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UPDATE ON THE ST. LUCIE INLET

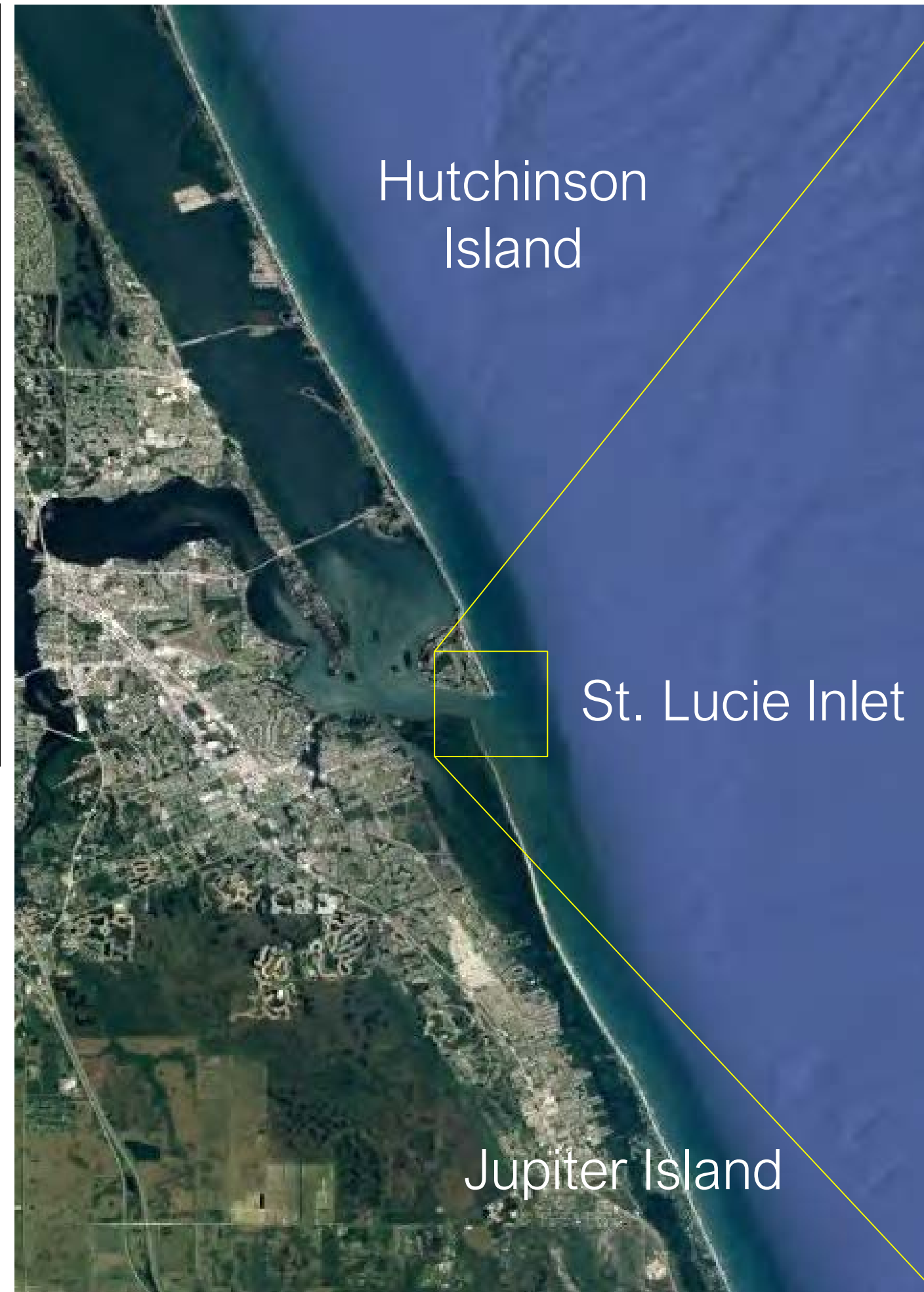
- **MAINTENANCE**
- **SOUTH JETTY**
- **INLET MANAGEMENT PLAN**

