

**REPORT OF SURVEY
COASTAL CONDITION SURVEY
ESCAMBIA COUNTY R-001 thru R-156, FLORIDA
MAY 2021**

Prepared for:

Olsen Associates, Inc.
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By

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1.0 INTRODUCTION

This report addresses the Florida Department of Environmental Protection (FDEP) Office of Resilience & Coastal Protection, Beaches, Inlets, & Ports Program (BIPP) Regional Data Collection and Processing Plan standards for data components of coastal assessment topographic and bathymetric data acquisition performed in Escambia County, Florida, between April 27 – May 13, 2021. Arc Surveying & Mapping, Inc. (ARC) was contracted to performed data acquisition in support of the local Coastal Monitoring Program along a portion of coastline located in Escambia County and specifically within the reach of historical FDEP beach profiles R-001 thru R-156. The objective of the survey is to document accurate topographic and bathymetric site conditions along historical beach monitoring profiles and to certify to the standard set forth by BIPP and the Florida Minimum Technical Standards for Surveying and Mapping (Chapter 61G17-6, FAC).

2.0 DATA SOURCES

ARC was provided historical beach profile monitoring data and Real Time Kinematic GPS project control and vertical benchmarks from BBCS to be utilized for data acquisition. Historical beach profile monitoring data was provided in digital file ES031.RTB.txt and included the profile name, origin location (northing, easting, and elevation), grid bearings of profile range, as well as monument name stampings. RTK GPS and benchmark control was provided in digital file 03CHECK and defined the controlling monumentation point and verification monumentation points of the previous survey performed by BBCS.

3.0 SURVEY DATUMS AND UNITS

The Horizontal project datum is based on the Lambert Conformal Conic Projection for the North Zone of Florida (0903) and referenced to the North American Adjustment of 83/90 (NAD83/90). The Vertical project datum is referenced to the North American Vertical Datum adjustment of 1988 (NAVD88). The units of measurement are U.S. Survey Foot.

4.0 SURVEY METHODOLOGY

4.01 Topographic Component

Beach / Dune Profiles were surveyed for monitoring ranges R-001 through R-156. Upland topographic profile data was collected utilizing RTK GPS surveying procedures. Equipment utilized included Trimble's R10 series RTK Total Station System while utilizing eGPS commercially available virtual network system. A QA/QC Procedural Report is provided as part of this survey and details the procedures used, findings, corrections, and results. A verification of the horizontal and vertical positions was

documented on all profile reference monuments found and is included as part of the survey. Topographic data resolution did not exceed 25-feet and included all breaks along each profile range. Data was collected beginning at each profile origin and extended seaward to a minimum depth –3.0 feet NAVD88 or greater along the historic grid bearing of each profile.

4.02 Profile Bathymetric Component

Offshore Profiles were surveyed for monitoring ranges R-001 through R-156. A 24-foot vessel configured with an automated hydrographic data acquisition system was utilized for the collection of offshore bathymetric data. The system included the following components:

Sensor calibrations were performed each day and documented as part of this survey and are discussed in the QA/QC Procedural Report. Bathymetric survey data was collected as close as possible with the upland topographic survey data collection and the time difference of the two was less the seven (7) days. Bathymetric survey data collection was conducted during high tide periods for offshore profile data to ensure minimum overlap with upland survey data. Offshore profiles extended to a minimum of 3000 feet offshore from the most landward offshore data point or to –30 feet (NAVD88), whichever was reached first. Seas were less the 3 feet in height for all bathymetric survey data collection.

4.03 Pensacola Pass Bathymetric Component

Bathymetry data acquisition was conducted within the study area of Pensacola Pass Flood and Ebb Shoal. Data was acquired at a cross-section interval not to exceed 500'. Sounding data was collected with a continuous recording survey fathometer operating at frequency of 200 kHz and logged to an onboard data collection system. In addition, an onboard Motion Reference Unit recorded and time tag vessel heave which was removed from the raw sounding measurements during signal processing.

4.04 LiDAR Component

Upland LiDAR topographic data acquisition was performed along the reach of the survey limits which includes all the Gulf Coastline lying in Escambia County between profiles R-001 thru R-156. Corridor data was collected at a width to capture the complete dune system and extend to the edge of water at a low tidal condition. LiDAR acquisition included a point density of not less than 25 points per square meter to support a complete digital terrain model of the existing beach condition. In addition,

high resolution digital imagery was captured suitable for production of three-inch pixel resolution and adequate to assure successful production of accurate ortho digital imagery.

5.0 SURVEY ACCURACY

The vertical accuracy meets and/or exceeds GPS – derived heights (5cm) standard and was documented and verified through a check back to on site controlling reference monuments. The horizontal accuracy of the data meets and/or exceeds the Geospatial Positioning Accuracy Standards, Range X, (maximum of 3 feet) and was documented and verified through a check back to on site controlling reference monuments.

6.0 VARIATIONS TO REGIONAL DATA COLLECTION AND PROCESSING PLAN (As Directed)

6.01 Reference Monuments

When a profile monument was not found, NO new monument or TBM was established.

6.02 Ground Digital Photography

Digital aerial imagery was captured during this survey.

7.0 VARIATIONS TO SCOPE OF WORK

No variations to scope of work.

8.0 SURVEYOR CERTIFICATION

This survey meets the State of Florida's Department of Environmental Protection, Bureau of Beaches and Coastal Systems, Regional Data Collection and Processing Plan (Section 2.01) and the Standard of Practice for Professional Surveyors and Mappers (Chapter 5J-17, Florida Administrative Code).

Surveyor and Mapper in Responsible Charge:

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