

## JOINT MEETING

**Manatee County Board of County Commissioners  
and  
Longboat Key Town Commission**

**Addressing Longboat Pass Management Plans  
Tuesday, November 30, 2010  
1:30 p.m.**

**Manatee County Administrative Center  
Manatee Room, 4th Floor  
1112 Manatee Avenue West, Bradenton FL 34205**



# Overview

- Town of Longboat Key, Manatee County and WCIND are developing an Inlet Management Plan (IMP) for Longboat Pass
- State funding available under 2010 Florida Statutes - Chapter 161.143
- Understanding inlet dynamics and effects on beaches
- Joint management of Longboat Pass for navigation, nourishment and protection



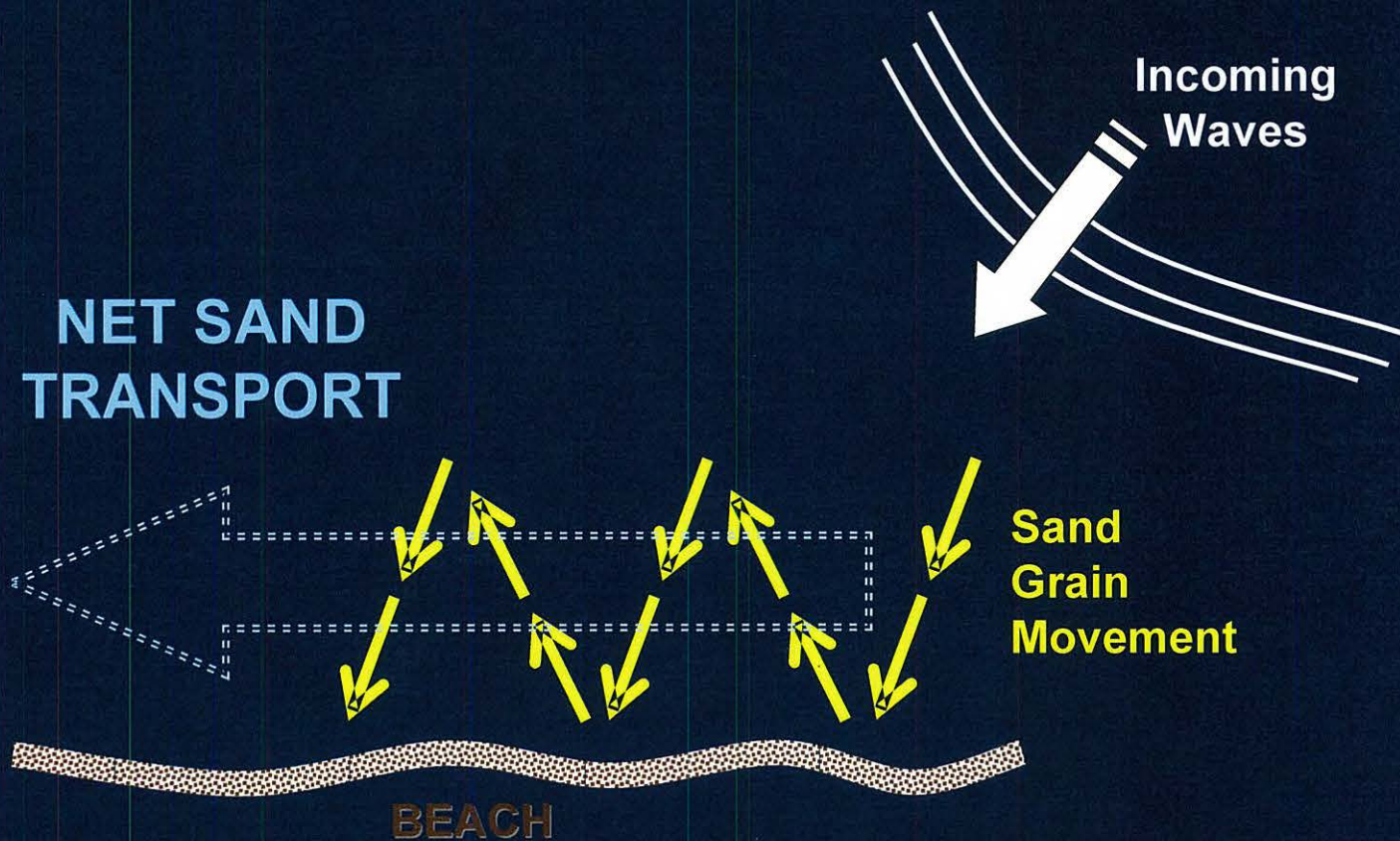