JUNE 8, 2021





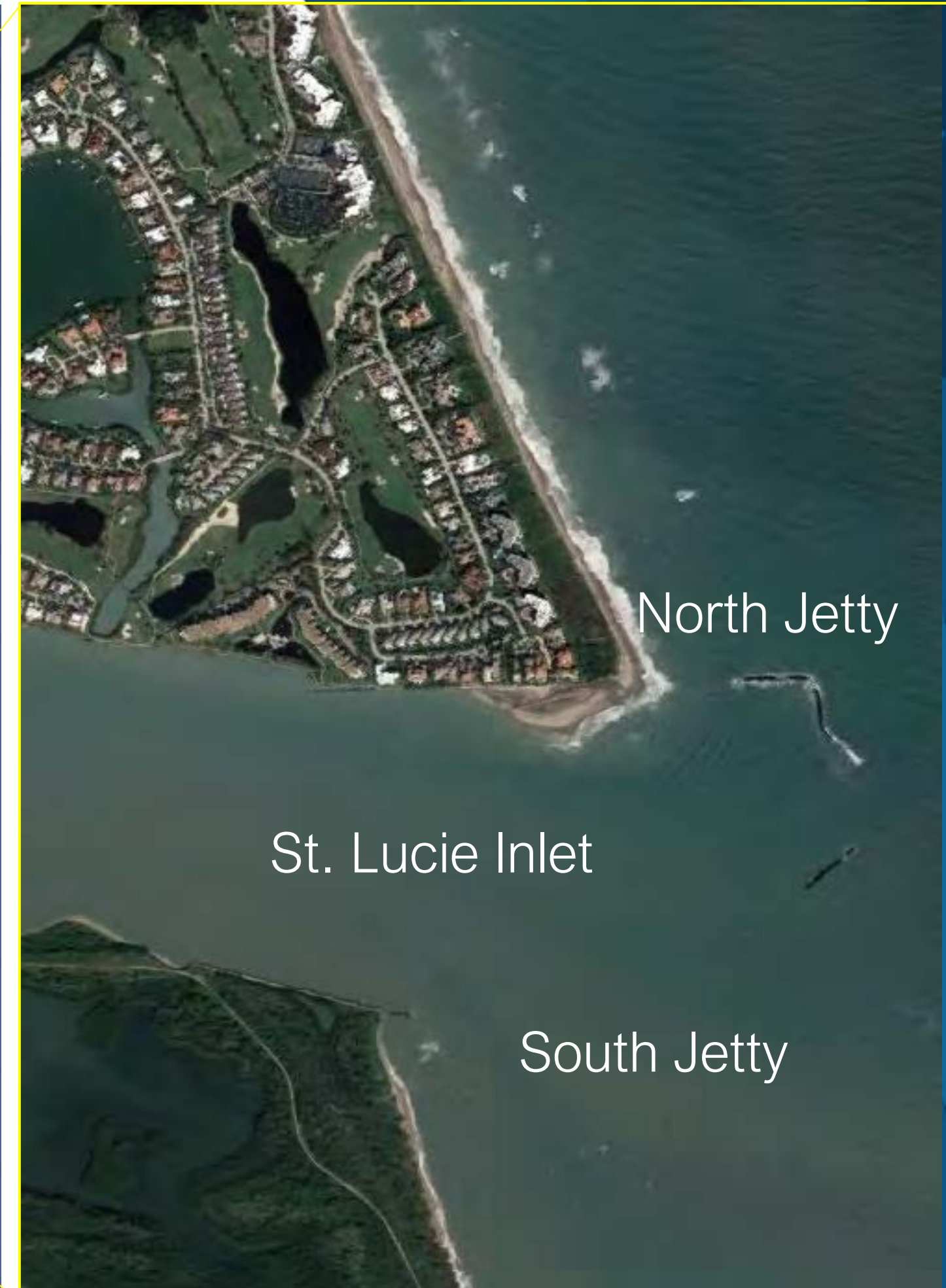
Martin County



Hutchinson Island

St. Lucie Inlet

Jupiter Island



North Jetty

St. Lucie Inlet

South Jetty



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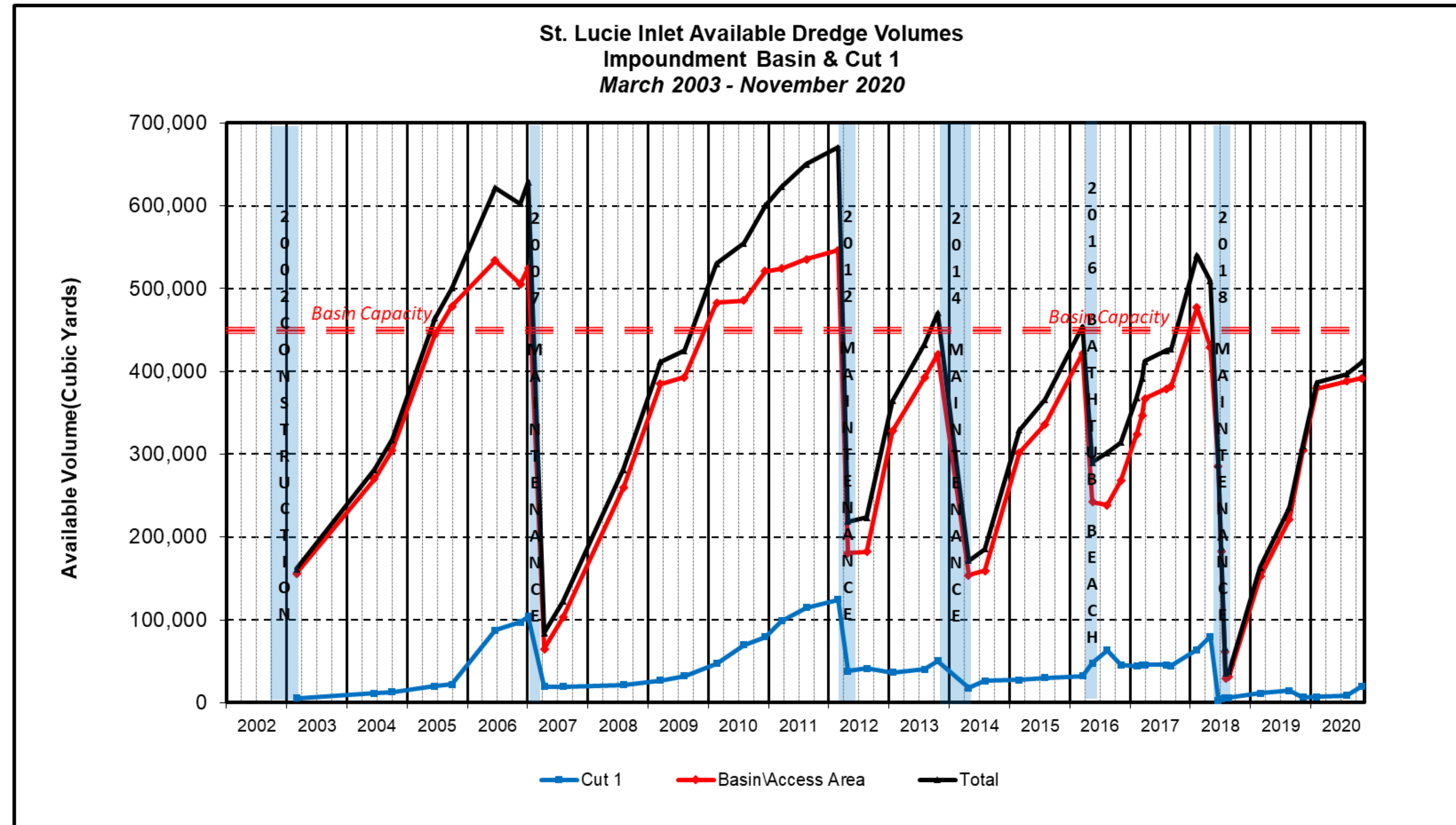
ST. LUCIE INLET MANAGEMENT BACKGROUND:

