ST. MARYS RIVER ENTRANCE INLET MANAGEMENT STUDY IMPLEMENTATION PLAN

CERTIFICATE OF ADOPTION

WHEREAS the Department of Environmental Protection, in partnership with the Nassau Soil and Water Conservation District, sponsored a study of the inlet known as St. Marys River Entrance, under the provisions of Section 161.161, Florida Statutes, for the purposes of evaluating the erosive impact of the inlet on adjacent beaches, and

WHEREAS the Department has developed an implementation plan which contains corrective measures to mitigate the identified impacts of the inlet, and

WHEREAS the implementation plan is consistent with the Department's program objectives under Chapter 161, Florida Statutes,

The Department does hereby adopt the following implementation actions:

1) **Continue to bypass suitable sediment to the downdrift beaches.**

   As a first priority, place material on the beach in areas of greatest need as determined by the Department meeting an annual placement objective of between 554,000 and 779,000 cubic yards as determined by the sediment budget. The sediment budget contained in the study report is adopted as an interim measure and shall be formally validated or redefined in subsequent revisions of the plan based on a comprehensive monitoring plan by December 31, 2003.

2) **Restore the downdrift beaches, designated by the Department as experiencing critical erosion, to mitigate the effects of the inlet.**

   This action may be pursued under the Nassau County Shore Protection Project or other available state or federal authorizations,

3) **Investigate the feasibility of constructing sand traps within the inlet interior and making modifications to the south jetty.**

   This study should be conducted in conjunction with the Fernandina Harbor Navigation Project in the form of a General Reevaluation Report or other appropriate study.

4) **Restore the existing groin field and construct additional shore protection structures as necessary to protect Fort Clinch.**

   Initiate discussions with the State of Georgia and National Park Service to pursue

removal of the interior north jetty shoal. This action is intended as a means of reducing erosional stress to Amelia Island and Fort Clinch resulting from the southerly migration of the entrance channel.

5) Investigate alternative means to recover suitable sandy maintenance material currently being placed offshore.

Evaluations should consider the use of silt separation technology and the determination of acceptable sediment qualities for beach and nearshore placement.

6) Develop an agreement between local, state and federal governments to identify proponents for cost sharing to facilitate the bypassing and monitoring of maintenance material dredged from the entrance channel.

7) Implement a comprehensive beach and offshore monitoring program subject to the approval of the Department.

The program will be used to identify beach placement locations for future bypassing efforts and to revalidate the sediment budget.

This plan is based on the supporting data contained in the study report, St. Marys Entrance Inlet Mangement Study, November 1997. Olsen Associates. Inc., and comments provided by public agencies and the citizenry of Nassau County. Each implementation action contained in this plan is subject to further evaluation, and subsequent authorization, as part of the Department's environmental permitting and authorization process. Any action that may affect navigation associated with the inlet shall be consistent with all applicable Federal requirements and subject to authorization from the U.S. Army Corps of Engineers. Further, actions affecting the State of Georgia and other federal agencies shall be subject to applicable permitting and authorization processes.

It is the intent of the Department to assist in the implementation of the plan through the provision of funds granted under the Florida Beach Erosion Control Program. The Department's financial obligations shall be contingent upon sufficient legislative appropriations.

Nothing in this plan precludes the evaluation and potential adoption of other alternatives or strategies for management at St. Marys Entrance.

APPROVED FOR ADOPTION

Kathy B. Cromartie for
Virginia B. Wetherell, Secretary
Department of Environmental Protection

5.18.98
Date

ST MARYS RIVER ENTRANCE INLET MANAGEMENT STUDY
SUMMARY OF FINDINGS REPORT
and
RECOMMENDED IMPLEMENTATION PLAN

Introduction

The Department of Environmental Protection, in partnership with the Nassau Soil and Water Conservation District, sponsored a study of St. Marys River Entrance. The study, St. Marvs Entrance Inlet Management Studv, November 1997, Olsen Associates, Inc., was conducted under the provisions of Section 161.161, Florida Statutes, for the purposes of evaluating the erosive impact of the inlet on adjacent beaches, and to recommend corrective measures to mitigate identified impacts.

