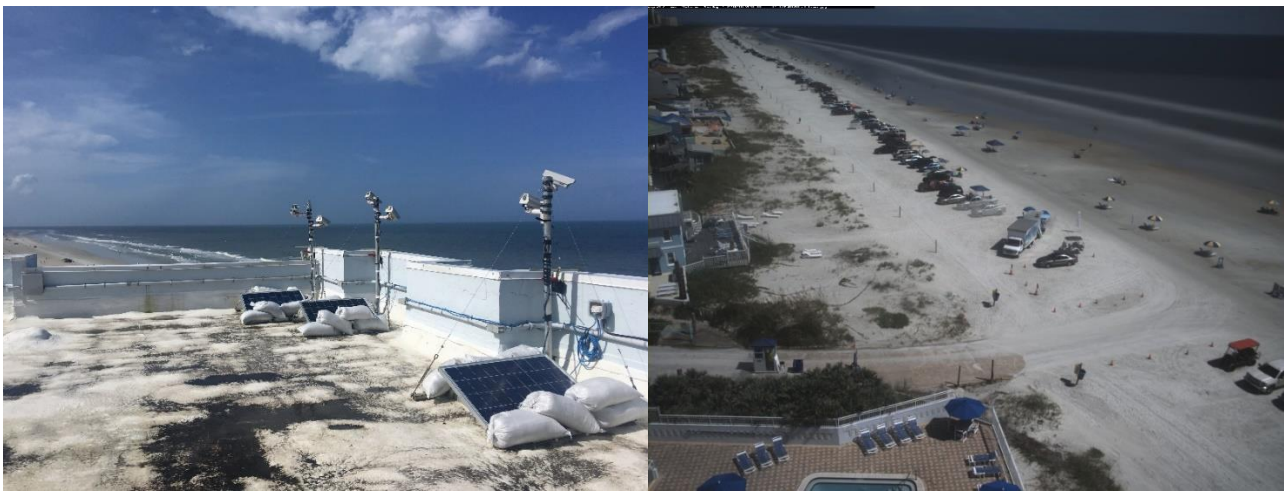
Mini-Argus Installation for Nearshore Berm Placement At New Smyrna Beach, FL

Response Summary:

In August 2018 Volusia County, FL will utilize up to 500,000 cy of dredged material from Ponce de Leon Inlet to nourish New Smyrna Beach (NSB), FL in the form of a nearshore berm. To monitor the behavior and performance of the placement, researchers from the Coastal and Hydraulics Laboratory's (CHL) Coastal Analysis and Observation Branch (COAB), Dr. Brittany Bruder and Nick Spore, traveled to NSB to deploy a prototype Mini-Argus coastal imaging monitoring station (left image). The system has been designed for flexible deployment, and have been deployed on top of roof of a beach front condominium to achieve the height traditionally achieved with the construction of a large tower system. The mini-Argus system delivers hourly quantitative imagery of the NSB project (right image), which will be exploited to provide nearshore depth estimates, sandbar/berm position, maximum wave runup, and average shoreline position.



Period of Performance:

July 31, 2018 - July 31, 2019.

Benefits of the Response to the USACE Dredging/Navigation Program:

The mini-Argus systems will provide districts with quantitative imagery of beach projects in near real time. Imagery of the coast can be exploited qualitatively and quantitatively to provide information on coastal processes, beach & dune topography, nearshore water depths, sandbar positions, wave runup elevations, as well as the condition of coastal infrastructure or navigability of harbor or inlet entrances. Self-contained, autonomous, and with a small form factor, mini-Argus stations can be deployed rapidly and provide a unique capability to address coastal management challenges before, during, and after natural disasters by providing cost-efficient and timely video monitoring of federal beach projects.

Deliverable:

The districts will have a dataset containing hourly coastal imagery for an entire year. These datasets can be exploited to provide information on and evaluate the performance of the berm placement and regional sediment management of Ponce Inlet.

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DOTS ID: DOTS-18-R70