- Federal Navigation Project
- St. Lucie Inlet Maintenance Dredging occurs approximately every 3 years
- Typical volume dredged - 450,000 to 500,000 cy
- Valuable sand resource captured in the impoundment basin
- 2016 State Inlet Management Plan
 - 161,000 cy south
 - 34,000 cy north

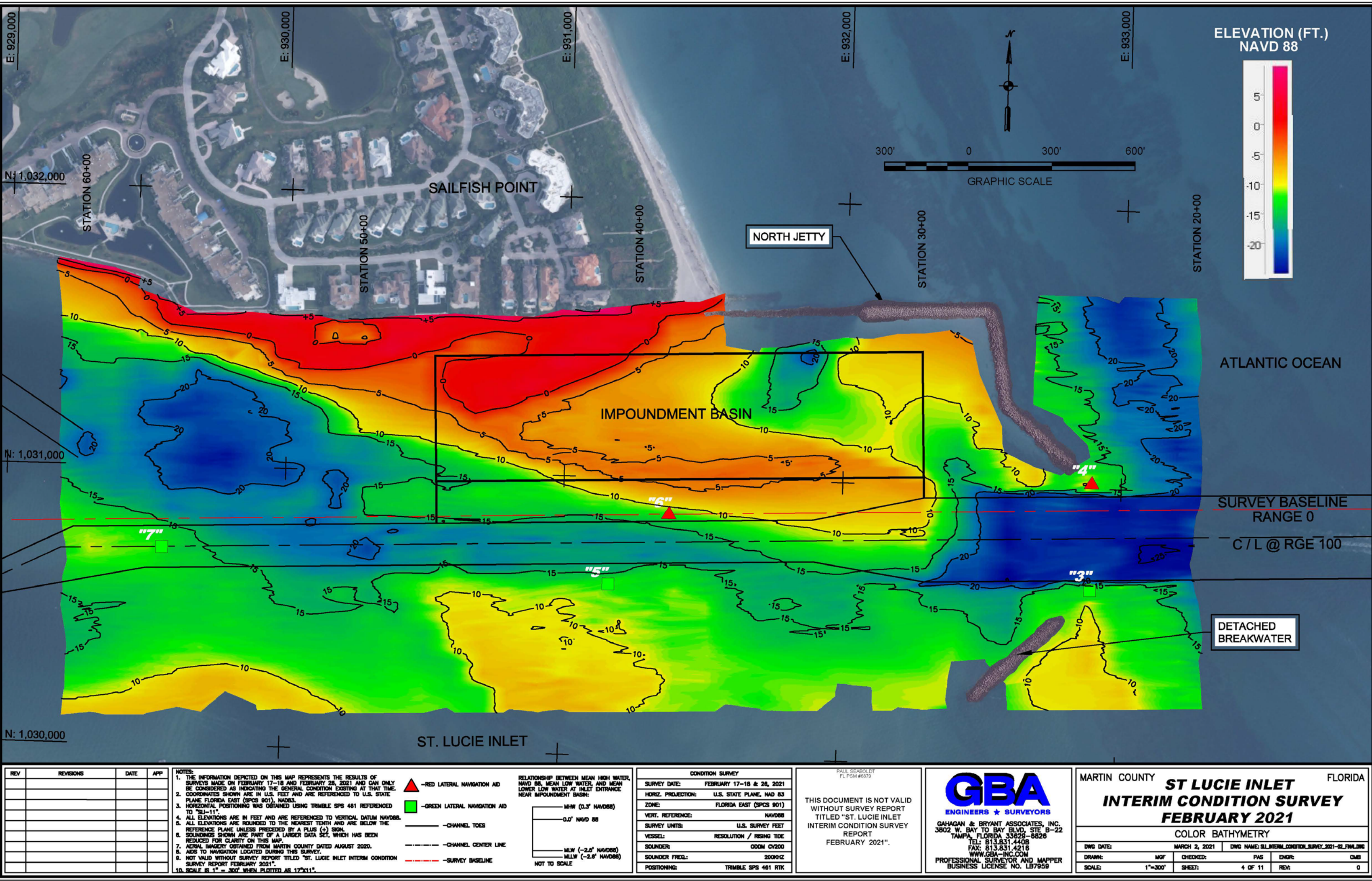


IMPOUNDMENT BASIN INFILLING:

- IB capacity 450,000 CY beyond which navigation channel shoaling begins
- From 2002 to 2012, dredge frequency every 5 years
- Since 2012, dredge frequency every 2 to 3 years



