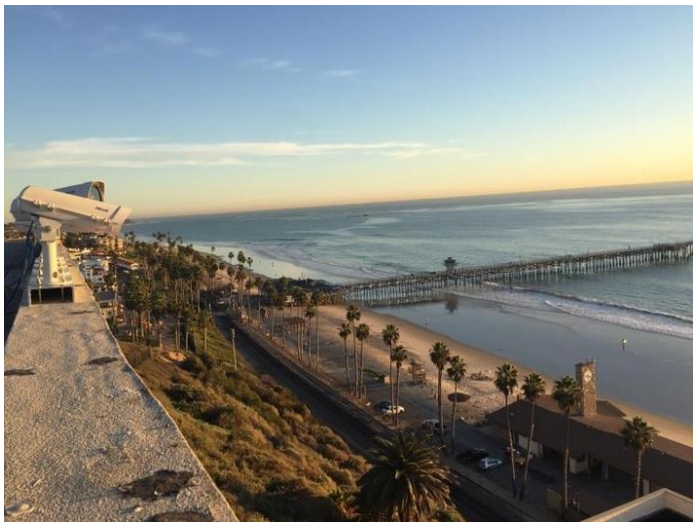
San Clemente Argus Station Installation

Response Summary:



Dr. Brittany Bruder and Mr. Nick Spore traveled to San Clemente, CA to install two Argus Nearshore Video Imaging stations for the Los Angeles District (SPL). The suite of cameras will support the engineering design of ongoing beach nourishment operations at the site. The imagery will be used to estimate beach topography, shoreline position, nearshore processes, and nearshore bathymetry by applying the cBathy algorithm to waves in the surf zone. This information will help optimize material selection and placement techniques at the site.

Dr. Bruder and Mr. Spore worked with SPL's Chris Hayward and Chuck Mesa, and Oregon State University's (OSU) Rob Holman and John Stanley to install the system on local structures with suitable views of the coastline. In addition to the installation of the cameras on structure roofs, the project setup demanded intensive camera calibration and alignment in order to property generate quantitative coastal engineering metrics.

Period of Performance:

Installation: November 26 through December 1, 2018. Monitoring: ~2 years

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

Beach nourishment within SPL is commonly paired with navigation operations. The area immediately offshore of San Clemente is not a suitable borrow source for beach nourishment and therefore the material will come from the beneficial reuse of dredging of nearby navigation channels, such as Newport Harbor and Oceanside Harbor. The engineering information generated by the Argus stations will therefore allow SPL to monitor the natural spatial and temporal variations of the shoreline and nearshore environment prior to future sediment placement at San Clemente. The lessons learned from the nourishment operations at San Clemente will also be applied to similar projects within the district that include navigation and beach nourishment, including Morro Bay maintenance dredging, Santa Barbara Harbor maintenance dredging, Channel Islands Harbor maintenance dredging, placement at Hueneme Beach, and a number of other district sites.

Deliverable:

SPL will have a dataset containing hourly coastal imagery for everyday of the year. These datasets can be exploited to provide information on nearshore processes and sediment transport at San Clemente and monitor evolution of the site in order to better justify management decisions there for future placement.

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