....	43
Blackwater River, Fla.....	44
Carrabelle Harbor, Fla.....	44
Choctawhatchee River, Fla. and Ala.....	45
East Pass Channel from the Gulf of Mexico into	
Choctawhatchee Bay, Fla.....	45
Escambia and Conecuh Rivers, Fla. and Ala.....	46
Grand Lagoon, Panama City, Fla.....	47
Gulf Intracoastal Waterway between Apalachee Bay, Fla.,	
and the Mexican Border.....	47
Gulf Intracoastal Waterway (St. Marks to Tampa Bay, Fla....	49
Joes Bayou, Fla.....	49
LaGrange Bayou, Fla.....	49
Lynn Haven Bayou, Fla.....	50
Panacea Harbor, Fla.....	50

Panama City Harbor, Fla.....	50
Pensacola Harbor, Fla.....	52
Port St. Joe Harbor, Fla.....	53
St. Marks River, Fla.....	54
Steinhatchee River, Fla.....	55

MULTIPLE PURPOSE

Apalachicola, Chattahoochee, and Flint Rivers, Fla. & Ga...	56
---	----

STUDIES

BEACH EROSION CONTROL

Panama City Harbor, Fla.....	59
Shores of Northwest Fla.-Between Indian Pass and Alabama	
State Line.....	59

FLOOD CONTROL

Big Escambia Creek, Fla. and Ala.....	59
Blackwater and Yellow Rivers, Fla. and Ala.....	59
Coastal Streams between Suwannee and Apalachicola Rivers,	
Fla.....	59

MULTIPLE PURPOSE

Apalachicola River System (308 Report).....	60
Choctawhatchee River and Tributaries, Fla. and Ga.....	60
Escambia and Conecuh Rivers, Fla. and Ala.....	60
Northwest Florida along Gulf of Mexico.....	60

NAVIGATION

Apalachicola, Fla. to Two-Mile.....	60
Apalachicola Bay, Fla.....	60
Apalachicola River below Jim Woodruff Dam.....	61
Apalachicola River to Gulf Intracoastal Waterway via	
Wewahitchka, Fla.....	61
Blackwater River and Bay, Fla.....	61
Eastern Lake, Fla.....	61
Waterway from East Bay, Fla. across Santa Rosa Peninsula...	61
Eastern and Redfish Lakes, Fla.....	61
Eastpoint, Apalachicola Bay, Fla.....	61
Gulf Intracoastal Waterway, Carrabelle to St. Marks, Fla...	61
Indian Pass, Apalachicola, Fla.....	62
Joes Bayou, Choctawhatchee Bay, Fla.....	62

Lanark Village to St. George Sound, Fla.....	63
Lynn Haven Bayou, Fla.....	63
Mexico Beach, Fla.....	63
Pensacola Bay, Fla.....	63
Pensacola Harbor, Fla.....	63
Philips Inlet, Fla.....	63
St. Marks River, Fla.....	63
Spring Creek, Fla.....	64

SOUTHWEST FLORIDA AREA

PROJECTS

BEACH EROSION CONTROL

Key West, Fla.....	66
Lee County, Fla.....	66
Lido Key, Fla.....	67
Mullet Key, Fla.....	68
Pinellas County, Fla.....	69

FLOOD CONTROL

Four River Basins (Green Swamp Area), Fla.....	70
Phillippi Creek Basin, Fla.....	72

NAVIGATION

Anclote River, Fla.....	73
Bayport, Fla.....	73
Cedar Keys Harbor, Fla.....	74
Charlotte Harbor, Fla.....	74
Clearwater Pass (Little Pass), Clearwater Bay, Fla.....	74
Crystal River, Fla.....	75
Fort Myers Beach, Fla.....	75
Homosassa River, Fla.....	75
Hudson River, Fla.....	76
Intracoastal Waterway, Caloosahatchee River to Anclote River, Fla.....	76
Johns Pass, Fla.....	77
Key West Harbor, Fla.....	77
Largo Sound Channel, Fla.....	77
Manatee River, Fla.....	78
Naples to Big Marco Pass, Channel From, and Gordon Pass, Fla.....	78

New Pass (Sarasota), Fla.....	79
Ozona, Fla., Channel and Turning Basin.....	79
Pass-a-Grille Pass, Pinellas County, Fla.....	79
Pithlachascotee River, Fla.....	79
St. Petersburg Harbor, Fla.....	80
Tampa Harbor, Fla.....	81
Withlacoochee River, Fla.....	82

HURRICANE PROTECTION

Hillsborough Bay, Fla.....	83
----------------------------	----

STUDIES

BEACH EROSION CONTROL

Collier County, Fla.....	84
Manatee County, Fla.....	84
Sarasota County, Fla.....	84

FLOOD CONTROL

Estero River, et al., Fla.....	84
Four River Basins, Fla.....	84

NAVIGATION

Anclote River, Fla.....	85
Boot Key Harbor, Fla., Side Channel and Basin, Intracoastal Waterway from Miami to Key West.....	85
Boot Key Harbor (Sister Creek), Monroe County, Fla.....	85
Charlotte Harbor, Fla. (Port Boca Grande).....	85
Intracoastal Waterway, Caloosahatchee River to Naples Bay, Fla.....	85
Key West Harbor (Stock Island), Fla.....	85
Little Gasparilla Pass, Charlotte County, Fla.....	85
Little Manatee River, Fla.....	85
Longboat Pass (Manatee County), Fla.....	85
St. Petersburg Harbor, Fla.....	86
Tampa Harbor (East Bay Channel and Turning Basin).....	86

SUWANNEE RIVER BASIN

PROJECTS

NAVIGATION

Suwannee River, Fla.....	87
Horseshoe Cove, Fla.....	88

STUDIES

FLOOD CONTROL

Fenholloway River Basin, Fla.....	88
-----------------------------------	----

NAVIGATION

Santa Fe River, Fla.....	88
Suwannee River, Fla.....	88

INACTIVE PROJECTS

Bayou Chico (Pensacola Harbor), Channel Enlargement.....	89
Biscayne Bay.....	89
Gulf Intracoastal Waterway extension, Carrabelle to Apalachee Bay.....	89
Holmes Creek.....	89
Little Manatee River.....	89
Ochlockonee River.....	89
Palm Beach Side Channel and Basin.....	89
Upper Chipola River, Marianna to Mouth.....	89

AQUATIC PLANT CONTROL PROGRAM

Aquatic Plant Control Program.....	90
Removing the Water Hyacinth Throughout Florida.....	92

FLOOD PLAIN MANAGEMENT

FLOOD PLAIN INFORMATION STUDIES

Blackwater Bay and River, Milton, Fla.....	93
Broward County, Fla.....	93
Charlotte and North Lee Counties, Fla.....	93
Choctawhatchee Bay, Fort Walton Beach Vicinity, Okaloosa County, Fla.....	93
Cypress Creek near Orlando, Fla.....	93
Destin, Okaloosa County, Fla.....	93
Lake Monroe at Sanford, Fla.....	94
Levy County Coastal Areas, Fla.....	94
Little Wekiva River, Orange County, Fla.....	94
Little Wekiva River, Seminole County, Fla.....	94
Martin County Coastal Areas, Fla.....	94
Mill Slough at Kissimmee, Fla.....	94
Northeast Volusia County, Fla.....	94
North Fork, St. Lucie River, Fla.....	94
Palm Beach County, Fla. - Tidal Areas.....	94
St. Johns River, Jacksonville, Fla.....	94
St. Lucie County Coastal Areas, Fla.....	94
Sarasota County Coastal Areas, Fla.....	94
Sarasota County, Elligraw Bayou, Catfish Creek, North Creek, and South Creek, Fla.....	94
Southeast Palm Beach County, Fla.....	94
Southeast Volusia County, Fla.....	94
Tallahassee, Leon County, Fla.....	94
Vicinity of Pensacola, Escambia, and Santa Rosa Counties, Fla.....	94

FLOOD INSURANCE STUDIES

Hastings, Fla.....	95
Hillsborough County, Fla.....	95
Monroe County Keys, Fla.....	95
Naples, Fla.....	95
Palm Beach Shores, Fla.....	95
Pompano Beach, Fla.....	95
Tampa, Fla.....	95
Temple Terrace, Fla.....	95

INDEX.....	97
------------	----

MAP

Water resource developments by the U. S. Army Corps of Engineers in Florida..... At end of pamphlet	
--	--

PHOTOGRAPHS

Cape Florida Lighthouse at Key Biscayne. This is one of the oldest structures in South Florida and was in danger of being undermined (1970).....	iii
Indialantic public beach (Brevard County), July 1972.....	3
Pompano Beach (Broward County), Fla. - North end of project before construction (1970).....	4
Pompano Beach (Broward County), Fla. - North end of project after construction (1971).....	4
Key Biscayne (Dade County) - Problem area north of Cape Florida State Park (1971).....	5
Advanced erosion of Bal Harbour Village (Dade County) project shore (1971).....	6
Fort Pierce - Before sand was pumped to shore (1971).....	7
Fort Pierce - After nourishment (1971).....	7
Virginia Key (Dade County) - Erosion of middle third of project beach, July 1971.....	9
Key Biscayne (Dade County) - Project beach functioning well at Crandon Park (1971).....	10
Conversion of Hurricane Gate Structure 6 into Lock Structure 193. View shows southern entrance of Taylor Creek (left) into Lake Okeechobee (right).....	11
Quiet solitude in Rardin Park on the southeastern shore of Lake Okeechobee (March 1971).....	12
Fishing from the jetties at the entrance to Canaveral Harbor, Cape Canaveral (August 1966).....	15
Miami Harbor cruise ships and pleasure boats in Government Cut.....	20
Picknicking at the Ortona Lock Recreation Area on the Okeechobee Waterway (March 1971).....	23
Lake Worth Inlet (Palm Beach County), July 1972.....	25
Port Everglades - Queen Elizabeth II enters harbor (1972).....	26
Jacksonville Beach (Duval County) - Problem beach, showing temporary stone revetment provided with Office of Emergency Preparedness funds (1971).....	32
Entrance to Jacksonville Harbor - Jetties protect entrance channel from the Atlantic Ocean into the St. Johns River.....	35

Jacksonville Harbor - Talleyrand docks and terminal (1972).....	36
Corps of Engineers personnel tagging crab traps that were placed in the navigation channel of St. Johns River (1972).....	38
Companions fish in silent concentration from the bank at Lake Seminole.....	42
Vacationists interrupt their pleasure cruise on the Gulf Intracoastal Waterway to look over the commercial fishing fleet in the harbor at Apalachicola, one of the principal seafood ports in the state.....	43
Charter boats from Destin leave East Pass at dawn in search of big game fish (Courtesy of Florida News Bureau).....	46
Pleasure boats make waves in the serene waters of one of the most beautiful sections of the Gulf Intra- coastal Waterway - the reach between White City and Apalachicola (Courtesy of Florida News Bureau).....	48
Towboat pushes heavily laden gasoline barge along West Bay section of Gulf Intracoastal Waterway. Over one million tons of gasoline passed through this section of the busy waterway in 1971.....	48
Damages to motel at Panama City caused by collapse of a bulkhead in the fall of 1970 following a week of sustained southeasterly winds.....	51
Happy vacationer lands a grouper while fishing from a party boat out of Panama City.....	52
Pensacola Harbor - Oceangoing freighter taking on cargo of paper products.....	53
The river port of St. Marks, served by a 12-foot Federal channel in the St. Marks River, is an important petroleum distribution center, with facilities for receiving gasoline and liquified gases by water and storing them for delivery by tank truck to wholesalers and consumers in Tallahassee and the surrounding region (Courtesy of Florida News Bureau).....	55
Visitors to Torreya State Park enjoy a spot of quiet beauty on the Apalachicola River about 10 miles below Jim Woodruff Lock and Dam (Courtesy of Florida News Bureau).....	56
Despite high water, eager fishermen of all ages line the bank below the Jim Woodruff powerhouse.....	57
A gasoline tow en route to an oil terminal in Early County, Georgia; passes Neal's Landing in the Chattahoochee River arm of Lake Seminole, where it forms the boundary between Florida and Georgia.....	58

Key West - Looking west from east end of project beach (August 1972).....	67
Lido Key (Sarasota County) - North end of project beach before construction.....	68
Lido Key (Sarasota County) - North end of project beach after construction (1971).....	68
Treasure Island (Pinellas County) - Project beach south of 94th Avenue (June 1972).....	69
Tampa Bypass Canal under construction. Floodwaters from Hillsborough River eventually will move to the Gulf of Mexico via the Tampa Bypass Canal. View is northeast with new Highway 301 bridge in center of photo (August 1972).....	71
Sailing is popular on Tampa Bay. Sunshine Skyway Bridge in background (1972).....	81
Typical hyacinth spraying operation - St. Johns River (April 1972).....	91
Dense growth of hyacinths on St. Johns River (May 1972).....	91
One of the marine harvesters used for removal of water hyacinths on the St. Johns River (April 1972).....	92
Example of wildlife found in Everglades National Park.....	96

INTRODUCTION

FUNCTIONS OF THE CORPS OF ENGINEERS

This pamphlet gives a brief description of water resources activities now being carried out by the Corps of Engineers in the State of Florida. These projects, and the administration of certain laws, classified as civil functions, have been assigned by Congress to the Department of the Army for accomplishment by the Corps of Engineers.

In addition to the development of projects designed to meet specific localized problems, the Corps of Engineers undertakes planning for long-range coordinated development of the water resources of entire river basins. Basinwide planning presents a challenge and many problems. Such studies are comprehensive in scope and have as their purpose the formulation of long-range plans for integrated and optimum development of water resources. Such investigations include consideration of navigation, flood control, generation of hydroelectric power, water conservation, domestic and industrial water supply, water quality management and improvement, the protection of fish and wildlife, recreation, protection and enhancement of environmental quality, and other potential uses of water which may enter into an overall plan. The various Federal and State agencies concerned contribute their specialized knowledge and skills to the investigation through active participation in the study.

Considerations which enter into recommendations for project authorization to Congress include determination that benefits will exceed costs, that the engineering design of the project is sound and will meet the needs of the people concerned, that it makes the fullest use possible of the natural resources involved and that opportunities for protection and enhancement of environmental quality will not be lost.

NAVIGATION

The Federal interest in navigation improvements stems from the commerce clause of the Constitution, and from subsequent decisions of the Supreme Court, to the effect that the Federal obligations to regulate navigation and commerce also included the right to make necessary improvements. At the present time navigation of harbors and inland waterways remains one of the most important parts of the nation's transportation system.

The Corps of Engineers is responsible for construction, as well as the maintenance and operation, of Federal river and harbor projects and the cost is largely Federal.

In addition, the Corps of Engineers has the responsibility for administering Federal laws for the protection and preservation of the navigable waters of the United States, embracing: granting permits for structures other than bridges over and in such navigable waters; establishing regulations for use of navigable water, including dumping grounds, fishing areas, and harbor lines; and removal of wrecks and other obstructions to navigation.

FLOOD CONTROL

The Federal interest in flood control began in the alluvial valley of the Mississippi River in the 19th Century when the interrelationship of flood control and navigation became apparent. That interest was extended in 1936 to the entire country due to the impact of disaster-type floods affecting wide areas, as well as transportation systems. It was recognized that the Federal Government should participate in the solution of problems affecting the public interest when they are too large or complex to be handled by state or local organizations.

The purpose of flood control works is to regulate flood flows and thus prevent flood damage. In addition, the Flood Control Act of 1944 provided that "flood control" shall include major drainage of land. These objectives are accomplished with reservoirs, local protection works, or with combinations of both.

Reservoirs constructed for flood control storage often include additional storage capacity for multiple-purpose uses, such as for the conservation of water for municipal and industrial use, navigation, irrigation, development of hydroelectric power, conservation of fish and wildlife, and recreation.

Local protection works are turned over to non-Federal authorities for maintenance, as are small reservoirs of localized effect.

BEACH EROSION CONTROL

Beach erosion control is concerned with the restoration of eroded shores and their subsequent preservation. This work acts to prevent future damage and the restored beaches provide improved recreational benefits.

The development of a plan for protection of non-Federal properties is accomplished by cooperative effort between the United States and an



Cape Florida Lighthouse at Key Biscayne. This is one of the oldest structures in South Florida and was in danger of being undermined (1970)

appropriate State or local element. The cost of the study is borne by the Federal Government. After review by the Board of Engineers for Rivers and Harbors and the Chief of Engineers, the plan, if found to be economically sound, is submitted to Congress for adoption.

The Federal contribution toward construction of remedial shore protection works, authorized as a result of the study, is limited by law to a maximum of one-half of the construction cost except in special circumstances. The remedial work may include periodic beach nourishment with sand fill at suitable intervals, if this provides the most feasible solution. Maintenance of the restored beach is a non-Federal responsibility.

HURRICANE PROTECTION

Hurricanes have been the cause of catastrophic loss of life and property along the Atlantic and Gulf coasts. In some cases tidal flooding can be prevented or reduced by protective structures, including dams and barriers in estuaries, with openings for navigation. Other

measures include raising dunes and constructing dikes, walls, and breakwaters. There are also places where increasing the height of natural beaches affords effective protection.

Under the authorization contained in Public Law 71, 84th Congress, 1st Session, approved June 15, 1955, the Corps of Engineers is conducting general investigations of the eastern and southern seaboard of the United States in order to identify problem areas and to determine the feasibility of protection. Works found to be justified are recommended to Congress for authorization and subsequent construction.

WATER SUPPLY

Water supply is of vital interest to the national economy and security, and full attention is given to this subject in the planning of river basin works. Under Section 6 of the Flood Control Act of 1944, the Secretary of the Army is authorized to make contracts with states, municipalities, private concerns, or individuals for domestic and industrial uses for surplus water that may be available at Corps of Engineers projects. The Water Supply Act of 1958, as amended, makes further provisions for water supply storage in Federal navigation, flood control, irrigation, or multiple-purpose projects.

The extent of state and local participation and cost sharing, in all new projects or modifications, is clearly set forth in Section 301 of the Water Supply Act of 1958.

WATER POLLUTION CONTROL

Under Public Law 87-88, 87th Congress, consideration is given in planning of Corps of Engineers' reservoir projects to inclusion of storage for regulation of the streamflow for water quality control, but not as a substitute for sewage treatment. The cost of such storage may be all Federal if the benefit is sufficiently widespread.

HYDROELECTRIC POWER

Power development in multiple-purpose projects under the jurisdiction of the Chief of Engineers is collateral to the major objectives of flood control and navigation. In a series of laws and resolutions dating back to the River and Harbor Act of 1909, Congress has directed the Corps of Engineers to give consideration in its reports to various water uses, including hydroelectric power.

Provisions for hydroelectric power are thus a part of proper comprehensive planning for water resource development. The Chief of Engineers, in accordance with specific directives of Congress, makes comprehensive plans which include consideration of power, and submits recommendations to Congress concerning those plans. As a result of

such plans and recommendations, Congress has authorized many multiple-use projects that involve hydropower development, and in some cases has authorized projects primarily for power development when such projects were parts of recommended basin plans. The cost of the power is required to be reimbursed by revenues from sale of the power. The Southeastern Power Administration, an agency of the Department of Interior, markets the power.

RECREATION

Consideration is given to the inclusion of facilities for swimming, boating, fishing, camping, and sightseeing wherever appropriate. In developing plans for recreational facilities the cooperation of the state or other concerned public bodies is required under terms of the Federal Water Projects Recreation Act of 1965.

FLOOD PLAIN INFORMATION

The Chief of Engineers, through the Secretary of the Army, is authorized by the Flood Control Act of 1960, as amended, to provide information to states and local communities, upon their request, to aid them in providing for use and regulation of flood plain areas. The work to be done by the Corps under this authority involves surveying and mapping of flood plain areas, together with hydrology and frequency studies necessary to establish the flood damage potential, flood heights, and the extent of inundation of the areas involved. Such information is provided to aid local interests in establishing right-of-way lines, stream clearance lines, and land use regulations.

OTHER SPECIAL AND CONTINUING AUTHORITIES

Small Flood Control Projects (Section 205, Flood Control Act of 1948, as amended). Provides for construction of small flood control projects not specifically authorized by Congress when, in the opinion of the Chief of Engineers, such work is advisable. The Federal share in such projects may not exceed \$1,000,000 and must constitute a complete solution to the flood problem involved so as not to commit the United States to additional improvements to insure effective operation. Such projects are subject to the same requirements of feasibility and economic justification as the larger projects which require specific authorization by Congress.

Small Navigation Projects (Section 107, 1960 River and Harbor Act, as amended). This legislation authorizes the Corps of Engineers to construct small river and harbor improvement projects not specifically authorized by Congress. The Federal share in such projects may not exceed \$1,000,000 and the projects must be complete in themselves and not commit the United States to any additional improvement to



insure successful operation. Such projects are also subject to the same requirements of feasibility and economic justification as the larger projects which require specific authorization by Congress.

Small Beach Erosion Control Projects (Section 103, River and Harbor Act of 1962, as amended). Authorizes construction of small beach restoration and protection projects not specifically authorized by Congress. The Federal share of the cost must not exceed \$1,000,000 for a single project, and the project must not be dependent on additional improvement for success.

Snagging and Clearing (Section 208, 1954 Flood Control Act). The Corps of Engineers is authorized, under this act, to spend up to \$100,000 on any single tributary during any one fiscal year for removal of accumulated snags and other debris, and for the clearing and straightening of stream channels when, in the opinion of the Chief of Engineers, such work is justified in the interest of flood control.

Flood Fighting, Repair, and Rescue Work (Public Law 99, 84th Congress). This law authorizes the Corps of Engineers to engage in flood fighting and rescue operations, and to repair or restore any flood control work threatened or destroyed by flood.

Snagging and Clearing (Section 3, River and Harbor Act of 1945). This act authorizes the Corps of Engineers to undertake emergency work to clear or remove unreasonable obstructions from rivers, harbors, and other waterways in the interest of navigation.

ENVIRONMENTAL QUALITY POLICY

The National Environmental Policy Act of 1969 declared a national policy on improvement of environmental quality and established a Council on Environmental Quality to carry out its purposes. Federal agencies, including the Corps of Engineers, are directed in the planning and development of projects and other activities to identify the impact on the environment and to examine alternatives and their effects. The Corps of Engineers' activities include environmental studies and actions in cooperation with the Council under this act. The objectives of these studies are to preserve unique and important ecological, aesthetic, and cultural values; conserve and use wisely the natural resources for the benefit of present and future generations; enhance, maintain, and restore the natural and manmade environment; and create new opportunities to use and enjoy the environment. In the review of programs and proposals emphasis is placed on development of alternatives or modifications which benefit environmental quality.

HOW CORPS OF ENGINEERS PROJECTS ARE INITIATED, AUTHORIZED AND CONSTRUCTED

The Corps of Engineers never initiates a project. Actually, local interests initiate, Congress authorizes, and the Corps of Engineers constructs Federal navigation, flood control, shore protection and other related projects under its civil works program. The major steps in initiating and processing Corps of Engineers projects are briefly outlined as follows:

1. When local interests feel that a need exists for any type of flood control, navigation, or other improvement, it will be profitable for them to consult at the outset with the District Engineer of the U. S. Army Engineer District in their area. He will tell them what might be done to solve their particular problem, the authorities under which it might be accomplished, and the procedures necessary to initiate the action desired. A listing of U. S. Army Engineer Division and Districts will be found on the inside cover of this pamphlet.

2. Local interests inform their Senator or Representative in Congress of a navigation, flood-control, or related water-resource improvement they desire and request that provision of the desired facility be investigated by the Federal Government.

Two courses of action are open to the Senator or Representative. If a previous report has been made for the area, he may request a review of previous reports to determine whether any modifications in such reports would be advisable.

If a review report is appropriate, the Congressional Committee adopts a resolution authorizing the Board of Engineers for Rivers and Harbors to make the review and refers the resolution to the Chief of Engineers for necessary action. If the Committee is convinced of the need for an original report, the authorization for an investigation will be included in an authorization bill for consideration by Congress. When passed, the bill becomes a directive for the study.

Comprehensive surveys of suggested projects are made to determine their economic, environmental, and engineering feasibility and necessity. In making these surveys the Corps of Engineers cooperates fully with all other Federal agencies concerned, as well as with State and local authorities.



3. When the investigation is authorized, the Chief of Engineers will assign it to an appropriate reporting officer, usually the Division Engineer in whose territory the area is located. The Division Engineer refers it to the proper District Engineer for actual accomplishment. Following receipt of the directive requesting an investigation and, upon receipt of funds for the studies, the District Engineer, in close cooperation with local authorities and other Federal agencies, begins the necessary engineering environmental and economic investigations.

Public meetings are held to ascertain the views and desires of local people as to the extent and character of the improvement desired and on the need for construction. After careful consideration of the view of the local people, as expressed during the public meetings or otherwise, and after thorough analysis of data obtained through field and office studies, the District Engineer develops a plan of improvement believed to be best suited to the problems under consideration and the area in question. Estimates of benefits and costs are prepared and the requirements of local cooperation decided upon. All these data, together with the recommendations of the District Engineer as to whether the project should be authorized, are included in the report on the investigation. A favorable recommendation by the District Engineer is largely dependent upon acceptance and support of the proposed project by the local people and upon environmental considerations and economic justification of the improvement.

4. The report is submitted to the Division Engineer who reviews and approves the report and transmits it to the Chief of Engineers and the Board of Engineers for Rivers and Harbors for review. All interested parties receive a public notice, which sets forth the findings and recommendations of the District and Division Engineers and informs them that they may present their views on the matter to the Board of Engineers for Rivers and Harbors.

5. The Board reviews the reports of the District and Division Engineers and carefully considers any additional information from interested parties. Finally, the Board prepares its report, including its recommendations, and transmits it to the Chief of Engineers. The Chief of Engineers reviews the reports and all other data and then prepares the report he will submit to Congress. The report is sent to the Governors of the States affected and to other interested Federal agencies in order to obtain their views and recommendations of the improvements discussed in the report. After full consideration of the comments received, the Chief of Engineers submits the report to the Secretary of the Army. The Secretary of the Army obtains the views of the Bureau of the Budget and transmits the report to Congress.

6. Committees on Public Works of the House and Senate may hold hearings on the report with a view towards formulating a bill including

authorization of projects recommended. If the project is included in an authorization bill, enactment of this bill constitutes authorization of the project.

Section 201 of Public Law 89-298, 89th Congress (1965 Authorization Act) authorized the Secretary of Army, acting through the Chief of Engineers, to construct and operate projects of less than \$10 million Federal cost without specific congressional authorization, if approved by resolutions of the Public Works Committees of the Senate and House of Representatives on the basis of reports submitted to Congress.

Funds for undertaking authorized projects are not usually provided by the authorization act, but are supplied by a later appropriation. After funding, projects are designed and built in accordance with the authorizing acts and such other general laws as may be applicable, at a rate determined by appropriation of funds.