ST. LUCIE INLET - FEBRUARY 2021

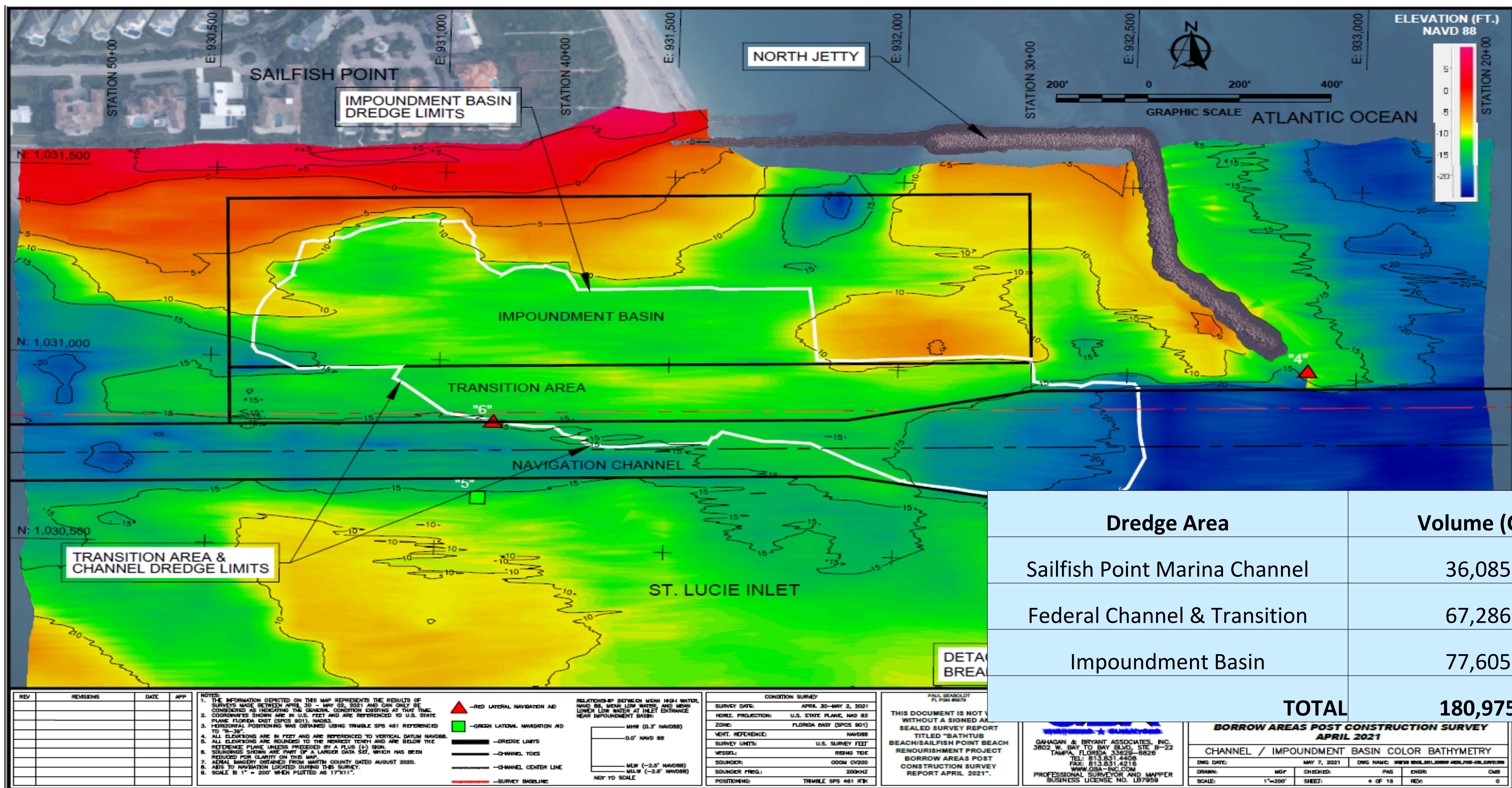


SAND BYPASSING NORTH



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ST. LUCIE INLET - MAY 2021



SAND BYPASSING SOUTH

- State park placement
- Preliminary cost estimate - \$9M
- USACE eligibility - approximately 75%
- Contributed funds agreement in place
- FDEP grant funding (very likely)



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FY22 FEDERAL FUNDING OUTLOOK

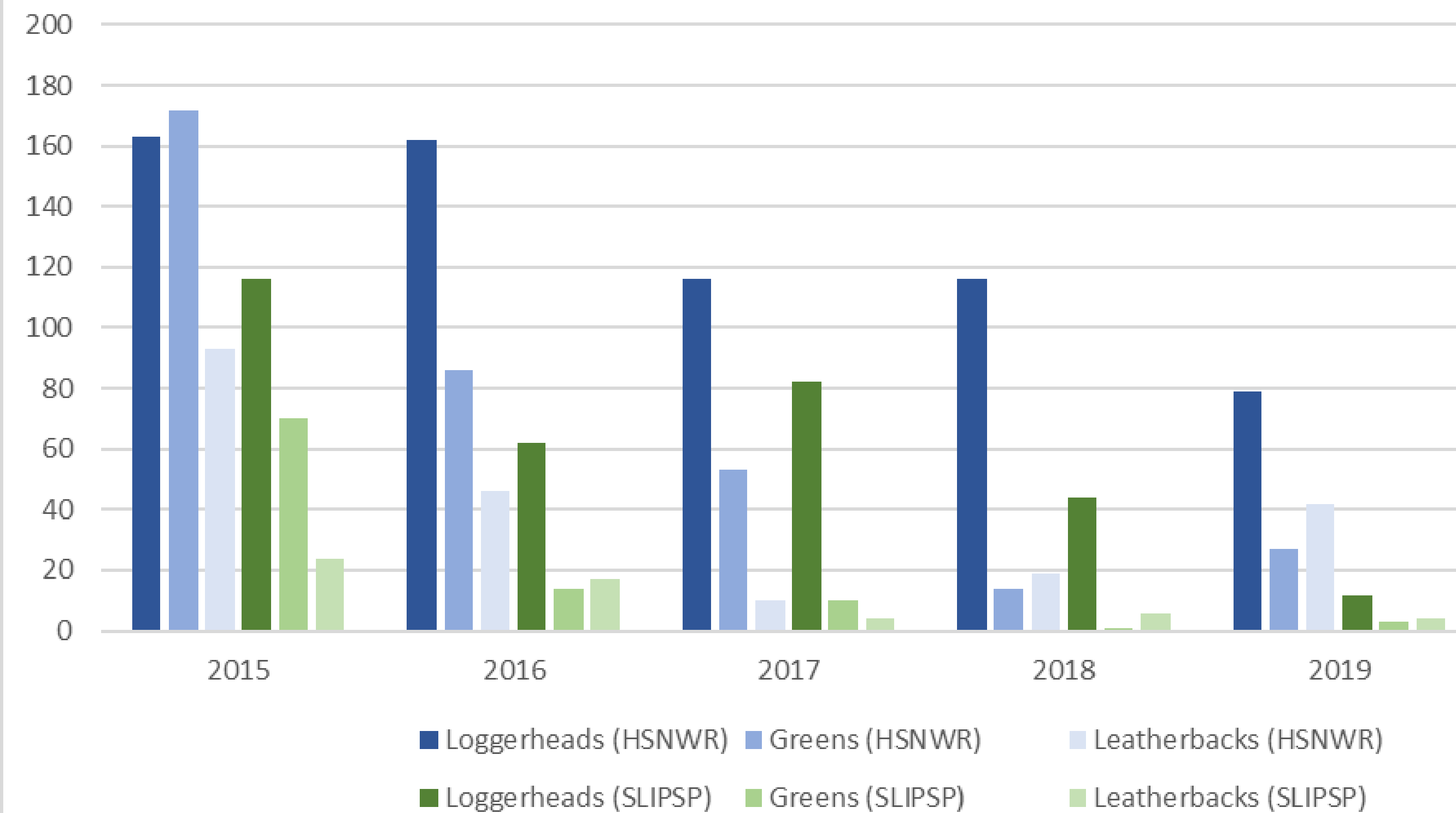
- The Presidents Budget - released on May 27, 2021
- No FY 2022 funding for St. Lucie Inlet Maintenance
- Remaining opportunity – congressional add (TBD)
- County has budgeted for emergency situations