The study has been evaluated by the staff of the Bureau of Beaches and Coastal Systems as it relates to the Bureau's statutory responsibilities and program objectives. As a result of that evaluation, the Bureau has developed a recommended implementation plan. to meet those responsibilities and objectives. Adoption of the plan will facilitate and streamline the joint coastal permit process during its implementation by providing a basis for consistency determination, and enable governmental entities to seek financial assistance from the Department to conduct inlet management activities authorized in the plan.

This report contains a brief history of St. Marys Entrance, a summary of the inlet study findings relative to adjacent beaches, and a consistency determination. The report also contains the recommended implementation plan.

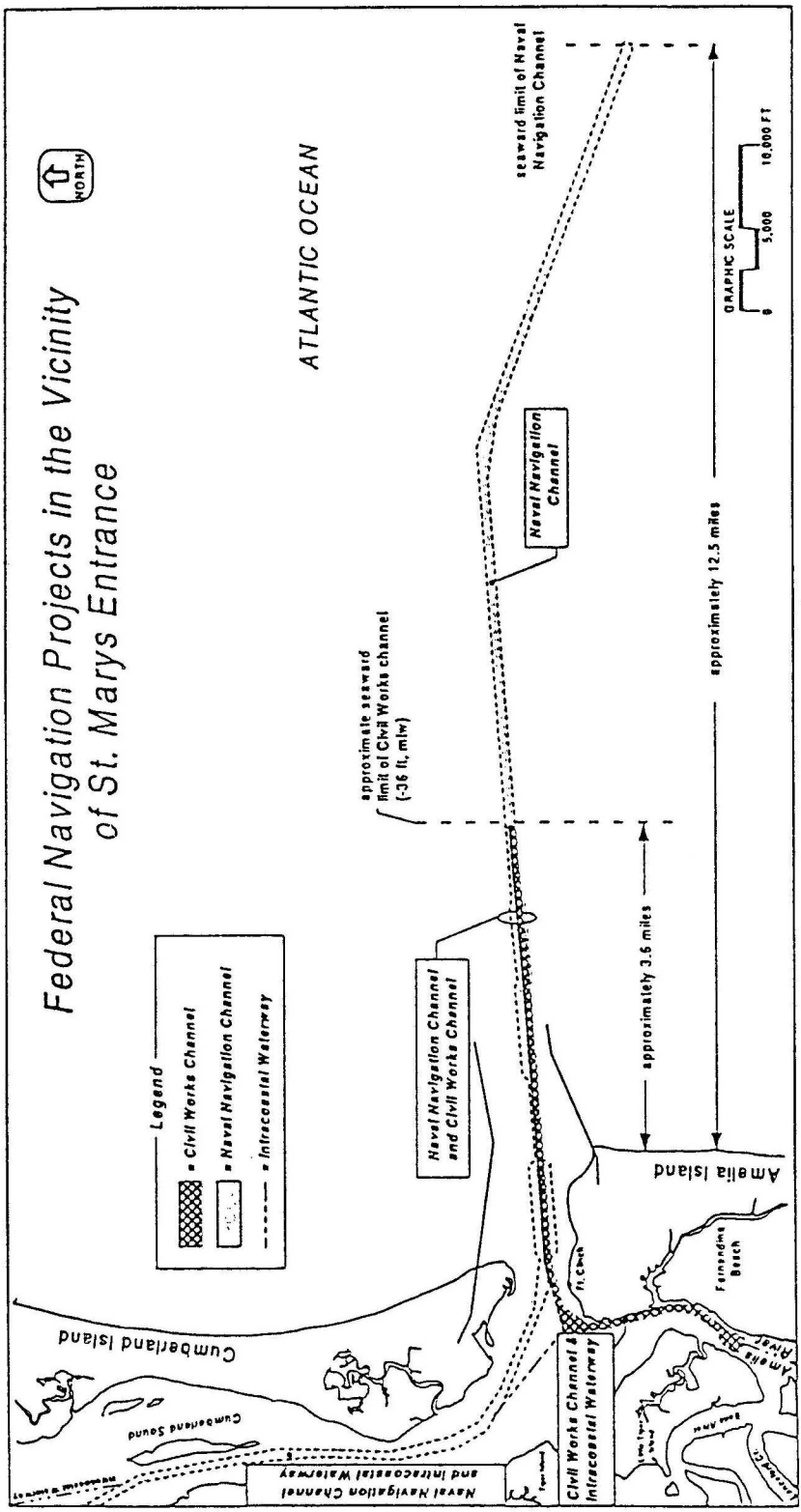
History of St. Marvs Entrance

Located in northeast Nassau County, St. Marys Entrance forms the border between Florida and Georgia. The entrance is an altered, natural inlet connecting the St. Marys River, Amelia River, and Cumberland Sound with the Atlantic Ocean. Cumberland Island, located north of the entrance and predominately undeveloped, lies within the State of Georgia and is managed by the National Park Service as Cumberland Island National Seashore. Amelia Island, to the south, is largely developed supporting residential and commercial development. Fort Clinch, designated a national historic place, is located on the entrance at the north end of the Amelia Island.

Two federal navigation projects to maintain commercial and military navigation have resulted in significant modifications to the inlet (see Figure 1). Efforts to improve commercial.

Figure 1

Navigation Projects Associated with St. Marys Entrance



navigation (Civil Works) began in 1881, with the initiation of construction of parallel jetties to maintain a 20 to 21 foot (mlw) navigation channel. Structural modifications and repairs to both structures have occurred over the years, resulting in their current length of 19,500 and 11,200 feet for the north and south. jetties, respectively. The authorized Civil Works channel is presently 36 feet (mlw) in depth with widths of 400 to 600 feet to the Port of Fernandina.