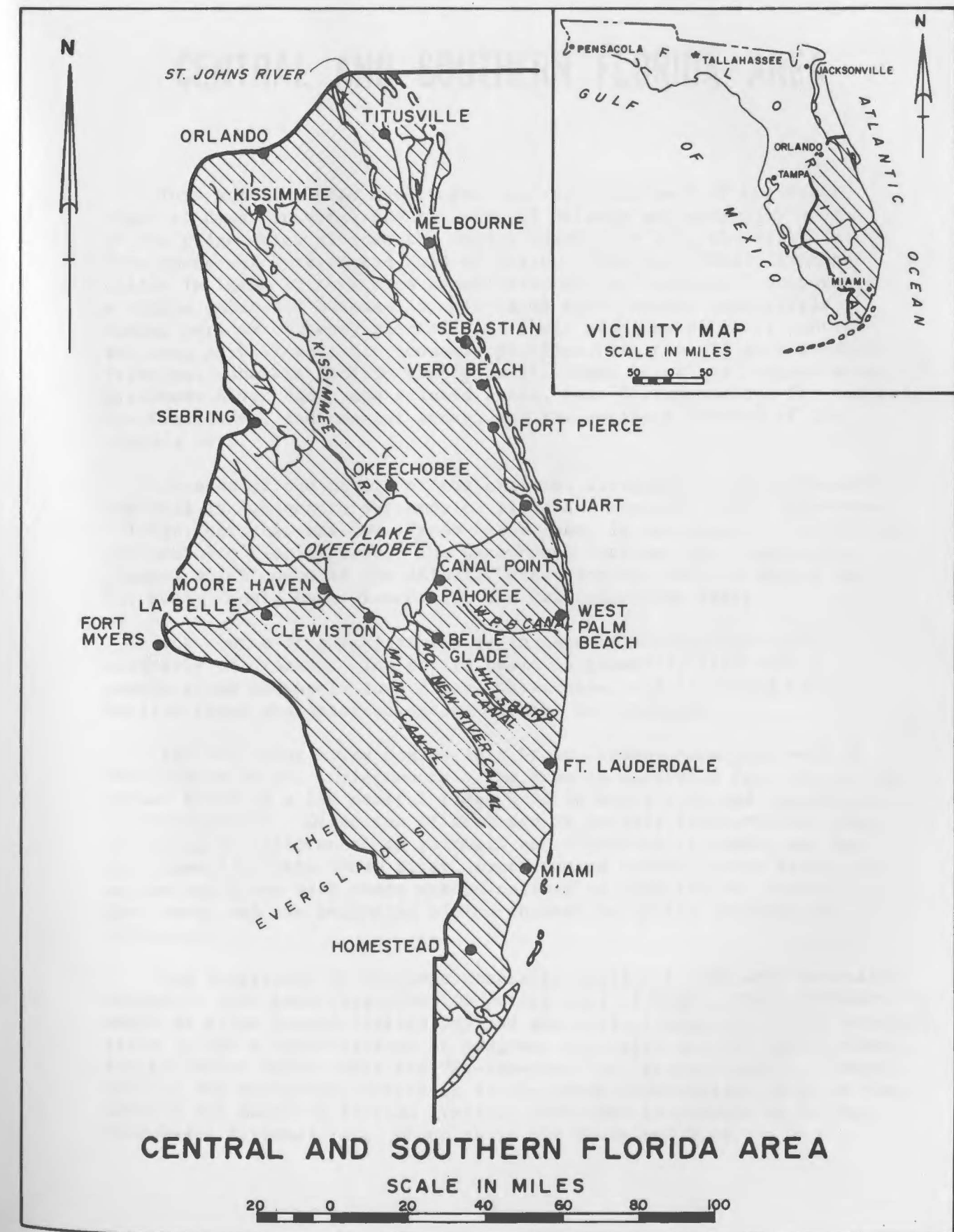
In addition to the above procedures, Congress has provided several special continuing authorities which give the Secretary of Army authority to construct small projects without specific authority of Congress. The selection and funding is delegated by the Secretary of the Army to the Chief of Engineers.

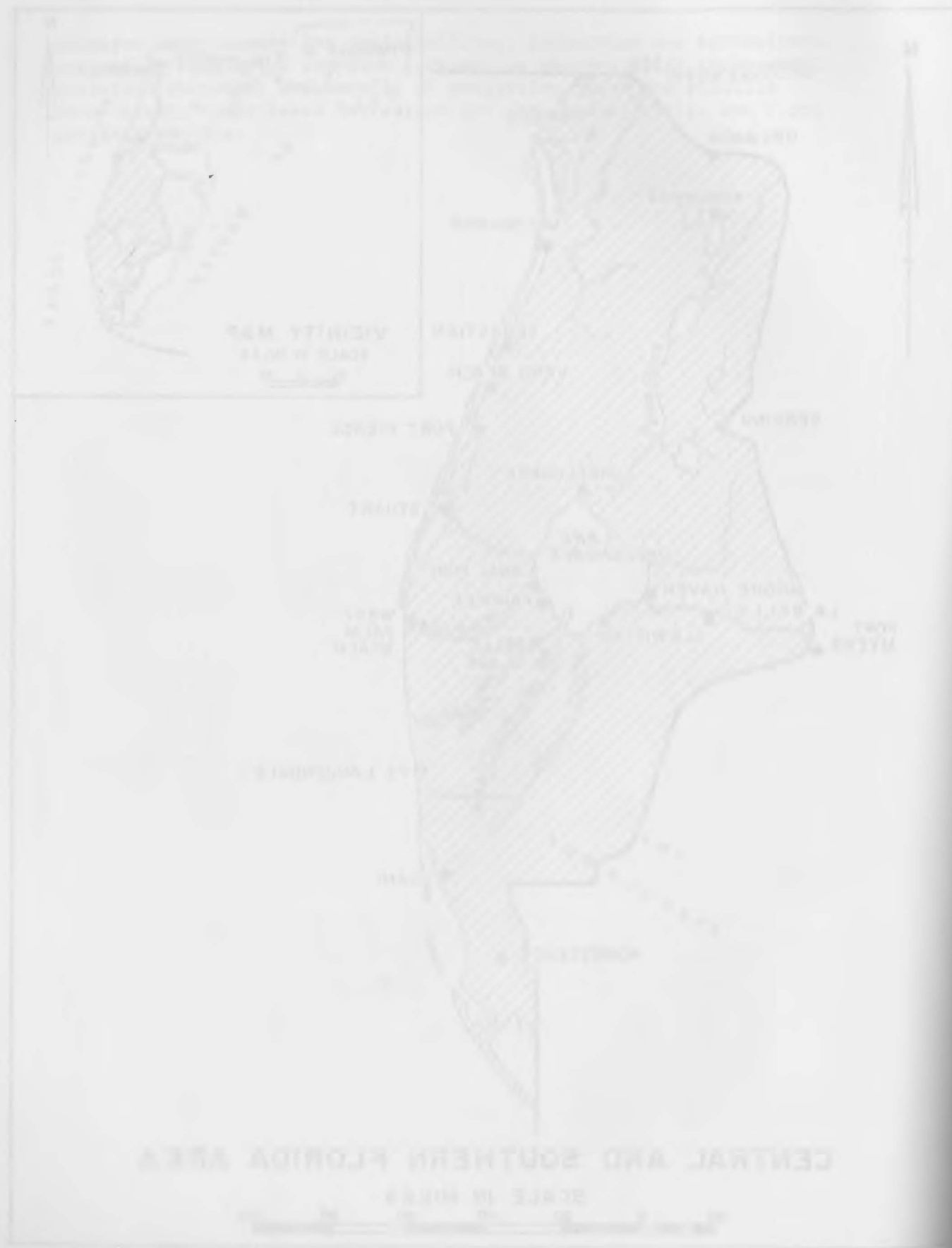
To be eligible for work under special continuing authorities, Federal assistance must be requested by responsible local bodies. The special continuing authorities are not to be applied for construction of a specifically authorized project, a portion thereof, or an alternate therefor. A special-continuing-authority project is to be complete in itself, not requiring additional work to alleviate the problem or to insure successful operation.

The legislation for each type of special continuing authority specifies a cost limitation which is the Federal cost ceiling including Federal planning, supervision, and administration. Local interests must assume responsibility, in cash usually, for costs which exceed that ceiling in addition to required local costs such as lands and relocations. When a project is approved, construction funds are allotted as available provided local cooperation requirements are met.

7. The completed project, which came into being at the initiative of the "grass-roots" of our nation, the local people, is in a sense turned over to the people to reap the benefits of the navigation, flood control, shore protection, or related water-resource improvement project built by the Army Corps of Engineers in their locality. It is the Corps civil works program which has the greatest impact on the economy of the locality and the nation, providing measures of defense through its portion of integrated waterways for water-borne commerce, generation of hydroelectric power to light our homes and run our industries, an

adequate water supply for municipalities, industries and agriculture, streamflow regulation for such purposes as water-quality improvement, pollution abatement and benefit of navigation, fish and wildlife enhancement, water-based recreation for the general public and flood damage reduction.





CENTRAL AND SOUTHERN FLORIDA AREA

This area includes the central and southern part of the state south of Cape Canaveral and the city of Orlando and generally east of the ridge which divides the waters which flow into the Atlantic from those which reach the Gulf of Mexico. The individual drainage basins included in this area constitute, for all practical purposes, a single watershed because in most cases their waters intermingle during periods of heavy rainfall and their problems of water control and use, as well as their economic problems, are closely interrelated. Principal subareas include the Upper St. Johns River and related areas, Kissimmee River Basin and related areas, Lake Okeechobee and its outlets, the Everglades, the coastal areas, and the northern portion of the Florida Keys.

Because of the nature of the climate, topography, and development, the area is subject to extremes of flood and drought. Lake Okeechobee, a large, natural, shallow, fresh-water lake, is the heart of the Central and Southern Florida area. The Okeechobee Waterway is a navigation channel which connects the Atlantic Ocean and the Gulf of Mexico via St. Lucie Canal, Lake Okeechobee, and Caloosahatchee River.

The source of the Kissimmee is in several streams which rise southerly of Orlando. The entire basin is generally flat with a gentle slope southerly toward Lake Okeechobee, and is dotted with shallow lakes and interconnecting sloughs and channels.

The St. Johns River begins in a broad, swampy area just west of Fort Pierce in St. Lucie County. The area is separated from the saline Indian River by a low coastal ridge 3 to 10 miles wide and ranging up to elevation 30. Direction of drainage is largely indeterminate and, depending on differences in rainfall and direction of winds, may be west toward the Kissimmee River, south toward the St. Lucie River, or to the north and east where waters collect to form the St. Johns. Open water and the beginning of the channel is in the latitude of Melbourne.

The Everglades is the name generally applied to the area extending southerly from Lake Okeechobee to points west of Miami, then southwesterly about 40 miles toward Florida Bay and the Gulf of Mexico. In its original state it was a vast solitude of sawgrass and water and was aptly termed by its Indian inhabitants the "Pa-hay-okee" or "grassy water". Almost half of the Everglades proper is in the water conservation areas of the Central and Southern Florida project; less than 10 percent is in the Everglades National Park, which is in the Southwest Area.

Population is concentrated along the coastal ridge in the eastern fringe of Dade, Broward, and Palm Beach Counties. A second center is developing around Orlando. The year-round warm climate, abundant supply of water, and the semi-tropical plant and animal life, along with tremendous capital investment in tourist-type accommodations, have made tourism the main industry. The climate provides also for year-round livestock grazing and vegetable production.

In recent years Miami Harbor and adjacent Port Everglades have become the principal cruise-ship ports in the southeastern United States. The cruise-ship industry is one of south Florida's fastest growing industries. Beach erosion is a problem along the coastal areas. A number of flood control, navigation, and beach-erosion control projects have been authorized. These are discussed on the following pages.

BEACH EROSION CONTROL PROJECTS

BREVARD COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of 1968, provides for a protective and recreational beach along 2.8 miles of shore at the city of Cape Canaveral and 2.0 miles of shore at Indialantic and Melbourne Beach and for periodic nourishment of the restored beach at Indialantic and Melbourne Beach. Nourishment of the restored beach at the city of Cape Canaveral would be provided by the authorized sand-transfer plant being planned for Canaveral Harbor. The plan consists of a beach with level berm 50 feet wide at elevation 10 feet above mean low water at the above two areas.

The total estimated cost of the plan is \$2,231,000. The Federal share of that cost is now estimated at \$1,116,000. The Federal share of the periodic nourishment costs at Indialantic and Melbourne Beach for 10 years after completion of the initial fill is now estimated at \$55,400 annually, or 50 percent. Preconstruction planning of initial project works is underway.

A plan was also developed for erosion control for about 11 miles of Federally owned shore in Brevard County and for hurricane protection of the entire 32 miles of Federally owned shore north of Canaveral Harbor. Improvement of those shores, not yet begun, would be accomplished entirely by the Federal agencies involved, subject to their own justification.



Indialantic public beach (Brevard County), July 1972

BROWARD COUNTY AND HILLSBORO INLET, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of October 27, 1965, provides for Federal participation in the cost of restoring recreational and protective beaches along parts of the ocean shores of Broward County and for periodic beach nourishment of eroding beaches in the county as needed. The beach erosion control features comprise restoration of a protective beach to a general width of 100 feet with a berm elevation of 10 feet and periodic nourishment thereof. The navigation features would provide for a channel 8 feet deep and 100 feet wide from the Intracoastal Waterway to a point 1,500 feet oceanward in Hillsboro Inlet, thence 10 feet deep and 150 feet wide to deep water in the Atlantic Ocean; jetties on the north and south sides of the ocean entrance; and a permanently based floating dredge to maintain the navigation channel and transfer sand across the inlet with the provision that the dredge be replaced by a trestle-mounted sand-transfer plant if experience proves the dredge to be unsatisfactory.

Construction of the 3.2-mile reach of project beach improvement between Hillsboro Inlet and Port Everglades was completed at Pompano Beach in October 1970. Total cost of that work was \$1,758,800. Only

the northerly mile of the work qualified for Federal aid. The Federal share of that project work was \$306,300. Navigation improvements at Hillsboro Inlet have been placed in an inactive category.

The total estimated first cost for the beach erosion control portion for the entire county is \$6,120,000. The Federal share is 30.4 percent of the total first cost, or \$1,860,000, on the basis of existing beach ownership.

Estimated average annual nourishment costs are \$604,500. The Federal share of those costs is estimated at \$282,000 annually for 10 years after initial construction.



← Pompano Beach (Broward County), Fla.
North end of project
before construction (1970)



Pompano Beach (Broward County),
Fla. - North end of project
after construction (1971) →

CAPE FLORIDA STATE PARK, KEY BISCAINE, FLA. (JACKSONVILLE DISTRICT)

The project was authorized November 1, 1967, under authority of Section 103 of River and Harbor Act of 1962. It provides for Federal participation in the cost of a 280-foot revetment with top elevation 5 feet above mean low water for protection of the historic lighthouse at the newly acquired State Park along the lower end of Key Biscayne



Key Biscayne (Dade County) - Problem area north of Cape Florida
State Park (1971)

in Dade County, Fla. Construction was completed in November 1968 at a cost of about \$34,862, of which 70 percent, or \$21,044, was the Federal share. Annual maintenance costs are entirely at the expense of local interests.

DADE COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the Flood Control Act of 1968, provides for beach erosion control and hurricane tidal flooding protection between Government Cut and Bakers Haulover Inlet by means of a protective and recreational beach having a dune at elevation 11.5 feet and a level berm 50 feet wide at elevation 9 feet, mean low water; for beach erosion control at Haulover Beach Park by means of a protective and recreational beach with a berm elevation of 9 feet, mean low water, and a berm width up to 50 feet; and for periodic nourishment of both of the above beaches.

The total estimated first cost is \$41,988,000. The Federal share of that cost, based on existing shorefront ownership, is \$16,765,000. Based on public ownership of all project beaches, the Federal share of the first cost would increase to \$24,580,000. The annual Federal share

of periodic nourishment costs, limited to the first 10 years of project life, is estimated to be \$134,000 with existing and \$347,000 with public ownership of project beaches.

Preconstruction planning is scheduled to begin in FY 1973.

Bal Harbour Village officials are preparing plans for provision of their 0.85-mile project segment. They are seeking congressional authorization for that project work and for future reimbursement of the appropriate Federal share of the costs on its satisfactory completion.



Advanced erosion of Bal Harbour Village (Dade County) project shore (1971)

FORT PIERCE, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of October 27, 1965, provides for Federal participation in the cost of a protective and recreational beach along 1.3 miles of ocean shore south of Fort Pierce Inlet. The project provides for increasing the width of the existing beach by 50 feet at elevation 10 feet, mean low water, and subsequent periodic nourishment of the restored beach.

Local interests completed initial construction of the project in July 1971 at a cost of \$621,300. The Federal share of that work was \$321,200. The Federal share of periodic nourishment for 10 years after initial construction is estimated at \$81,000 annually, or 51.7 percent.



Fort Pierce - Before sand was pumped to shore (1971)



Fort Pierce - After Initial Project nourishment. (1971)

**PALM BEACH COUNTY, FLA., FROM LAKE WORTH INLET
TO SOUTH LAKE WORTH INLET** (JACKSONVILLE DISTRICT)

The project, initially authorized by the River and Harbor Act of May 17, 1950, and modified by the River and Harbor Act of July 3, 1958, provides for Federal participation in the cost of protecting the shore of Palm Beach County between Lake Worth Inlet and South Lake Worth Inlet, substantially in accordance with the plan outlined in House Document No. 342, Eighty-fifth Congress, second session. That plan provides generally for construction of a protective beach 100 to 150 feet wide along the shorefront of Palm Beach Island, construction and operation of a sand-transfer plant at Lake Worth Inlet, and additional periodic nourishment of the protective beach.

Construction of the sand-transfer plant was completed by local interests in 1958 at a cost of \$577,000. Local interests have been reimbursed for the Federal share of the plant construction cost.

Contribution of the Federal share of the annual operation and maintenance costs of the plant is authorized for a period of 10 years from the year of its initial construction. Local interests have been reimbursed an average of \$19,500 annually for that 10-year period of such costs.

The beach improvement portion, excluding the sand-transfer plant part of the project, has been placed in the inactive category.

**PALM BEACH COUNTY, FLA., FROM MARTIN COUNTY LINE TO LAKE WORTH INLET
AND FROM SOUTH LAKE WORTH INLET TO BROWARD COUNTY LINE** (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of October 23, 1962, provides for Federal participation in the cost of restoring protective beaches between Martin County and Lake Worth Inlet and between South Lake Worth and Boca Raton Inlets to a general width of 100 feet with a berm elevation of 10 feet above mean low water, and subsequent periodic nourishment thereof, including operation of the sand-transfer plant at South Lake Worth Inlet.

Initial costs of construction are currently estimated at \$4,575,000. The estimated Federal share of the initial cost is \$301,000.

Estimated average annual nourishment costs are \$290,500, including \$30,400 for operation and maintenance of the sand-transfer plant at South Lake Worth Inlet. The Federal share of those costs is estimated at \$19,900 annually. Contribution of the Federal share of the nourishment costs is authorized for a period of 10 years from the year of initial construction.

Local interests are preparing plans for accomplishing a 3-mile project segment at Delray Beach for future reimbursement of the appropriate Federal share of project costs upon its satisfactory completion.

VIRGINIA KEY AND KEY BISCAYNE, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of October 23, 1962, provides for Federal participation in the cost of protecting the ocean shores of Virginia Key and the publicly owned ocean shores of Key Biscayne by periodic nourishment and by three groins on Virginia Key and one groin on Key Biscayne. Construction of the groins would be deferred, subject to future determination of the need therefor, based on experience gained in nourishing the beaches. Contribution of the Federal share of the nourishment costs is authorized for a period of 10 years from the year of initial construction.



Virginia Key (Dade County) - Erosion of middle third of project beach, July 1971

An initial 2-year supply of project nourishment material was provided in July 1969 at a cost of \$577,075, of which \$403,953 (70 percent) was the Federal share.

The project fill on Key Biscayne has functioned well. Much of the project fill on Virginia Key has eroded because of its greater exposure to onshore waves and alongshore currents. Preconstruction planning to renourish that project shore, including provision of a groin system to reduce future nourishment requirements, is nearing completion.



Key Biscayne (Dade County) - Project beach functioning well at Crandon Park (1971)

FLOOD CONTROL PROJECTS

CENTRAL AND SOUTHERN FLORIDA (JACKSONVILLE DISTRICT)

The Central and Southern Florida Project, first phase, was authorized by the Flood Control Act of June 30, 1948. Phase 1 consists of most of the works necessary to afford flood protection to the productive agricultural development south of Lake Okeechobee and to the highly developed urban area along the lower east coast of the State. Phase 2, consisting of all remaining works of the original Comprehensive Plan, was authorized by the Flood Control Act of September 3, 1954. Improvements in Hendry County and in Nicodemus Slough (just west of Lake Okeechobee) were added to the project by the Flood Control Acts of July 3, 1958, and July 14, 1960, respectively. Improvements in Boggy Creek, Cutler Drain Area, Shingle Creek, South Dade County, and West Palm Beach Canal were added to the project by the Flood Control Act of October 23, 1962. Improvements in Southwest Dade County were



Conversion of Hurricane Gate Structure 6 into Lock Structure 193. View shows southern entrance of Taylor Creek (left) into Lake Okeechobee (right)

added to the project by the Flood Control Act of October 27, 1965; the same act modified the 1958 authorization for the Hendry County improvements. The Flood Control Act of 1968 expanded the project to provide for increased storage and conservation of water and for improved distribution of water throughout much of the project area. Flood control measures for Martin County were added. The 1968 modifications would also facilitate increased delivery of water to the Everglades National Park. In December 1970 small-craft recreational facilities were authorized by the Committee on Public Works of the U. S. House of Representatives.

The project involves an area of about 16,000 square miles, which includes all or part of 18 counties in central and southern Florida. It embraces Lake Okeechobee, its regulatory outlets, a large portion of the Everglades, the upper St. Johns and Kissimmee River Basins, and the lower east coast of Florida. The project is one for flood relief and water conservation and provides principally for: An east coast protective levee extending from the Homestead area north to the eastern shore of Lake Okeechobee near St. Lucie Canal; three conservation areas for water impoundment in the Everglades area west of the east coast protective levee, with control structures to effect transfer of water as necessary; local protective works along the lower east coast;



Quiet solitude in Rardin Park on the southeastern shore of Lake Okeechobee (March 1971)

encirclement of the Lake Okeechobee agricultural area by levees and canals; enlargement of portions of Miami, North New River, Hillsboro, and West Palm Beach Canals; enlargement of existing Lake Okeechobee levees and construction of new levees on the northeast and northwest shores of the lake; increased outlets capacity for improved control of Lake Okeechobee; floodway channels in the Kissimmee River Basin, with suitable control structures to prevent overdrainage; and facilities for regulation of floods in the Upper St. Johns River Basin. The project provides water control and protection from the recurrence of devastating floodwaters from the Everglades and local sources for the highly developed urban area along the lower east coast of Florida and for the productive agricultural areas around Lake Okeechobee (including the towns around the lake), in the upper St. Johns and Kissimmee River Basin, and in south Dade County. Another important project function is the conservation of floodwaters for beneficial uses during dry seasons. The project also includes seven navigation locks, 20 feet long and 90 feet wide, in the Kissimmee River Basin; six locks, 20 feet wide and 60 feet long in the St. Johns River Basin; and the necessary channel excavations and bridge alterations to provide needed facilities for additional recreational boating use.

The authorizing acts require that local interests shall provide all lands, easements, and right-of-way; pay for relocations of highways (with certain exceptions), highway bridges, and public utilities which may be required for construction of project works; hold and save the United States free from damages resulting from construction and operation of the works; maintain and operate all works (except certain major regulating structures) after completion; and make a cash contribution for each part of the work prior to its initiation. In 1949, the Florida State Legislature created the Central and Southern Florida Flood Control District and authorized it to act for local interests in complying with those conditions of local cooperation and in all other matters relating to the project.

Authorized project facilities include 32 pumping stations, 200 control and diversion structures, 1,030 miles of levees, 1,014 miles of canals, 13 small navigation locks, and 62 railroad relocations (bridges). Construction was begun in January 1950. The project as a whole was about 48 percent completed on June 30, 1972.

As of June 30, 1972, the estimated cost for new work was \$407,000,000 Federal funds and \$95,000,000 contributed funds. In addition, the estimated cost to local interests for lands, rights-of-way, relocations, and review of plans and specifications was \$78,100,000. Through June 30, 1972, Federal allocations have amounted to about \$197,098,000 and cash contributions by local interests have amounted to about \$37,089,000 (including an advance of \$100,000).

The current estimates of average annual benefits from the project are summarized as follows:

<u>Type of Benefit</u>	<u>Estimated Average Annual Benefits</u>
Flood damages prevented	\$ 42,566,000
Increased land use	73,201,000
Recreation	7,601,000
Water supply	
Agricultural	16,382,000
Urban	7,063,000
Fish and wildlife	446,000
Navigation	1,326,000
Total annual benefits	\$148,585,000

Total estimate of flood damages prevented by the completed works of this project between January 1950 and June 1972 amounts to about \$218,692,000.

This is a long-range project which will extend over a number of years, the completion date being dependent on funds appropriated by Congress.

NAVIGATION PROJECTS

BAKERS HAULOVER INLET, FLA. (JACKSONVILLE DISTRICT)

Bakers Haulover Inlet, on the eastern coast of Florida 9 miles north of the entrance to Miami Harbor, is an artificial cut across the barrier beach between the Atlantic Ocean and northern Biscayne Bay.

Authorized by the River and Harbor Act of July 14, 1960, the project provides for reconstruction of the existing jetties; protection of the inlet shores seaward of the existing 500-foot section; and dredging, when necessary, a channel 11 feet deep and 200 feet wide through the 300-foot section of the inlet, thence 8 feet deep and 100 feet wide west and north to and including a marina basin 200 feet wide, and thence 8 feet deep and 100 feet wide both west and north to the Intracoastal Waterway. The project was completed

in December 1964 at a cost of about \$505,500 (including about \$262,200 contributed funds and other costs). Maintenance costs have amounted to about \$500.

The 1971 commerce was about 85 tons.

CANAVERAL HARBOR, FLA. (JACKSONVILLE DISTRICT)

Canaveral Harbor is on the east coast of Florida, in Canaveral Bight, about 146 miles south of the entrance to Jacksonville Harbor. The project authorized by the River and Harbor Act of March 2, 1945, provides for a turning basin 27 feet deep and 1,000 feet wide, with lengths of 900 feet on the north side and 2,900 feet on the south side, near the easterly shore of Banana River and enclosed by a dike; an entrance channel 27 feet deep and 300 feet wide at the 27-foot contour in Canaveral Bight, with jetties at the entrance; a barge canal 8 feet deep and 100 feet wide from the turning basin to the Intracoastal Waterway; and a lock 50 feet wide and 250 feet long to pass the barge canal through the dike enclosing the turning basin. Length of the project is about 11.5 miles.



