NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT FL1807-CM-T

Bridges Intersecting the Intracoastal Waterway, Melbourne to Lake Worth Creek, Florida

Introduction

Coastal Mapping Program (CMP) Project FL1807-CM-T provides highly accurate digital shoreline data for a portion of the Intracoastal Waterway (ICW) from Melbourne to Lake Worth, Florida. In particular, the Geographic Cell (GC) provides compilation of the precise locations and alignments of several bridges that cross the ICW within the extents of the project. The GC may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for coastal zone management applications.

Project Design

Project FL1807-CM-T was designed per a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA. Based on an analysis of project requirements and results of a source data search, it was determined that CMP procedures for multiple source projects would apply for this project. Available source data deemed adequate for successful completion of this project included four natural color orthomosaics of Leica ADS-100 imagery, with a spatial resolution of 1 meter, obtained through the National Agriculture Imagery Program (NAIP). Further information on the imagery is available in the NAIP metadata, which was obtained with the imagery, on file with other project data within the RSD Electronic Data Library.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project source data.

Georeferencing

Photogrammetric processing and orthorectification of the NAIP imagery is fully described in the NAIP metadata indicated above. Additional georeferencing tasks were deemed unnecessary since the image provider conducted an acceptable accuracy assessment. As a means of further verifying image accuracy, comparisons were made between published locations of various NGS third order geodetic control points and their locations as measured within the NAIP imagery. These comparisons revealed offsets ranging from 1-4 meters. All project data is referenced to the North American Datum of 1983 (NAD83).

Compilation

The compilation of cartographic feature data for this project was accomplished by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in May 2018. Using Esri's ArcGIS desktop GIS software (ver. 10.5), digital feature data was compiled in shapefile format. Feature attribution was assigned in compliance with the Coastal Cartographic Object Attribute

Source Table (C-COAST) specification file, which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP. Cartographic features were compiled to meet a horizontal accuracy of 6 meters at the 95% confidence level. This figure represents the level of accuracy claimed by the image provider. The table below provides detailed information on the image sources used.

Sensor	Source File Name	Acquisition Date /Time (GMT)	Tide Stage*
ADS-100	ortho_1-1_1n_s_fl009_2017_1.sid	2017-10-29 / 18:55 – 19:05	0.9 – 1.1 m
ADS-100	ortho_1-1_1n_s_fl099_2017_1.sid	2017-10-30 / 14:44 – 15:07	0.3 – 0.4 m
ADS-100	ortho_1-1_1n_s_fl061_2017_1.sid	2017-12-11 / 14:43 – 14:59	0.3 – 0.5 m
ADS-100	ortho_1-1_1n_s_fl085_2017_1.sid	2017-12-11 / 15:27 – 15:35	0.5 – 0.6 m

* Tide levels are given in meters above MLLW and are based on actual observations recorded by NOS gauges at Lake Worth Pier, Atlantic Ocean (#8722670) and Trident Pier, Port Canaveral (#8721604) at the time of photography. The elevation of MHW at the NOS gauges ranges from 0.9 to 1.1 meters above MLLW.

Quality Control / Final Review

Quality control (QC) tasks were conducted during all phases of project completion by a senior member of RSD. The final QC review was completed in May 2018. The review process consisted of an assessment of the identification and attribution of cartographic features according to image analysis and criteria defined in C-COAST. The quality control process concluded with an inspection of topological connectivity within the GC using ArcGIS (ver. 10.5). All project data was evaluated for compliance to CMP requirements. Comparisons of the largest scale NOAA nautical charts with project imagery and compiled project data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used in the comparison process:

- 11472, Intracoastal Waterway – Palm Shores to West Palm Beach, FL, 36th Ed., Feb. 2014

End Products and Deliverables

The following specifies the location and identification of end products generated during the completion of this project:

Remote Sensing Division Electronic Data Library

- Project database
- GC11398 in shapefile format
- Project Completion Report (PCR)
- Chart Evaluation File in shapefile format