The military project provides navigational access between the Kings Bay Naval Submarine Base located at Kings Bay, Georgia and the Atlantic Ocean. Initiated in 1955, the project has resulted in the construction of the Cumberland Sound Access Channel and the expansion of the entrance channel to approximately 12.5 miles offshore of Amelia Island. The authorized channel is maintained at a depth of 46 feet (mlw) and a width of 500 feet, however, with advance maintenance and allowable overdepth, the channel is frequently dredged to 51 feet (mlw). Construction of 300 foot wide settling basins and a turning basin measuring 1,200 feet in width have been incorporated into portions of the entrance channel. Both the military and Civil Works navigation projects share a single entrance channel.

The entrance channel and associated structures are maintained by the U.S. Army Corps of Engineers, funded in part by U.S. Department of the Navy. Maintenance dredging generally occurs on an annual basis with placement of suitable material on the adjacent beaches or a nearshore disposal area. Non beach quality material is disposed of offshore.

Numerous shore protection projects have occurred on Amelia Island to combat beach erosion. In addition to privately constructed bulkheads, significant structures including the construction of groins to protect Fort Clinch and the installation of approximately 3.6 miles of rock revetment along the Atlantic shoreline have taken place. As a result of navigation maintenance and expansion activities, approximately 35 million cubic yards of material has been dredged from the entrance channel, including over 5 million cubic yards of material which has been placed on the adjacent beaches since 1978. In addition, the southernmost 17,000 feet of the island was restored by private interests in 1994.