Fishing from the jetties at the entrance to Canaveral Harbor, Cape Canaveral (August 1966)

Dredging required to provide the above-described channels and turning basin was completed in March 1952. An 813-foot emergency south jetty was constructed in 1953 and a north jetty 1,150 feet long was completed in 1954. The ocean entrance channel and turning basin were dredged 37 feet and 35 feet deep, respectively in 1961 with military funds.

Total estimated cost of the project is \$8,666,000, including \$940,000 cash contributed by local interests. In addition to the total \$940,000 cash contribution, local interests were required to furnish lands and construct wharves, warehouses, and other terminal facilities.

The River and Harbor Act of October 23, 1962, authorized modification of the project to provide for maintaining depths of 37 feet in the entrance channel, 36 feet in the inner channel, and 35 feet in the turning basin; relocation of the perimeter dike about 4,000 feet westward and extending the deepwater harbor westward to 31-foot depth; enlargement of the barge channel to 12 feet deep by 125 feet wide from the turning basin to the Intracoastal Waterway; relocation and construction of the previously authorized barge lock; and construction and operation of a sand-transfer plant.

The existing project is about 60 percent completed. Cost for new work to date has been about \$6,531,000 (excluding about \$652,500 contributed by NASA in connection with construction of lock and \$1,003,000 contributed funds). The lock was constructed 90 feet wide and 600 feet long to accommodate NASA's requirements. Cost of maintenance for the entire project has been about \$4,776,000. Work remaining to be done is construction of the sand-transfer plant and construction of the harbor extension.

The Air Force and Navy are using the harbor in connection with missile operations. Deepwater cargo vessels also use the harbor. Some shrimp boats are using the basin as a harbor of refuge. The average annual freight traffic from 1962 to 1972 has been about 1,120,000 tons. The 1971 traffic was 1,999,000 tons.

COURTENAY CHANNEL, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of June 20, 1938, provides for a side channel in Indian River 8 feet deep and 100 feet wide between the Intracoastal Waterway, Jacksonville to Miami, and the town of Courtenay, with a turning basin at that point. Length of the project is about 1.7 miles. The project was completed in 1940 at a cost of about \$23,000.

Little use is made of the improvement for movement of freight to or from the locality. However, commercial and recreational fishing craft occasionally use the channel in navigating that section of Indian River. No commerce was reported for 1971.

EAU GALLIE HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of June 20, 1938, provides for a channel 8 feet deep and 100 feet wide from Indian River to the town of Eau Gallie, with a turning basin at that point. Length of the project is about 2,700 feet. The project was completed in 1939 at a cost of about \$9,600. Cost of maintenance has been about \$38,000.

Traffic is negligible insofar as commodity movements by water are concerned. The harbor is a "way section" along the Intracoastal Waterway. It is used extensively by recreational craft for repairs or for taking on gasoline, oil, or other supplies, and, on occasion, as a harbor of refuge.

The average annual traffic from 1961 to 1971 has been about 250 tons. The 1971 traffic was 7,200 tons.

EVERGLADES HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 14, 1960, provides for a channel 8 feet deep and 60 feet wide from that depth in Indian Key Pass to the marine ways on Barron River, with a triangular-shaped turning basin 8 feet deep, 200 feet wide, and 200 feet long near the upper end, and a cutoff about 3,000 feet long just seaward of Chokoloskee Bay. The length of the project is about 9.2 miles. The project was completed in 1963.

Cost of the completed work has been about \$221,500 (excluding about \$62,700 contributed funds and other costs). Cost of maintenance has been about \$12,000.

The 1970 traffic was 435 tons.

FORT PIERCE HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of August 30, 1935, and prior acts, provides for Federal maintenance, enlargement, and deepening of the harbor constructed by local interests, to provide a channel from the 27-foot contour in the Atlantic Ocean, with widths varying from 350 feet to 200 feet and depths of

27 feet outside and 25 feet inside, to and including a turning basin 25 feet deep in Indian River at Fort Pierce. The project also includes maintenance of two jetties and shore revetments at the inlet. Length of the project is about 3.5 miles. The project was completed in 1938 except for a fishing walkway atop the south jetty which was completed by the local sponsor in 1968. Total cost of new work has been about \$352,000 (excluding about \$3,400 contributed funds). Cost of maintenance has been about \$1,149,000.

The 1971 traffic was 238,000 tons.

INTRACOASTAL WATERWAY, JACKSONVILLE TO MIAMI, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 2, 1945, and prior acts, provides for a channel 12 feet deep and 125 feet wide from Jacksonville to Miami; turning basins 8 feet deep near Jacksonville Beach, at Sebastian, and at Vero Beach; a side channel 8 feet deep and 100 feet wide from the waterway to the turning basin at Sebastian; and operation and maintenance of the Palm Valley highway bridge. The side channel and turning basin at Sebastian have been classified inactive. Maintenance of a side channel 8 feet deep and 80 feet wide from the waterway to the Daytona Beach Municipal Yacht Basin was authorized by the River and Harbor Act of July 3, 1958. Length of the project is about 370 miles, which includes 21 miles in St. Johns River.

An economic restudy prepared in 1960 determined that a channel 10 feet deep and 125 feet wide from Fort Pierce to Miami would be adequate for the foreseeable future.

The active part of the project was completed in March 1965 at a cost of about \$16,950,000 (excluding about \$94,800 for previous projects and about \$2,199,800 from Public Works funds). Cost of maintenance has been about \$9,411,000 (including costs for previous projects and for operation and care).

The average annual traffic from 1962 to 1972 has been about 830,000 tons and about 189,000 passengers. The 1971 traffic was about 1,092,000 tons and 345,000 passengers.

INTRACOASTAL WATERWAY, MIAMI TO KEY WEST, FLA (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 2, 1945, and a prior act, provides for a channel 7 feet deep and 90 feet wide from Miami to Key West, along a protected inside route. Length of the project is about 158 miles. The portion of the waterway between Miami and Cross Bank, about 63 miles, was

completed in 1939. No work has been done on the section between Cross Bank and Key West, which has been placed in an inactive category. The project is about 8 percent completed.

Total estimated cost of the existing project (1962) is \$6,218,000, of which about \$243,000 has been expended. Cost of maintenance has been about \$3,000.

The average annual traffic from 1962 to 1972 has been about 443,000 tons. The 1971 traffic was 755,000 tons.

KISSIMMEE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of June 13, 1902, provides for a channel 3 feet deep and 30 feet wide between the towns of Kissimmee and Fort Basinger, and a channel of the same dimensions between Kissimmee River and Lake Istokpoga. Length of the project is about 109 miles, including 9.4 miles in Istokpoga Creek. The project was completed in 1909 at a cost of about \$23,500. Cost of maintenance has been about \$25,200. The 3-foot project has been largely supplanted by a floodway with control structures and navigation locks.

No commerce was reported for 1971.

MELBOURNE HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of August 26, 1937, provides for a channel 3,150 feet long, 8 feet deep, and 100 feet wide in Indian River to and including a turning basin in Crane Creek at Melbourne. The project was completed in 1938 at a cost of about \$17,700. Cost of maintenance has been about \$41,900.

The 1971 traffic was about 300 tons. Principal use is for recreational craft.

MIAMI HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Acts of August 13, 1968, July 14, 1960, March 2, 1945, and prior acts, provides for the following:

a. Deepening the bar channel to 38 feet and widening it to 500 feet; widening the north side of the channel between the jetties by 100 feet and deepening the entrance channel to 38 feet to the existing

beach line, thence 36 feet deep and 400 feet wide across Biscayne Bay to and including the turning basin 1,400 feet long and 1,650 feet wide at Biscayne Boulevard Terminal.

b. A turning basin along the north side of Fisher Island about 39 acres in extent and 36 feet in depth.

c. Two parallel rubblestone jetties at the entrance, 100 feet apart and 3,000 and 2,750 feet long, respectively.

d. A channel 15 feet deep and 200 feet wide from the mouth of Miami River to the turning basin at the municipal terminals.

e. A channel 8 feet deep and 200 feet wide from the mouth of Miami River to the Intracoastal Waterway and thence 100 feet wide to Government Cut.



Miami Harbor - Cruise ships and pleasure boats in Government Cut

f. A channel at the mouth of Miami River, 15 feet deep at mean low water, 250 feet wide at the outer end and tapering to 170 feet

wide at Brickell Point in a distance of about 1,400 feet; thence a channel in Miami River, 15 feet deep under flood conditions, 150 feet wide for 3 miles, thence 125 feet wide for 1.1 miles, and thence 90 feet wide for 1.4 miles.

g. A channel 12 feet deep and 100 feet wide from Miami River to a harbor of refuge in Palmer Lake, the location of the harbor of refuge and channel leading thereto being subject to modification at the discretion of the Chief of Engineers.

Length of the project is about 15.3 miles, including about 6 miles of channel from the ocean to the municipal terminals, 5.8 miles in Miami River and its mouth, and 3.5 miles of connecting channels leading therefrom.

Items d, e, and g have been coordinated with local interests and are under consideration for reclassification to the "deferred for restudy" category. Estimated costs for these features are \$20,700 Federal and \$30,000 non-Federal.

The project is about 56 percent completed. Work remaining to be done to complete the project is as follows:

Deepen the existing 30-foot ship channel from the ocean to the existing beach line to 38 feet, thence to 36 feet across Biscayne Bay to the turning basin at Municipal Terminals, Miami; deepen existing 30-foot depth turning basin in front of Municipal Terminals and the north side of Fisher Island to 36-foot depth, and widen the north side of the entrance channel between the jetties by 100 feet; also widen the channel at the mouth of Miami River by 20 to 100 feet for 1,400 feet; provide a channel 8 feet deep, 200 feet wide from the mouth of the river to the Intracoastal Waterway and thence 100 feet wide to Government Cut; provide a channel 12 feet deep and 100 feet wide from Miami River to a harbor refuge in Palmer Lake; and provide a channel 15 x 200 feet from the mouth of the river to the municipal turning basin.

Total estimated Federal cost for new work is \$14,400,000. The Federal cost for new work to date has been about \$9,861,000, including about \$2,202,000 Public Works funds; also, about \$686,000 in non-Federal funds has been expended for new work. In addition, the 1968 modification requires a cash contribution of \$1,290,000. The cost of maintenance has been about \$2,070,000.

The average annual traffic from 1962 to 1972 has been about 1,843,000 tons and about 559,000 passengers. The 1971 traffic was 2,644,000 tons and 686,000 passengers.

NEW RIVER, FLA. (JACKSONVILLE DISTRICT)

New River flows through Fort Lauderdale, in eastern Broward County. The existing project, authorized by the River and Harbor Act of March 2, 1945, provides for a channel 8 feet deep and 100 feet wide through a rock shoal between the Intracoastal Waterway and Tarpon Bend, and also provides for removal of sunken vessels and snags in New River and in its South Fork to the intersection of Dania Cutoff Canal, 7.9 miles above the mouth of the river. The project was completed in 1956 at a cost of about \$36,500.

The 1971 traffic was 873 tons. Traffic on New River is included in totals compiled for Port Everglades Harbor.

OKEECHOBEE WATERWAY, FLA. (JACKSONVILLE DISTRICT)

The waterway traverses the southern part of the Florida peninsula via Lake Okeechobee, a large fresh-water lake about 31 miles in diameter, and connects the Atlantic and Gulf sections of the Intracoastal Waterway. The existing navigation project, authorized by the River and Harbor Act of March 2, 1945, and prior acts, provides, in general, for:

- a. Replacing the old locks Nos. 1 and 2 in St. Lucie Canal with a single new lock with usable dimensions of 50 by 250 feet and with a new weir structure.
- b. A channel 8 feet deep and 80 to 100 feet wide from Fort Myers to the Intracoastal Waterway near Stuart and a turning basin at Stuart.
- c. A channel 8 feet deep and 100 feet wide at Fort Myers from the project turning basin to the existing municipal yacht basin.
- d. Under maintenance, the operating and care of St. Lucie Lock.

The project also includes maintenance of features completed under previous projects, as follows: (1) A channel 12 feet deep and 200 feet wide from the Gulf of Mexico to Punta Rassa, thence 10 feet deep and 100 feet wide to Fort Myers, with a turning basin at that point; (2) a channel 6 feet deep and 60 feet wide in Taylor Creek from the town of Okeechobee into Lake Okeechobee; (3) a navigation channel 6 feet deep and 80 feet wide generally along the south shore of Lake Okeechobee from Clewiston to St. Lucie Canal; and (4) operating and care of Moore Haven and Ortona Locks (usable dimensions 50 by 250 feet). Length of the project is about 154.6 miles via the channel across Lake Okeechobee.

The project was completed in 1962 except for provision of the turning basin at Stuart which has been placed in an inactive category.



Picnicking at the Ortona Lock Recreation Area on the Okeechobee Waterway (March 1971)

The cost of new work has been about \$3,906,400 (excluding about \$16,222,000 for new work and \$500,000 contributed funds spent on previous projects). Cost of maintenance and operating and care has been about \$5,466,000 (excluding about \$7,582,000 Federal and \$1,000 contributed funds spent on previous projects).

The average annual traffic from 1962 to 1972 has been about 414,000 tons and about 12,000 passengers. The 1971 traffic was about 734,000 tons and 12,000 passengers.

Enlargement of the 8-foot deep by 90-foot wide Okeechobee Waterway for about 5 miles upstream from Fort Myers to 10 feet deep by 100 feet wide was authorized under Section 107 of the 1960 River and Harbor Act. It is scheduled for completion in FY 1973. Total estimated cost is \$480,000.

ORANGE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of June 13, 1902, provides for a channel 4 feet deep and 50 feet wide in Orange River from Caloosahatchee River to the head of navigation at the town of Buckingham. Length of the project is about 5.7 miles. The project was completed in 1903 at a cost of \$2,000. Cost of maintenance has been about \$18,000.

Transient recreational craft occasionally use the river for refuge during storms, and for storage and repair facilities or supplies. Several local commercial fishing boats also either base on the river or go there, chiefly to take advantage of the repair facilities available.

PALM BEACH HARBOR, FLA. (JACKSONVILLE DISTRICT)

The River and Harbor Act of March 2, 1945, and prior acts provided for maintenance, enlargement, and deepening of the harbor constructed by local interests, to secure a channel 300 feet wide and 27 feet deep from the Atlantic Ocean through the inlet, thence 200 feet wide and 26 feet deep to and including a turning basin about 700 feet square in Lake Worth at the Port of Palm Beach, together with jetties and shore revetments at the entrance. Length of the project is about 1.6 miles. The above work was completed in 1948 at a cost of about \$1,450,000.

The River and Harbor Act of May 17, 1950, authorized modification of the project to provide for enlargement of the turning basin by extending it 550 feet southerly for a width of 900 feet and flaring it to the east, all to a depth of 26 feet. In accordance with the authorizing act, local interests have completed the turning basin enlargement and have been reimbursed. The basin enlargement was completed in 1950; total cost to that time was about \$1,689,000.

The River and Harbor Act of July 14, 1960, modified the existing project to provide for an entrance channel 35 feet deep, 400 feet wide, and 0.8 mile long, merging with an inner channel 33 feet deep, 300 feet wide, and 0.3 mile long, thence flaring into a turning basin, generally rectangular in shape, 1,400 feet north-south and at least 1,210 feet east-west.

The project was completed in 1967 at a cost of about \$6,904,000 for new work (excluding about \$510,000 contributed funds and \$52,000 other costs). Cost of maintenance has been about \$1,829,000.

The average annual traffic from 1962 to 1972 has been about 840,000 tons. The 1971 traffic was 955,000 tons.



Lake Worth Inlet (Palm Beach County), July 1972

PORT EVERGLADES HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 3, 1958, and prior acts, provides for a channel 40 feet deep and 500 feet wide through the ocean bar tapering to 300 feet wide and 37 feet deep between rubblestone entrance jetties, and continuing at those dimensions to an irregularly flared entrance and turning basin of the same depth, with a north-south extension of the turning basin 31 feet deep, and maintenance of the entrance jetties. The project is about 1.6 miles long. The project was completed in 1964 at a cost of about \$6,656,000 for new work, excluding about \$323,000 contributed funds. Cost of maintenance has been about \$657,000.

Average annual traffic from 1962 to 1972 has been about 7,331,000 tons and about 388,000 passengers. The 1971 traffic was about 10,066,000 tons and 160,000 passengers.



Port Everglades - Queen Elizabeth II enters harbor (1972)

ST. LUCIE INLET, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 2, 1945, provides for a channel 10 feet deep and 200 feet wide across the outside rock reef at the seaward entrance to the inlet; and maintenance of the existing 6- by 100-foot channel between the authorized bar channel and the Intracoastal Waterway. Length of the project is about 1.9 miles. The project was completed in 1948 at a cost of about \$123,600, including the cost of a previous project. Cost of maintenance has been about \$517,000.

In 1965, emergency dredging was undertaken under authority of Section 3 of River and Harbor Act of March 2, 1945 to restore at least 6-foot depth in the channel between the Federal bar-cut channel and the Intracoastal Waterway to facilitate small-craft navigation. The dredging was accomplished at a cost of about \$63,700.

The 1971 traffic was 87 tons.

STUDIES

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
BEACH EROSION CONTROL		
Indian River County, Fla. (Jacksonville District)	Determine best methods of alleviating beach erosion and to formulate Federal project therefor.	1974
Key Biscayne, Fla. (Jacksonville District)	Determine corrective measures for eroding ocean shore of southerly half of Key Biscayne, including Cape Florida State Park.	Reconnaissance report under-way
Fort Pierce Harbor, St. Lucie Co., Fla. (Jacksonville District)	Mitigation and prevention of shorefront damages attributable to existing Federal navigation project at Fort Pierce.	Reconnaissance report comp. Dec. 1971; detailed project report underway
Palm Beach Harbor, Fla. (Jacksonville District)	Mitigation and prevention of shorefront damages attributable to existing Federal navigation project at Palm Beach Harbor	Reconnaissance report under-way

FLOOD CONTROL

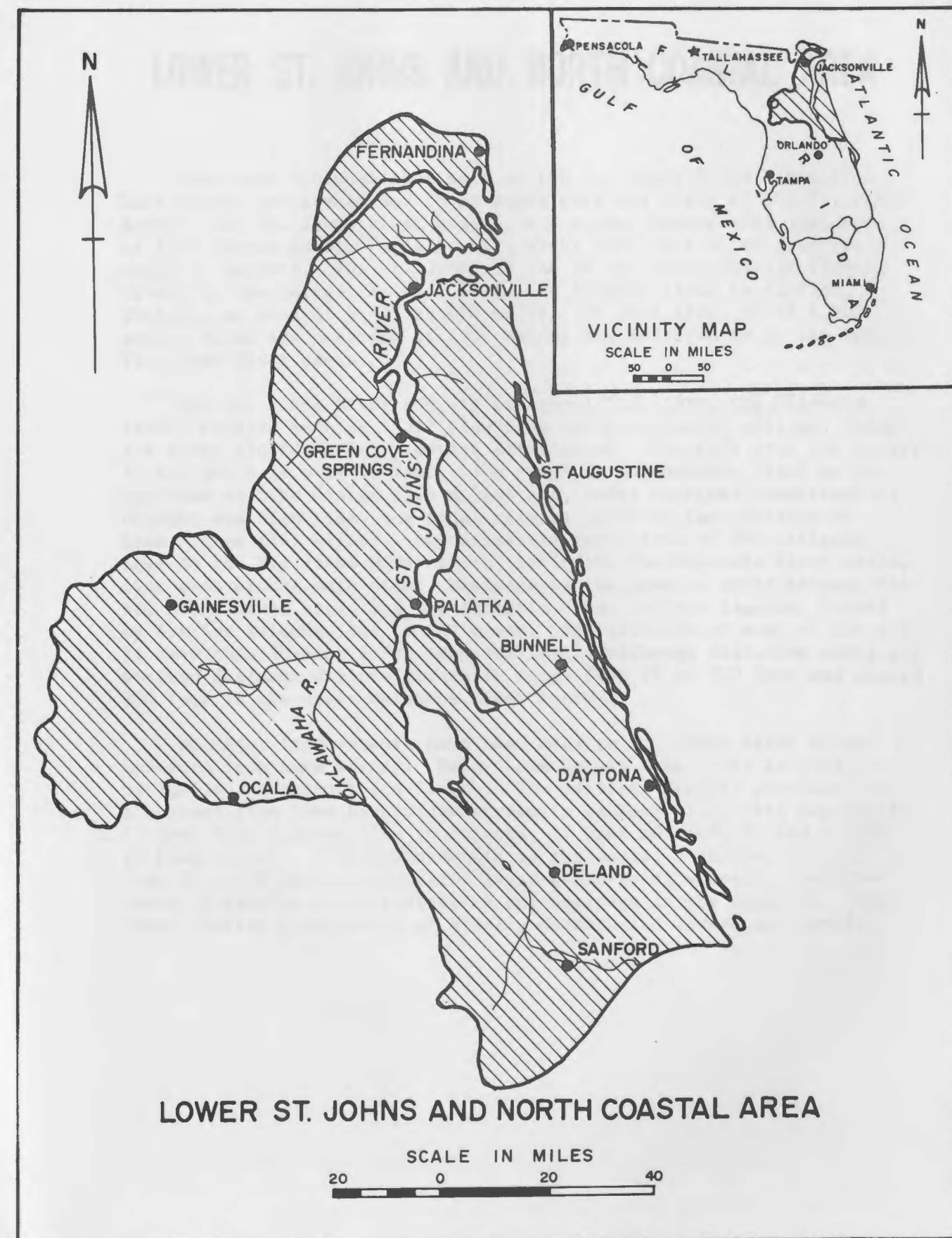
The Senate and House Public Works Committees have authorized review of the Comprehensive Plan for Central and Southern Florida (H. Doc. 643, 80th Cong., 2d sess.) with a view to determining the economic justification of modifications of the original plan to provide flood and water-control works at a number of localities for which the need for such works was not foreseen when the plan was prepared in 1947. Pending investigations are listed below.

Caloosahatchee River Basin, Fla. (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
Canal 17 and Adjacent Areas (Jacksonville District)	Improvements in the interest of flood and water control.	1973.

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
FLOOD CONTROL		
Canal 18, Area West of, and Jupiter Inlet and Loxahatchee River Area (Jacksonville District)	Improvements in the interest of flood and water control.	1975
Canal 21-A (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
Econlockhatchee River Basin (Jacksonville District)	Improvements in the interest of flood and water control.	1973
Greater Miami Area (Area B) (Jacksonville District)	Improvements in the interest of flood and water control.	1973
Hillsboro Canal (East of Conservation Areas Nos. 1 and 2) (Jacksonville District)	Improvements in the interest of flood and water control.	1973
Lake Istokpoga, Highlands County (Jacksonville District)	Improvements in the interest of flood and water control.	1973
Lake Okeechobee, Additional Outlet Capacity (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
Reedy Creek Basin (Jacksonville District)	Improvements in the interest of flood and water control.	1973
South New River Canal C-11 (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
Upper St. Johns River Basin (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
Wekiva River Basin (Jacksonville District)	Improvements in the interest of flood and water control.	Indefinite
C&SF - Water Supply (Jacksonville District)	Feasibility of alternative sources of water supply for industrial and municipal use in south central Fla.	Indefinite

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
Southern Florida (Jacksonville District)	Land and water management, urban improvement, and waste-water management.	Indefinite
NAVIGATION		
Boca Raton Inlet, Fla. (Jacksonville District)	Improvements in the interests of small-craft navigation and allied purposes.	Indefinite
Canaveral Harbor, Fla. (Jacksonville District)	Deepening of the 35-foot navigation project.	Indefinite
Fort Pierce Harbor, Fla. (Jacksonville District)	Enlargement of existing 25-foot project to 40-foot depth.	Indefinite
IWW, Jacksonville to Miami (Fort Pierce to Miami Reach), Fla. (Jacksonville District)	Deepening from 10 to 12 feet of the Fort Pierce-to-Miami reach.	Indefinite
IWW, Miami to Key West, Fla. (Jacksonville District)	Authorized IWW project has not been completed. Study would develop current justification.	Indefinite
Miami Harbor (Miami River Cleanup) (Jacksonville District)	Cleanup of Miami River for esthetic, environmental, and navigational purposes.	Indefinite
Miami River, Fla. Locks and Dams (Jacksonville District)	Dam with navigation locks in Tamiami Canal. Prevention of salt-water intrusion into municipal water-supply well field and flood control problem being covered under C&SF project for flood control.	Ltr. report being prepared
New River, Fla. (Jacksonville District)	Extending existing small-craft channel.	Indefinite
Okeechobee Waterway, Fla. (Jacksonville District)	Enlargement of present waterway to 12-foot depth, better approaches to certain bridges, modification of certain bridges, and enlargement of locks.	1975.

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
NAVIGATION		
Okeechobee Waterway-Side Channel and Turning Basin at Clewiston, Fla. (Jacksonville District)	Small-craft side channel and turning basin at Clewiston	Indefinite
Port Everglades Harbor, Fla. (Jacksonville District)	Deepening of existing 37-foot project to 40 feet, widening of entrance channel, and enlargement of turning basin.	1973
St. Lucie Inlet, Fla. (Jacksonville District)	Protected ocean entrance and connecting channel to IWW for use by recreational and commercial craft, and means of transferring littoral drift from north to south side of channel to renourish eroding south beach area.	1973
Sanford-Titusville Canal, Fla. (Jacksonville District)	Channel from Sanford, Fla. via St. Johns River and a land cut, to Indian River for barge navigation and other purposes.	1973
Sebastian Inlet, Fla. (Jacksonville District)	Improvement of inlet for small-craft navigation.	Indefinite
Wiggins Pass, Fla. (Jacksonville District)	Dredging of small-boat navigation channel through the pass now restricted by shoals.	Indefinite





LOWER ST. JOHNS AND NORTH COASTAL AREA

This area includes that part of the St. Johns River basin from Lake Harney downstream and those areas east and north of the St. Johns River. The St. Johns River begins in a broad, swampy area just west of Fort Pierce in St. Lucie County, about 300 river miles from its mouth at Mayport. The St. Johns is one of the few northerly flowing rivers in the United States. It is the largest river in Florida, draining an area of 9,430 square miles. Of this area, about 1,900 square miles are upstream of Lake Harney and referred to as the Upper St. Johns River basin.

