

# SARASOTA COUNTY COMPREHENSIVE INLET MANAGEMENT PLAN

Client: Sarasota County

Big Sarasota Pass, New Pass and the adjacent interior and exterior shorelines of Longboat Key, Lido Key and Siesta Key comprise a unique resource that affects a wide range of public interests. The County desired the development of a comprehensive integrated Inlet Management Plan (“Plan”) for these passes and adjacent shorelines: 1) to determine the extent to which the inlets cause erosion on adjacent beaches and to provide for mitigation of the erosive impact, 2) to develop a sand management strategy, and 3) to provide for a safe and efficient navigation strategy.



**Phase I:** The County wanted to bring together all the stakeholders affected by the functions and impacts of the coupled inlets-shoreline-Bay system and develop a proactive, scientifically-based regional work plan consistent with stakeholder interests and the objectives identified above. The Coastal Tech Team (Coastal Tech, Coastal Engineering Consultants, and University of South Florida) assisted the County through a phased examination of the physical and hydrodynamic setting of the passes and interior of Sarasota Bay and the identification of detailed activities required for final Plan development. This effort resulted in a detailed scope of services for the final Plan development as “Phase II”.

**Phase II:** Inlet management alternatives, including ‘no action,’ dredging new alignments for channels at both passes, and mining Big Pass’s ebb shoal in various configurations were extensively modeled and evaluated for feasibility, physical and environmental impact of the adjacent Bay system. In order to provide data for set-up and calibration of the models used in this evaluation, topographic and bathymetric surveys were performed at the two inlets (ebb shoals, flood shoals, and channels) and along the adjacent beaches. Thirty five days worth of field data, which included water elevations and current velocities were collected at two locations inside the passes. The hydrodynamic model, ADCIRC was used to quantify potential impacts that could occur to the Bay system from inlet modifications that would alter circulation processes and sedimentation patterns. In addition to the hydrodynamic modeling, the Team used the U.S. Army Corps’ M2D model with sediment transport capabilities coupled with a wave model, WABED, to simulate morphological changes and to assess potential impacts to the existing morphologic regime for the two-inlet system over a 1-year period caused by the proposed relocation of the existing channel and mining of the Big Sarasota Pass ebb shoal.

## Key Elements

- ⦿ Bathymetric & Topographic Surveys
- ⦿ Controlled Aerial Photography
- ⦿ Erosion Analyses
- ⦿ Sediment Data
- ⦿ Hydrodynamic Data
- ⦿ Numerical Modeling
- ⦿ Alternatives Identification, Evaluation and Comparison

**Date:** 2008

**Cost:** \$501,088

**Fees:** \$174,882

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