# Chapter 161.143, Florida Statutes

**161.143 - Inlet management; planning, prioritizing, funding, approving, and implementing projects.**

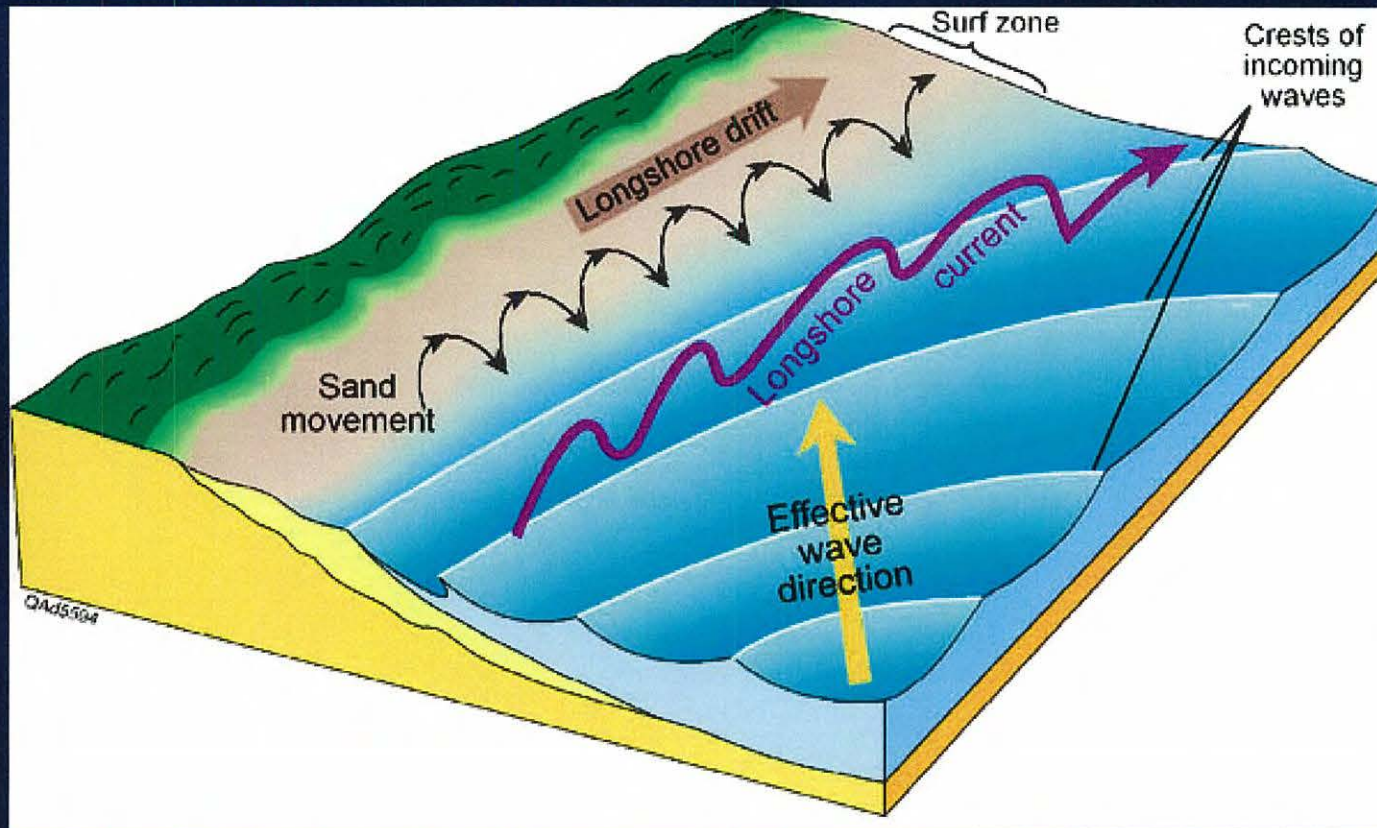
- 
- (1) Studies, projects, and activities for the purpose of mitigating the erosive effects of inlets and balancing the sediment budget of the inlet and adjacent beaches must be supported by separately approved inlet management plans ... Such plans in support of individual inlet projects or activities must ... evaluate each inlet to determine the extent of the inlet's erosive effect on adjacent beaches and, if significant, make recommendations to mitigate such ongoing erosive effects and provide estimated costs for such mitigation.