The St. Johns River and its principal tributary, the Oklawaha River, receive much of their flow from large perennial springs, which are among Florida's many tourist attractions. The fall from the source to the mouth is only 25 feet. The river is perennially tidal as far upstream as Lake George (106 miles) and, under combined conditions of drought and high tide, the tidal effects occur as far upstream as Lake Monroe (161 miles). Approximately two-thirds of the drainage area in the St. Johns River basin, including the Oklawaha River basin, lies west of the main stem. Drainage in the coastal strip between the St. Johns River basin and the Atlantic Ocean is into lagoons, formed by barrier islands, and to the ocean. The altitude of most of the area is less than 50 feet above mean sea level, although altitudes along the western drainage divides generally range from 75 to 200 feet and exceed 300 feet in the upper Oklawaha River basin.

No major improvements have been made to St. Johns River proper upstream from Lake Harney. Below Lake Harney, the river is used for navigation throughout its length. The existing project provides for a channel from Lake Harney downstream to Jacksonville, with depths of 13 feet from Jacksonville to Palatka, 12 feet to Sanford, and 5 feet to Lake Harney. From Jacksonville to the ocean, a channel ranging from 34 to 38 feet accommodates large ocean-going vessels. Improvements to provide flood protection and drainage in the upper St. Johns River consist principally of locally constructed levees and canals.

BEACH-EROSION-CONTROL PROJECTS

DUVAL COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of October 27, 1965, provides for Federal participation in the cost of artificial placement of fill to form a protective and recreational beach for about 10 miles of shore in the reach between St. Johns River and the Duval County-St. Johns County line, and periodic nourishment of the restored beach for the first 10 years of project life. The improvement would provide a beach with a level berm 60 feet wide at elevation 11 feet above mean low water. Stability of the restored beach would be accomplished by periodic replenishment of losses.

The total estimated first cost is \$6,320,000. The Federal share of the first cost is now estimated at \$3,450,000. The Federal share of the periodic nourishment costs for 10 years after completion of the initial fill placement is now estimated at \$350,000 annually, or 57.7 percent.

Preconstruction planning is scheduled to begin in FY 1973.



Jacksonville Beach (Duval County) - Problem beach, showing temporary stone revetment provided with Office of Emergency Preparedness funds (1971)

FLOOD CONTROL PROJECTS

HOGTOWN CREEK, FLA. (JACKSONVILLE DISTRICT)

Hogtown Creek is located on the west side of Gainesville, Fla., and drains 22 square miles to a sinkhole. Local interests request assistance in reducing the flood problem caused from creek overflow and ponding in the low area around the sink. The project plan provides for a levee around the Clear Lake residential area to protect the area during periods of high water in the sink ponding area, and a pumping station to remove interior runoff. Detailed project report was approved in June 1968 and the project was formally authorized in August 1968. The project was reclassified to an unfavorable status by the Chief of Engineers in May 1972 as a result of concern for the environment for the area and of reduced economic justification.

NAVIGATION PROJECTS

ATLANTIC INTRACOASTAL WATERWAY BETWEEN NORFOLK, VA., AND ST. JOHNS RIVER, FLA. (JACKSONVILLE DISTRICT SECTION)

The existing project, authorized by the River and Harbor Act of June 20, 1938, and prior acts, provides for a channel 12 feet deep with widths varying from 90 feet in land cuts to 150 feet in open waters between Fernandina Harbor and St. Johns River, with a cutoff in Kingsley Creek and easing of bends elsewhere. Length of the project is about 21.9 miles. The project was completed in 1941 at a cost of about \$361,200 for new work (including about \$97,600 spent on a previous project). The cost for maintenance has been about \$999,000.

The average annual traffic from 1961 to 1971 has been about 757,000 tons. The 1971 traffic was about 804,000 tons.

CROSS-FLORIDA BARGE CANAL, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by Public Law 675, Seventy-seventh Congress, approved July 23, 1942, provides for a high-level lock barge canal from St. Johns River to the Gulf of Mexico, with project depth of 12 feet and minimum bottom width of 150 feet, with five locks, each 84 feet wide and 600 feet long, two earth dams, and necessary highway and railroad crossing. Length of the project is about 107 miles, extending from St. Johns River at Palatka to deep water in the Gulf of Mexico near Yankeetown. Total estimated cost of the project is \$179,000,000.

Provision of the works authorized under this project was found economically justified in the District Engineer's economic restudy completed in January 1958. The Chief of Engineers thereupon removed the project from a "deferred" category of projects in the future program to the "active" category, which made it eligible for future appropriations.

In 1962 Congress again requested a detailed study of the project. The study made in response to that request found the project to be still economically justified, and \$205,000 was appropriated for preconstruction planning.

Construction began in February 1964 and was about 30 percent completed when work was stopped by the President in January 1971 because of environmental considerations. Federal costs to date have been about \$58,609,000 for new work and about \$2,492,000 for maintenance.

FERNANDINA HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project extends from the bar to the junction of Lanceford Creek with Amelia River, a total length of about 7 miles. The project was authorized by eight River and Harbor Acts between 1880 and 1950. The 1950 project is inactive and the project as it exists today was authorized by the River and Harbor Act of March 2, 1945, which provided for a channel 28 feet deep. The 28-foot project has been completed and has cost \$3,289,000 for new work and \$2,208,000 for maintenance.

The average annual traffic from 1962 to 1972 has been about 234,000 tons. The 1971 traffic was 319,000 tons.

JACKSONVILLE HARBOR, FLA. (JACKSONVILLE DISTRICT)



Entrance to Jacksonville Harbor - Jetties protect entrance channel from the Atlantic Ocean into the St. Johns River

The harbor comprises the lower 26.1 miles of St. Johns River, which empties into the Atlantic Ocean near the northeastern corner of the Florida peninsula. The existing project, authorized by the River and Harbor Acts of Mar. 2, 1945 and Oct. 27, 1965, and prior acts, provides in general for a channel 38 feet deep and 400 to 1,200 feet wide from the ocean to mile 20 via Dame Point-Fulton Cutoff, thence 34 feet deep to Commodore Point, and thence 30 feet deep to Florida East Coast Railway bridge at Jacksonville, including a 30-foot depth channel in Arlington Cut and in the old Dame Point-Fulton

Channel; maintenance of jetties at the channel entrance; and construction of training walls and revetments. The project is about 56 percent completed.

Total estimated cost of new work is \$28,525,000 Federal, exclusive of amounts expended on previous projects, and \$420,000 non-Federal. Total Federal cost has been about \$24,832,000 for new work, about \$20,500,000 for maintenance, and about \$102,800 for rehabilitation, including about \$3,520,000 for new work and about \$543,000 for maintenance on previous projects and about \$290,000 for new work from Public Works funds.

The navy maintains a channel 40 feet deep from the authorized harbor entrance channels to its turning basin at Mayport.

The average annual traffic over the past 10 years has been about 10,103,000 tons and 2,100 passengers. The 1971 traffic was 12,449,000 tons and about 2,800 passengers.



Jacksonville Harbor - Talleyrand docks and terminal (1972)

LAKE CRESCENT AND DUNNS CREEK, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 4, 1913, provides for a channel 8 feet deep and 100 feet wide in Dunns Creek and Lake Crescent between St. Johns River and Crescent City, including three cutoffs in Dunns Creek. Length of the project is about 15.3 miles. Work remaining to be accomplished, which has been placed in an inactive status, includes the provision of three cutoffs in Dunns Creek. The active project was completed in 1915 and is considered adequate for present commerce. Cost of new work has been about \$10,300. Cost of maintenance has been about \$8,000.

No commerce was reported for 1971.

OKLAWAHA RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 27, 1916, and prior River and Harbor Acts, provides for clearing the river of obstructions from the mouth to Leesburg, including certain artificial waterways and extensions thereof, and maintaining dikes to obtain a navigable depth of about 4 feet to Leesburg (85.7 miles above

the mouth); and construction of a lock and dam at Moss Bluff to maintain the water level in Lake Griffin. The portion of the project authorized by the River and Harbor Act approved March 2, 1907, providing for a 6-foot depth channel from St. Johns River to the head of Silver Springs Run, about 57.7 miles, is considered to be inactive. Length of the project is about 85.7 miles in Oklawaha River and 5.4 miles in Silver Springs Run. The project was completed in 1925. Cost of the completed work has been about \$311,400, (excluding about \$3,900 for new work spent on previous projects). Cost of maintenance and operating and care has been about \$1,190,000 (excluding \$11,414 under provisions of the permanent indefinite appropriation).

The 1971 traffic was 203 tons and 1,210,000 passengers (excursion passengers carried over Silver Springs Run).

PONCE DE LEON INLET, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the 1965 River and Harbor Act, provides for an entrance channel 15 feet deep and 200 feet wide across the ocean bar, thence 12 feet deep and 200 to 100 feet wide through the inlet; thence southward in Indian River North, 12 feet deep and 100 feet wide, and northward in Halifax River, 7 feet deep and 100 feet wide, each leg continuing to the Intracoastal Waterway; ocean jetties on the north and south sides of the inlet; and a weir in the north jetty with an impoundment basin inside the jetty. The project is about 5 miles long.

The first contract for project construction was awarded June 10, 1968. Project was completed in July 1972. Cost for new work to date has been about \$1,844,000 Federal funds and \$2,245,000 non-Federal funds.

RICE CREEK, PUTNAM COUNTY, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of September 3, 1954, provides for a channel 12 feet deep and 100 feet wide from beacon No. 64 in St. Johns River to the mouth of Rice Creek, and thence 75 feet wide to the access channel of the Hudson Pulp and Paper Corp. except through the railroad and highway bridges, including a cutoff and suitable straightening, widening, and snagging. Length of the project is about 3.8 miles.

The project was completed in October 1956. Total costs under the existing project have been \$85,200 for new work, and \$3,100 for maintenance.

The 1970 traffic was about 170,000 tons.

ST. AUGUSTINE HARBOR, FLA. (JACKSONVILLE DISTRICT)

The River and Harbor Act of June 20, 1938, authorized provision of a channel 27 feet deep and 200 feet wide from the Atlantic Ocean across Vilano Point to deep water in Tolomato River, protected at its outer end by a sand-trap groin extending seaward from the coast on the north side of the channel and parallel thereto. The above work was completed in 1941.

The River and Harbor Act of May 17, 1950, authorized modification of the project for St. Augustine Harbor, Fla., to provide for an entrance channel along the best natural alignment as it may exist from time to time, 200 feet wide and 16 feet deep across the inlet bar, thence 12 feet deep to the Intracoastal Waterway, together with a sand-tight jetty extending seaward from the ocean shore of Conch Island (formerly Vilano Point or North Point) parallel to and coextensive with the existing north groin. That act also authorized completion of a channel 10 feet deep and 100 feet wide in San Sebastian River from the Intracoastal Waterway to King Street bridge, with a turning basin near the upper end. Length of the project is about 4.1 miles.

The project was completed in 1957 at a cost of about \$1,403,000 for new work (excluding \$71,300 for new work in a previous project and \$137,500 contributed funds). Cost of maintenance has been about \$373,000.

The 1971 traffic was 5,300 tons.

ST. JOHNS RIVER, FLA., JACKSONVILLE TO LAKE HARNEY (JACKSONVILLE DISTRICT)



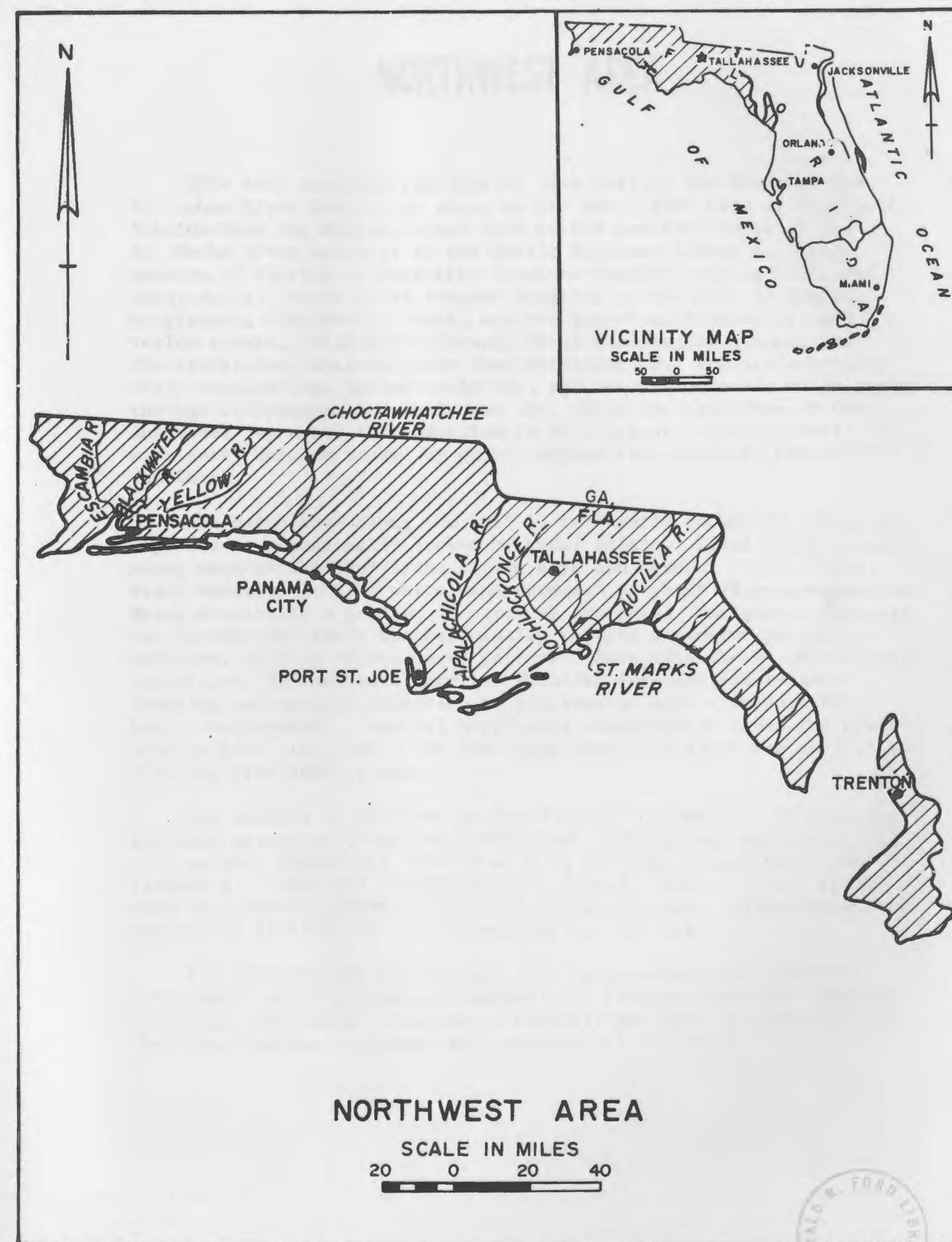
Corps of Engineers personnel tagging crab traps that were placed in the navigation channel of St. Johns River (1972)

to Sanford, thence 5 feet deep and 100 feet wide to Lake Harney, with a cutoff channel 5 feet deep and 75 feet wide between Lake Monroe and the vicinity of Osteen Bridge; and a channel 8 feet deep and 100 feet wide across the bar at the mouth of Deep Creek, thence 8 feet deep and 50 feet wide to Hastings Landing. The project also provides for maintenance of two jetties built at Volusia Bar under a previous project. Length of the project is about 161.5 miles in St. Johns River, 2.7 miles in the channel to Enterprise, 0.9 mile in the alternate approach channel to Sanford, and 5 miles in Deep Creek. The project was completed in 1949 at a cost of about \$1,171,000. Cost of maintenance has been about \$603,000.

The average annual traffic from 1962 to 1972 has been about 728,000 tons. The 1971 traffic was 778,000 tons.

STUDIES

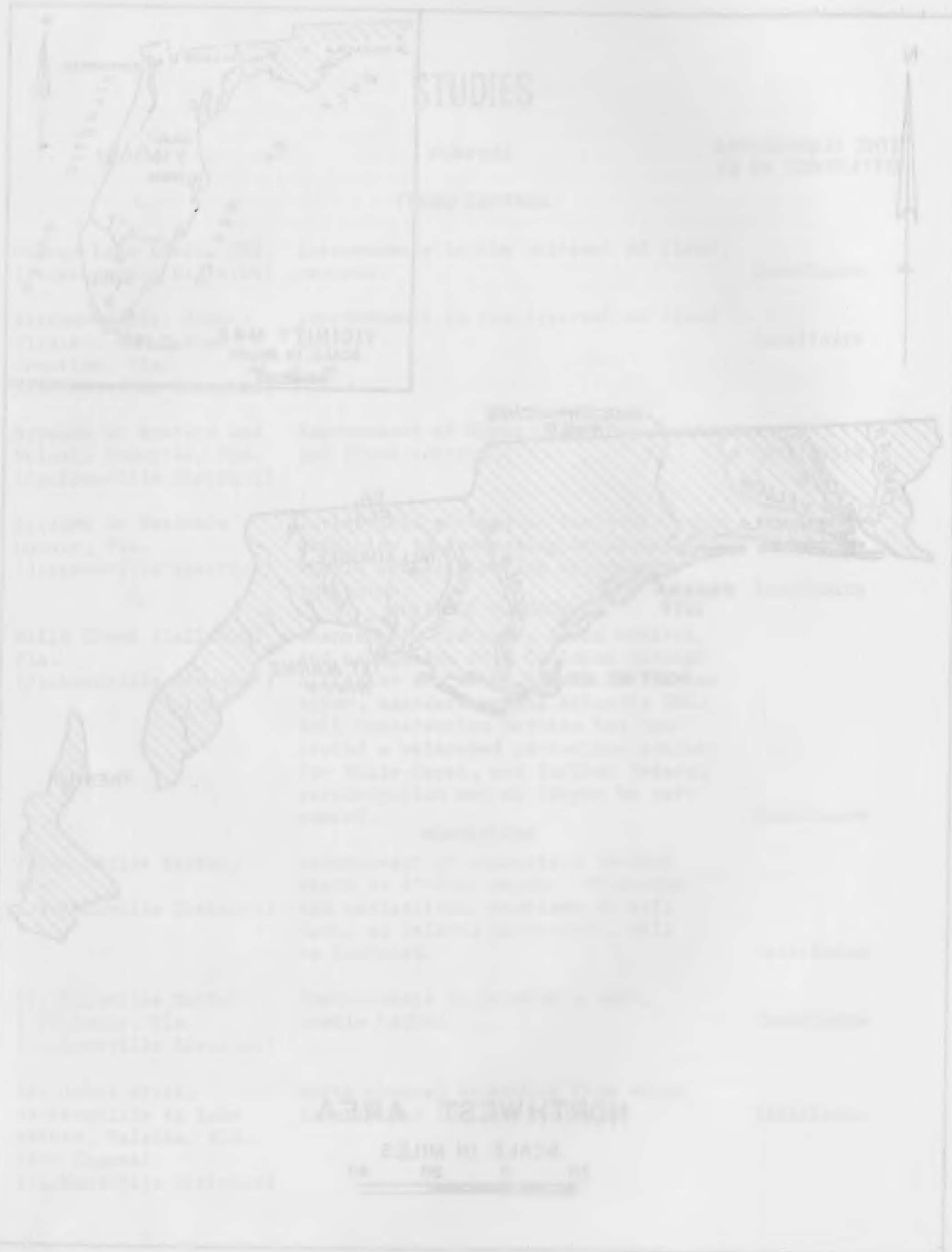
LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
FLOOD CONTROL		
Orange Lake Basin, Fla. (Jacksonville District)	Improvements in the interest of flood control.	Indefinite
Streams in St. Johns, Flagler, and Putnam Counties, Fla. (Jacksonville District)	Improvements in the interest of flood control.	Indefinite
Streams in Brevard and Volusia Counties, Fla. (Jacksonville District)	Improvement of Sykes Creek for drainage and flood control.	Indefinite
Streams in Seminole County, Fla. (Jacksonville District)	Investigate streams in Seminole County with view to protecting declining water levels and eliminating salt-water intrusion.	Indefinite
MULTIPLE PURPOSE		
Mills Creek (Callahan) Fla. (Jacksonville District)	Channel for drainage, flood control, and navigation from Callahan through Alligator and Mills Creeks and Nassau River, eastward to the Atlantic IWW. Soil Conservation Service has completed a watershed protection project for Mills Creek, and further Federal participation may no longer be warranted.	Indefinite
NAVIGATION		
Jacksonville Harbor, Fla. (Jacksonville District)	Enlargement of authorized 38-foot depth to 45-foot depth. Siltation and navigational problems at Mill Cove, as related to project, will be included.	Indefinite
St. Augustine Harbor & Vicinity, Fla. (Jacksonville District)	Improvements to provide a safe, usable harbor.	Indefinite
St. Johns River, Jacksonville to Lake Harney, Palatka, Fla. Side Channel (Jacksonville District)	Barge channel extending from shore to existing 13-foot project.	Indefinite



NORTHWEST AREA

SCALE IN MILES
20 0 20 40

WALDO R. FORD LIBRARY



NORTHWEST AREA

This area includes the coastal area west of the Suwannee and St. Johns River basins, as shown on the map. That part of northwest Florida from the Alabama state line to the eastern limits of the St. Marks River basin is in the Mobile Engineer District. This section of Florida is generally characterized by rolling hills and sandy soils. Major river systems draining to the Gulf of Mexico, progressing from west to east, are the Escambia, Blackwater, and Yellow Rivers, which drain through the Pensacola Bay system; the Choctawhatchee, draining into Choctawhatchee Bay; the Apalachicola, which empties into Apalachicola Bay; and the Ochlockonee, which drains through Ochlockonee and Apalachee Bay. With the exception of the Apalachee Bay area, the coastline in this region consists mostly of wide sandy beaches backed by dunes ranging from 10 to 15 feet above sea level.

The beach zone along the Gulf is frequently backed by sounds or bays and is occasionally broken by tidal inlets. Tidal marsh occurs along much of the shorelines of the bays and sounds. Most of the beach material is fine white sand composed of about 98 percent quartz. Beach erosion is a problem in parts of the area. Navigation channels cut through the sandy beaches usually require extensive protective measures, such as rubble-mound jetties. Even with these, the natural instability of the beach material requires frequent maintenance dredging and special attention to problems of sand transport and beach nourishment. Tropical hurricanes occasionally cross the coastline in this area, and a few low-lying populated areas are subject to flooding from storm tides.

The economy of the area is based mainly on tourism, soybean and pulpwood production, logging, commercial fishing, and manufacturing, with primary industrial centers at Port St. Joe, Panama City, and Pensacola. Crude oil production from a newly discovered oil field near Jay, Florida, also contributes to the economy. Tallahassee, the capital of Florida, is the largest city in the area.

The Apalachicola River, part of a multiple-purpose waterway development serving Alabama, Georgia, and Florida, has been improved for barge navigation. Navigation channels are also maintained on the lower reaches of Blackwater and Escambia Rivers.

The Gulf Intracoastal Waterway parallels the coastline by way of numerous bays and sounds with connecting land cuts where necessary. Several local navigation projects provide small-craft channels connecting towns or river systems with the waterway and with the Gulf of Mexico. Deep-draft channels and harbors are maintained at Port St. Joe, Panama City, and Pensacola.

Projects that are completed and/or authorized are described on the following pages.

FLOOD-CONTROL PROJECTS

JACKSON COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project was authorized March 11, 1958, under authority of Section 205 of the Flood Control Act of 1948, to alleviate flood conditions in a 15-square-mile lime sink region in eastern Jackson County adjacent to Lake Seminole. It consists of 8 canals draining 15 ponds into the lake. Construction was completed in March 1959 at a cost of about \$129,000.

During the 13-1/2 years of its operation (January 1959 through June 1972), the project has provided flood control benefits amounting to about \$107,700 -- about \$27,900 reduced damages and \$79,800 from changes in land use.



Companions fish in silent concentration from the bank at Lake Seminole

NAVIGATION PROJECTS

APALACHICOLA BAY, FLA. (MOBILE DISTRICT)

The existing project, exclusive of improvements at Two Mile, was authorized by the River and Harbor Acts of 1954, 1958, and prior acts, and improvements at Two Mile were authorized November 21, 1963, by the Chief of Engineers under authority of Section 107 of the River and Harbor Act of 1960. The project provides for: (a) a channel 10 feet deep and 100 feet wide from the 10-foot depth in Apalachicola Bay across St. George Island to within 300 feet of the gulf shore, thence increasing uniformly in width to 200 feet at the shore and continuing with that width to the 10-foot depth in the Gulf of Mexico, with twin jetties extending from the dune line to the outer end of the channel; (b) an inner bar channel 10 feet deep and 100 feet wide in Apalachicola Bay; (c) a boat basin 200 by 880 feet and 9 feet deep at Apalachicola, with a connecting channel 9 feet deep and 80 feet wide through Scipio Creek to Apalachicola River; (d) a channel known as Link Channel, 10 feet deep and 150



Apalachicola - Vacationists interrupt their pleasure cruise in the Gulf Intracoastal Waterway to look over the commercial fishing fleet in the harbor at Apalachicola, one of the principal seafood ports in the state

feet wide in Apalachicola Bay; (e) a channel generally parallel to the shore at Eastpoint, 6 feet deep, 100 feet wide, and about 6,000 feet long, with a connecting channel 6 feet deep and 100 feet wide to water of the same depth in St. George Sound; (f) a channel 9 feet deep and 100 feet wide through Bulkhead Shoals, connecting Apalachicola Bay with St. George Sound; and (g) a 6- by 100-foot channel, about 1 mile long, generally parallel to the shore at Two Mile, with a 6- by 100-foot connecting channel to water of the same depth in Apalachicola Bay. Overall length of the project is a little more than 10 miles.

The project as authorized by the River and Harbor Act of 1954 was completed in 1959, including reimbursement to local interests for approved work as authorized by the River and Harbor Act of 1958. Improvements at Two Mile were completed in 1964. The total cost of new work to date has been about \$1,047,000, and the cost of maintenance has been about \$1,278,100.

The average annual traffic has been about 30,700 tons. The 1971 traffic was about 29,900 tons.

BLACKWATER RIVER, FLA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 3, 1905, provides for a channel 9 feet deep and 100 feet wide from the mouth of Blackwater Bay to Milton, Fla., a distance of about 12 miles, to be obtained by dredging at necessary points. The project was completed in 1916 at a cost of about \$41,650 for new work. Cost of maintenance has been about \$235,400.

Annual traffic has averaged about 63,000 tons. The 1971 traffic was about 54,100 tons.

CARRABELLE HARBOR, FLA. (MOBILE DISTRICT)

The existing project provides for a channel 200 feet wide and 27 feet deep from the Gulf of Mexico to a point west of Dog Island, thence 150 feet wide and 25 feet deep through St. George Sound and Carrabelle River to a turning basin 500 feet square and 25 feet deep at the town of Carrabelle, and a channel 100 feet wide and 10 feet deep from the turning basin to U. S. Highway 98 bridge and thence 80 feet wide and 10 feet deep to the confluence of New and Crooked Rivers. The channels above the turning basin were authorized in May 1965 by the Chief of Engineers under authority of Section 107 of the River and Harbor Act of 1960. Other features of the project were authorized by the River and Harbor Acts of 1937 and 1954, and prior acts. Overall length of the project is about 11.7 miles.

