

**JUPITER INLET MANAGEMENT STUDY  
IMPLEMENTATION PLAN**

**CERTIFICATE OF ADOPTION**

WHEREAS the Department of Environmental Protection, in partnership with the Jupiter Inlet District, has conducted a study of Jupiter Inlet, 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) Bypass sediment to downdrift beaches downdrift beaches

As a minimum, bypassing of material shall meet the average annual placement objective of 75,000 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, 2001.

- 2) Expand existing sand trap to facilitate the bypassing objectives as stated above.
- 3) Construct improvements to jetty structures which will reduce erosion and facilitate bypassing.

Specific improvements should include raising both jetties and extending the south jetty.

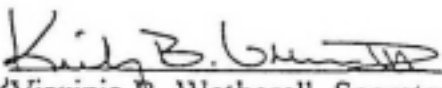
- 4) Implement a comprehensive beach and offshore monitoring program subject to approval of the Department.

plan is subject to further evaluation, and subsequent authorization. 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.

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 Jupiter Inlet.

APPROVED FOR ADOPTION

  
✓ Virginia B. Wetherell, Secretary  
Department of Environmental Protection

9.5.97  
Date

**JUPITER INLET MANAGEMENT STUDY  
SUMMARY OF FINDINGS REPORT  
and  
RECOMMENDED IMPLEMENTATION PLAN**

Introduction

The Department of Environmental Protection, in partnership with the Jupiter Inlet District sponsored a study of Jupiter Inlet. The study, Erosion, Navigation and Sedimentation Imperatives at Jupiter Inlet, Florida: Recommendations for Coastal Engineering Management, June, 1992 (plus October, 1993 addenda), Mehta, Montague and Thieke, 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 coastal construction permitting process during its implementation by providing a basis for consistency determination, and enable governmental entities to seek financial assistance from the Department to conduct management activities authorized in the plan.

