

Stump Pass Long Term Management Plan

By Charles Mopps, Project Manager

Stump Pass is an inlet that separates Manasota Key and the State Park Beach on the north side and Palm-Knight-Don Pedro Islands to the south. In July 2003, Charlotte County completed construction of the first erosion control project, restoring three critically eroding beach segments along Manasota Key, Palm Island, Knight Island and Don Pedro Island. In 2006 and 2011, Charlotte County completed maintenance of the project to offset the erosion losses from storms and hurricanes as well as background erosion.

In order to address future beach and inlet management needs, Charlotte County embarked on the next 10-Year Management Plan for Stump Pass and the adjacent beaches. As part of this plan, Charlotte County is in the process of submitting the necessary documents to conduct an Erosion Mitigation and Habitat Conservation Project that will place beach compatible fill, from both inlet and offshore sand sources, along erosion damaged shorelines including critical sea turtle and shorebird habitats. An erosion control structure will be integrated with the fill to improve project performance. Three historically eroding sites including Knight Island, Don Pedro Island, and Stump Pass Beach State Park located on Manasota Key, will be addressed.

The primary purpose of this project is to restore storm protection to upland development and restore and conserve natural resource habitats and recreational beach areas. The beach fill areas include approximately three miles of critically-eroding shoreline on Knight and Don Pedro Islands (along the north and south beach areas) and approximately 1.5 miles of critically-eroding shoreline along the updrift project area at Stump Pass Beach State Park. An additional benefit of the project is to restore the storm and erosion-impacted navigational channel through Stump Pass. Navigational aids within the Stump Pass Channel, including channel markers and buoys, shall be maintained to mark the navigational channel.

To achieve the goals of enhancing project performance, extending project life, and increasing the interval between maintenance dredging events, Charlotte County has undertaken a detailed study to identify structural compliments to stabilize the dynamic shorelines adjacent to Stump Pass. These efforts have been coordinated with the Florida Department of Environmental Protection (FDEP) Beaches and Coastal Systems and the Florida Park Service who manages the lands north of the inlet.

Based on the professional experience of Coastal Engineering Consultants and county staff, and with the input of stakeholders, several design considerations were analyzed in the selection of a structural compliment. These considerations include adaptive management, a desirable feature allowing structures to be timely and cost-effectively modified based upon performance; minimal footprint, which protects the natural environment; downdrift impacts, which mitigates for placed structures; environmental impacts, avoided or minimized if possible; environmental benefits, to ensure sustaining the beach fill which provides habitat for threatened and endangered species; fiscal impacts, to ensure program costs reduce over the 25-year life of the project.

Charlotte County staff and the consulting team completed a detailed alternatives analysis of the beach and inlet management strategies deemed feasible through the plan formulation phase of the work. The analyses included extensive stakeholder outreach including presentations to the Board of County Commissioners, Beaches and Shores Advisory Committee, resident and homeowner groups, and state agencies. Based on the detailed numerical modeling study, input from the stakeholders, and assessment of alternatives, multiple strategies were proposed and evaluated along with an adaptive management plan to include future strategies.

The selected recommended long-term management plan includes beach re-nourishment to sustain the critically-eroding beaches on an approximate eight-year cycle using offshore sand sources. In addition, the plan includes dredging Stump Pass for improved navigation on an approximate four-year cycle with sand placement on the shorelines immediately adjacent to the pass, and installation of a rock terminal groin stabilizing structure on the south end of Manasota Key. The plan also incorporates possible future installation of T-groin stabilizing structures on the immediate downdrift beach should sand bypassing prove to be insufficient to meet storm damage reduction measures, and future sand placement on the ebb shoal should monitoring indicate the shoal is not naturally recovering.

County staff and the consulting team are currently conducting sensitivity testing of the rock terminal groin along the south end of Manasota Key. Upon completion of additional modeling, a Joint Coastal Permit application will be submitted to the regulatory agencies requesting authorizations of the above recommended plan.

Major steps and approximate timing for this project are: November 2013, complete and submit Joint Coastal Permit application; November through December 2013, conduct geotechnical investigation of offshore borrow areas; December 2013 through December 2014, permit processing with FDEP and the United States Army Corps of Engineers; July through October 2015, bid process, contract procurement and mobilization; November 2015, commence construction.

The status of Charlotte County's Coastal Projects is available on our website www.CharlotteCountyFL.gov —click Project Status Updates in the Popular Links list on the left. If you have any questions regarding Stump Pass or any other Coastal Project, please contact Charles Mopps, Project Manager, at Chuck.Mopps@charlottefl.com.