The project was completed to present dimensions in September 1965. Cost of new work to date has been about \$503,300 and cost of maintenance has been about \$312,500.

The average annual traffic has been about 43,100 tons. The 1971 traffic was about 39,600 tons.

CHOCTAWHATCHEE RIVER, FLA. AND ALA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Act of 1874 and subsequent acts, provides for improvement of Cypress Top Outlet and maintenance of a navigable channel at low water from the mouth of the river to Geneva, Ala., 96 miles upstream, by removing snags and overhanging trees, and for a channel for low-water navigation 3 feet deep and 60 feet wide between Geneva and Newton, Ala., a distance of 44 miles, to be obtained by removing hard, blue-clay obstructions, snags, and overhanging trees and by rock excavation. The project was completed in 1906 at a cost of about \$172,000. Cost of maintenance has been about \$282,700.

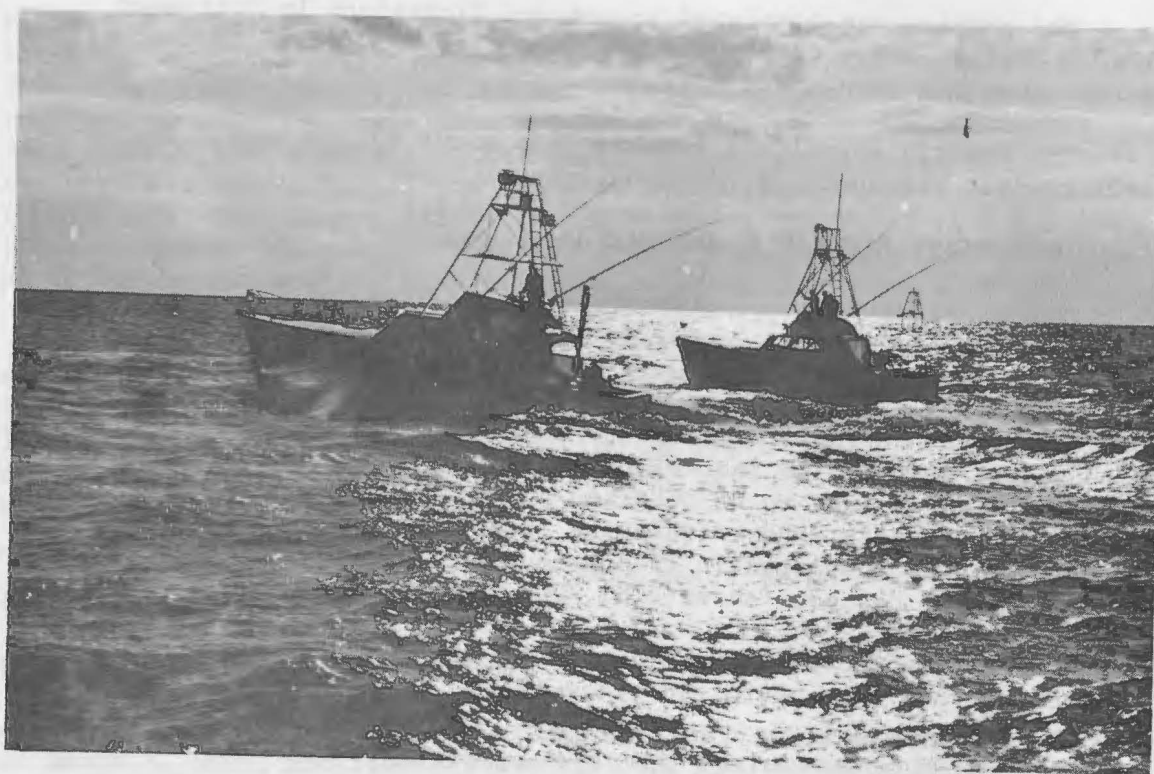
Vessel traffic in recent years has been negligible, and no maintenance has been performed since 1948.

EAST PASS CHANNEL FROM THE GULF OF MEXICO INTO CHOCTAWHATCHEE BAY, FLA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Act of 1965, consists of a channel 12 feet deep, 180 feet wide, and 2.7 miles long from the Gulf of Mexico into Choctawhatchee Bay via East Pass and a spur channel 6 feet deep and 100 feet wide from the main channel into Old Pass Lagoon to the harbor at Destin, a distance of about 2,000 feet. The main entrance channel from the Gulf is protected by two converging rock jetties, spaced 1,000 feet apart at the seaward end; the west jetty is provided with a low weir section 1,000 feet long to permit the passage of littoral drift into a dredged deposition basin 500 feet wide and 1,500 feet long located between the west jetty and the navigation channel.

The existing project was completed in January 1969. The cost of new work has been \$1,314,700, including \$398,000 contributed in cash by local interests. The cost of maintenance, including the maintenance project existing prior to the modification authorized in 1965, has been \$1,373,000. Maintenance operations included the closure of a breach opened in the sandspit protecting Destin Harbor by Hurricane Betsy; this work was performed in 1965 at a cost of \$2,145.

The average annual traffic has been about 750 tons. The 1971 traffic was 332 tons and about 80,000 passengers in fishing parties.



East Pass - Charter boats from Destin leave East Pass at dawn in search of big game fish (Courtesy of Florida News Bureau)

ESCAMBIA AND CONECUH RIVERS, FLA. AND ALA. (MOBILE DISTRICT)

This is a single stream called Conecuh River in Alabama and Escambia River after it crosses the Florida line. The existing project, authorized by the River and Harbor Acts of 1880, 1907, and 1958, provides for a channel 10 feet deep and 100 feet wide from the 10-foot depth in Escambia Bay to the mouth of the Escambia River, a distance of 5.5 miles, and thence up the Escambia River to a point about 7 miles above the mouth; a channel thence 5 feet deep to the Florida State line, a distance of 51 miles; and an improved channel thence up the Conecuh River to the mouth of Patsaliga Creek, a distance of 80 miles. The total length of the project, including the portion in Escambia Bay, is about 143 miles.

The River and Harbor Act of 1880 authorized improvement of the stream to mile 293; this work was completed in 1882 at a cost of about \$118,000. The River and Harbor Act of 1907 established the upstream limit of the project to be maintained at Patsaliga Creek. In 1953, local interests dredged a channel 10 feet deep and 100 feet wide from the 10-foot depth in Escambia Bay to a point 7 miles above the mouth of Escambia River. The River and Harbor Act approved July 3, 1958, authorized adoption of the channel as dredged by local interests,

and the channel dimensions were restored in 1960 at a cost of approximately \$90,163. Total cost of new work, including work on the previous project, has been about \$208,500. Maintenance costs have amounted to about \$381,100.

The average annual traffic has been about 686,300 tons. The 1971 traffic was about 1,078,500 tons.

GRAND LAGOON, PANAMA CITY, FLA. (MOBILE DISTRICT)

Grand Lagoon, an arm of St. Andrew Bay, is about 3 miles southwest of Panama City, Florida. The waterway is used extensively by charter fishing boats, party boats, and private recreational craft. The existing project was authorized in March 1967 under authority of Section 107 of the River and Harbor Act of 1960. It provides for a channel 8 feet deep and 100 feet wide in Grand Lagoon from St. Andrew Bay to a point about 2,400 feet east of State Highway 392 bridge, with branch channels to serve terminal facilities on both sides of the lagoon, and with both branches terminating in a connecting channel parallel to the highway and bridge. A width of 150 feet is authorized for the connecting channel and reaches opposite the terminal facilities.

The project was completed in January 1972 at a total cost of about \$128,000 for new work, including \$80,000 in contributed funds.

GULF INTRACOASTAL WATERWAY BETWEEN APALACHEE BAY, FLA. AND THE MEXICAN BORDER (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Acts of 1942, 1943, and 1966, provides for a through waterway with minimum dimensions of 12 by 125 feet from Apalachee Bay, Fla., to the Mexican border via coastal bays, sounds, and land cuts, and for a tributary channel, known as the Gulf County Canal, 12 feet deep, 125 feet wide, and about 6 miles long connecting the Intracoastal Waterway at White City, Fla., with St. Joseph Bay. In Florida, the waterway has been completed from the Alabama line as far east as Carrabelle, a distance of about 210 miles.

The authorized extension of the waterway from Carrabelle to Apalachee Bay was deferred for restudy some years ago. A restudy completed in 1969 determined that the most feasible route from navigation and economic standpoints would be through St. George Sound, Alligator Harbor, a land cut across St. James Island, then via Ochlockonee Bay and Apalachee Bay to St. Marks River. However, in the course of an environmental impact study, it was found that dredging along the proposed route would have an adverse effect on the ecology of the area, particularly in Alligator Harbor, and further consideration of the extension was terminated. The project remains in the deferred-for-restudy category.



Gulf Intracoastal Waterway - Pleasure boats make waves in the serene waters of one of the most beautiful sections of the Gulf Intracoastal Waterway - the reach between White City and Apalachicola (Courtesy of Florida News Bureau)



Gulf Intracoastal Waterway - Towboat pushes heavily laden gasoline barge along West Bay section of Gulf Intracoastal Waterway. Over one million tons of gasoline passed through this section of the busy waterway in 1971

The existing project between Carrabelle and New Orleans (Mobile District, Carrabelle, Fla., to the Rigolets, La.), exclusive of the Gulf County Canal, was completed in 1957 at a cost of \$5,940,500. The Gulf County Canal was completed to present dimensions in 1969 at a cost of \$494,200. Total cost of new work, including work on the previous project, has been \$6,480,300. About \$11,505,000 has been expended on maintaining this section of the waterway.

The average annual traffic in the Florida section (including the Gulf County Canal) from 1962 through 1971 has been about 4,719,000 tons. The 1971 traffic was 7,012,800 tons.

GULF INTRACOASTAL WATERWAY, (ST. MARKS TO TAMPA BAY, FLA.) (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of August 13, 1968, provides for a waterway 12 feet deep and 150 feet wide along a route skirting the shoreline from St. Marks River to Anclote River, and thence along the alignment of the existing 9-foot channel through the coastal lagoons in the reach between Anclote River and Tampa Bay. The project also provides for minimum basic recreational facilities required for public health and safety. It would assure safe public access to gulf waters at or near 15 existing sites with essential basic facilities such as water-supply and sanitary facilities, boat-launching ramps, vehicular parking areas, and limited facilities for picnicking and overnight camping. The project is about 234 miles long.

An economic restudy and ecological studies are to be accomplished.

Net cost to the United States for the dual-purpose navigation and recreation improvement is estimated at \$115,000,000 for new work and \$1,193,000 annually for operation and maintenance.

JOES BAYOU, FLA. (MOBILE DISTRICT)

In FY 1970, emergency dredging was undertaken under authority of Section 3 of River and Harbor Act of March 2, 1945, to restore a channel depth suitable for barges and construction equipment from Choctawhatchee Bay into Joes Bayou. Cost of the work was about \$24,100.

LA GRANGE BAYOU, FLA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Acts of 1922, 1935, and 1950, provides for a channel 12 feet deep, 100 feet wide, and about 6 miles long from the 12-foot contour in Choctawhatchee Bay to Freeport, Fla., and a turning basin 12 feet

deep, 200 feet wide, and 400 feet long at Freeport. The project was completed to the authorized dimensions in May 1963 at a total cost of \$289,500. Cost of maintenance has been about \$65,900.

The average annual traffic has been about 132,500 tons. The 1971 traffic was 234,300 tons.

LYNN HAVEN BAYOU, FLA. (MOBILE DISTRICT)

Dimensions were restored in small-craft canal from Lynn Haven Bayou to North Bay at a cost of about \$12,000 in December 1961, under authority of Section 3 of River and Harbor Act of March 2, 1945.

PANACEA HARBOR, FLA. (MOBILE DISTRICT)

The project, as authorized on 14 August 1962 by the Chief of Engineers under authority of Section 107 of the River and Harbor Act of 1960, provides for channel 8 feet deep and 100 feet wide from the town of Panacea through Dickerson Bay to water of the same depth in Apalachee Bay, an overall length of 3.7 miles.

Construction was initiated in December 1962, and completed in February 1963 at a cost of approximately \$122,400, exclusive of \$7,000 contributed by local interests. Maintenance has cost about \$8,600.

The 1971 traffic was about 675 tons. Average annual traffic has been 1,060 tons.

PANAMA CITY HARBOR, FLA. (MOBILE DISTRICT)

The project as presently maintained comprises a channel about 2.6 miles long extending from deep water in St. Andrew Bay across Lands End peninsula to the Gulf of Mexico, 300 feet wide and 32 feet deep in the bay and across Lands End and 450 feet wide and 34 feet deep in the approach channel in the Gulf. The Gulf end of the cut is protected by two rubble-mound jetties, each about 700 feet long. The project also includes maintenance of a channel in Watson Bayou 10 feet deep and 100 feet wide from St. Andrew Bay to the highway bridge across the bayou about 1.8 miles above its mouth.

The project was authorized by the 1948 River and Harbor Act and prior acts. A modification authorized by resolutions of the Senate and House Public Works Committees adopted in June 1972, under provision of Section 201 of the 1965 Flood Control Act, provides for an entrance channel 42 feet deep and 450 feet wide in the Gulf of Mexico, thence 40 feet deep and 300 feet wide



Panama City Beach Erosion - Damages to motel at Panama City caused by collapse of a bulkhead in the fall of 1970 following a week of sustained southeasterly winds

across Lands End peninsula to deep water in St. Andrew Bay, with branch channels 38 feet deep and 300 feet wide to the Port Authority terminal on the west and the Bay Harbor terminal on the east, turning and maneuvering areas of 55 acres opposite the Port Authority terminal and 42 acres opposite Bay Harbor, and an anchorage and loading basin 40 feet deep and 177 acres in area in St. Andrew Bay near the inner end of the main entrance channel. No work has been accomplished on the authorized modification.

The project as presently maintained was commenced in 1933 and completed in 1949. Repairs to the jetties, authorized by the Chief of Engineers in 1961, were completed in 1968. Costs for new work, including work on a previous project and jetty rehabilitation, amounted to \$1,348,000. Maintenance costs have aggregated about \$3,379,000.

The average annual traffic has been about 1,377,700 tons. The 1971 traffic was 1,677,200 tons.



Panama City - Happy vacationer lands a grouper while fishing from a party boat out of Panama City

PENSACOLA HARBOR, FLA. (MOBILE DISTRICT)

The project, authorized by the River and Harbor Acts of 1902, 1935, 1937, and 1962, provides for: (a) An entrance channel 35 feet deep, 500 feet wide, and about 5 miles long from the Gulf of Mexico to deep water in lower Pensacola Bay; (b) a bay channel 33 feet deep and 300 feet wide; (c) two parallel approach channels 33 feet deep and 300 feet wide to opposite ends of the inner-harbor channel; (d) an inner-harbor channel 500 feet wide, 33 feet deep, and 3,950 feet long; (e) an approach channel to the pierhead line south of Muscogee wharf 30 feet deep and 250 feet wide; and (f) an entrance channel into Bayou Chico 15 feet deep and 100 feet wide and thence a channel 14 feet deep, 75 feet wide, and about 4,400 feet long to a turning basin 14 feet deep and 500 feet square. Overall length of the project is 13.7 miles.

Modification of the Bayou Chico project to provide for enlarging the entrance channel to 21 by 100 feet and the bayou channel to 20 by 100 feet and deepening the turning basin to 20 feet, as authorized by the River and Harbor Act of 1945, has been deferred for restudy.

All new work, with the exception of the modification deferred for restudy, was completed in May 1965. The cost of new work

completed, including funds spent under a previous project, has been \$1,469,700, and the cost of maintenance has been \$2,656,400.

The average annual traffic during the last ten years has been about 817,450 tons. The 1971 traffic was about 1,081,700 tons.



Pensacola Harbor - Oceangoing freighter taking on cargo of paper products

PORT ST. JOE HARBOR, FLA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Acts of 1912, 1937, 1945, and 1954, provides for: (a) An entrance channel 37 feet deep, 500 feet wide at its outer end, and diminishing progressively in width to 400 feet at the first bend, a distance of 3.6 miles, thence continuing at a depth of 37 feet and a width of 400 feet through the second and to the third bend, a distance of 3.3 miles, thence continuing at a depth of 35 feet and a width of 300 feet, a distance of 2.4 miles to a point in St. Joseph Bay where the entrance channel joins the North Channel, a total overall distance of 9.3 miles, thence continuing in the North Channel at a depth of 35 feet and a width of 300 feet to the north end of the turning basin at Port St. Joe, a distance of about 4.7 miles; (b) a turning basin 32 feet deep, 1,000 feet wide, and 2,000 feet long, and a harbor channel therein 35 feet deep, 250 feet wide, and 2,000 feet long adjacent to the waterfront at Port St. Joe; and (c) a channel 27 feet deep, 200 feet wide, and about 1 mile long leading from the south end of the turning basin to deep water in St. Joseph Bay.

The project was completed to the latest authorized dimensions in July 1962 at a total cost of about \$1,981,000, including \$20,000 in contributed funds. Cost of maintenance has been about \$1,061,400.

The average annual traffic from 1962 to 1971 has been about 668,000 tons. In 1971 traffic was about 689,200 tons.

ST. MARKS RIVER, FLA. (MOBILE DISTRICT)

The project, authorized by the River and Harbor Acts of 1930, 1937, 1945, and 1960, provides for: (a) A channel 12 feet deep and 125 feet wide from Apalachee Bay to St. Marks; (b) a turning basin at St. Marks 12 feet deep and 300 feet square; (c) a channel 12 feet deep and 100 feet wide, extending approximately 3,400 feet upstream from the turning basin; and (d) removal of snags and similar obstructions from the present channel between St. Marks and Newport. Length of the dredged channel is about 10 miles.

The project was completed to its present dimensions in July 1964, at a total cost of approximately \$1,746,800, including new work on previous projects. Cost of maintenance has been about \$26,900.

The average annual traffic from 1962 to 1972 has been about 607,400 tons and about 3,160 passengers in fishing parties. The 1971 traffic was 670,800 tons and 2,550 passengers in fishing parties.



St. Marks - The river port of St. Marks, served by a 12-foot Federal channel in the St. Marks River is an important petroleum distribution center, with facilities for receiving gasoline and liquified gases by water and storing them for delivery by tank truck to wholesalers and consumers in Tallahassee and the surrounding region (Courtesy of Florida News Bureau)

STEINHATCHEE RIVER, FLA. (MOBILE DISTRICT)

The existing project, authorized by the River and Harbor Act of August 26, 1937, provides for a channel 6 feet deep and 150 feet wide in Deadman Bay between the Gulf of Mexico and the mouth of Steinhatchee River, and a channel 6 feet deep and 100 feet wide in Steinhatchee River to the town of Steinhatchee. Length of the project is about 4.8 miles. The project was completed in 1939 at a cost of about \$135,000. Cost of maintenance has been about \$5,800.

The 1971 traffic was 700 tons.

MULTIPLE PURPOSE PROJECTS

APALACHICOLA, CHATTAHOOCHEE, AND FLINT RIVERS, FLA. AND GA (FLORIDA PORTION) (MOBILE DISTRICT)

The River and Harbor Acts of 1945 and 1946, as modified by a resolution adopted May 19, 1953, by the House Committee on Public Works, approved a comprehensive plan for development of the entire basin and authorized certain dams and reservoirs for the initiation and partial accomplishment of that plan. The initial development, which is now completed, consists of channel improvement in Apalachicola River; a navigation-power dam (Jim Woodruff) on Apalachicola River just below the confluence of Chattahoochee and Flint Rivers, near Chattahoochee, Fla.; a navigation dam (George W. Andrews) on Chattahoochee River near Columbia, Ala.; a navigation-power dam (Walter F. George) on Chattahoochee River near Fort Gaines, Ga., and a flood control-power dam (Buford) on Chattahoochee River northeast of Atlanta which provides regulated flow for navigation and other uses. The initial development provides flood control for the upper Chattahoochee Valley, over 850,000,000 kilowatt-hours of electric energy a year, a 9-foot deep barge channel from the Gulf Intracoastal Waterway at Apalachicola, Fla., to Bainbridge, Ga., on Flint River, and to Columbus, Ga., on Chattahoochee River, and other benefits. Construction of a flood control-power dam on the Chattahoochee River at West Point was authorized by the Flood Control Act of 1962; this dam is under construction. Construction of flood control-power dams on the Flint River south of Atlanta was authorized by the Flood Control Acts of 1963 and 1965, and planning for the projects is underway.

Two elements of the development, the Apalachicola River channel and the Jim Woodruff Lock and Dam, lie in Florida. The remainder of this discussion is concerned primarily with the Florida portion of the overall basin plan.



Apalachicola River-Visitors to Torreya State Park enjoy a spot of quiet beauty on the Apalachicola River about 10 miles below Jim Woodruff Lock and Dam (Courtesy of Florida News Bureau)

Jim Woodruff Dam consists of a concrete, fixed-crest spillway, a lock with inside chamber dimensions of 82 by 450 feet and a lift of 33 feet, a concrete spillway containing 16 vertical-lift gates, a concrete powerhouse containing three 10,000 kilowatt generators, a switchyard on an earth fill, and a long earth overflow dike riprapped with stone. The reservoir extends 47 miles up Flint River and 47 miles up Chattahoochee River, covering a total of 37,500 acres and having a shoreline 250 miles long. The dam creates a navigable depth up Flint River to Bainbridge, Ga., and up Chattahoochee River to Columbia, Ala., and produces an average annual energy output of about 239,000,000 kilowatt-hours. Construction of the Jim Woodruff Lock and Dam was commenced in 1947 and essentially completed in 1957. The lock was opened to navigation in 1954 and power generation was begun in 1957. A total of about 256,292,000 kilowatt-hours of electricity was generated at the dam during FY 1972. The bulk of this was sold by the Southeastern Power Administration to the towns of Chattahoochee and Quincy, four local electric cooperatives, and the Florida Power Corporation for a total of approximately \$1,319,000 (net). The beautiful two-pronged reservoir, which has been named Lake Seminole, has become a popular recreation area and a major tourist attraction, with a total of approximately 2,985,000 visitors in 1971.



Despite high water, eager fishermen of all ages line the bank below the Jim Woodruff powerhouse



Apalachicola-Chattahoochee-Flint Waterway- A gasoline tow enroute to an oil terminal in Early County, Georgia, passes Neal's Landing in the Chattahoochee River arm of Lake Seminole, where it forms the boundary between Florida and Georgia

As a part of the Corps of Engineers water quality control program, an automatic monitoring station immediately below the dam constantly checks the water released from the lake as to the amount of dissolved oxygen, temperature, degree of acidity or alkalinity, conductivity, and turbidity so that any change in the quality of the water can be detected immediately.

The Florida portion of the river channel is 9 feet deep by 100 feet wide from the intersection of the Gulf Intracoastal Waterway at Apalachicola to Jim Woodruff Dam, about 104 miles. New work in Apalachicola River, consisting of dredging, snagging, and some channel rectification, was completed in 1957. However, as often happens with such new channels, considerable difficulty was encountered in maintaining the desired depth. Additional work to stabilize the river channel, including contraction works and channel realignment, was completed in December 1970. A study is now underway to consider the feasibility of constructing one or more locks to achieve more dependable navigation conditions.

Approximate cost of the Jim Woodruff development has been \$47,493,900, including \$1,019,400 for recreational facilities provided after completion of the project. Approximate cost of the initial Apalachicola River improvement was \$1,257,000, and the additional river work cost a total of about \$3,231,000. During the past 5 years, operation, ordinary maintenance, and rehabilitation costs have averaged \$939,600 for Jim Woodruff. Maintenance costs for Apalachicola River are estimated to be approximately \$900,000 a year.

The average annual traffic in the Florida portion of the project during the period 1962 through 1971 has been about 538,600 tons. The 1971 traffic was 898,100 tons.