The natural littoral processes associated with St. Marys Entrance have been significantly altered as a result of modifications to the inlet. The area of inlet influence, as determined by the study, extends approximately 4 miles north of the inlet along Cumberland Island and 13 miles south of the inlet encompassing the entirety of Amelia Island. In addition, the interior inlet shoreline and Fort Clinch have been adversely impacted as a result of the southerly migration of the entrance channel in response to the progradation of the south end of Cumberland

Island. The Department has designated three segments of shoreline along Amelia Island, totaling 9.1 miles, as experiencing critical beach erosion. A sediment budget (see Figure 2) developed as part of the study estimates the need to bypass between 554,000 and 797,000 cubic yards of material annually to offset the impacts of the inlet.

Study Summary

To accomplish the plan objectives, the study evaluated numerous potential management activities in terms of environmental impacts, permitting constraints, fiscal concerns, and potential achievability. The study recommends a combination of alternatives involving enhancement of sand bypassing, erosion control activities to mitigate inlet impacts, modification of the jetty structures, and funding recommendations. The primary recommendations consist of the following:

1) Continue periodic maintenance dredging of the entrance channel with sand bypassing to the beaches downdrift of the inlet. Utilize alternative suitable sand sources, identified in the study, as a means to meet the proposed annual bypassing objective. Allow for the nearshore disposal of material containing at least 75% sand.

2) Construct interior sand traps at the north and south jetties to increase trapping and bypassing efficiency (see Figure 3).

3) Modify south jetty structure. Recommended modifications include: interim sand tightening of landwardmost section of the south jetty using geotextile tubes; if successful, permanently sand tightening and raising the south jetty, and evaluating sand tightening an additional 500 feet of the south jetty: and the possible construction of a spur or hook near the seaward end of the tightening.

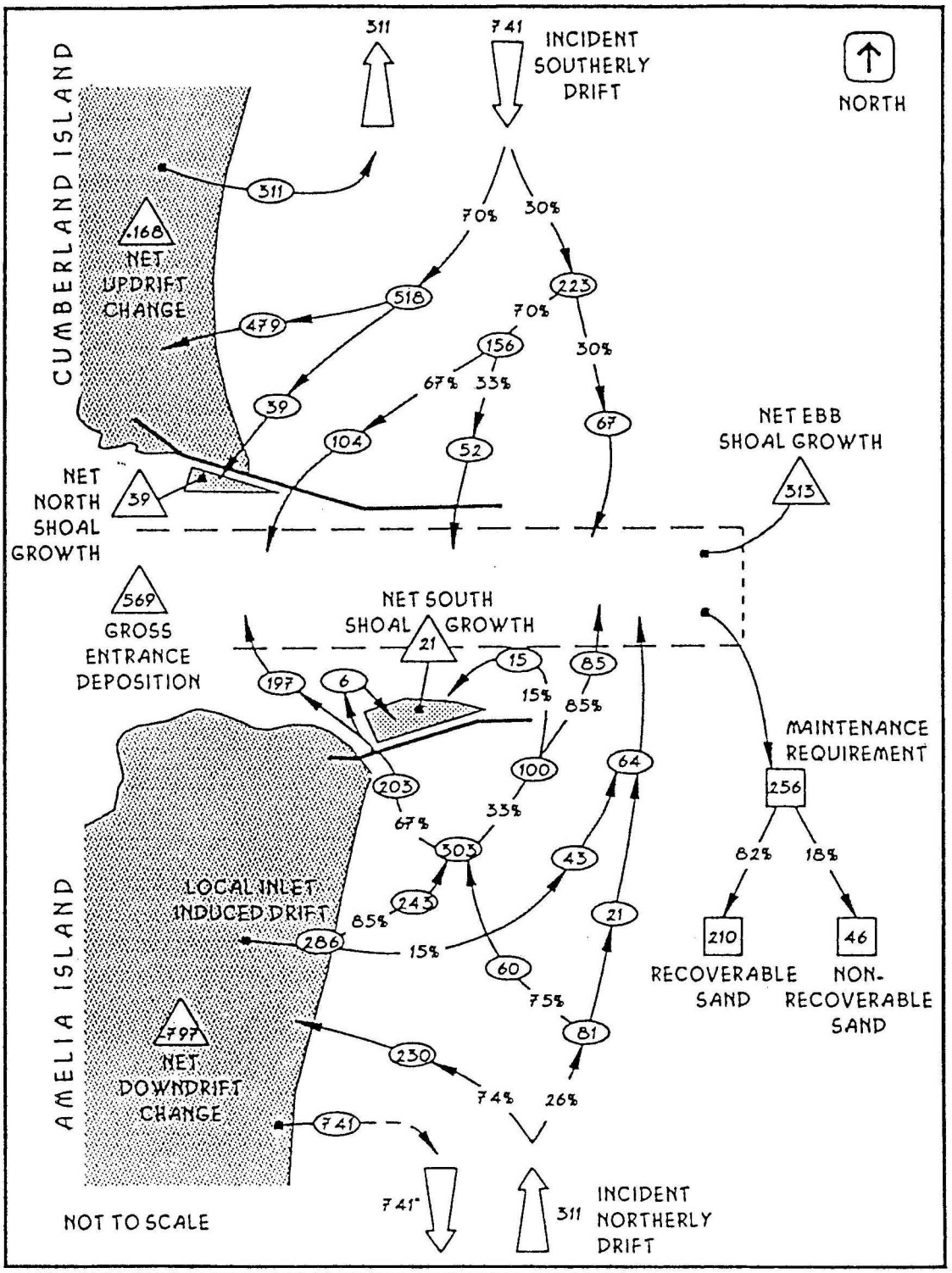
4) Restoration of downdrift beaches as mitigation of inlet effects.

