

2017 TOWN OF DUCK SHORELINE & VOLUME MONITORING REPORT

I. INTRODUCTION

The Town of Duck is focused on a long-term shoreline management program that will serve to sustain the beaches that support a significant portion of their local economy, maintains the tax base of the Town, retains existing recreational resources, and protects existing natural resources. In order to accomplish these stated goals, the Town is taking steps to maintain and monitor its oceanfront beach and dune to a configuration that provides a reasonable level of storm damage reduction to public and private development and mitigates long-term erosion impacts.

This monitoring report is an update to the previous monitoring report prepared for the Town (CPE-NC, 2016) and describes the analysis of beach profile data for shoreline changes measured in October 1996, September 2013, May 2015, and the recent data collected in December 2017. The report also evaluates volume change trends measured between September 2013, May 2015, and December 2017 along the Town's shoreline. The data and analysis in this report will be utilized as a basis of comparison for future physical monitoring of the Town of Duck.

Future monitoring reports will also track the performance of the beach fill project constructed between May and June 2017. The beach fill project covered 1.6 miles of the Town's shoreline between profile stations D-10 and D-19.

II. PROJECT LOCATION

The Town of Duck is located on the Outer Banks of North Carolina roughly 27 miles south-southeast of the North Carolina and Virginia border. The Town encompasses 5.5 square miles extending along 5.9 miles of Atlantic Ocean shoreline from the Dare County and Currituck County line south-southeast to the Town of Southern Shores. The USACE Field Research Facility (FRF) is located within the Town limits, approximately 2.3 miles north of the southern limit and 3.6 miles south of the northern limit. A Location Map is provided in Figure 1. This location map highlights the limits of the nourishment project built along a 1.6-mile section of the Town's oceanfront shoreline between May 23 and June 29, 2017, and the two Outer Continental Shelf (OCS) borrow areas located in Federal waters offshore of Dare County.

While only 1.6 miles of the Town's shoreline was directly impacted by the beach nourishment project, the beach monitoring program includes the entire 5.9 miles of the Town's shoreline as well as small segments of the Pine Island and Southern Shores shorelines north and south of the Duck town limits, respectively. The extent of the survey coverage is intended to provide the Town with information on shoreline behavior that will be used to determine how well the beach nourishment project performs and if other segments of the Town's shoreline should be included in future beach nourishment efforts.