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

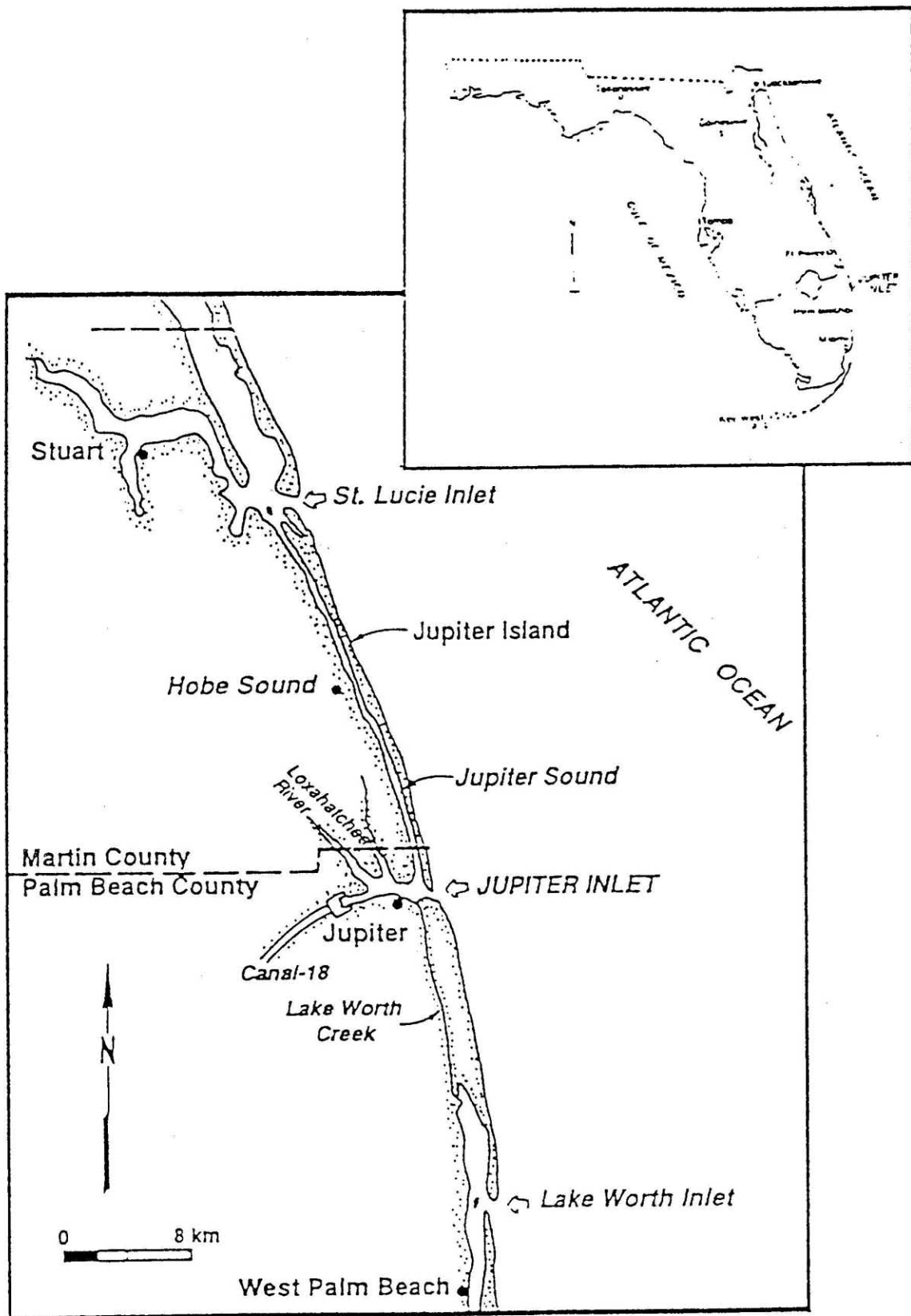
History of Jupiter Inlet

Located in northeast Palm Beach County, Jupiter Inlet is an improved natural inlet connecting the Loxahatchee River to the Atlantic Ocean (see Figure 1). Efforts to stabilize the inlet began in 1922, with the construction of parallel jetties at the inlet mouth. Structural modifications and repairs to both structures have occurred over the years, primarily for navigational purposes. A sand trap located west of the inlet throat was constructed in 1966.

The inlet channel and associated structures are maintained by the Jupiter Inlet District. Maintenance dredging of the navigation channel and sand trap generally occur on an annual basis with placement of suitable material on the downdrift beaches located south of the inlet. Similarly, the U.S. Army Corps of Engineers periodically bypasses material from the Intracoastal Waterway during maintenance dredging events. The beaches located south of the inlet were restored during 1995 to mitigate erosion caused by the inlet. A sediment budget (see Figure 2) developed as part of the study estimates the need to bypass 75,000 cubic yards of material annually to offset the impacts of the inlet.