5) Evaluate the feasibility of structural stabilization of the northernmost three miles of Atlantic coast shoreline.

6) Periodic nourishment of Ft. Clinch shoreline and restoration of existing groin field. Removal of the interior north jetty shoal adjacent to Cumberland Island to reduce the southerly migration of the entrance channel.

Figure 2

Sediment Budget



*ASSUMES THAT THE MAGNITUDE OF SOUTHERLY - DIRECTED TRANSPORT EQUALS THE INCIDENT RATE NORTH OF THE INLET.

7) Establish a monitoring program to evaluate effectiveness of recommended actions.

Consistency Determination and Comments

Each of the primary recommendations has been evaluated for consistency with program objectives under Chapter 161, Florida Statutes. The consistency determination is based solely upon the recommendations as presented in the study report. A determination does not preclude further study of other potential management alternatives. Comments regarding each recommendation are as follows.

1) Continued Bypassing of suitable material dredged during maintenance of the entrance channel is consistent and should be continued. In the absence of sufficient quantities of maintenance material, alternative suitable sand sources are acceptable. Placement of beach compatible material should be on beaches located downdrift of the inlet in areas of greatest need based on a plan approved by the Department. Areas of placement may be further refined based upon results from long term monitoring of the inlet and adjacent beaches. Efforts to reintroduce suitable sediments into the littoral system are consistent. Further efforts to develop acceptable protocol regarding sediment quality and placement locations should be developed.