STUDIES

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
BEACH EROSION CONTROL		
Panama City Harbor, Fla. (Mobile District)	Mitigation and prevention of damage to beaches adjacent to Panama City Harbor entrance channel. Problem alleviated by placement of spoil material from Panama City Harbor maintenance dredging.	Field work and reconnaissance report completed.
Shores of Northwest Fla. Between Indian Pass and Ala. State Line (Mobile District)	County Commission of various counties involved requested a study of Gulf of Mexico shorelines of Gulf, Bay, Walton, Okaloosa, Santa Rosa and Escambia Counties for beach erosion control and hurricane protection.	1976
FLOOD CONTROL		
Big Escambia Creek, Fla. and Ala. (Mobile District)	Flood protection primarily for urban areas in Flomaton, Ala. and South Flomaton, Fla.	Unfavorable report submitted in 1971.
Blackwater and Yellow Rivers, Fla. and Ala. (Mobile District)	Water-resource improvements, including reservoirs and local flood-protection works.	Indefinite; awaiting studies by Environmental Protection Agency and funds.
Coastal Streams between Suwannee and Apalachicola Rivers, Fla. (Mobile District)	Local flood protection along coastal streams between Suwannee and Apalachicola Rivers.	Indefinite

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
	MULTIPLE PURPOSE	
Apalachicola River System (308 Report) (Mobile District)	A comprehensive survey of water resources of Apalachicola-Chattahoochee-Flint river system to determine advisability of modifying existing Federal project.	1973
Choctawhatchee River and Tributaries, Fla. and Ala. (Mobile District)	Improving and developing waterway for navigation and other water uses, including flood control, power, and recreation.	Indefinite (deferred at request of proponents)
Escambia and Conecuh Rivers, Fla. and Ala. (Mobile District)	Comprehensive study to determine advisability of improving and developing stream for navigation and other water uses.	Indefinite (deferred at request of proponents)
Northwest Florida along Gulf of Mexico (Mobile District)	Develop water and related land resources in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Washington, Gulf, Calhoun, Franklin, Liberty, and Wakulla Counties for flood protection, flood plain use, navigation, regional water supply and waste management, recreation, water-quality control, fish and wildlife conservation, and other measures for environmental enhancement and economic and human resources development.	Indefinite

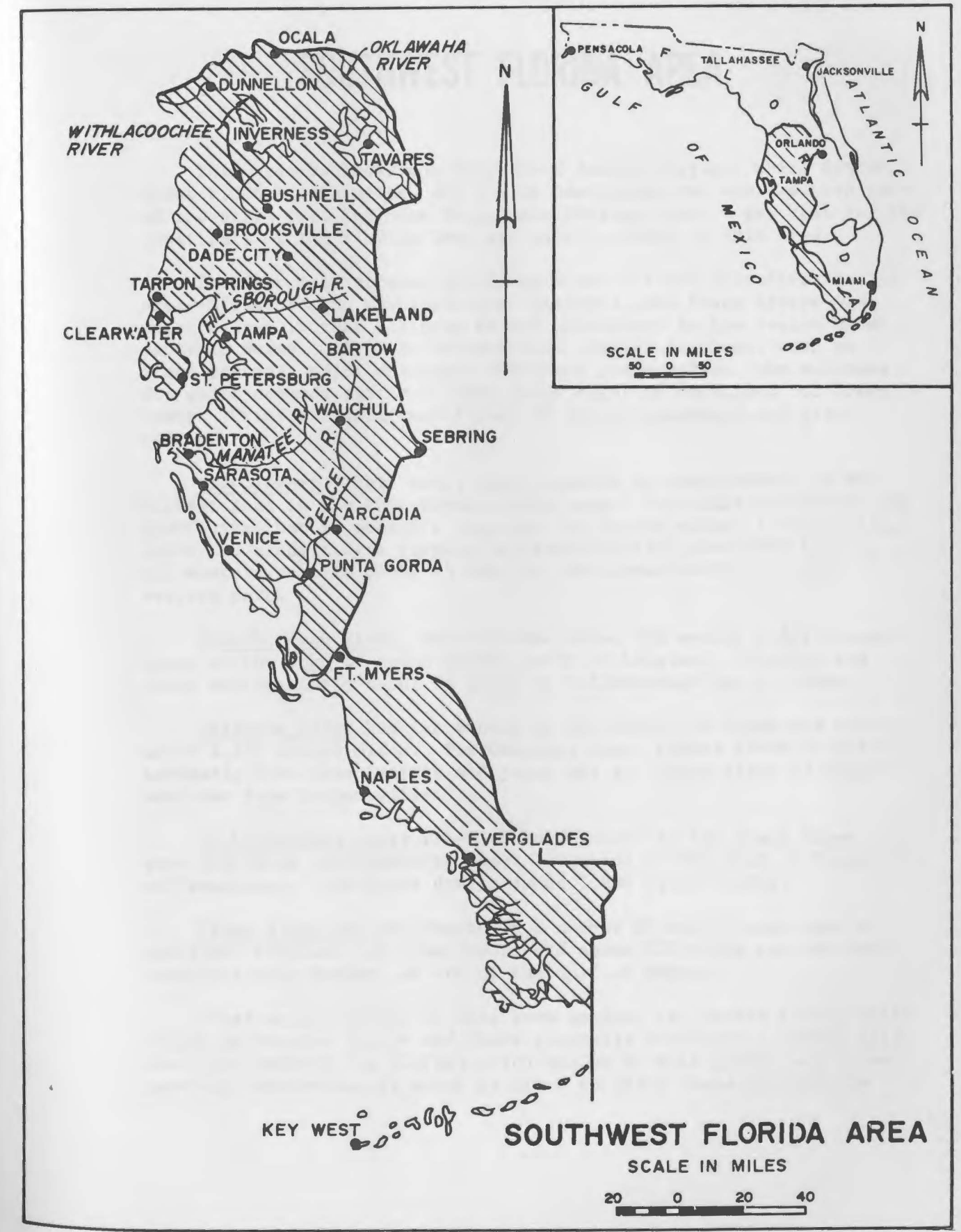
LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
	NAVIGATION	
Apalachicola, Fla. to Two-Mile (Mobile District)	Construct small-craft channel from existing Two-Mile Harbor eastward to mouth of Apalachicola River and a breakwater opposite harbor channel at community of Two-Mile.	Submitted in 1972. Final action awaiting environmental impact statement and revision of economics.
Apalachicola Bay, Fla. (Mobile District)	Enlarge existing channel from Gulf to menhaden plant, and to provide additional depths in Scipio Creek Channel and Basin to accommodate deeper draft shrimp trawlers serving seafood processing plants.	Report submitted, but returned pending completion of coastal process study to determine source of shoaling material in channel and methods of reducing it under regular maintenance program for existing project.
Apalachicola River below Jim Woodruff Dam (Mobile District)	Canalization of 100-mile reach of Apalachicola-Chattahoochee-Flint Waterway to assure 9-foot depth for navigation 95% of the time.	1974
Apalachicola River to Gulf IWW via Wewahitchka, Fla. (Mobile District)	Cutoff channel from Apalachicola River near Wewahitchka via Chipola River Cutoff to Wetappo Creek on the Gulf IWW	Indefinite

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
NAVIGATION		
Blackwater River and Bay, Fla. (Mobile District)	Increase dimensions of existing channel to Milton, Fla. from 9x100 feet to 12x125 feet.	Unfavorable report submitted to the Secretary of the Army 17 Jan 1972
Eastern Lake, Fla. (Mobile District)	Small-craft channel from the Gulf into lake.	(See Eastern & Redfish Lakes)
Waterway from East Bay, Fla. across Santa Rosa Peninsula	Channel for small-craft from East Bay, across Santa Rosa Sound, and across Santa Rosa Island to Gulf of Mexico.	In progress. Final action deferred at request of sponsor. Probable submission in 1973.
Eastern and Redfish Lakes, Fla. (Mobile District)	Small-craft channels from the Gulf into each lake (Project would require jetties)	Unfavorable Section 107 report submitted 1972. Sponsor notified.
Eastpoint, Apalachicola Bay, Fla. (Mobile District)	Breakwater for protection of oystering fleet and shore facilities at Eastpoint	1973
Gulf IWW, Carrabelle to St. Marks, Fla. (Mobile District)	Alternate route in lieu of authorized route, which is between Carrabelle and St. Marks via Carrabelle, Crooked, and Ochlockonee Rivers.	Deferred for restudy
Indian Pass, Apalachicola, Fla. (Mobile District)	Channel from Gulf of Mexico into St. Vincent Sound via Indian Pass	Unfavorable report to the Congress 13 Dec 1971
Joes Bayou, Choctawhatchee Bay, Fla. (Mobile District)	Navigable channel for small-craft across bar at mouth of bayou and in upper portion of bayou.	Indefinite

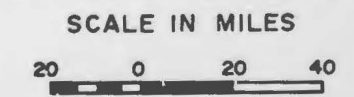
LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
NAVIGATION		
Lanark Village to St. George Sound, Fla. (Mobile District)	Small-craft channel connecting Lanark Village with deep water in St. George Sound.	Indefinite
Lynn Haven Bayou, Fla. (Mobile District)	Maintenance of existing channel connecting Lynn Haven Bayou with North Bay. Channel was constructed by Government when Lynn Haven Bayou was blocked by a railroad and highway causeway during World War II	1973
Mexico Beach, Fla. (Mobile District)	Deepen from 6 to 8 feet existing waterway from the Gulf to the town.	1974
Pensacola Bay, Fla. (Mobile District)	Small-craft channel from Pensacola Bay to foot of "B" Street at Pensacola.	Indefinite
Pensacola Harbor, Fla. (Mobile District)	Greater depths in existing project channels.	1976
Philips Inlet, Fla. (Mobile District)	Small-craft channel from the Gulf through Philips Inlet and Powell Lake, thence about 2-1/2 miles to Gulf IWW (jetties would be required)	1974
St. Marks River, Fla. (Mobile District)	Barge channels leading to public terminals and industrial areas, and a barge canal from St. Marks River to Tallahassee, Fla.	Indefinite

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
Spring Creek, Fla. (Mobile District)	Small-craft channel from Spring Creek to deep water in Apalachee Bay.	Indefinite

NAVIGATION



SOUTHWEST FLORIDA AREA





SOUTHWEST FLORIDA AREA

This area includes the Four River Basins project, which drains about 6,046 square miles, and a wide band along the southwestern part of the State that includes Everglades National Park. Key West and the lower part of the Florida Keys are also included in this area.

The four main streams which cover most of the Four-River-Basins area--Hillsborough, Withlacoochee, Oklawaha, and Peace Rivers--are interrelated in that all have common headwaters in the region known as Green Swamp. All four streams have similar problems, such as flood control, major drainage, and water conservation, the solution for which depends partly on what plans might be developed for Green Swamp. Brief descriptions of each of these watersheds are given below.

Green Swamp. This area, known locally as Green Swamp, is the highest land in the Four-River-Basins area. The exact boundaries are indefinite, but it consists of about 850 square miles of swampy flatlands and sandy ridges varying in elevation from about 200 feet in the eastern part to about 75 feet in the stream valleys in the western part.

Hillsborough River, which drains about 690 square miles, originates at the edge of Green Swamp, north of Lakeland, Florida, and flows southwesterly about 54 miles to Hillsborough Bay at Tampa.

Oklawaha River has its source in two chains of lakes and drains about 2,100 square miles. The Oklawaha River proper flows 75 miles northerly from Lake Griffin and joins the St. Johns River 77 miles upstream from Jacksonville.

Withlacoochee River rises in Polk County in the Green Swamp area and flows northwesterly about 160 miles to the Gulf of Mexico at Yankeetown. The river drains about 1,980 square miles.

Peace River has its source in a number of small lakes east of Lakeland, Florida. It flows southward about 120 miles and empties into Charlotte Harbor, an arm of the Gulf of Mexico.

Other major streams in this area include the Myakka River, which begins in Manatee County and flows generally southward to empty into Charlotte Harbor; the Alafia, which begins in Polk County and flows generally southwesterly about 24 miles to enter Tampa Bay; Little

Manatee and Manatee Rivers, which begin in Manatee County and flow into Tampa Bay. Little Manatee River is about 39 miles long and Manatee River is about 35.5 miles long.

Some of the larger municipalities in the area include Tampa, St. Petersburg, Lakeland, Clearwater, Sarasota, and Ft. Myers. Authorized improvements provide for control of floods and improvement of drainage, and for water conservation through construction of necessary canals, levees, reservoirs, and control structures. Projects authorized for this area provide also for preserving the beaches and for navigation improvements. These will be discussed separately.

BEACH EROSION CONTROL PROJECTS

KEY WEST, FLA. (JACKSONVILLE DISTRICT)

The project authorized by the River and Harbor Act of July 14, 1960, provides for Federal participation in the cost of restoring a protective beach generally 100 feet wide and 6,200 feet long along a section of South Roosevelt Boulevard on the south shore of Key West. Restoration of about one-half of the protective beach has been completed by local interests. The Federal contribution amounts to one-third of the first costs of the completed work and one-half of the remaining initial construction and to one-half of the costs of periodic nourishment to replace alongshore losses from the restored beach for a period of 10 years from the time of initial restoration.

Initial costs of construction are currently estimated at \$1,176,000. The estimated Federal share of the initial costs is \$540,000. Local interests have been reimbursed for the Federal share of the work completed by them.

Estimated average annual nourishment costs to replace alongshore losses are \$66,400. The estimated Federal share is \$33,200.

LEE COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project authorized by Senate Resolution dated 17 December 1970 and House Resolution dated 15 December 1970, provides for Federal participation in a protective and recreational beach along parts of Gasparilla, Captiva, and Estero Islands; terminal groins at Gasparilla



Key West - Looking west from east end of project beach, August 1972

and Estero Islands; construction of a 2,400-foot revetment at Gasparilla Island, and periodic nourishment of the improved beaches, as needed.

The estimated costs of the erosion-control measures are \$4,555,000 for initial construction. Estimated periodic nourishment costs are \$333,500 annually. The estimated Federal share of the initial cost is \$859,000; and the Federal share of the periodic nourishment is estimated to be \$15,100 annually for the first 10 years after completion of initial fill.

LIDO KEY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of December 1970, provides for Federal participation in a protective and recreational beach along 1.2 miles of Gulf shore at Lido Key and periodic nourishment of the improved beach for a period of 10 years after initial construction. Construction of the northerly 3,300 feet of the project was completed by local interests in May 1970. The total cost of that preproject work was \$360,600.



Lido Key (Sarasota County) -
North end of project beach
before construction



Lido Key (Sarasota County) -
North end of project beach
after construction (1971)

The total estimated first cost for the entire beach erosion control project is \$798,000. The estimated Federal share is 35.6 percent, or \$284,000, based on existing shore ownership.

Estimated average annual nourishment costs are \$100,200. The Federal share of those costs is estimated at \$31,800 annually for 10 years after initial project construction.

MULLET KEY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of November 7, 1966, provides for Federal participation in the cost of a protective and recreational beach; construction of an anchor groin near the southwest point of Mullet Key and provision of a revetment around that point; and, as deferred construction, a groin at the north end of the island pending its need and justification. Future control measures would consist of periodic nourishment of the west and south shores of the Key as needed.

The estimated costs of the erosion-control measures are \$698,000 for initial construction and \$113,000 for deferred construction. Estimated periodic nourishment cost is \$45,900 annually. Since Mullet Key is a publicly owned park and conservation area meeting the criteria established by applicable parts of the River and Harbor Act of 1962, the Federal share of the cost of the erosion-control measures can be 70 percent. Federal share of periodic nourishment is therefore estimated to be \$32,100 annually for 10 years; Federal first cost of initial construction is estimated at \$499,100; and Federal first cost of deferred construction is estimated at \$79,100.

PINELLAS COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of November 7, 1966, provides for Federal participation in the cost of artificial placement of fill to form a protective and recreational beach along parts of Pinellas County gulf shores, provision of some revetment, and periodic beach nourishment as needed. The total estimated cost of the project is \$4,048,000 for initial construction and \$2,232,000 for 10 years' nourishment, excluding the cost of the revetment at the southerly end of Clearwater Beach Island which is recommended for local interests'



Treasure Island (Pinellas County) - Project beach south of
94th Avenue, June 1972

accomplishment at their own expense. Maximum Federal participation, should all beaches to be improved be established as publicly owned, would be \$2,024,000 for initial construction and \$111,600 annually for periodic nourishment for a period of 10 years. Based on existing shorefront ownership, the Federal share of cost for initial construction is now estimated at \$396,000 and for periodic nourishment is estimated at \$56,400 annually for 10 years from initial construction. Construction of the Treasure Island segment of the project was completed in July 1969 at a cost of \$524,767, of which \$262,384 was the Federal share. The Treasure Island segment was extended 2,000 feet northerly in November 1971 at a cost of \$41,200, of which \$20,600 was the Federal share.

FLOOD CONTROL PROJECTS

FOUR RIVER BASINS (GREEN SWAMP AREA), FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the Flood Control Act of October 23, 1962, encompasses a 6,000-square-mile area within 14 counties in central and southwest peninsular Florida. It includes all or portions of the drainage basins of four major streams--Hillsborough, Oklawaha, Withlacoochee, and Peace Rivers--and three smaller west coast watersheds--Pithlachascotee River, Anclote River, and Lake Tarpon. The plan of improvement consists primarily of stream improvements and a system of canals, reservoirs, and auxiliary water-control structures designed to prevent a recurrence of the disastrous flooding experienced in the past and to permit storage of excess water for later beneficial use.

The authorizing act requires that local interests shall furnish all lands, easements, and rights-of-way; provide alterations or replacements of public and private utilities, roads, bridges (except railroad bridges), etc.; hold and save the United States free from damages; operate and maintain all project works after completion; construct and maintain such associated works as are necessary to realize benefits made available by the project works; and make a cash contribution for each part of the work prior to its initiation. In 1961, the Florida State Legislature created the Southwest Florida Water Management District to represent local interests in meeting the requirements of local cooperation and other matters relating to the project.

Construction was begun in April 1966. The project is 25 percent completed.



Tampa Bypass Canal under construction. Floodwaters from Hillsborough River eventually will move to the Gulf of Mexico via the Tampa Bypass Canal. View is northeast with new Highway 301 bridge in center of photo (August 1972)

The estimate of cost of new work is \$75,900,000 Federal funds and \$48,920,000 non-Federal funds (\$14,420,000 cash contribution and \$34,500,000 for other costs).

Through June 30, 1972, Federal allocations have amounted to about \$19,084,000 and cash contributions by local interests have amounted to about \$3,087,000.

The current estimates of average annual benefits from the project are summarized as follows:

<u>Type of Benefits</u>	<u>Estimated Average Annual Benefits</u>
Prevention of flood damages	4,237,000
Increased land use.	5,528,000
Fish and wildlife	855,000
Navigation.	199,000
Recreation.	113,000
Area redevelopment benefits	215,000
Total annual benefits	11,147,000

This is a long-range project which will require a number of years to complete, the completion date being dependent on the appropriation of funds by Congress.

PHILLIPPI CREEK BASIN, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the Flood Control Act of October 27, 1965, provides for primary works for flood control and major drainage by enlargement of the main stream of Phillippi Creek and its major tributary channels, realignment of the channel at U. S. Highway 41, and provision of spillway and inlet structures and appurtenant works.

The authorizing act requires that local interest shall make a cash contribution toward the cost of the work; construct and maintain associated works; provide all lands and rights-of-way; provide all necessary new highway bridges, alterations or replacement of bridges, roads, miscellaneous utilities, and other existing improvements, except railroad bridges and approaches; hold the United States free from damages; prevent encroachment on the flood-carrying capacity of the improved channels; and operate and maintain the works after completion.

No construction work has been accomplished. The estimated cost of the project is \$6,916,000 Federal funds and \$4,830,000 non-Federal

funds (\$1,810,000 non-Federal cash contribution and about \$3,020,000 for lands and relocations).

Estimates of average annual benefits from the project are summarized as follows:

Type of Benefit

Prevention of flood damages	\$429,000
Increased land use.	267,000
Navigation (recreational boating)	30,000
Total annual benefits	726,000

NAVIGATION PROJECTS

ANCLOTE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 2, 1945, and prior acts, provides for a channel 9 feet deep and 100 feet wide from the Gulf of Mexico to and including a turning basin 300 feet wide and about 850 feet long at the town of Tarpon Springs. Length of the project is about 8.5 miles. All work, with the exception of the turning basin at Tarpon Springs, was completed in 1938; the turning basin was enlarged in July 1958. Total costs have been about \$267,000 for new work and about \$110,000 for maintenance.

The 1971 traffic was about 4,300 tons.

BAYPORT, FLA. (JACKSONVILLE DISTRICT)

The project, authorized under Section 107 of the 1960 River and Harbor Act, provides for a channel 6 feet deep by 75 feet wide from the Gulf of Mexico to a turning basin at Bayport Park. Length of the project is about 4 miles. The project now has an unfavorable benefit-to-cost ratio, and no further action toward provision of a small-craft navigation channel in the vicinity of Bayport, Florida, will be undertaken at this time.

CEDAR KEYS HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 5, 1884, and modified by the Chief of Engineers on March 24, 1965, under Section 107 of the 1960 River and Harbor Act, provides for a channel 10.5 feet deep and 200 feet wide from the Gulf of Mexico to Cedar Key, a cut through the Middle Ground, and a channel 8 feet deep and 100 feet wide from the Gulf of Mexico to Main Ship Channel by way of existing Northwest Channel. Length of the project is about 11 miles. The project was completed in 1965 except for removal of rock from Middle Ground Channel. That work is now considered not essential in the interests of navigation and commerce and has been placed in an inactive status.

Total Federal cost of new work has been about \$169,000, including about \$83,000 expended under a previous project but excluding \$23,500 contributed funds and other costs. Cost of maintenance has been \$30,000.

The 1971 traffic was about 3,500 tons.

CHARLOTTE HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of May 17, 1950, and prior acts, provides for a channel 32 feet deep and 300 feet wide, increased to 700 feet at the bend, from the Gulf of Mexico to Port Boca Grande, thence 10 feet deep and 100 feet wide to and including a turning basin 200 feet square at the municipal terminal at the town of Punta Gorda. Length of the project is about 29.5 miles.

The existing project was completed in 1959 at a cost of about \$432,000 (excluding \$113,000 spent on a previous project and about \$28,000 contributed funds and other costs). Cost of maintenance has been about \$1,925,000.

The average annual traffic from 1962 to 1972 has been about 2,054,000 tons. The 1971 traffic was 2,407,000 tons.

CLEARWATER PASS (LITTLE PASS), CLEARWATER BAY, FLA. (JACKSONVILLE DISTRICT)

Clearwater Pass, on the gulf coast of Florida, connects Clearwater Bay with the Gulf of Mexico about 25 miles north of Tampa Bay and 14 miles south of Anclote River.

The project, authorized by the River and Harbor Act of July 14, 1960, provides for a channel 10 feet deep and 150 feet wide from deep water in the Gulf of Mexico through Clearwater Pass to the site of a proposed drawbridge across the pass, thence 8 feet deep and 100 feet wide eastward to the authorized Intracoastal Waterway; and a

side channel 8 feet deep and 100 feet wide from the inner channel northward to the Clearwater Island Marina, with a turning basin at the marina 8 feet deep, 100 to 450 feet wide, and 850 feet long.

The existing project was completed in 1961 at a cost of about \$46,300, excluding about \$40,000 for preauthorization studies and \$42,800 contributed funds. Cost of maintenance has been about \$146,000. The 1971 traffic was about 20 tons.

The pass is used principally by recreational craft.

CRYSTAL RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of June 13, 1902, provides for a channel 6 feet deep and 60 feet wide from the Gulf of Mexico to the town of Crystal River. Length of the project is about 9 miles. The project was completed in 1906 at a cost of about \$25,000. Cost of maintenance has been about \$23,000.

The 1971 traffic was about 351 tons.

FORT MYERS BEACH, FLA., CHANNEL (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 14, 1960, provides for a channel 12 feet deep and 150 feet wide from that depth in San Carlos Bay into Matanzas Pass, thence 11 feet deep and 125 feet wide through Matanzas Pass to the upper shrimp terminals, a total distance of about 2.1 miles. A one-half mile extension of the 11-foot channel was authorized in 1968 under Section 107 of the River and Harbor Act of 1960. It is scheduled for completion in FY 1973. Total estimated cost of the new work is about \$65,100.

The existing project was completed in March 1961 at a cost of \$94,500 (excluding \$1,095 contributed funds and \$22,300 other costs). Cost of maintenance has been about \$75,000.

The 1971 traffic was 22,500 tons.

HOMOSASSA RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of August 30, 1935, provides for a channel 5 feet deep and 40 feet wide through four bars at the mouth of the river. Length of the project is about 0.7 mile. The project was completed in 1936 at a cost of

\$5,000, including \$1,000 contributed funds. Cost of maintenance has been about \$700.

The 1971 traffic was about 600 tons.

HUDSON RIVER, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of May 17, 1950, provides for a channel 6 feet deep and 75 feet wide from the Gulf of Mexico to the head of Hudson River at the town of Hudson. Length of the project is about 3.3 miles. No construction work has been accomplished and the project has been deferred for restudy. Total estimated cost is about \$394,000.

The 1971 traffic was about 200 tons.

INTRACOASTAL WATERWAY CALOOSAHATCHEE RIVER TO ANCLOTE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project provides for a channel 9 feet deep and 100 feet wide from Caloosahatchee River to Anclote River, generally along inside protected waters; deepening the existing channel at Caseys Pass (Venice Inlet) to 9 feet; improvement and maintenance of a channel 6 feet deep and 80 feet wide (Cats Point Channel) along the southeastern side of Boca Ciega Bay past Frenchman Creek and Gulfport; improvement and maintenance of Sunshine Skyway Channel to a depth of 9 feet and a width of 100 feet; and maintenance of bulkheads, revetments, and two jetties built at Caseys Pass under a previous project. Length of the project is about 160 miles.

The existing project was authorized by the River and Harbor Act of September 3, 1954, and prior acts, and modified on March 1, 1962, and March 1, 1963, to include, under Section 107 of the River and Harbor Act of 1960, the Sunshine Skyway Channel and the Cats Point Channel, respectively.

The project is completed.

The cost has been about \$7,594,500 for new work, excluding \$515,479 on previous project and \$14,500 contributed funds. Cost of maintenance has been \$949,500, excluding \$450,800 previous project costs.

The average annual traffic from 1962 to 1972 has been about 362,000 tons. The 1971 traffic was about 754,000 tons and 17,000 passengers.

JOHNS PASS, FLA. (JACKSONVILLE DISTRICT)

The project was authorized December 2, 1964, under authority of Section 107 of the 1960 River and Harbor Act. It provides for an entrance channel 10 feet deep and 150 feet wide across the gulf bar, thence 8 feet deep and 100 feet wide into the pass, thence 6 feet deep and 100 feet wide to the Intracoastal Waterway. Length of the project is about 2.6 miles. The project was completed in 1968 at a cost of about \$81,000, excluding about \$68,000 contributed funds and other costs. Maintenance has cost \$9,400.

KEY WEST HARBOR, FLA. (JACKSONVILLE DISTRICT)

The existing project provides for removal of coral heads and reefs from the main ship channel and anchorage to provide a channel 30 feet deep and 300 feet wide; a channel 17 feet deep and of sufficient width for navigation in Northwest Channel, with two jetties at its entrance; and widening the channel opposite the wharves to 800 feet, with a depth of 26 feet; a channel 12 feet deep and 150 feet wide from the 30-foot-depth ship channel into Key West Bight, with a 12-foot-depth turning basin in the bight and an 800-foot-long granite-mound breakwater; and a channel 8 feet deep and 100 feet wide along the north and east sides of Fleming Key and into Garrison Bight. Length of the project is about 23 miles, including the channels into Key West and Garrison Bights.

The project was authorized by the River and Harbor Act of October 23, 1962, and prior acts, and modified March 1, 1963, to include provision of an 8- by 100-foot channel into Garrison Bight under authority of Section 107 of the River and Harbor Act of 1960.

The project is complete except for completion of jetties at the northwest entrance, which is considered unnecessary at this time.

Total Federal cost to date has been about \$1,566,900 for new work and about \$360,000 for maintenance. In addition, \$35,371 was expended from contributed funds for new work in Garrison Bight.

The 1971 traffic was about 175,000 tons and 34,000 passengers.

LARGO SOUND CHANNEL, FLA. (JACKSONVILLE DISTRICT)

The project was authorized April 20, 1964, under authority of Section 107 of the 1960 River and Harbor Act. It provides for a channel 6 feet deep and 50 feet wide from Hawk Channel through South Sound Creek and into Largo Sound. Length of the project is about 5 miles.

The project was completed July 31, 1965, at a cost of about \$204,000, including about \$86,000 contributed funds. Maintenance has cost about \$11,400.

MANATEE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 27, 1916, and prior acts, provides for a channel 13 feet deep and 100 feet wide from Tampa Bay to McNeil Point, thence 9 feet deep and 100 feet wide to Rocky Bluff, thence 4 feet deep and 75 feet wide to Mitchellville (Rye) Bridge, and a cutoff 6 feet deep and 100 feet wide into Terra Ceia Bay. Length of the project is about 27.75 miles in Manatee River and 0.66 mile in the cutoff. The project, virtually completed in 1915, is about 90 percent completed. Work remaining to be done consists of removal of a small amount of rock at the entrance.

Cost of the completed work has been about \$123,300. Work remaining to be accomplished, which is not considered essential in the interest of navigation and commerce, has been placed in an inactive status. Cost of maintenance has been about \$160,400.

The 1971 traffic was 44,000 tons.