MARINE TURTLE NESTING



Marine Turtle Nesting Numbers at Hobe Sound National Wildlife (HSNWR) vs St. Lucie Inlet Preserve State Park (SLIPSP)



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Marine Turtle data collected by Ecological Associates, Inc. (EAI))

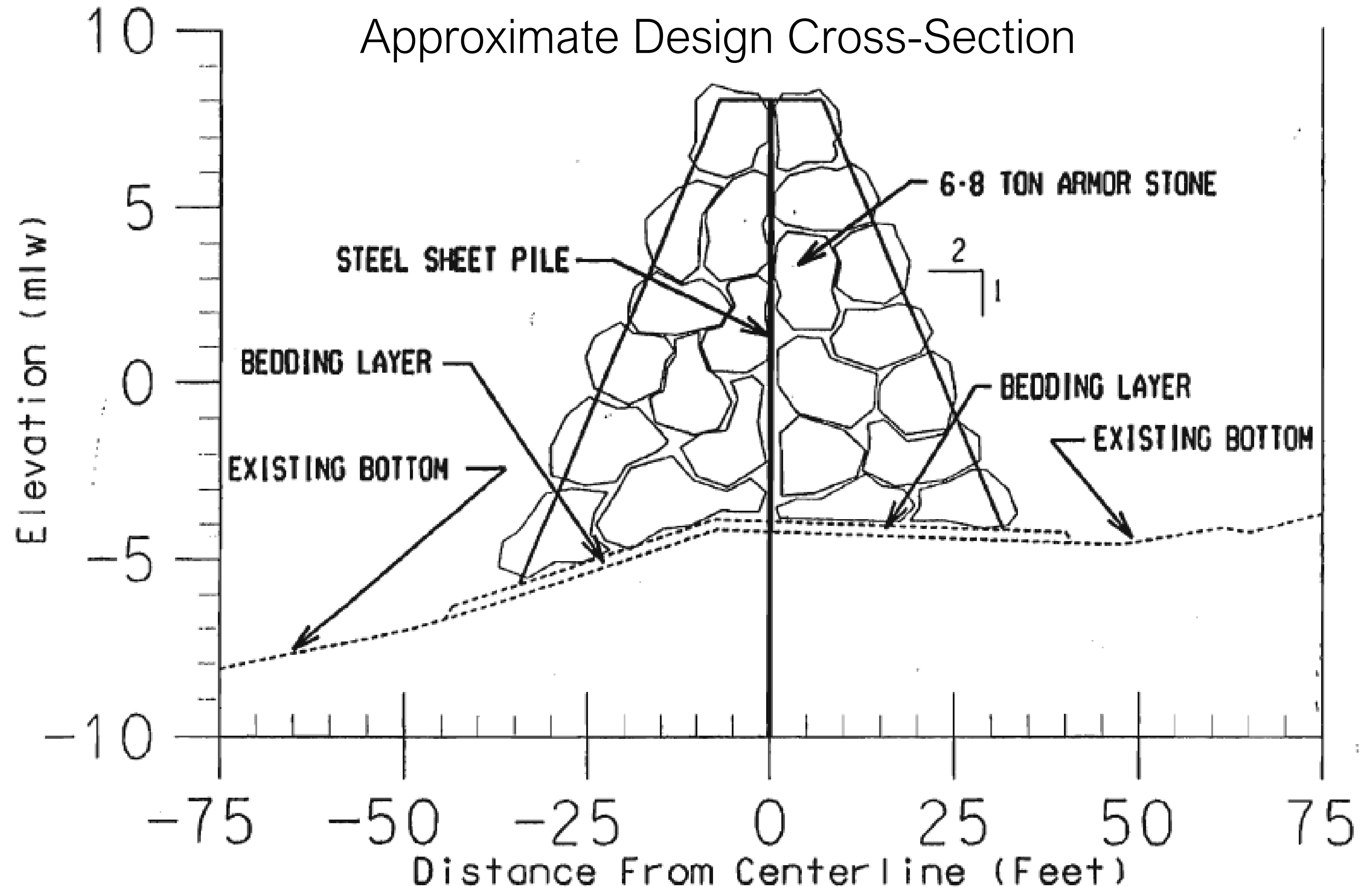
SOUTH JETTY REPAIR



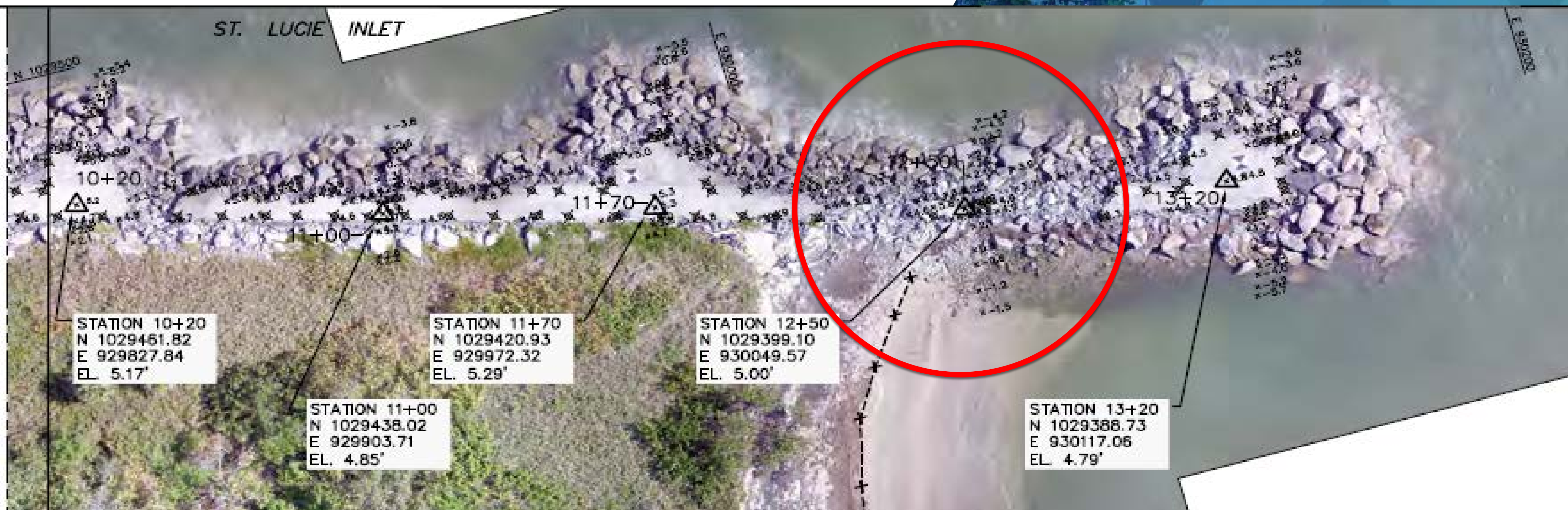
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USACE SOUTH JETTY DESIGN

- Component of the Federal Navigation Project
- Constructed in 1982
- Crest elevation: +8.0 ft MLW
- Crest Width: 10-14 ft.
- 6-8 ton granite armor stone

