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Title: UPDATE ON THE ST. LUCIE INLET MANAGEMENT AND IMPROVEMENTS NEEDED FOR THE SOUTH JETTY

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Attachments: 1. SUPP MEMO, 2. 06-08-2021 BOCC Update SLI Management and Jetty.pdf

Date	Ver.	Action By	Action	Result
6/8/2021	1	Board of County Commissioners	approved	Pass

PLACEMENT: Departmental

TITLE:

UPDATE ON THE ST. LUCIE INLET MANAGEMENT AND IMPROVEMENTS NEEDED FOR THE SOUTH JETTY

EXECUTIVE SUMMARY:

County staff will present an update on aspects of St. Lucie Inlet Management including inlet maintenance, Inlet Management Plan update and south jetty repair. The PowerPoint presentation will be submitted as a Supplemental Memorandum to this Agenda Item.

DEPARTMENT: Public Works

PREPARED BY: **Name:** Kathy FitzPatrick
Title: Coastal Engineer

REQUESTED BY: Board of County Commissioners

PRESET:

PROCEDURES: None

BACKGROUND/RELATED STRATEGIC GOAL:

St. Lucie Inlet Maintenance

The St. Lucie Inlet is a federal navigation project managed by the US Army Corps of Engineers (USACE) through their Jacksonville, Florida District. Martin County serves as the local sponsor for this federal project. Although not a requirement of a local sponsor, the County proactively obtains all necessary permits for the required work, performs all monitoring and supplements the Corps' planning activities and project funding when time or money are in short supply. County staff meets

regularly with Corps staff to discuss and prepare for upcoming projects. The County also advocates for funding at the federal level through our Congressman and Senators as well as interacting directly with all agencies, committees and offices involved.

Although this is a federal inlet, the Commission has recognized that the Inlet is vital to the health of Martin County's economy and ecology. Maintaining safe navigation and healthy water flow has been identified as the top priority for the Coastal Management Division. While pursuing all avenues to secure federal funding, the County has also established alternative paths to ensure the required work gets done when it is needed. A contributed funds agreement has been executed to allow the County to supplement federal funding when necessary. The County also maintains a federal permit that would allow the work to proceed in the absence of Corps participation. The Commission has established regular annual funding that is sufficient for the County to take action on its own whenever necessary.

Staff received a modeling report from consultants in late 2020 which showed the Impoundment Basin was filling faster than in past cycles. While the causes for this increased deposition rate are unknown, it predicted conditions that could cause shoaling and impact navigation through the Inlet. By dredging sand from the Impoundment Basin and Navigation Channel to complete the recent project at Bathtub Beach the danger of immediate shoaling was removed.

Given the current condition of the impoundment basin and navigation channel, the St. Lucie Inlet will need to be fully dredged in the January - May time period in 2022. Staff has obtained a state permit for this project where the material will be placed on the beach in the state park, just south of the South Jetty. This is sand bypassing that has been requested by the St. Lucie Inlet Preserve State Park manager, to mitigate extreme erosion that has occurred in the first mile south of the inlet. Unlike previous projects that have required sand to be pumped 3-5 miles south of the inlet, this project will be much simpler, cheaper and faster than projects in the past. Project estimates maintenance dredging and beach placement are in the \$9M range with the requested federal contribution being about 75% of the ultimate project cost. Grant funding from the State is also expected for this work.

Staff has been working with the USACE Jacksonville District to coordinate the federal project to be conducted in early 2022. We continue efforts through our DC Lobbyist to obtain federal funding. Staff is also working closely with the Palm Beach Gardens regulatory office to obtain a federal permit for the project. This would allow the County to conduct this dredging independently if necessary and will also provide the necessary federal environmental review. Environmental baseline surveys have been conducted, including documentation of the location and condition of existing coral and other hardbottom communities.

St. Lucie Inlet Sediment Budget

In 1987, Section 161.142 FS, "Declaration of public policy relating to improved navigation inlets", was enacted to add inlet management planning into the State's strategic Beach Management Program. Historically, inlet maintenance projects were prone to employing the "least cost" disposal options, often simply side casting the sand within the inlet or dumping the sand offshore where it was lost to the beach system. The goal of Section 161.142 FS was to encourage the best use of valuable sand resources by placing the beach quality sand dredged from inlets on beaches that were eroding as a direct result of effects from the inlet's existence. It was updated in 2008 to include the requirement of balancing the sediment budget for inlet management plans.

On August 7, 1995, the St. Lucie Inlet Management Plan (Plan) became the first inlet management plan to be adopted by the State of Florida. Prior to adoption, a study of the St. Lucie Inlet (Study) was conducted to evaluate the impact of the St. Lucie Inlet on adjacent beaches and to recommend corrective measures to mitigate the identified impacts.

On January 11, 2016 State adopted a new Plan which for the first-time acknowledged impacts updrift (north in our case) of an inlet. The Plan balanced the sediment budget by placing 34,000cy of sand on the beaches north of the inlet and 161,000cy of sand on beaches to the south. The County is required to reevaluate the sediment budget every five years.

Staff began work on the 2021 sediment budget update in the summer of 2020 by collecting new data over a 12-month period. During this time period multiple instruments were deployed, and additional surveys were conducted. When the report is finalized, staff will submit the document to Board and to the State for their review. The Inlet Management Plan update is issued by the state, and while close coordination will occur while the new document is under review, County concurrence is not required.

South Jetty

The south jetty stabilizes the north end of Jupiter Island and is a popular recreation area for fishing and beach users. Construction of the south jetty was authorized by Congress as part of the St. Lucie Inlet federal navigation project in 1974. The USACE completed construction of the jetty in 1982. The south jetty at St. Lucie Inlet has deteriorated since it was constructed in 1982. Over the last two years staff has worked with consultants to evaluate the south jetty's structure and stability. The data shows that the jetty crest has decreased in elevation and the side slopes have flattened since the structure was constructed. Moreover, the remaining armor stone appears to be undersized or inappropriately layered throughout the structure and several breaches in the jetty are present in the structure with the most severe damage observed at the seaward end. It is clear that the structure has been damaged and is in need of repair. Together with our consultant, staff has presented a preliminary recommendation for this repair to the USACE. All data collected by the County has been shared with our USACE team.

Similar to the maintenance dredging project, staff and our consultant in Washington, DC continue efforts to obtain federal funding for this project. The south jetty is a navigation component of the federal St. Lucie Inlet Navigation project and is eligible for up to 100% federal funding for the project. The St. Lucie Inlet status is a low priority navigation project making full funding for this project uncertain. The jetty repair project is not eligible for any state funds.

ISSUES:

None

LEGAL SUFFICIENCY REVIEW:

None

RECOMMENDED ACTION:

RECOMMENDATION

Receive the update and presentation on the St. Lucie Inlet management status.

ALTERNATIVE RECOMMENDATIONS

None

FISCAL IMPACT:

RECOMMENDATION

None

ALTERNATIVE RECOMMENDATIONS

None

DOCUMENT(S) REQUIRING ACTION:

- ☐ Budget Transfer / Amendment ☐ Chair Letter ☐ Contract / Agreement
☐ Grant / Application ☐ Notice ☐ Ordinance ☐ Resolution
☐ Other:

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