NAPLES TO BIG MARCO PASS, CHANNEL FROM, AND GORDON PASS, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Acts of June 20, 1938, and July 14, 1960, provides for an interior channel 6 feet deep and 70 feet wide from the southerly limits of Naples to Big Marco Pass; a channel 12 feet deep and 150 feet wide from that depth in the Gulf of Mexico to Gordon Pass, thence 10 feet deep and 100 feet wide through Gordon Pass and Naples Bay to a point 400 feet south of the bridge on U. S. Highway 41, thence 10 feet deep and 70 feet wide to the bridge; a turning basin 10 feet deep, 150 feet wide, and 200 feet long in upper Naples Bay; and a turning basin 8 feet deep, generally 250 feet wide and 670 feet long, at the municipal yacht basin. The project includes 10.15 miles of waterway from Naples to Big Marco Pass and 4.5 miles of waterway from Naples to Gordon Pass.

The project was completed in 1963 at a cost of about \$305,000 (excluding about \$202,000 contributed funds and other costs). Cost of maintenance has been about \$238,000.

No commerce was reported for 1970.

NEW PASS (SARASOTA), FLA. (JACKSONVILLE DISTRICT)

The project was authorized August 28, 1963, under authority of Section 107 of the 1960 River and Harbor Act. It provides for an entrance channel 10 feet deep and 150 feet wide through New Pass, connecting interior channels 8 feet deep and 100 feet wide, and turning basins at Payne Terminal and City Pier. Length of the project is about 4 miles. The project was completed in 1964.

The cost for new work has been about \$45,800 (excluding \$21,000 for preauthorization studies and about \$45,800 contributed funds). Maintenance has cost about \$12,900.

OZONA, FLA., CHANNEL AND TURNING BASIN (JACKSONVILLE DISTRICT)

The project, authorized by the River and Harbor Act of May 17, 1950, provides for a channel in St. Josephs Sound 6 feet deep and 80 feet wide, from the Intracoastal Waterway, Caloosahatchee River to Anclote River, Fla., to and including a turning basin about 150 feet square at the town of Ozona. Length of the project is about 6,600 feet.

The project was completed in June 1962 at a cost of about \$106,000 for new work and about \$1,946 for maintenance.

No commerce reported for 1971.

PASS-A-GRILLE PASS, PINELLAS COUNTY, FLA. (JACKSONVILLE DISTRICT)

The project was authorized November 19, 1964, under authority of Section 107 of the 1960 River and Harbor Act. It provides for an entrance channel 10 feet deep and 150 feet wide across the gulf bar, thence 8 feet deep by 100 feet wide to the Intracoastal Waterway. Length of the project is about 3.4 miles. The project was completed in April 1966 at a cost of about \$82,600, including \$41,300 contributed funds. Maintenance has cost about \$3,900.

PITHLACHASCOTEE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of March 2, 1945, provides for a channel 6 feet deep and 100 feet wide from like depth in the Gulf of Mexico to and including a turning basin of the same depth about 500 feet downstream of the present U. S. Highway 19 bridge. In 1962, the project was reclassified to the deferred-for-restudy category as a result of changed conditions. As a result of an economic restudy, the Chief of

Engineers on May 17, 1966, reclassified part of the project from the "deferred" to the "active" category. The active part of the project consists of a channel 6 by 75 feet and a turning basin of like depth at the entrance to Millers Bayou. The remaining 25-foot width of the authorized channel was reclassified as "inactive."

Total estimated cost for new work is \$649,000, including cash contribution of \$247,000. The project is scheduled for construction in FY 1973.

No commerce was reported for 1971.

ST. PETERSBURG HARBOR, FLA (JACKSONVILLE DISTRICT)

The existing project authorized by the River and Harbor Act of May 17, 1950, and prior acts, provides for:

- a. An entrance channel 24 by 300 feet from Tampa Bay southwesterly and thence westerly along the south side of Port of St. Petersburg basin to Bayboro Harbor;
- b. A 24-foot depth in the port basin and in the area between the entrance channel and the Maritime Service south bulkhead;
- c. A channel 15 by 100 feet in Bayboro Harbor along the southwesterly 300 feet of the Maritime Service bulkhead;
- d. A basin in Bayboro Harbor 12 feet deep, 700 to 1,400 feet long, and 800 feet wide;
- e. A channel 12 feet deep, 75 feet wide, and 300 feet long in the mouth of Salt Creek;
- f. An entrance channel 20 feet deep and 200 feet wide extending northerly about 5.5 miles from deep water in lower Tampa Bay, and thence a channel 19 by 250 feet leading westward to the 24-foot-depth entrance channel. The total length of the project is about 8.9 miles.

Except for dredging the 24-foot-depth channel and basin from Tampa Bay to Bayboro Harbor, which is being restudied, the project has been completed. New work has cost about \$223,000 and maintenance about \$65,900 (exclusive of about \$32,700 for new work and \$20,500 for maintenance spent on previous projects).

The average annual traffic from 1962 to 1972 has been about 371,000 tons and about 27,000 passengers. The 1971 traffic was about 346,000 tons and 20,000 passengers.

TAMPA HARBOR, FLA. (JACKSONVILLE DISTRICT)

Tampa Harbor is a large natural indentation on the Gulf of Mexico about midway up the west coast of the Florida peninsula. The existing project comprises channels in Tampa Bay from the Gulf to terminals at Tampa. Present dimensions are generally 36 to 34 feet deep and 500 to 400 feet wide.

Although construction has not begun on the project authorized by the River and Harbor Act of 1970, the Act provides for the following:

1. The channel from the Gulf of Mexico to the junction of Hillsborough Bay and Port Tampa channel will be deepened to depths ranging from 46 to 44 feet and widened to widths varying from 700 to 500 feet.
2. Port Tampa Channel will be deepened to 42 feet at its existing 400-foot width from the junction with Hillsborough and Tampa Bay Channels. The Port Tampa turning basin will be deepened to 42 feet, but keep its 2,000-foot length and 900-foot width.



Sailing is very popular on Tampa Bay. Sunshine Skyway Bridge in background (1972)

3. Hillsborough Channel will be deepened to 44 feet and widened to 500 feet.

4. Port Sutton entrance channel will be increased to a 44-foot depth and 300-foot width. Its turning basin will be enlarged to a 1,200-foot diameter.

5. An added approach channel in East Bay will be made available with a 44-foot depth and 300-foot width, and have a turning basin with a 1,200-foot diameter.

6. Sparkman Channel will be deepened to 42 feet at the existing 400-foot width.

7. Ybor Channel will be deepened to 40 feet at a width of 300 feet.

8. Port Sutton Terminal Channel will be maintained at a depth of 44 feet after it has been dredged to that depth by local interests.

Preconstruction planning on the authorized project is expected to begin in FY 1973. Estimated project cost is \$123,000,000.

Average annual traffic from 1962 to 1972 has been about 23,091,000 tons and about 32,000 passengers. The 1971 traffic was about 34,975,000 tons and 66,000 passengers.

WITHLACOOCHIE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of July 24, 1946, and prior acts, provides for a channel 10 feet deep and 100 feet wide from the Gulf of Mexico to Port Inglis, about 4.1 miles; thence a practicable channel 10 feet deep and 70 feet wide to the steam-electric plant at Inglis, about 6.4 miles; and removal of shoals and other obstructions to obtain a draft of 2 feet for about half the year in the upper river as far as Croom, about 78.6 miles. Length of the project is about 89.1 miles. All work was completed in 1946 with exception of the entrance channel to Port Inglis, which has been dredged only 85 feet wide in lieu of the authorized 100-foot width. The project is about 88 percent completed.

Cost of the completed work has been about \$615,000, including \$30,000 spent under a previous project. Cost of maintenance has been about \$301,000.

The 1971 traffic was 151,000 tons.

HURRICANE PROTECTION PROJECTS

HILLSBOROUGH BAY, FLA. (JACKSONVILLE DISTRICT)

The project, authorized by the Flood Control Act of 1968, provides for: (a) a detailed study of water-resource problems in the entire Tampa Bay area, including a comprehensive model study; and (b) construction of a levee barrier across Hillsborough Bay, with ungated navigation openings, the alignment to be selected after completion of the detailed studies. Such a barrier would prevent high wind tides generated in the Gulf of Mexico and in Tampa Bay from moving into the area above the barrier. The estimated total initial investment is \$21,022,000, of which the Federal share is \$14,967,000 and the non-Federal share is \$6,055,000.

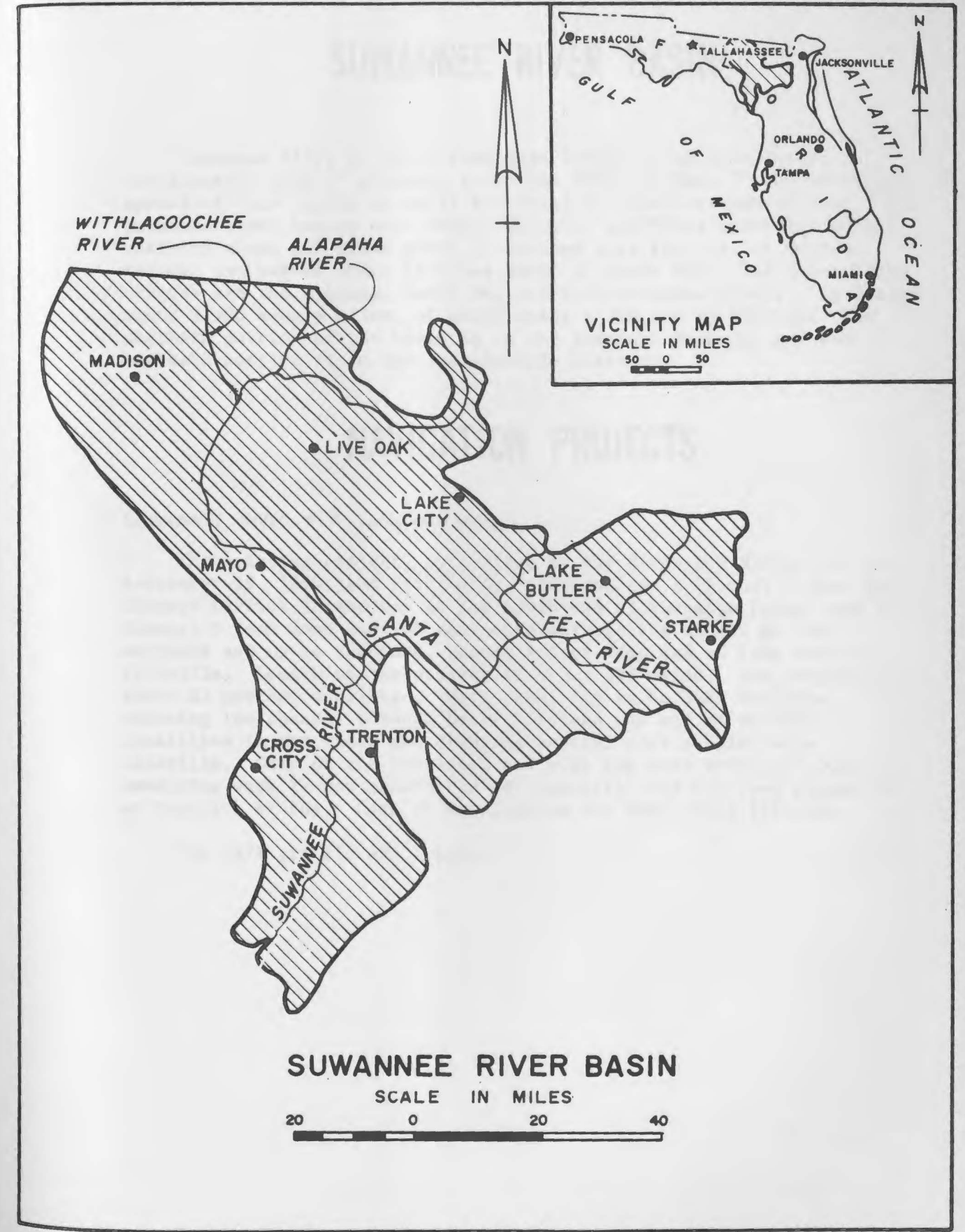
Under the provisions of the authorizing act, no construction of the barrier across Hillsborough Bay shall be undertaken until the Chief of Engineers completes the detailed studies covering related water-resource problems, including a comprehensive model study of the entire Tampa Bay area, and until 60 days after the date of submission of a report on such studies to the Committees on Public Works of the Senate and House of Representatives.

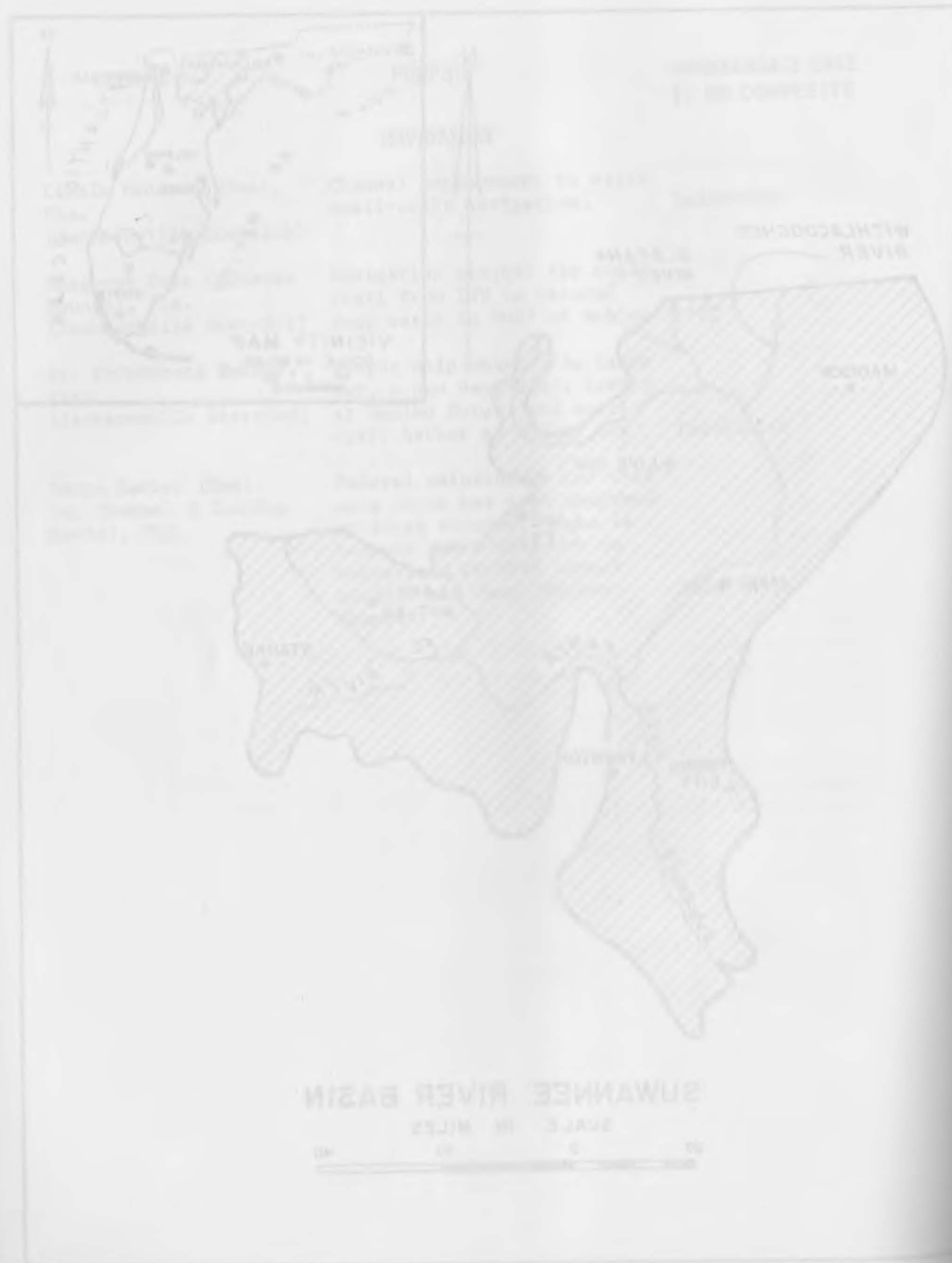
STUDIES

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
BEACH EROSION CONTROL		
Collier County, Fla. (Jacksonville District)	Determine erosion problem and formulate plan of protection therefor.	1973
Manatee County, Fla. (Jacksonville District)	Determine erosion problem and formulate plan of protection therefor.	Completed 1972
Sarasota County, Fla. (Jacksonville District)	Determine erosion problem of Siesta and Casey Keys and shore south of Venice Inlet and formulate plan of protection therefor.	County-wide study indefinite--Lido Key authorized in 1971.
FLOOD CONTROL		
Estero River, et al Fla. (Jacksonville District)	Improvements in the interest of flood control	Indefinite
Four River Basins, Fla. (Jacksonville District)	Review project document to determine if any modifications recommended therein are advisable at the present time in the interest of flood control, water supply, and other allied water uses.	1st Phase - 1973

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
NAVIGATION		
Anclote River, Fla. (Jacksonville District)	Enlargement of existing Federal project to 12-foot depth and 150-foot width.	1973
Boot Key Harbor, Fla. Side Channel & Basin, IWW from Miami to Key West (Jacksonville District)	Entrance channel 100 feet wide and dredging and pile removal to provide anchorage basin in Boot Key Harbor, all 12 feet deep.	Indefinite
Boot Key Harbor (Sister Creek), Monroe County, Fla. (Jacksonville District)	Navigation channel in Boot Key Harbor and Sister Creek for commercial and recreational boats.	1973
Charlotte Harbor, Fla. (Port Boca Grande) (Jacksonville District)	Enlargement of existing Federal project to 36- to 40-foot depth, to better serve large tankers and phosphate ships.	Indefinite
IWW, Caloosahatchee River to Naples Bay, Fla. (Jacksonville District)	Existing IWW, Caloosahatchee River to Anclote River, Fla. be extended southward to Naples Bay, Fla.	Indefinite
Key West Harbor (Stock Island), Fla. (Jacksonville District)	Federal maintenance of channel and navigation aids to Safe Harbor, a privately dredged car-ferry and shrimp-boat harbor, about 5 miles east of Key West.	Indefinite
Little Gasparilla Pass, Charlotte County, Fla. (Jacksonville District)	Federal improvement of Little Gasparilla Pass, including jetties.	Indefinite

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
NAVIGATION		
Little Manatee River, Fla. (Jacksonville District)	Channel improvement to serve small-craft navigation.	Indefinite
Longboat Pass (Manatee County), Fla. (Jacksonville District)	Navigation project for small craft from IWW to natural deep water in Gulf of Mexico	1973
St. Petersburg Harbor, Fla. (Jacksonville District)	Deeper ship channel in Tampa Bay, a new deep-draft harbor at Maximo Point, and small-craft harbor at Mullet Key	Indefinite
Tampa Harbor (East Bay Channel & Turning Basin), Fla.	Federal maintenance for this area which has been deepened at local expense. Area is between and contiguous to authorized Federal harbor project and Tampa Bypass Channel.	Indefinite





SUWANNEE RIVER BASIN

Suwannee River is the stream made famous by Stephen Foster in his immortal song of southern lore "Old Folks at Home." The nostalgic appeal of this region is aptly portrayed by that sentimental song. The Suwannee River begins near Fargo, Georgia, and flows generally south-westerly about 217 miles where it empties into the Gulf of Mexico through two passes about 12 miles north of Cedar Key. The major tributaries are the Alapaha, Santa Fe, and Withlacoochee Rivers. It drains about 9,900 square miles, of which about 4,200 are in Florida. The northern portion of the basin is in the Savannah District and the southern portion is in the Jacksonville District.

NAVIGATION PROJECTS

SUWANNEE RIVER, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of September 19, 1890, and prior acts, provides for a channel 6 feet deep through Derrick Island Gap at the south end of Suwannee Sound, and a channel 5 feet deep and 150 feet wide through the shoals at the entrance and up to Branford, thence 4 feet deep and 60 feet wide to Ellaville. Length of the project is about 139 miles. The project is about 25 percent completed. Work remaining to be done includes widening the channel through Derrick Island Gap and at several localities in the river and dredging several rock shoals below Ellaville. Cost of the completed new work has been about \$76,000. Remaining work is now considered not essential and has been placed in an inactive status. Cost of maintenance has been about \$102,000.

The 1971 traffic was 5 tons.

HORSESHOE COVE, FLA. (JACKSONVILLE DISTRICT)

The existing project, authorized by the River and Harbor Act of May 17, 1950, provides for a channel 6 feet deep and 75 feet wide from the Gulf of Mexico to and including an irregular-shaped turning basin at the town of Horseshoe. Total length of the project is about 1.75 miles. The project was completed in 1959 at a cost of about \$347,000. Cost of maintenance has been about \$92,500.

No commerce reported for 1971.

STUDIES

LOCALITY	PURPOSE	APPROXIMATE DATE TO BE COMPLETED
FLOOD CONTROL		
Fenholloway River Basin, Fla. (Jacksonville District)	Improvements in the interest of flood control.	Indefinite
NAVIGATION		
Santa Fe River, Fla. (Jacksonville District)	Channel improvements from Suwannee River upstream through Santa Fe River to the vicinity of High Springs, about 20 miles.	Indefinite
Suwannee River, Fla. (Jacksonville District)	Improvements for navigation in vicinity of mouth of Suwannee River.	Indefinite

INACTIVE PROJECTS

Name	Date authorized	Date completed	Cost to June 30, 1972		Status
			Constr.	Maint.	
Bayou Chico (Pensacola Harbor) channel enlargement (Mobile)	1945	-	-	-	Deferred for restudy.
Biscayne Bay (Jacksonville)	1965	-	-	-	Classified inactive for lack of local support.
Gulf Intracoastal Waterway extension, Carrabelle to Apalachee Bay (Mobile)	1942	-	**41,413	-	Deferred for restudy.
Holmes Creek (Mobile)	1888	1893	8,600	36,800	Commercially inactive; no longer maintained.
Little Manatee River (Jacksonville)	1945	-	**11,903	-	Inactive; no work has been done.
Ochlockonee River (Mobile)	1833	***	5,000	-	Commercially inactive; never maintained; abandonment recommended.
Palm Beach Side Channel and Basin (Jacksonville)	1938	-	-	-	Inactive; no work has been done.
Upper Chipola River Marianna to mouth (Mobile)	1899	****	36,800	63,200	Commercially inactive; no longer maintained; abandonment recommended.

NOTES:

- * All the above projects are for navigation except Biscayne Bay, which is for hurricane protection.
- ** Expended on restudy.
- *** Records lacking, snagging costing approximately \$5,000 performed presumably in 1834 or 1835.
- ****75 percent completed in 1916.

AQUATIC PLANT CONTROL PROGRAM

AQUATIC PLANT CONTROL PROGRAM (JACKSONVILLE DISTRICT)

For some years past, the Corps of Engineers has been engaged in combating water hyacinths and other aquatic growths in a number of southern states in the interest of navigation. Infestation has been spreading, especially on streams or other waters not possible to treat under that program. These plants form dense mats, detrimental to water travel and to fish and wildlife. They retard drainage, prolong flooding, and increase mosquito breeding.

An expanded pilot program was authorized by Public Law 85-500, passed by the 85th Congress on July 3, 1958. This law authorized a comprehensive program for the control and growths in the States of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas, in the combined interest of navigation, flood control, drainage, agriculture, fish and wildlife conservation, public health, and related purposes, including continued research for development of most effective and economical control measures. The 1958 Act provided that 70 percent of the costs of the comprehensive project would be borne by the United States and 30 percent by local interests. The River and Harbor Act of 1962 modified the project to provide that planning costs prior to initiation of operations and all research costs shall be borne fully by the United States and shall not be included in the cost to be shared by local interests. This initial pilot program ended with the close of FY 1968.

A new program was authorized by Section 302 of the River and Harbor Act approved October 27, 1965. The law authorized a comprehensive program for the control and progressive eradication of water hyacinth, alligatorweed, Eurasian watermilfoil, and other obnoxious aquatic plant growths where such growths constitute or pose major economic problems in any of the states. Program cost sharing of 70 percent Federal and 30 percent by local interests will continue except that research costs and planning costs prior to start of construction would not be included in the cost to be shared by local interests.



Typical hyacinth spraying operation -
St. Johns River (April 1972)

Corps of Engineers personnel and equipment have conducted operations in Oklawaha River, Lake Okeechobee, the northerly part of Upper St. Johns River, Lake Istokpoga and tributaries, and Sante Fe, Alafia, Manatee, Little Manatee and Caloosahatchee Rivers.

The cost of the program to June 30, 1972, in Florida--excluding research--has been about \$4,856,000 Federal and non-Federal funds.

Until recently the water hyacinth has been considered the principal problem aquatic plant in Florida. Since its appearance in 1960 in a Miami canal and in springs near Crystal River,

Federal expenditure is not to exceed \$5,000,000 annually for the United States. Federal funds appropriated are allocated by the Chief of Engineers on a priority basis, as determined by local conditions and the availability of local funds. He also supervises research for the country as a whole.

Project planning was begun in FY 1959, with field operations starting in mid-1960. The Florida Game and Fresh Water Fish Commission, representing local interests, has conducted operations in Withlacoochee, Upper St. Johns, Myakka, Hillsborough, Peace, Suwannee, Kissimmee, Waccasassa, and Aucilla-Wacissa Rivers; on the gulf coast from Yankeetown to Tampa Bay; on the east coast from Cocoa to Stuart; and in several small areas in west Florida.