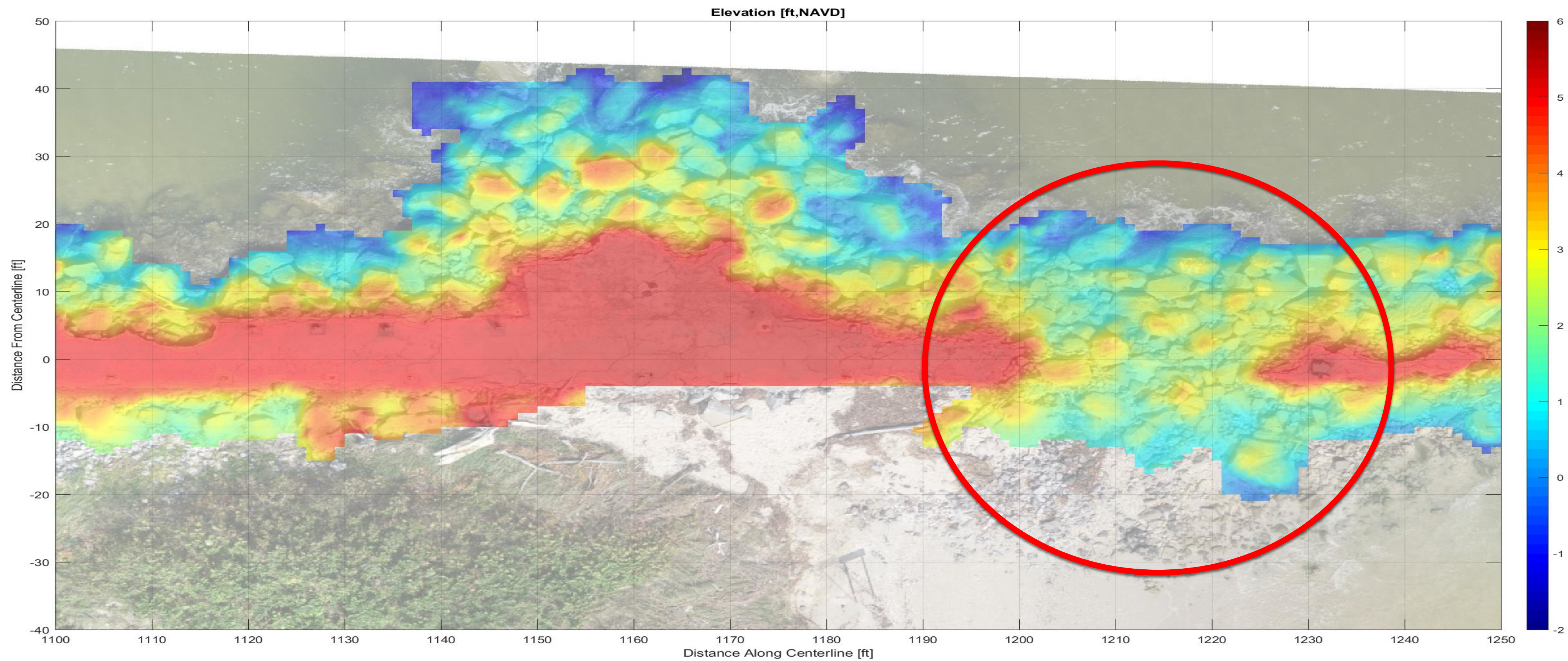


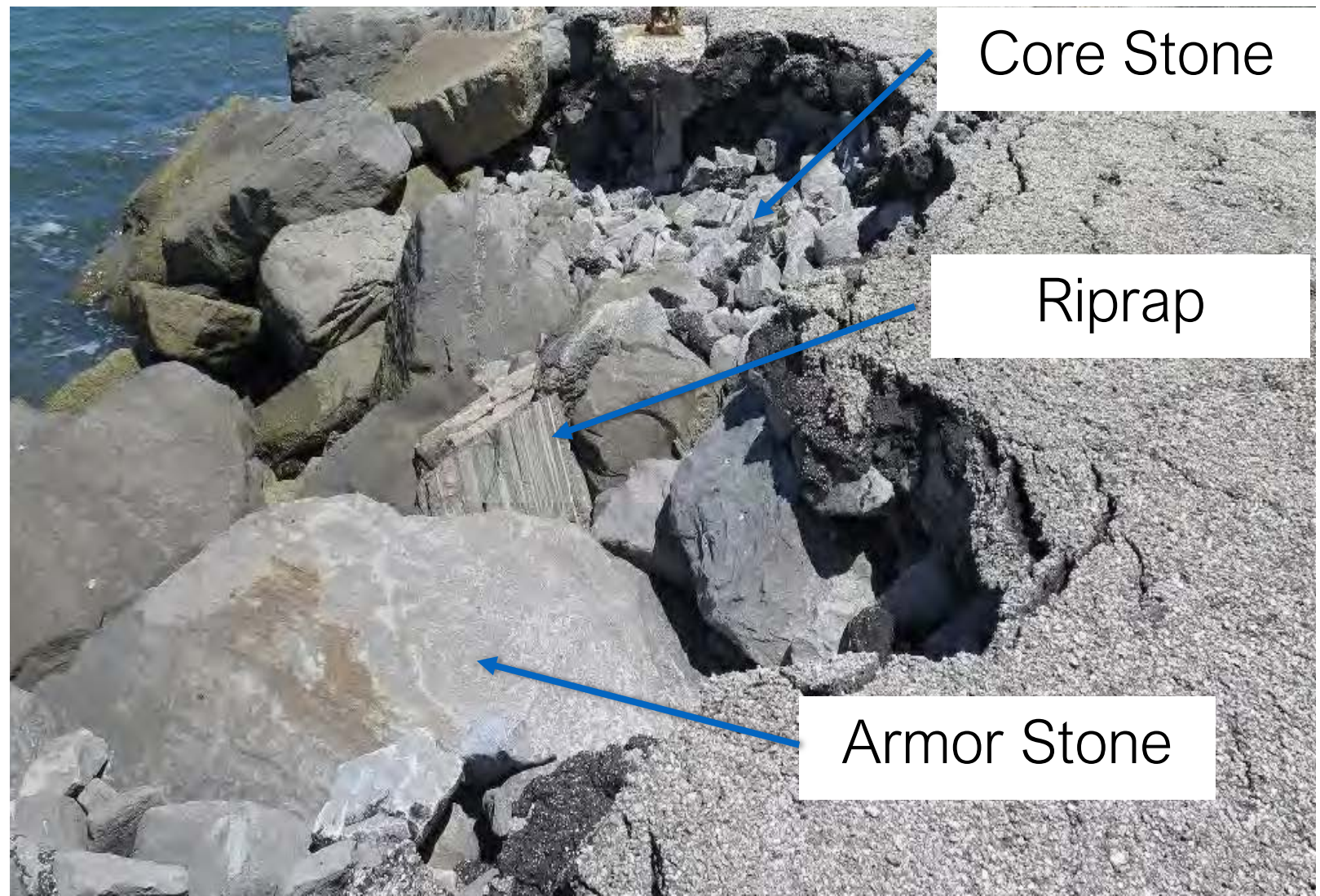
2019 AERIAL SURVEY



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2019 LIDAR SURVEY







RECOMMENDATION TO USACE

- Rehab the South Jetty Structure
- Use 50 year life for SLR projection
- Increased design height by 1 foot
- Eligible for up to 100% Federal funds

Line Item	Units	Unit Cost	Quantity	Total
Adjust/Remove Stone	Tons	\$50	12,320	\$616,000
Place Stone	Tons	\$150	27,010	\$4,051,500
Maintenance Road	Cubic Yards	\$500	500	\$250,000
Option 4 (9.0 ft NAVD)	-	-	-	\$4,917,500



ST. LUCIE INLET MANAGEMENT PLAN



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ORIGINAL INLET MANAGEMENT PLAN

ADOPTED 1995

ST. LUCIE INLET MANAGEMENT STUDY IMPLEMENTATION PLAN

CERTIFICATE OF ADOPTION

WHEREAS the Department of Environmental Protection, in partnership with Martin County, has conducted a study of the St. Lucie 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) Continue measures to mitigate the identified impacts of the inlet, and channel and sedimentation basin.**

An optimum dredging plan including the most beneficial dredging cycle, in terms of bypassing sand at the inlet, should be established for current conditions as well as for conditions with the proposed expanded sedimentation basin. Place all beach compatible dredged material on downdrift beaches in eroded areas. Location for placement of material shall be on areas most in need and environmentally suited. As a minimum, bypassing of material shall meet average annual placement objectives as stated in the sediment budget (see 4) below).
- 2) Dredge interior inlet flood tidal shoal and place beach quality material on downdrift beaches.**

Sediment quality and method of transportation to spoil site must be resolved prior to application for permit.
- 3) Investigate options which include modifications to the north jetty and expansion of the sedimentation basin.**

Proposed alternatives must facilitate the continued bypassing of sand, consistent with Section 161.142, Florida Statutes.
- 4) Investigate options which include modifications to the north jetty and expansion shall be formally validated or redefined based on a comprehensive monitoring plan by December 31, 2000.**

UPDATED INLET MANAGEMENT PLAN

2016

St. Lucie Inlet Management Plan

FINAL ORDER ADOPTING

ST. LUCIE INLET MANAGEMENT PLAN

WHEREAS on August 7, 1995, the Florida Department of Environmental Protection (Department) adopted the St. Lucie Inlet Management Study Implementation Plan, which established inlet sand bypassing objectives, calling for studies to modify jetties and expand the sediment basin, and calling for implementation of a comprehensive beach and offshore monitoring program and to revalidate the adopted sediment budget, and

