

**INDIAN RIVER COUNTY, FLORIDA  
BOARD MEMORANDUM**

**DEPARTMENTAL**

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**TO:** Board of County Commissioners

**THROUGH:** John Titkanich, Jr., County Administrator

**THROUGH:** Richard B. Szpyrka, P.E., Public Works Director

**PREPARED BY:** Eric Charest, Natural Resources Manager

**SUBJECT:** Indian River County Beaches – Sector 4 Post Hurricanes Ian and Nicole

**DATE:** May 8, 2023

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**DESCRIPTION AND CONDITIONS**

Indian River County's coastline suffered significant erosional losses to the beach and dune system from the impacts of Hurricane Ian on September 28, 2022, followed closely by Hurricane Nicole on November 10, 2022. The impacts of these storms lasted well beyond the initial day of the storm, with the increased wave activity and high surf created by the Hurricanes in the Atlantic Ocean further contributing to beach and dune erosion throughout the County's beaches for several days. The impacts from these storms resulted in extensive areas where significant dune erosion and beach berm lowering were observed.

These storms not only impacted the County's Engineered and Maintained beaches (Sectors 1-3, 5 and 7), but also significantly impacted much of the County's natural coastline, including the Sector 4 stretch of beach. Although most of Sector 4 is not currently designated as a critically eroded area (62B-36.002(5), F.A.C.) and is not a regularly maintained engineered beach, the entire Sector experienced appreciable erosion to the berm and dunes as a result of Hurricanes Ian and Nicole.

As part of the County's storm response efforts, County staff met with representatives from the Federal Emergency Management Agency (FEMA), Florida Division of Emergency Management (FDEM), and Florida Department of Environmental Protection (FDEP), and Coastal Engineering consultants to quantify the erosional impacts from these storms. Staff continued to work with the above agencies to best position the County in requesting federal and state funding to support future repair efforts to the beach and dune systems within the County's natural Sector 4 beach. However, on May 8, 2023 the County was informed that FEMA has determined that Sector 4 does not qualify for either Category B or Category G federal funding.

Initial observations performed by Staff immediately after the passing of Hurricane Nicole estimated the Sector 4 losses at approximately 220,000 cubic yards (cy) of sand to repair the dune only.

In accordance with the County's Beach Preservation Plan (Stantec 2019), semi-annual hydrographic beach surveys are conducted throughout the County's coastline. These surveys are used to monitor the health of the beaches and provide a critical basis for pursuing cost share reimbursements from FEMA following storm events. As with the County's efforts on the Engineered and Maintained beaches

(Sectors 3, 5 and 7), post-storm hydrographic surveys were performed throughout Sector 4 in order to quantify sand losses. APTIM Environmental and Infrastructure, LLC (APTIM) has compiled the survey data and other information related to Hurricane Ian and Hurricane Nicole impacts into the current draft *Indian River County, FL Sector 4 Storm Damage Report: Hurricanes Ian & Nicole*.

Review of the current Sector 4 data as it relates to Hurricane Ian and Hurricane Nicole losses, indicates that comparing the pre- and post-storm surveys shows a surveyed loss of 50,200 cy of sand above Mean High Water (dry beach and dune losses). When looking at the survey data over the complete hydrographic survey range (dune to offshore to Depth of Closure (DOC)) for the same pre- and post-storm surveys, the Sector 4 beaches demonstrated an increase of 11,700 cy of sand.

Saying that the Sector 4 beaches actually accreted sand as a result of Hurricanes Ian and Nicole contradicts the visual observations of the dune retreat. However, as FEMA considers all the sand in the system, including sand from the dune to sand in the water to the active DOC, the significant increases in sand observed in the nearshore waters outweighed the losses observed in the dune and dry beach. Removing the cubic yard value of 10,900 cy from what is considered to be normal background erosion that would have occurred in the timeframe between the pre- and post-storm survey impacts from Hurricanes Ian and Nicole to the Sector 4 beaches saw an increase of 800 cubic yards of sand above the DOC.

As the complete hydrographic survey information, as required by FEMA to quantify hurricane losses, shows that the Sector 4 beaches saw an accretion of sand in the amount of 800 cy, the County and its' Coastal Engineering Consultant team continue to work with FEMA and the State on ways to seek funding to address dry beach repairs.

As stated above, on May 8, 2023, the County received a final determination from FEMA with regards to whether the Sector 4 beaches had qualified to receive any funding (either Category B funding for emergency measures, or Category G funding for beach and dune repairs). FEMA has since determined that Sector 4 does not qualify for either category of federal funding. This determination was based on Sector 4 not being an engineered and maintained beach, thus not making it eligible for FEMA Category G funding. Additionally, the post storm surveyed data shows that more sand is in the system now than before the storms, and that the remaining dune elevation is greater than what a 5-year storm run-up wave surge would crest over, disqualifying the area for any emergency, FEMA Category B measures. It is anticipated that the County will challenge the FEMA determination.