Figure 1

General Location Map



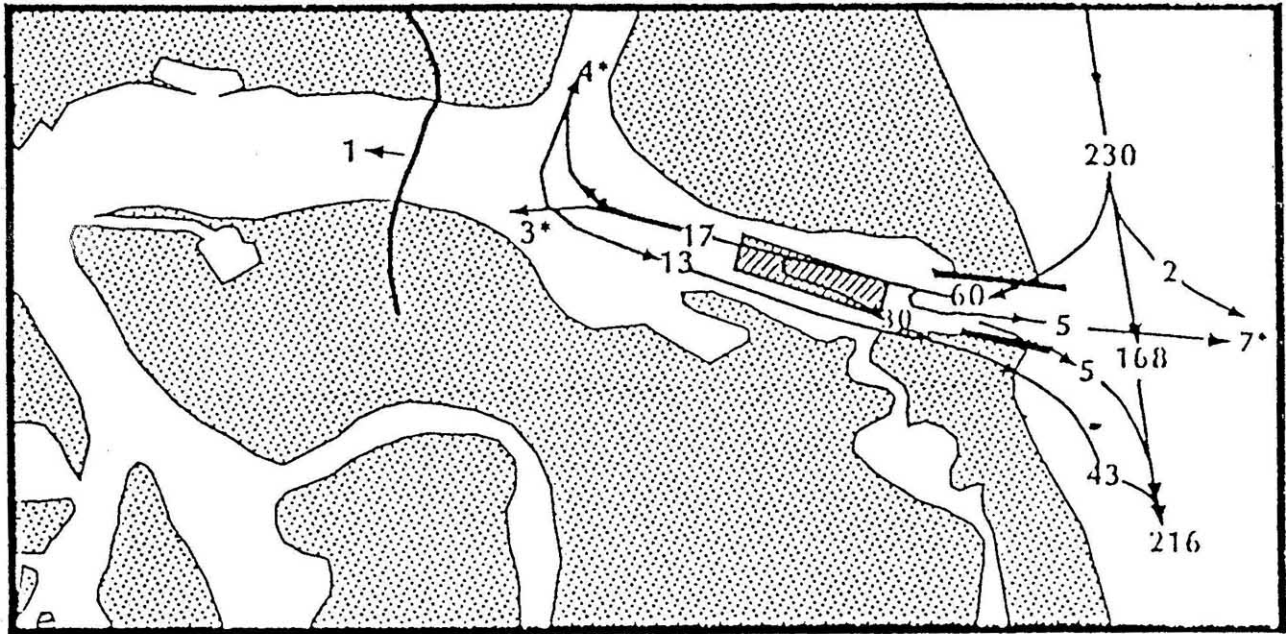
## Study Summary

To accomplish the plan objectives, the study evaluated nine 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, and the modification the jetty structures. The primary recommendations consist of the following:

- 1) Continue periodic maintenance dredging of the inlet channel, sand trap, and Intracoastal Waterway with sand bypassing to the beaches located south of the inlet. Dredging schedules should be optimized and the existing authorized disposal area should be modified to extend sand placement southward.
- 2) Continue periodic nourishment of downdrift beaches as mitigation of inlet effects.
- 3) Expand existing sand trap and construct an additional interior trap to increase trapping and bypassing efficiency.
- 4) Modify existing jetty structures. Recommended modifications include: raising both the north and south jetties by 3 feet; extending the north jetty by 400 feet along a southeasterly curvature; and extending the south jetty by 175 feet along a southeasterly curvature.
- 5) Construct a fixed bypassing plant at the north jetty or install a sand fluidization system in conjunction with the north jetty extension.

Figure 2  
Sediment Budget

### DISTRIBUTION OF ANNUAL NET SOUTHWARD DRIFT



\* "Lost" in Transit

Annual Rates in 1,000's  
of cubic yards

## Consistency Determination and Comments

Each of the five 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) Bypassing of suitable material dredged during maintenance dredging of the inlet channel, sand trap, and Intracoastal Waterway is consistent and should be continued. Placement of 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.
- 2) Program objectives require the mitigation of inlet effects. Since mitigation for this area was achieved through the 1995 beach restoration project, future nourishment activities will be eligible only as a method to meet the annual bypassing requirements as determined by the study.
- 3) Expansion of the existing sand trap would facilitate the bypassing of material and therefore is consistent. The proposed interior sand trap is located a sufficient distance upstream such that the material intercepted is not anticipated to be suitable for beach placement. Since the construction of the interior sand trap is primarily for navigation purposes and not beach related, it will not be included as part of the plan.
- 4) Raising the elevation of both the north and south jetties would reduce shoaling within the inlet channel and could facilitate bypassing during storm events and therefore is consistent. Extending the south jetty could reduce erosion immediately south of the inlet. This activity is consistent with program objectives, The extension of the north jetty, as proposed, is not consistent with the statutory intent of the program. The proposed modification would cause an impoundment of material on the updrift beaches and likely result in downdrift erosion.
- 5) Construction of a sand transfer plant is consistent with state policy provided the bypassing of material does not exceed the average annual longshore sediment transport, as determined in the study, whereby adversely impacting the adjacent shorelines. The installation of a sand fluidization system would enhance bypassing capabilities and therefore is also consistent with program objectives. However, necessity and cost effectiveness of said bypassing activities should be further investigated prior to implementation.

## Recommended Implementation Plan

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

- 1) Continue efforts to bypass sediment to the downdrift beaches. As a minimum, bypassing of material shall meet the average annual placement objective of 75,000 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, 2001.
- 2) Expand existing sand trap to facilitate the bypassing objectives as stated above.
- 3) Construct improvements to jetty structures which will reduce erosion and facilitate bypassing. Specific improvements should include raising both jetties and extending the south jetty.
- 4) Implement a comprehensive beach and offshore monitoring program subject to the approval of the Department.

This plan is based on the supporting data contained in the study report, Erosion, Navigation and Sedimentation Imperatives at Jupiter Inlet, Florida: Recommendations for Coastal Engineering Management, June, 1992 (plus October, 1993 addenda), Mehta, Montague and Thieke, and comments provided by public agencies and the citizenry of Palm Beach 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.

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 Jupiter Inlet.