# Successive Waves Carry Sand Downdrift Along a Longshore Current



# Successive Waves Carry Sand Downdrift Along a Longshore Current



[http://coastal.beg.utexas.edu/thscmp/fg\\_mustang\\_3.htm](http://coastal.beg.utexas.edu/thscmp/fg_mustang_3.htm)



# Longshore Sand Transport Anna Maria Island

**Sand is moving south  
into Longboat Pass**

Jetty is leaky

Groins  
hold  
some  
sand



# Longshore Sand Transport Longboat Key

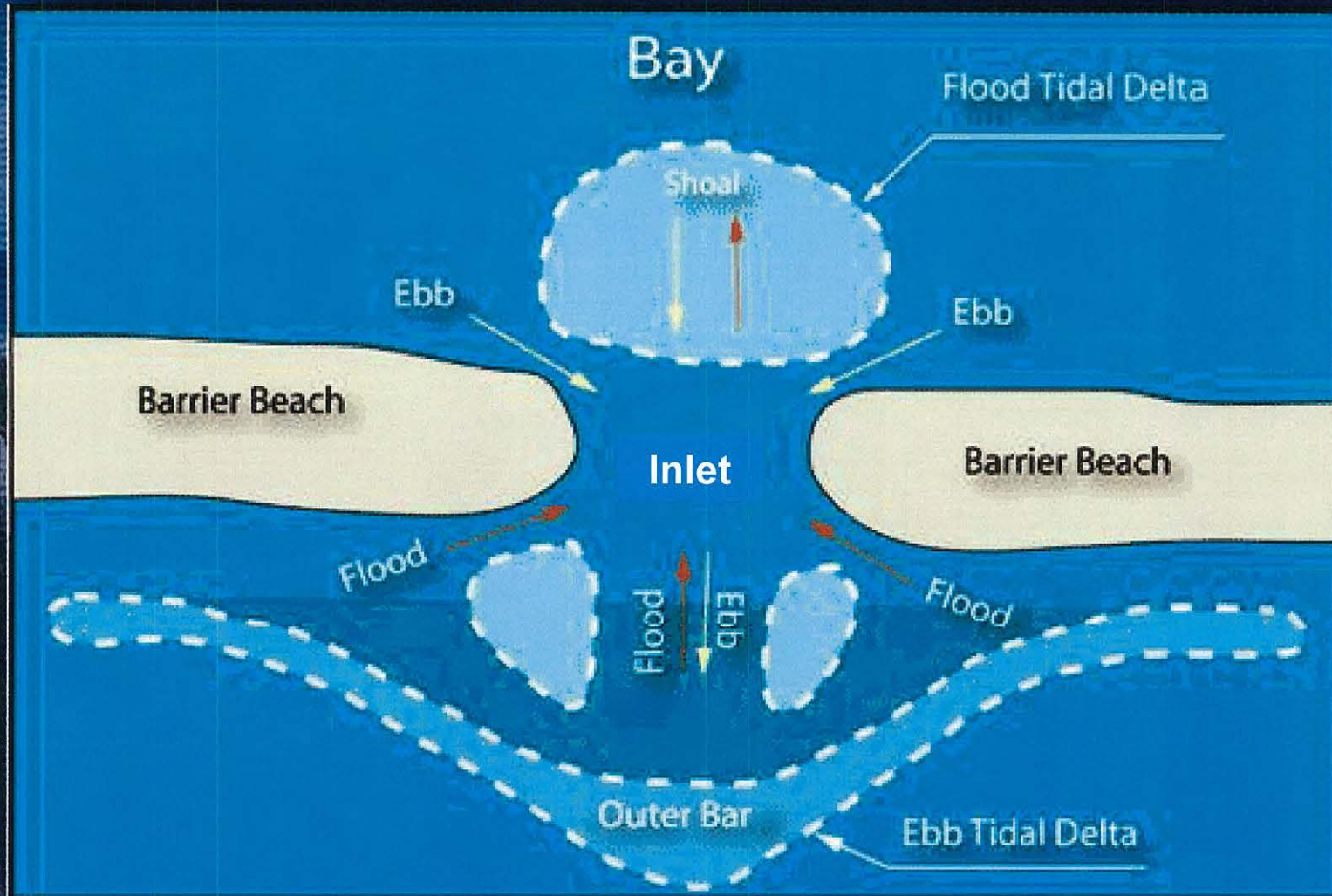
Ebb shoal  
moving  
sand  
onshore

**Sand is moving north  
into Longboat Pass and  
south on Longboat Key**

Sand Bars

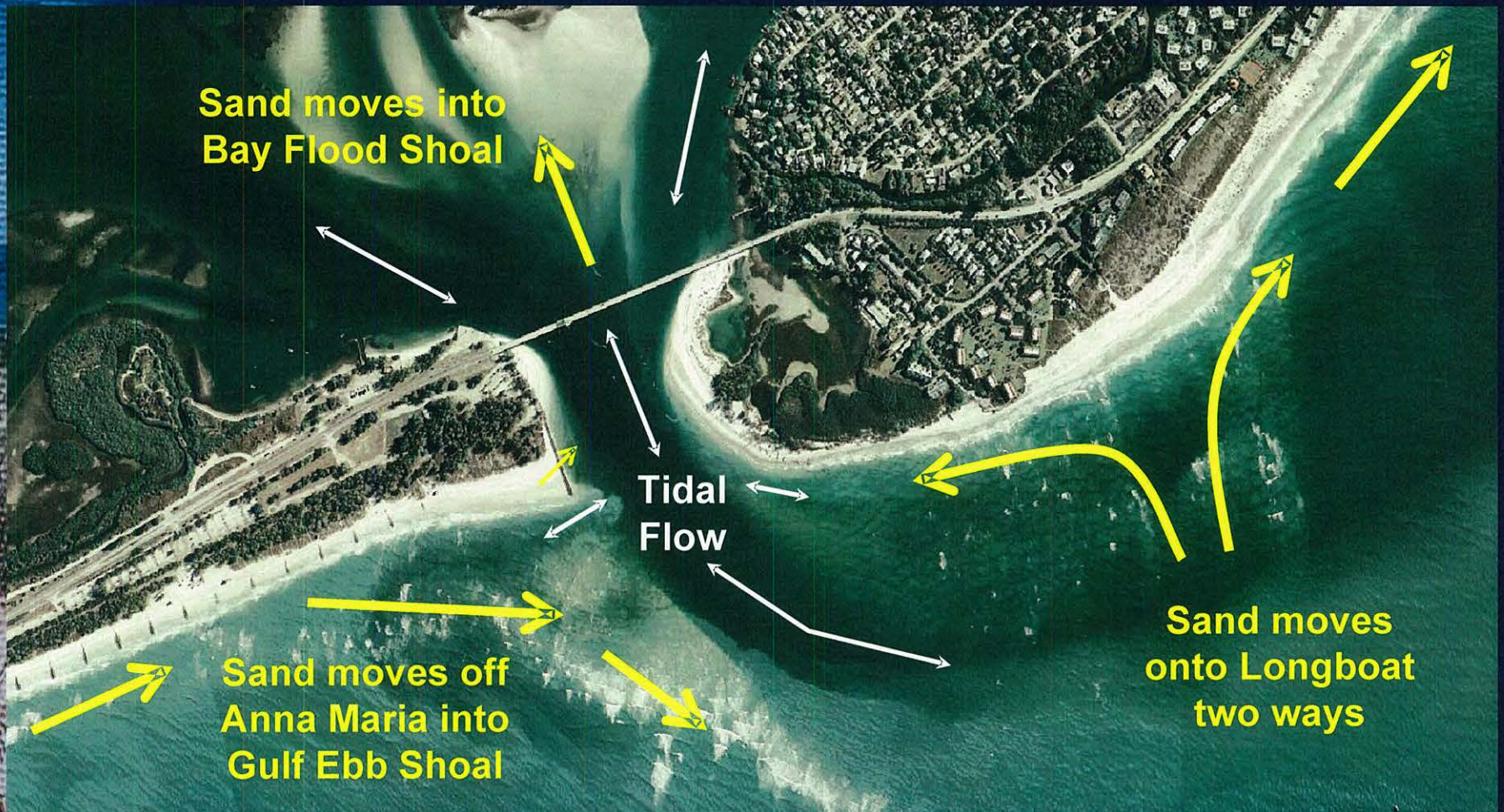


# Gulf Ebb and Bay Flood Shoals Collect Sand

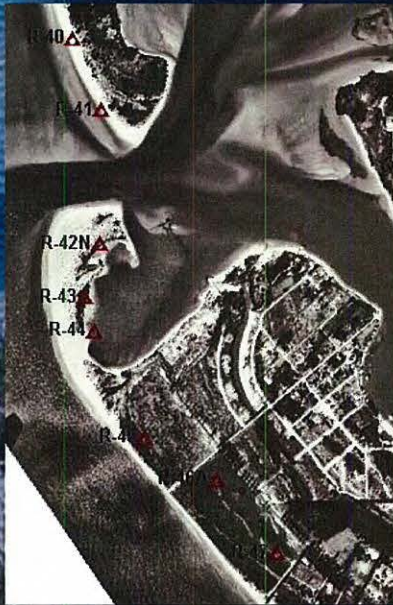




# Longboat Pass Dynamics



# Historic Variability



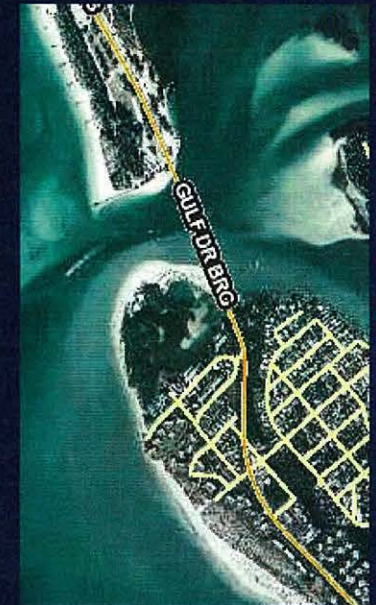
1952



1963



1977

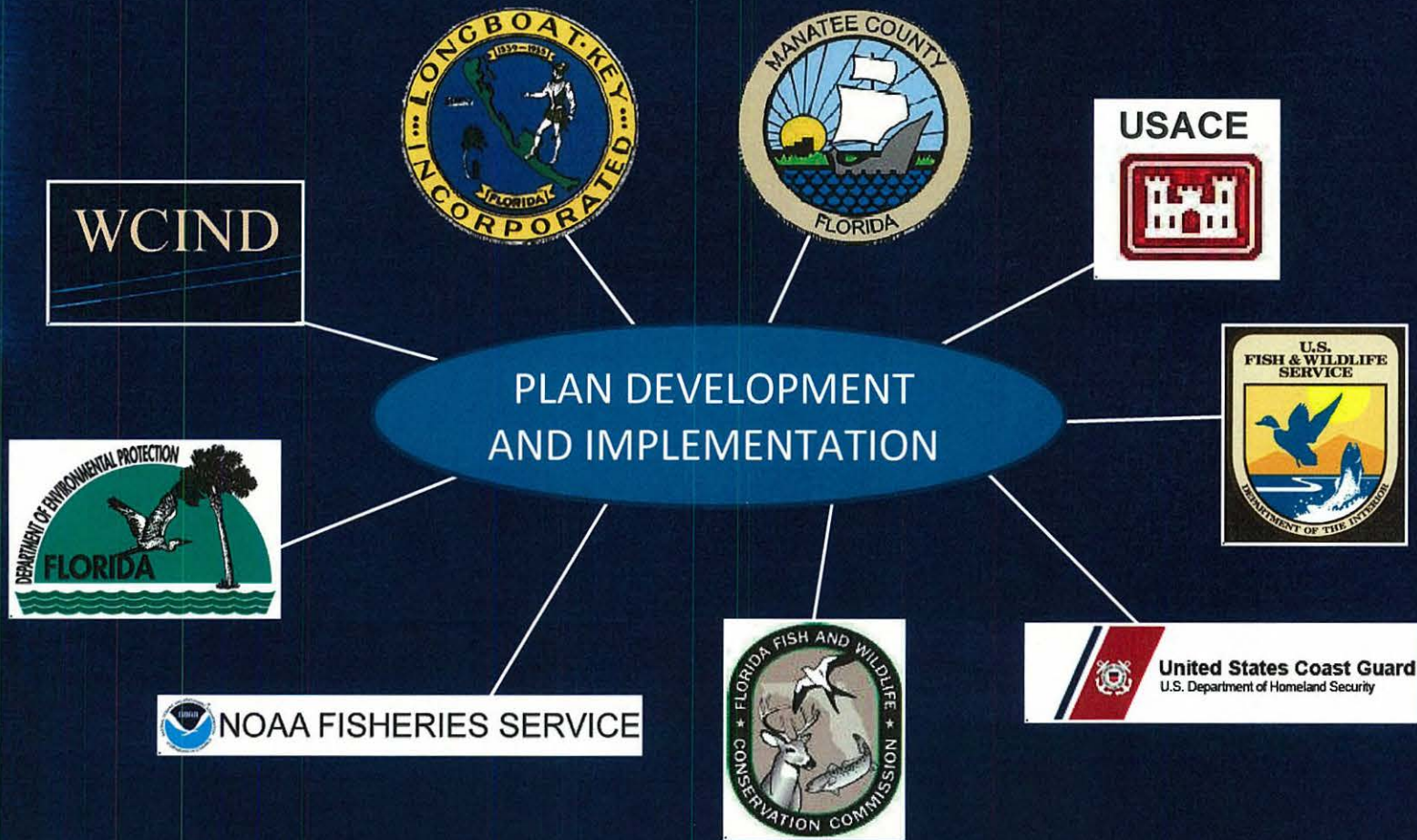


2010

- Management challenges
- Multiple municipalities affected



