

Executive Summary

The Atlantic coastline of Indian River County is an indispensable asset providing economic and recreational value, critical environmental habitat, and storm protection. Property along the County's coast has an appraised value of approximately \$4 billion, which accounts for approximately 20 percent of the total property value within the County. The County's beaches are estimated to have a recreational benefit of \$33.1 million annually through the tourist industry and use by residents. The coastline and surrounding ecosystems are also home to a variety of endangered and threatened species, providing foraging, nesting, and nursery habitats. The beach and dune system also serve as a vital defense from coastal storms by dissipating wind and wave energy.

The first Beach Preservation Plan (BPP) was developed in 1988 to evaluate and maintain the resources along the coastline under the County's Coastal Restoration Program. Indian River County has funded periodic updates to the BPP, occurring in 1998, 2002, 2008, 2015, and 2019. The purpose of the current update is to support the County in managing its beaches, assess the impact of recent storm events, evaluate current vulnerability to future storm events, and document the overall performance of the management program from 2013 to 2019.

As of 2005, the Florida Department of Environmental Protection (FDEP) has classified 15.7 mi of Indian River County's 22.4 mi shoreline as "critically eroded", a 73% increase from 9.1 mi, following the 2004 hurricane season. General shoreline trends were determined looking at the annualized shoreline change. Nourishment efforts in the 2002 to 2013 time period have been successful, with a Countywide shoreline change of 2.6 ft/yr.

Previous BPP updates have shown that Sectors 3, 5, 6, 7, and 8 experienced a shoreline advance that was either greater than the advances seen in the previous two time periods (1972 to 1986 and 1986 to 2005), or a reversal of a previous shoreline retreat. Sectors 1 and 2 also experienced an advance from 2002 to 2013, though it was less of an advance than the 1986 to 2005 time period. Sector 4 is the only sector with an average shoreline reversal in the 2002 to 2013 time period, in contrast to an average advance in the 1986 to 2005 time period.

The Countywide annualized shoreline change, from 2013 to 2019, was 0.3 ft/yr, which is less than that of any of the previous time periods. Sectors 2, 6, and 8 experienced shoreline advance/accretion. These sectors have historically been more stable than the rest of the County. All other sectors experienced shoreline retreat, ranging from -1.7 ft/yr in Sectors 4 and 7 to -0.3 ft/yr in Sector 5. These values indicate that overall, 2013 to 2019 was a period of on average of shoreline advance in the County but less than



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previous years, a trend due mainly to a lack of beach nourishment activity in some Sectors and the impact from several hurricanes.

As a result, several strategic management recommendations are presented herein. The past 20 years of carrying out the recommendations in the BPP have shown to be effective in mitigating erosion along the coastline. However, based on the results within this BPP update and the expected impacts of climate change it is recommended that adjustments be made to the management strategies. Planning for climate change is paramount to the County's successful management of the beaches and preparation for a resilient future. Most importantly, continued implementation of sand bypassing and beach nourishment projects in Sectors 1 & 2, and Sectors 3, 4, 5, and 7 respectively are recommended. However, planning for more frequent maintenance events and replenishment after storm events is necessary to increase project performance and combat expected impacts of climate change.