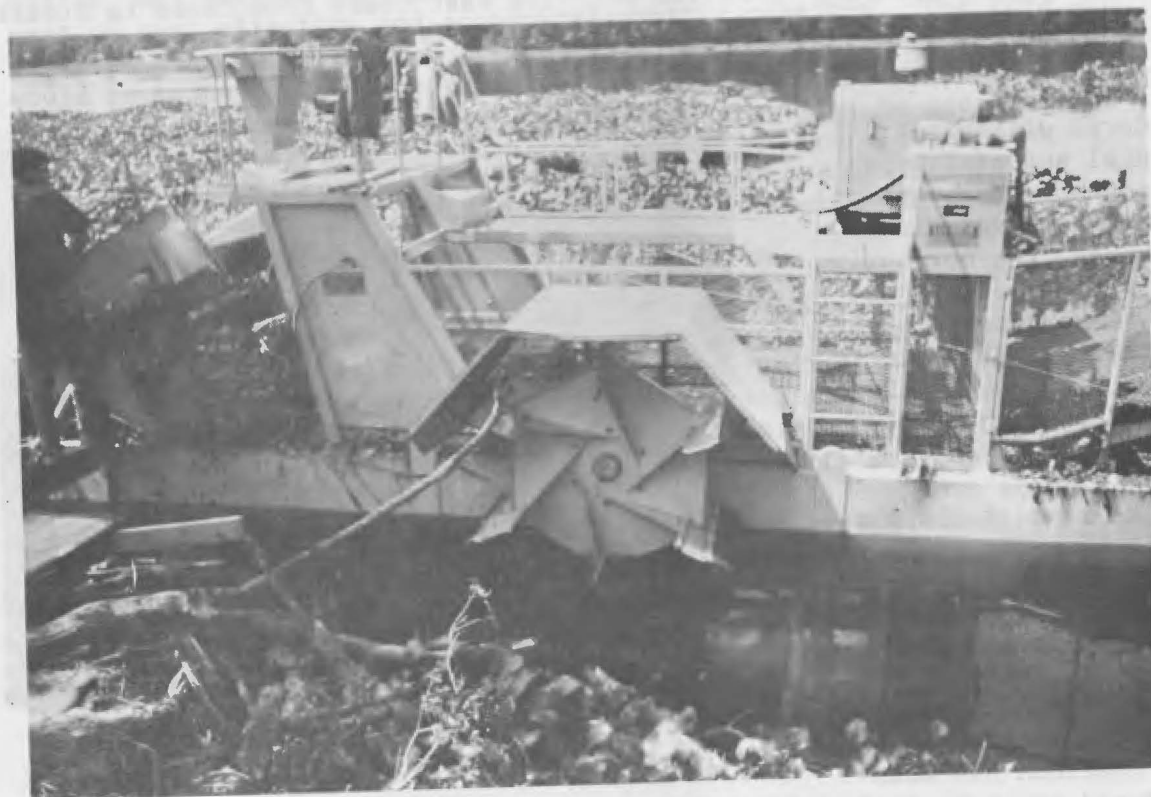
Dense growth of hyacinths on
St. Johns River (May 1972)

the submersed weed hydrilla (*Hydrilla verticillata*) has infested vast water areas in the lower two-thirds of peninsular Florida. Research is being conducted under the direction of the Chief of Engineers on all conceivable methods for control of obnoxious aquatic plants.

REMOVING THE WATER HYACINTH THROUGHOUT FLORIDA (JACKSONVILLE DISTRICT)

The project authorized by the River and Harbor Act of March 3, 1905, and prior acts provided for the destruction or removal of plants from the navigable waters of Florida, so far as they are or may become an obstruction to navigation and commerce, by any mechanical, chemical, or other means not injurious to cattle; for the construction and operation of boats equipped with suitable machinery for such removal; and for the construction and operation of log booms to prevent the drifting of plants from one stream to another. Operations so far have been confined to keeping the principal navigable waterways in Florida reasonably open for navigation.

The cost to date for such operations has been about \$3,524,000 (maintenance funds only).



One of the marine harvesters used for removal of water hyacinths on the St. Johns River (April 1972)

FLOOD PLAIN MANAGEMENT

FLOOD PLAIN INFORMATION STUDIES

Flood plain information studies are made to: (a) Provide information on floods and flood hazards, including areas subject to flooding, in a clear, concise, and useful form; (b) encourage optimum and prudent use of the stream valleys by providing State and local agencies a factual basis for reducing future flood damages and hazards through well-planned use of flood plains; (c) publicize available information for the guidance of private citizens and interests on the use and hazards of using the flood plains; and (d) reduce future expenditures for the alleviation of flood problems arising from improper use of the flood-plain area. The reports contain general criteria for guidance in the use of flood-plain areas, and provide engineering advice to local interests for their use in planning to ameliorate the flood hazard.

Assistance in preparing applications for flood plain information studies may be obtained from the Director, Florida Department of Natural Resources, Larson Building, Tallahassee, Fla. 32304 or from the applicable U. S. Army Engineer District. Complete study reports are also available at these offices.

Flood plain information studies have been authorized for the areas listed below.

<u>Title</u>	<u>Completion Date</u>	<u>District</u>
Blackwater Bay and River, Milton, Fla.	1973	Mobile
Broward County, Florida	January 1965	Jacksonville
Charlotte and North Lee Counties, Fla.	July 1968	Jacksonville
Choctawhatchee Bay, Fort Walton Beach Vicinity, Okaloosa County, Fla.	1971	Mobile
Cypress Creek near Orlando	1971	Jacksonville
Destin, Okaloosa County, Fla.	June 1970	Mobile

<u>Title</u>	<u>Completion Date</u>	<u>District</u>
Lake Monroe at Sanford, Fla.	1971	Jacksonville
Levy County Coastal Areas, Fla.	1973	Jacksonville
Little Wekiva River, Orange County, Fla.	1970	Jacksonville
Little Wekiva River, Seminole County, Fla.	1970	Jacksonville
Martin County Coastal Areas, Fla.	1973	Jacksonville
Mill Slough at Kissimmee, Fla.	1973	Jacksonville
Northeast Volusia County, Fla.	1971	Jacksonville
North Fork, St. Lucie River, Fla.	1972	Jacksonville
Palm Beach County, Fla. - Tidal Areas	1969	Jacksonville
St. Johns River, Jacksonville, Fla.	1969	Jacksonville
St. Lucie County Coastal Areas, Fla.	1972	Jacksonville
Sarasota County Coastal Areas, Fla.	1972	Jacksonville
Sarasota County, Elligraw Bayou, Catfish Creek, North Creek, and South Creek, Fla.	1973	Jacksonville
Southeast Palm Beach County, Fla.	1970	Jacksonville
Southeast Volusia County, Fla.	1972	Jacksonville
Tallahassee, Leon County, Fla.	Deferred on request of local sponsor	Mobile
Vicinity of Pensacola, Escambia, and Santa Rosa Counties, Fla.	June 1972	Mobile

FLOOD INSURANCE STUDIES

Under the National Flood Insurance Act of 1968 (Public Law 90-448), the Secretary of the Department of Housing and Urban Development (HUD) was authorized to establish and carry out a National Flood Insurance Program. Under this Act, the Secretary may make studies and investigations to establish the risk premium rates for flood insurance in communities and, in carrying out his responsibility, is authorized to use the services, on a reimbursable basis, of the Department of the Army, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Tennessee Valley Authority to the maximum extent feasible.

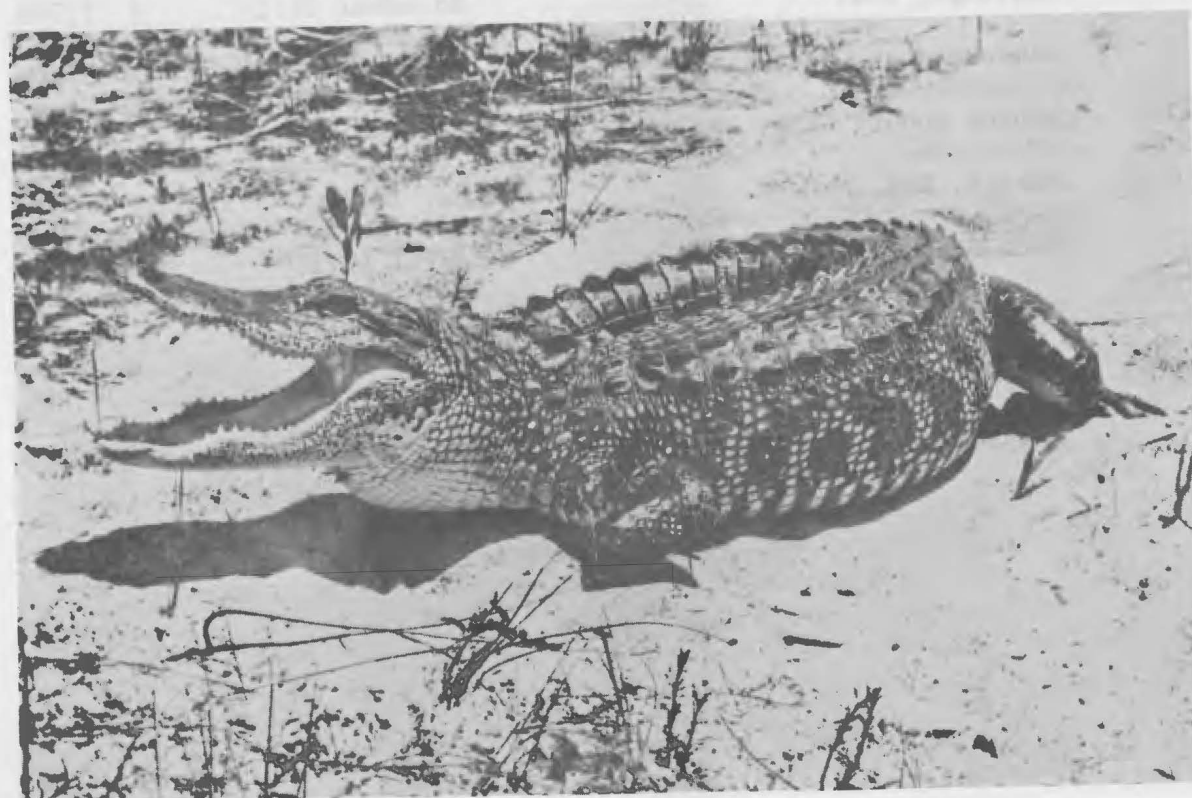
The Corps of Engineers, upon request of HUD, determines the rates of average annual flood damages for various types of residence in specific areas. Based on these damage rates, HUD then determines the premium rates to be charged for flood insurance.

The Corps of Engineers has conducted flood damage studies for HUD, as follows:

<u>Study</u>	<u>Completion date</u>	<u>Cost</u>
Hastings, Fla.	November 1971	\$ 2,000
Hillsborough County, Fla.	September 1972	30,000
Monroe County Keys, Fla.	May 1971	7,000
Naples, Fla.	May 1971	25,000
Palm Beach Shores, Fla.	April 1971	7,500
Pompano Beach, Fla.	October 1969	40,000
Tampa, Fla.	August 1972	30,000
Temple Terrace, Fla.	June 1972	3,500



Example of wildlife found in Everglades National Park



Example of wildlife found in Everglades National Park

INDEX

Additional outlet capacity, Lake Okeechobee.....	28
Anclote River, Fla.....	73, 85
Apalachicola, Indian Pass, Fla.....	62
Apalachicola Bay, Fla.....	43, 60
Apalachicola, Fla., to Two Mile.....	60
Apalachicola, Chattahoochee, and Flint Rivers, Fla. and Ga. (Florida portion).....	56
Apalachicola River below Jim Woodruff Dam.....	61
Apalachicola River, channel from, to Gulf Intracoastal Waterway via Wewahitchka, Fla.....	61
Apalachicola River System (308 report).....	60
Aquatic plant control.....	90
Area B - Greater Miami Area (Dade County).....	28
Atlantic Intracoastal Waterway between Norfolk, Va., and St. Johns River, Fla. (Jacksonville District section).....	33
Bakers Haulover Inlet, Fla.....	14
Bayou Chico (Pensacola Harbor) channel enlargement.....	89
Bayport, Fla.....	73
Big Escambia Creek, Fla. and Ala.....	59
Biscayne Bay, Fla.....	89
Blackwater River, Fla.....	44
Blackwater River and Bay, Fla.....	61, 93
Blackwater and Yellow Rivers, Fla. and Ala.....	59
Boca Raton Inlet, Fla.....	29
Boot Key Harbor, Fla. (Sister Creek) Monroe Co., Fla.....	85
Boot Key Harbor, Fla., side channel and basin Intracoastal Waterway from Miami to Key West.....	85
Brevard County, Fla.....	2
Brevard and Volusia Counties, Fla., streams in.....	40
Broward County, Fla.....	93
Broward County and Hillsboro Inlet, Fla.....	3
Caloosahatchee River Basin, Fla.....	27
Canal 17 and adjacent areas, Fla.....	27
Canal 18, area west of, and Jupiter Inlet and Loxahatchee River area, Fla.....	28
Canal 21-A, Fla.....	28
Canaveral Harbor, Fla.....	15, 29
Cape Florida State Park, Key Biscayne, Fla.....	4
Carrabelle to St. Marks, Fla., Gulf Intracoastal Waterway.....	61
Carrabelle Harbor, Fla.....	44
Cedar Keys Harbor, Fla.....	74
Central and Southern Florida.....	11
Central and Southern Florida water supply.....	28
Central and Southern Florida small-craft navigation facilities.....	13

Channel from Apalachicola River to Gulf Intracoastal	61
Waterway via Wewahitchka, Fla.....	93
Charlotte and North Lee Counties, Fla.....	74
Charlotte Harbor, Fla.....	85
Charlotte Harbor, Fla. (Port Boca Grande).....	93
Choctawhatchee Bay, Fla., Fort Walton Beach vicinity.....	45, 60
Choctawhatchee River and tributaries, Fla. and Ala.....	74
Clearwater Pass (Little Pass), Clearwater Bay, Fla.....	59
Coastal streams between Suwannee and Apalachicola	
River, Fla.....	84
Collier County, Fla.....	16
Courtenay Channel, Fla.....	34
Cross Florida Barge Canal, Fla.....	75
Crystal River, Fla.....	93
Cypress Creek near Orlando, Fla.....	5
Dade County, Fla.....	93
Destin, Fla.....	32
Duval County, Fla.....	61
Eastern Lake, Fla.....	61
Eastern and Redfish Lakes, Fla.....	61
Eastpoint, in Apalachicola Bay, Fla.....	61
East Pass Channel from the Gulf of Mexico into	
Choctawhatchee Bay, Fla.....	45
Eau Gallie Harbor, Fla.....	17
Econlockhatchee River Basin.....	28
Escambia and Conecuh Rivers, Fla. and Ala.....	46, 60
Esterio River, et al., Fla.....	84
Everglades Harbor, Fla.....	17
Fenholloway River Basin, Fla.....	88
Fernandina Harbor, Fla.....	34
Fort Myers Beach, Fla.....	75
Fort Pierce, Fla.....	6
Fort Pierce Harbor, Fla.....	17, 27, 29
Four River Basins, Fla.....	70, 84
Functions of the Corps of Engineers:	
Beach erosion control.....	ii
Environmental quality policy.....	vi
Flood control.....	ii
Flood plain information studies.....	v
How Corps of Engineers projects are initiated,	
authorized, and constructed.....	vii
Hurricane protection.....	iii
Hydroelectric power.....	iv
Navigation.....	i
Recreation.....	v
Other special and continuing authorities.....	v
Water pollution control.....	iv
Water supply.....	iv

Grand Lagoon, Panama City, Fla.....	47
Greater Miami Area (Area B) Dade County.....	28
Gulf Intracoastal Waterway between Apalachee Bay, Fla.,	
and the Mexican Border (Mobile District Section).....	47
Gulf Intracoastal Waterway, Carrabelle to St. Marks, Fla.....	61
Gulf Intracoastal Waterway (St. Marks to Tampa Bay, Fla.).....	49
Gulf Intracoastal Waterway extension, Carrabelle to	
Apalachee Bay, Fla.....	89
Hastings, Fla.....	95
Hillsborough Bay, Fla.....	83
Hillsborough County, Fla.....	95
Hillsboro Canal (east of Water Conservation Areas Nos.	
1 and 2), Palm Beach and Broward Counties.....	28
Hogtown Creek, Fla.....	33
Holmes Creek, Fla.....	89
Homosassa River, Fla.....	75
Horseshoe Cove, Fla.....	88
Hudson River, Fla.....	75
Inactive projects.....	89
Indian Pass, Apalachicola, Fla.....	62
Indian River County, Fla.....	27
Intracoastal Waterway, Caloosahatchee River to	
Anclote River, Fla.....	76
Intracoastal Waterway, Caloosahatchee River to	
Naples Bay, Fla.....	85
Intracoastal Waterway, Jacksonville to Miami, Fla.....	18
Intracoastal Waterway, Jacksonville to Miami	
(Fort Pierce to Miami reach), Fla.....	29
Intracoastal Waterway, Miami to Key West, Fla.....	18, 29
Introduction.....	i
Jackson County, Fla.....	42
Jacksonville Harbor, Fla.....	35, 40
Jim Woodruff Dam.....	61
Joes Bayou, Choctawhatchee Bay, Fla.....	49, 62
Johns Pass, Fla.....	77
Key Biscayne (Cape Florida State Park).....	27
Key West, Fla.....	66
Key West Harbor, Fla.....	77
Key West Harbor (Stock Island), Fla.....	85
Kissimmee River, Fla.....	19
LaGrange Bayou, Fla.....	49
Lake Crescent and Dunns Creek, Fla.....	36
Lake Istokpoga, Highlands County.....	28
Lake Monroe, Fla.....	94
Lake Okeechobee, additional outlet capacity.....	28
Lanark Village to St. George Sound, Fla.....	63
Largo Sound Channel, Fla.....	77
Lee County, Fla.....	66

Levy County Coastal Areas, Fla.....	94
Lido Key, Fla.....	67
Little Manatee River, Fla.....	85, 89
Little Gasparilla Pass, Charlotte County, Fla.....	85
Little Wekiva River.....	94
Longboat Pass (Manatee County).....	85
Lynn Haven Bayou, Fla.....	63
Lynn Haven Bayou, Fla., channel from, into North Bay, Fla.....	50
Manatee County, Fla.....	84
Manatee River, Fla.....	78
Martin County Coastal Areas, Fla.....	94
Mill Slough.....	94
Melbourne Harbor, Fla.....	19
Mexico Beach, Fla.....	63
Miami Harbor, Fla.....	19, 29
Miami River, Fla., locks and dams.....	29
Mills Creek (Callahan), Fla.....	40
Monroe County Keys.....	95
Mullet Key, Fla.....	68
Naples to Big Marco Pass, channel from, and Gordon Pass, Fla.....	78
Naples, Fla.....	95
New Pass (Sarasota), Fla.....	79
New River, Fla.....	22, 29
North Fork, St. Lucie River, Fla.....	94
Northeast Volusia County, Fla.....	94
Northwest Fla.....	60
Ocklockonee River, Fla.....	89
Okeechobee Waterway, Fla.....	22, 29
Okeechobee Waterway -- side channel and turning basin at Clewiston, Fla.....	30
Oklawaha River, Fla.....	36
Orange Lake Basin, Fla.....	40
Orange River, Fla.....	24
Ozona, Fla., channel and turning basin.....	79
Palm Beach County, Fla., from Lake Worth Inlet to South Lake Worth Inlet.....	8
Palm Beach County, Fla., from Martin County Line to Lake Worth Inlet and from South Lake Worth Inlet to Broward County Line.....	8
Palm Beach County, Fla.-- tidal areas.....	94
Palm Beach Harbor, Fla.....	24, 27
Palm Beach Shores, Fla.....	95
Palm Beach Side Channel and Basin.....	89
Panacea Harbor, Fla.....	50
Panama City Harbor, Fla.....	50, 59
Pass-a-Grille Pass, Pinellas County, Fla.....	79
Pensacola Bay, Fla.....	63
Pensacola Harbor, Fla.....	52, 63

Phillippi Creek Basin, Fla.....	72
Phillips Inlet.....	63
Pinellas County, Fla.....	69
Pithlachascotee River, Fla.....	79
Pompano Beach, Fla.....	95
Ponce de Leon Inlet, Fla.....	37
Port Everglades Harbor, Fla.....	25, 30
Port St. Joe Harbor, Fla.....	53
Reedy Creek Basin.....	28
Removing the water hyacinth throughout Florida.....	92
Rice Creek, Putnam County, Fla.....	37
St. Augustine Harbor, Fla.....	38, 40
St. Johns, Flagler, and Putnam Counties, Fla., streams in.....	40
St. Johns River, Fla., Jacksonville to Lake Harney.....	38
St. Johns River, Jacksonville to Lake Harney, Palatka, Fla., side channel.....	40
St. Johns River, Jacksonville.....	94
St. Lucie County Coastal Areas, Fla.....	94
St. Lucie Inlet, Fla.....	26, 30
St. Marks River, Fla.....	54, 63
St. Petersburg Harbor, Fla.....	80, 86
Sanford-Titusville Canal, Fla.....	30
Sante Fe River, Fla.....	88
Sarasota County, Fla.....	84, 94
Sebastian Inlet, Fla.....	30
Seminole County, streams in.....	40
Shores of Northwest Florida.....	59
Small-craft navigation facilities, Central and Southern Florida Projects.....	13
South New River Canal (C-11).....	28
Southeast Palm Beach County, Fla.....	94
Southeast Volusia County, Fla.....	94
Southern Florida.....	29
Spring Creek, Fla.....	64
Steinhatchee River, Fla.....	55
Streams in Brevard and Volusia Counties, Fla.....	40
Streams in St. Johns, Flagler, and Putnam Counties, Fla.....	40
Streams in Seminole County, Fla.....	40
Suwannee River, Fla.....	87, 88
Suwannee and Apalachicola River, Fla., coastal streams between.....	59
Table of Contents.....	a
Tallahassee, Leon County, Fla.....	94
Tampa, Fla.....	95
Tampa Harbor, Fla.....	81
Tampa Harbor (East Bay channel and turning basin), Fla.....	86
Temple Terrace, Fla.....	95
Two Mile, Apalachicola Bay, Fla.....	60

Upper Chipola River, Marianna to mouth, Fla.....	89
Upper St. Johns River Basin, Fla.....	28
Vicinity of Pensacola, Escambia and Santa Rosa Counties, Fla.....	94
Virginia Key and Key Biscayne, Fla.....	9
Water hyacinth, removing throughout Florida.....	90
Waterway from East Bay, Fla., across Santa Rosa Peninsula to Gulf of Mexico.....	61
Wekiva River Basin, Fla.....	28
Wiggins Pass, Fla.....	30
Withlacoochee River, Fla.....	82

LEGEND**3**

CONGRESSIONAL DISTRICT

HARBOR

WATERWAY

DEPTH

●

—

25 FT. AND OVER

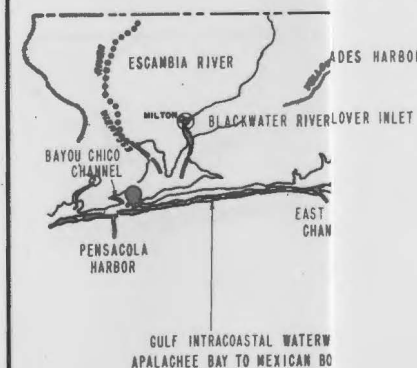
⊙

9-24 FT.

○

.....

LESS THAN 9 FT.



CORPS OF ENGINEERS



NAVIGATION PROJECTS IN FLORIDA

 20 0 20 40 60
 SCALE IN MILES

1 JANUARY 1973



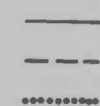
LEGEND

3 CONGRESSIONAL DISTRICT

HARBOR



WATERWAY



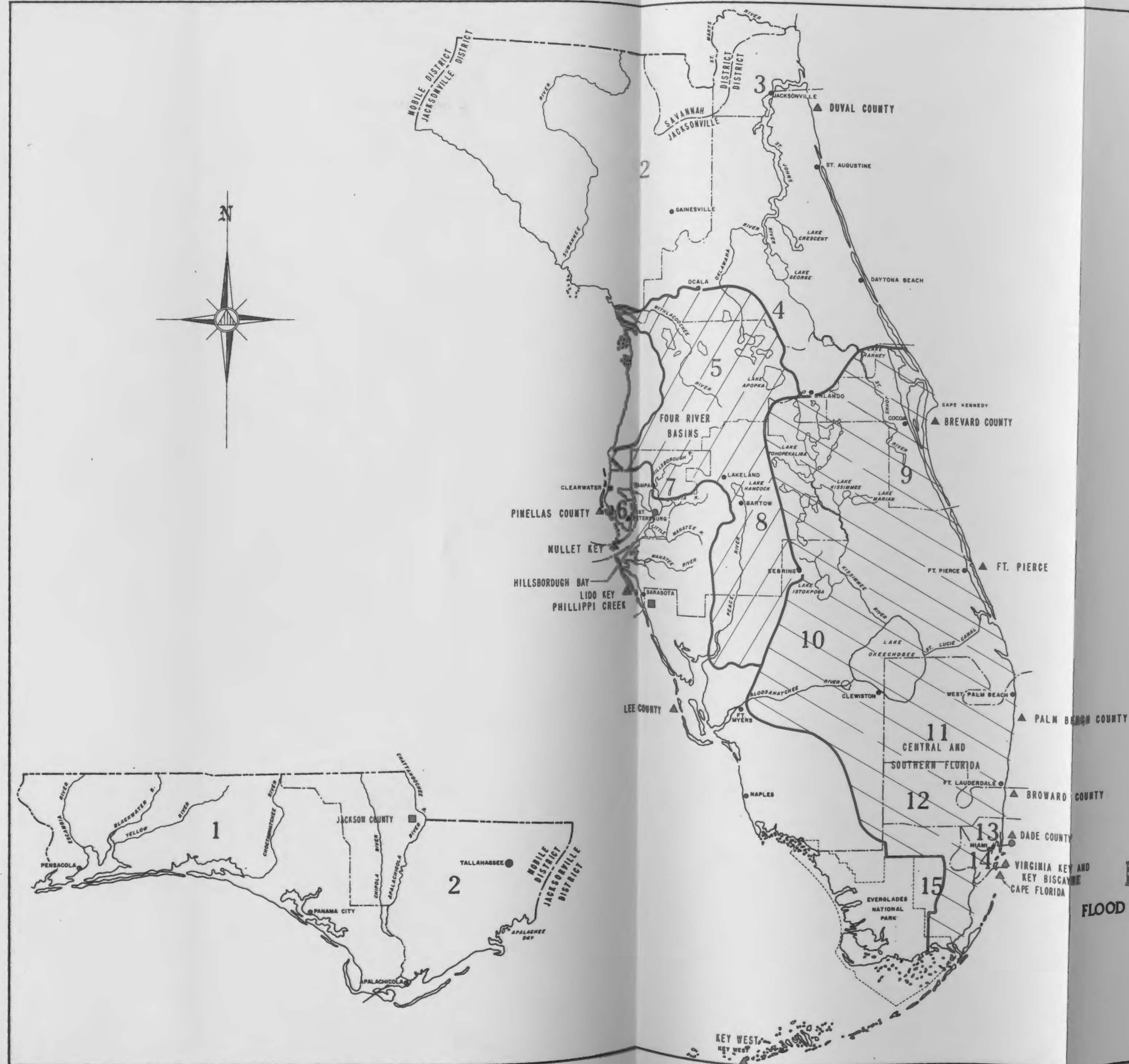
DEPTH

25 FT. AND OVER
9-24 FT.
LESS THAN 9 FT.

CORPS OF ENGINEERS
NAVIGATION PROJECTS
IN FLORIDA

SCALE IN MILES

1 JANUARY 1973



LEGEND

3 CONGRESSIONAL DISTRICT

- ▲ SHORE PROTECTION PROJECT
- LOCAL FLOOD PROTECTION
- HURRICANE PROTECTION

AND
FLOOD CONTROL & SHORE PROTECTION PROJECTS
IN
FLORIDA

0 20 40
SCALE IN MILES

1 JANUARY 1973