# Inlet Management Plan



# Conclusions

- Inlets trap sand from beach transport
- Sand lost to inlets does not benefit adjacent beaches
- Changes in shape or orientation of inlet affects adjacent beaches and navigation
- Town of Longboat Key, Manatee County and WCIND are developing an Inlet Management Plan (IMP) for Longboat Pass to fully address these issues





## COASTAL PLANNING & ENGINEERING, INC.

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November 19, 2010

Charlie Hunsicker  
Director  
Natural Resources Department  
Manatee County Government  
415 10 Street West  
Bradenton, FL 34205

**Re: Management of Longboat Pass**

Dear Charlie:

This is to describe the present management situation of Longboat Pass, located between Anna Maria Island and Longboat Key, and to summarize recent events concerning the Pass.

Longboat Pass divides Anna Maria Island to the north from Longboat Key to the south, and is a federally authorized navigation project. The federal government periodically dredges the navigation channel to maintain navigation through Longboat Pass. The present location of the federally authorized navigation channel at the Pass assumes an approximate center location, some distance away from the adjacent islands. It was last excavated in the center (authorized) position by the U.S. Army Corps of Engineers (USACE) in 1997. Since that time, the navigation channel has naturally drifted south and is now positioned just north of the north end of Longboat Key. The federally authorized, centrally located channel is presently shoaled. At this time, the USACE is conducting the engineering for maintenance dredging of Longboat Pass and may be considering maintaining the modified channel location of just north of Longboat Key rather than maintaining the central channel location.

In recent years, the County has considered excavating Longboat Pass to obtain sand for beach nourishment purposes. The County is presently planning to construct a beach nourishment of the eroded beach immediately north of Longboat Pass (Coquina Beach). Construction is scheduled for this winter. In the initial stages of engineering for the Coquina Beach nourishment project, we considered the use of Longboat Pass sediment as the sand source for the project. Longboat Pass sand was considered for use because the sediment would be the least costly alternative to nourish the eroded beach and would have a high probability of being compatible with the sediment of Coquina beaches. Also, dredging the Pass may provide the secondary benefit of enhancing navigational conditions in the Pass. In the past, sediment had been excavated from the channel by the USACE during navigation maintenance efforts with placement on both Longboat Key and Anna Maria Island. Thus, the possibility of extracting sediment from Longboat Pass for beach nourishment purposes was considered a cost effective method to obtain

sediment for the beach with the added benefit of improving navigational conditions through Longboat Pass.