WHEREAS the existing inlet protocol to bypass all beach compatible dredged material to downdrift beaches in eroded¹ areas was determined by the sediment budget developed in the study, *St. Lucie Inlet Management Plan* (ATM, 1995), which was conducted in partnership with Martin County, and

WHEREAS the sand bypassing objectives of the St. Lucie Inlet Management Study Implementation Plan directed the placement of the inlet maintenance dredging material on the Jupiter Island beaches south of the inlet, and

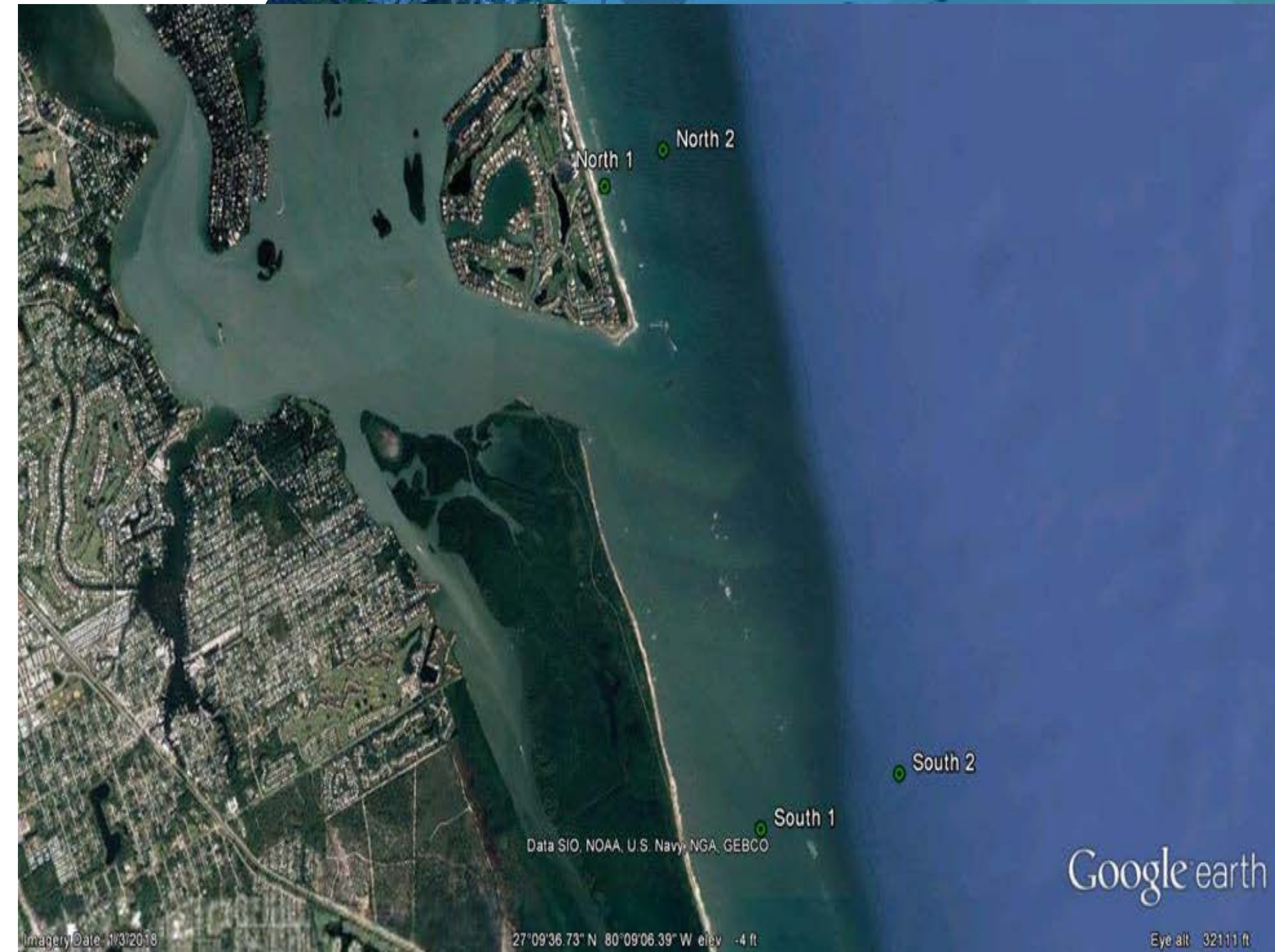
WHEREAS in 2008, the Florida Legislature amended Section 161.142, Florida Statutes, finding, "It is in the public interest to replicate the natural drift of sand which is interrupted or altered by inlets to be replaced and for each level of government to undertake all reasonable efforts to maximize inlet sand bypassing to ensure that beach-quality sand is placed on adjacent eroding beaches. Such activities cannot make up for the historical sand deficits caused by inlets but shall be designed to balance the sediment budget of the inlet and adjacent beaches and extend the life of proximate beach-restoration projects so that periodic nourishment is needed less frequently", and

WHEREAS Martin County contracted with Applied Coastal Research and Engineering, Inc., to compile new and historical data and information regarding coastal processes and inlet and shoreline dynamics, and to update the inlet sediment budget as reported in *2014 Updated St. Lucie Inlet Sediment Budget* (Ramsey et al, 2014), and

¹ As used in this document, the term "erosion" means wearing away of land or the removal of consolidated or unconsolidated material from the coastal system by wind or wave action, storm surge, tidal or littoral currents or surface water runoff. As used in this document, the term "accretion" means the buildup of land or accumulation of unconsolidated material within the coastal system caused by wind and wave action, storm surge, or tidal or littoral currents. The description of coastal processes in this document are not intended to affect title to real property or real property boundaries.



SEDIMENT BUDGET UPDATE DATA COLLECTION



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Questions?