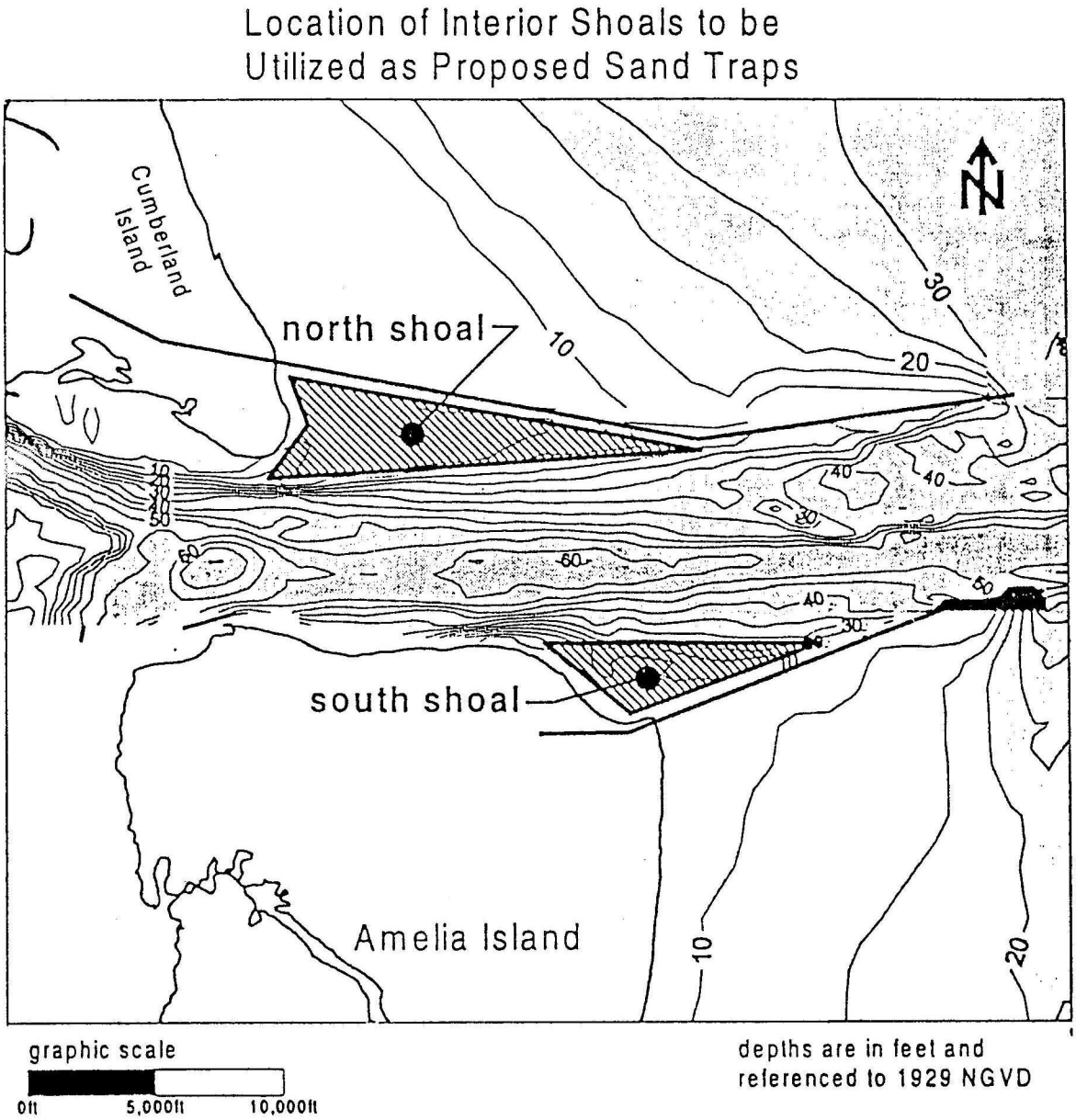
2) Construction of interior sand traps at the north and south jetties requires further analysis to determine potential impacts to adjacent shorelines and the efficiency of trapping material for future bypassing. In the event that further study results in the determination of consistency, authorization from the federal government and/or the State of Georgia would be required if implementation is pursued.

3) The sand tightening of the south jetty to minimize the backflow of material into the entrance channel could reduce maintenance dredging activities. However, the proposed action is inconsistent pending further study manner which does not adversely impact the interior shoreline.