In 2007, Coastal Planning & Engineering, Inc. (CPE) conducted geotechnical investigations in Longboat Pass and determined that the combined volume of sediment within the federally authorized channel and portions of the northern ebb tidal shoal would provide sufficient sediment volume for the Coquina project, as designed at that time. Geotechnical investigations indicated the sediment was beach compatible. However, the Florida Department of Environmental Protection (FDEP) advised the County that the federally authorized navigation channel could be excavated but not the ebb tidal shoal material. The FDEP disallowed the use of the ebb tidal shoal material because of concern for possible adverse coastal effects from removing ebb tidal shoal sand. As a result, the volume available from Longboat Pass was not sufficient based upon the preliminary Coquina Beach project design and use of Longboat Pass as the Coquina project sediment source was abandoned. Sand for the project will be obtained from a borrow area located offshore of the north end of Anna Maria Island.

In 2008, the West Coast Inland Navigation District (WCIND) and the FDEP released a draft report of a study of Longboat Pass. The study recognized that the present southerly position of the channel would likely minimize USACE channel maintenance requirements and costs and, as a result, the USACE has considered excavating the southern channel location. The central channel location would not be maintained under this scenario.

In recent years there has been observational evidence that the southerly location of the channel may contribute to the erosion of Greer Island and northern Longboat Key. As a result, the Town of Longboat Key Town Commission has expressed concern regarding the potential adoption of the southerly location of the channel by the USACE as the new maintained channel location, citing concern of continuing erosion pressure of the northern Longboat Key beaches due to the allowed channel drift to the south. In response to concerns about the potential for the southerly channel's impact on northern Longboat Key, the County and the Town have met with the WCIND and the USACE. After hearing the concerns of the County and the Town, the WCIND indicated a willingness to continue supporting the maintenance of the channel in its authorized center position.

The concept of the Town and County taking control of the next excavation of the central channel location has also been considered. In the event that the USACE was not funded to excavate the center channel location, we were requested to provide an estimated engineering and construction cost to excavate an estimated 200,000 cubic yards with near proximity placement on the beach. The engineering and construction cost estimate was as follows:

- |  |                            |
|--|----------------------------|
| (1) Dredge and Equipment mobilization/demobilization of an interior hydraulic cutterhead dredge:                       | \$650,000 to \$750,000     |
| (2) Excavation of 200,000 cubic yards with placement on adjacent beaches and an estimated \$5.50 to \$6.50 cubic yard: | \$1,100,000 to \$1,300,000 |

(3)	Beach Tilling:	\$10,000
(4)	Geotechnical Investigations of Longboat Pass:	completed
(5)	FDEP and USACE Permitting:	\$140,000
(6)	Plans and Specifications:	\$50,000
(7)	Construction Bidding Assistance:	\$15,000
(8)	Construction Administration:	\$100,000

Estimated Cost Range: \$2,065,000 to \$2,365,000

It is recognized that Longboat Pass is an integral part of the regional coastal system which includes both Longboat Key and Anna Maria Island. The Pass greatly influences the erosional and accretional conditions of the Gulf coastline of both Longboat Key and Anna Maria Island. Considering the effort and resources both the County and Town employ to maintain and preserve the beaches of Longboat Key and Anna Maria, appropriate management of Longboat Pass by the Town and the County would be expected to enhance the preservation and maintenance of the adjacent beaches. In a cooperative effort, the Town and the County are funding the development of an Inlet Management Plan (IMP) for Longboat Pass. The IMP will utilize the information presented in the WCIND study and build upon it. The IMP will address many of the issues related to the management of the Pass and the adjacent beaches. Included in the IMP will be a three dimensional modeling evaluation of the navigation channel and the effect of the channel location on the adjacent coastlines. The results of the IMP will serve as a guide for the future management of Longboat Pass.

If you have any questions, please call me.

Sincerely,

COASTAL PLANNING & ENGINEERING, INC.



Richard H. Spadoni  
Senior Vice President

cc: Beau Suthard, P.G., CPE  
Tom Pierro, P.E., CPE