

**INDIAN RIVER COUNTY, FLORIDA
MEMORANDUM**

TO: Jason E. Brown, County Administrator

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

THROUGH: Eric Charest, Natural Resources Manager

FROM: Kylie Ariotti, Beach Environmental Specialist

SUBJECT: Completion of Sector 3, Phase 1 & 2, Beach and Dune Restoration Project

DATE: May 3rd, 2022

This is an update to inform the Board of County Commissioners (BCC), Indian River County's (IRC) residents and visitors of the completion of the Sector 3 Beach and Dune Restoration Project.

DESCRIPTION AND CONDITIONS

Sector 3 encompasses approximately 6.6 miles of coastline in North Beach, the Town of Orchid, Wabasso Beach, Indian River Shores, and unincorporated Indian River County. Sector 3 beaches sustained erosional damage from Hurricane Matthew (2016), Hurricane Irma (2017) and Hurricane Dorian (2019). The Sector 3 Beach and Dune Restoration project was designed and permitted to restore sand losses from these storms and from background erosion by placing beach compatible sand and native salt-tolerant dune plants along the 6.6 mile stretch from the Seaview subdivision in the north to just south of the Turtle Trail beach access.

To avoid the sea turtle nesting season, construction activities on the beach are required to take place between November 1st and April 30th of each year (sea turtle nesting season begins on March 1st in Indian River County, but the Florida Department of Environmental Protection (FDEP) Joint Coastal Permit (JCP) issued for the Sector 3 Beach and Dune Project allows for on-beach construction to take place within March and April under the permit required conditions of additional sea turtle monitoring efforts). Due to the size of the project and initial delayed start date, the Sector 3 Beach and Dune Restoration project was divided into two (2) phases over two (2) construction years 2020/2021 and 2021/2022.

Both Sector 3 Phase 1 and Phase 2 Projects were advertised for competitive bid, with the lowest bid on both projects awarded to local contractor Guettler Brothers, LLC. The Sector 3 Project was designed, permitted, and managed alongside Coastal Staff by County's engineering consultant, Aptim Environmental & Infrastructure, LLC (APTIM). Beach compatible upland sand was obtained locally by Stewart Materials in Fort Pierce and native salt tolerant dune plants including sea oats, dune sunflower, beach elder, panic grass, and railroad vine were provided by Cardno Inc.

Construction on Sector 3 Phase 1 began January 4th, 2021 and after a brief intermission for sea turtle nesting season, was completed January 11, 2022. The Phase 1 Project Area ranged from Seaview Subdivision to Wabasso Beach Park (3.7 miles) and placed approximately 342,047 cubic yards (cy) of beach compatible sand and 385,363 salt tolerant dune plants.

Construction on Sector 3 Phase 2 began November 2nd, 2021 and was completed March 9th, 2022. The Phase 2 Project Area ranged from Wabasso Beach Park to just south of Turtle Trail Beach Access (2.9 miles) and placed approximately 180,139 cubic yards of beach compatible sand and 302,820 salt tolerant dune plants.

In total the Sector 3 Beach and Dune Project placed approximately 522,186 cy of beach compatible sand and installed 688,183 native salt tolerant dune plants over 6.6 miles of IRC's Atlantic coastline. The sand, placed in compliance with engineered permit templates, increased the dune to an average 15-foot elevation at the dune crest, and the beach berm to an average 8-foot elevation at the toe of dune. The beach berm then gradually sloped down to the intertidal zone at a 10:1 ratio providing an increase in the recreational dry beach area. This design provides storm protection benefits to upland infrastructure. Widths of the newly created beach berm and dune varied throughout the project area based on existing beach profiles.

Construction of the Sector 3 Beach and Dune Project has been deemed complete by APTIM. Certifications of project completion, as required under the permits issued for the project, will be submitted by APTIM to the Florida Department of Environmental Protection and the United States Army Corps of Engineers over the next few months.

The warranty period for dune plants installed within the past 90 days remains in effect and those plants will continue to be monitored for survival and growth requirements until the end of the 90-day warranty period.

Beach and dune nourishment projects are the most common method for shoreline protection in the County because of their success of protecting upland infrastructure, providing recreational spaces to the public, and preserving nesting habitat for listed species. Nourishment projects are designed and constructed to take advantage of natural forces like waves and currents to adjust the new beach profile, naturally moving sand within the intertidal zone to slope the new beach. This process, following a nourishment project, is called profile equilibration, or profile adjustment. During beach nourishment projects, construction equipment cannot physically place sand within the intertidal zone, and therefore these projects are designed to include a volume of sand that the waves and currents will disperse to fill in the lower parts of the beach profile. During equilibration, the dry beach may appear to have eroded, however this sand has moved offshore by design where it will effectively dampen the effects of waves aiding to protect our coastline. This permitted design template takes into consideration the protection of nearshore hardbottom resources, with placement volumes adjusted to avoid impacts.

Permit required environmental monitoring will continue at the frequency identified in the project's FDEP JCP permit.

Coastal Staff ask that the public to help do their part in protecting our sand dunes and dune vegetation. By avoiding activities like walking, sitting, standing, and playing on the dunes you in turn will help protect our coastline. Activities like these are detrimental to a dunes' structure and will lead to the destruction of dune vegetation, weakening the overall dune system. A simple way you can help protect our dunes is by using designated dune crossovers and paths to access the beach.

RECOMMENDATION

There is no BCC action needed under this Sector 3 Beach and Dune Restoration Project update.

APPROVED AGENDA ITEM FOR MAY 3, 2022