4) Program objectives of section 161.161, Florida Statutes, require a plan for mitigation of the erosive impacts of the inlet. Restoration of the beaches located on Amelia Island designated by the Department as experiencing critical erosion is consistent. Mitigation for the southernmost 17,000 feet of Amelia

Figure 3

Study Recommendation: Sand Traps



Island has been achieved by local interests through the 1994 beach restoration project. Future nourishment activities associated with that portion of the island will be eligible only as a part of efforts to meet the annual bypassing requirements as determined by the study.

5) The introduction of structures to stabilize the shoreline has not been justified in the study and therefore is inconsistent pending additional study to demonstrate their feasibility. Further hardening of this portion of the Atlantic coast shoreline is inconsistent with program objectives due to the absence of threatened upland properties. The rehabilitation of existing shore protection structures may be appropriate. Protection of upland properties should be pursued through a beach restoration project proposed as mitigation for inlet effects.

6) Restoration of the Fort Clinch groin field and periodic nourishment of the adjacent shoreline is consistent. The removal of the interior north jetty shoal adjacent to Cumberland Island is consistent, however it is subject to authorization from the State of Georgia and National Park Service.

7) Monitoring of the beach and inlet is consistent provided that those beaches are located within the influence of the inlet.

Recommended Implementation Plan

The Bureau recommends the following implementation plan be adopted to meet the requirements of Chapter 161, Florida Statutes:

1) Continue to bypass suitable sediment to the downdrift beaches. As a first priority, place material on the beach in areas of greatest need as determined by the Department meeting an annual placement objective of between 554,000 and 779,000 cubic yards as determined by the sediment budget. The sediment budget contained in the study report is adopted as an interim measure and shall be formally validated or redefined in subsequent revisions of the plan based on a comprehensive monitoring plan by December 31, 2003.

2) Restore the downdrift beaches, designated by the Department as experiencing critical erosion, to mitigate the effects of the inlet. This action may be pursued under the Nassau County Shore Protection Project or other available state or federal authorizations.

3) Investigate the feasibility of constructing sand traps within the inlet interior and making modifications to the south jetty. This study should be conducted in conjunction with the Fernandina Harbor Navigation Project in the form of a General Reevaluation Report or other appropriate study.

4) Restore the existing groin field and construct additional shore protection structures as necessary to protect Fort Clinch, Initiate discussions with the State of Georgia and National Park Service to pursue removal of the interior north jetty shoal. This action is intended as a means of reducing erosional stress to Amelia Island and Fort Clinch resulting from the southerly migration of the entrance channel.

5) Investigate alternative means to recover suitable sandy maintenance material currently being placed offshore. Evaluations should consider the use of silt separation technology and the determination of acceptable sediment qualities for beach and nearshore placement.

6) Develop an agreement between local, state and federal governments to identify proponents for cost sharing to facilitate the bypassing and monitoring of maintenance material dredged from the entrance channel.

7) Implement a comprehensive beach and offshore monitoring program subject to the approval of the Department. The program will be used to identify beach placement locations for future bypassing efforts and to revalidate the sediment budget.

This plan is based on the supporting data contained in the study report, St Marys Entrance Inlet Management Study, November 1997, Olsen Associates, Inc. and comments provided by public agencies and the citizenry of Nassau County. Each implementation action contained in this plan is subject to further evaluation, and subsequent authorization or denial, as part of the Department's environmental permitting and authorization process. Any action that may affect navigation associated with the inlet shall be consistent with all applicable Federal requirements and subject to authorization from the U.S. Army corps of Engineers. Further, actions affecting the State of Georgia and other federal agencies shall be subject to applicable permitting and authorization processes.

The implementation activities identified above shall be eligible for state financial participation subject to Department approval and an appropriation from the Florida Legislature. The level of state funding shall be determined based upon the activity being

conducted and Department policy. The Department may choose not to participate financially if the proposed method for implementation is not cost effective or fails to meet the intent of Section 161.142, Florida Statutes.

Nothing in this plan precludes the evaluation and potential adoption of other alternatives or strategies for management at St. Marys Entrance.