While the sand losses and the Sector 4 Damage Assessment report continue to be reviewed, County staff remain committed to ensuring the needs of the County's coastline are well documented and known throughout the regulatory and funding community. This can be seen in the coordinated effort between the County and the FDEP in the Department's *Hurricane Ian & Hurricane Nicole Preliminary Post-Storm Beach Conditions and Coastal Impact Report* (December 2022) and subsequent *Hurricanes Ian and Nicole Recovery Plan for Florida's Beach and Dune System* (December 2022) in which the County provided estimated losses and project costs attributed to impacts from the storms. It is important to note that the estimates included in the FDEP documents were based on visual observations from staff immediately after the storm and estimated projected costs.

The County has since provided an update to the FDEP to this preliminary information which the FDEP has indicated will be used in the current session to pursue additional funds to help entities, such as the County, address costs for future repair projects above and beyond any funding that might be made available by FEMA and other agencies.

At the April 17, 2023 publicly noticed Beach and Shore Preservation Advisory Committee (BSPAC) meeting, County staff presented the Committee with information related to the current status of the Sector 4 beach and updated the group regarding on-going discussions that have taken place with FEMA. The BSPAC members unanimously supported making recommendations to the Board of County Commissioners (BCC) to:

1. Direct staff to look at performing a dune only project within Sector 4.
2. Direct staff to look at performing a feasibility study to determine eligibility for Sector 4 becoming an engineered beach.

Based on the recommendation of the BSPAC the following would be necessary for the County to perform any work within Sector 4:

- Easements are required to perform dune or beach renourishment projects on private property utilizing public funds. There are 63 properties within Sector 4 that staff will need to contact to obtain easements. Experience shows that it may take one to three years to obtain the necessary easements for the project. Easement will need to be written by a surveyor for each of the 63 properties and the County Attorney’s office will need to prepare easement documentation for each of the 63 properties.
- If a dune restoration/repair project is undertaken by the County, minimal permitting or permit determinations are anticipated. It is estimated that the cost for design, minimal permitting, and coordination with State and Federal agencies is between \$30,000 and \$50,000.
- If a full beach restoration project is undertaken, the beach must be engineered and permitted through numerous State and Federal agencies. This is a lengthy process that will take up to two years. However, once achieved and once easements are in place, dune and/or beach renourishment projects may happen quickly depending on the availability of funding and turtle season. Preliminary estimates for design, survey, and permitting for an engineered beach is between \$500,000 and \$600,000.

**FUNDING**

Funding is not needed for this BCC agenda item, but should a future dune nourishment/repair activity take place to address the erosional dune losses from Hurricanes Ian and Nicole, the preliminary construction costs of such activities on the Sector 4 natural beach has been estimated to be:

	Sand volume	Estimated Cost
Sector 4	87,700 to 102,000 cubic yards	\$ 5,093,666.71 to \$ 5,924,218.98

- Note that by FEMA determining Sector 4 to be ineligible to receive Federal Funding for dune repairs associated to Hurricanes Ian and Nicole losses, the costs above would be 100% borne by Indian River County and any State funding that may be allocated by the Governor’s office. The Indian River County portion would be funded by the Beach or Optional Sales Tax fund.
- The FDEP has allocated \$4,080,388.00 to Indian River County for use to restore beaches within the County. The funding was allocated by sector, and Sector 4 was allocated \$1,152,520.43. Grant documentation from FDEP will be presented to the for action once FDEP provides the final grant documentation to the County.

Should the BCC direct staff to pursue the feasibility study to determine the eligibility to get Sector 4 identified as an engineered beach as recommended by the BSPAC, the estimated costs for that activity would be:

Activity	Estimated Cost	Timeframe
Feasibility Study and permitting for a Dune project	\$ 30,000 - \$ 50,000	3 to 6 months
Feasibility Study and permitting to become an Engineered Beach for a full Beach and Dune Restoration Project	\$ 500,000 - \$ 600,000	Up to 2 years

**RECOMMENDATION**

At this time, staff is seeking Board direction regarding the next steps pertaining to Sector 4. Staff recommends the BCC continue to support Staff’s on-going discussions with FEMA, FDEM, FDEP and the regulatory permitting agencies in order to continue to pursue funding sources for any potential future dune repair project addressing the Sector 4 impacts from Hurricanes Ian and Nicole.

**ATTACHMENTS**

1. IRC Sector 4 Storm Damage Report

**APPROVED AGENDA ITEM FOR: MAY 16, 2023**