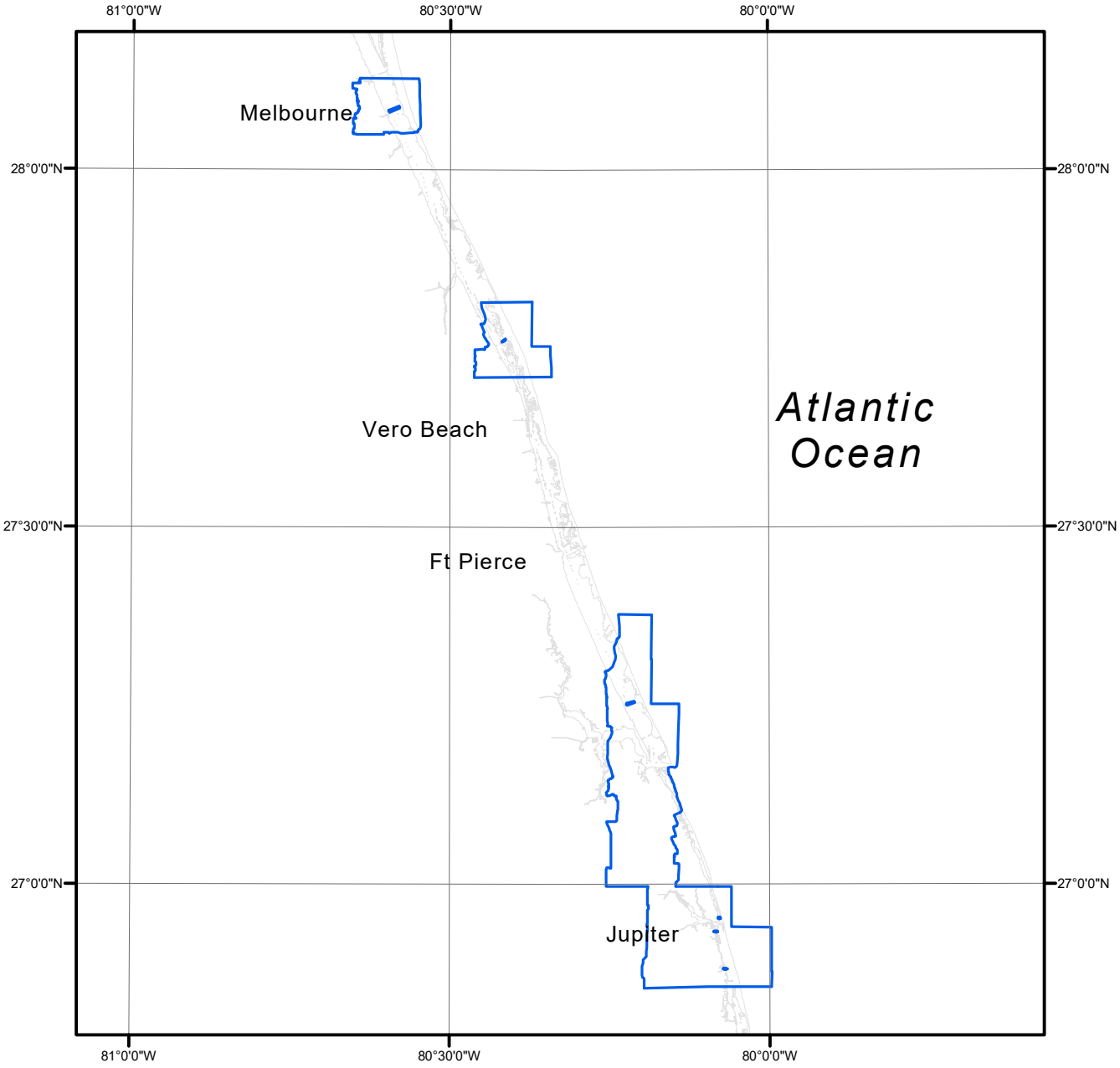
NOAA Shoreline Data Explorer

- GC11398 in shapefile format
- Metadata file for 11398
- PCR in Adobe PDF format

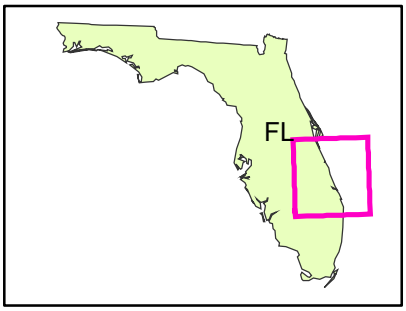
End of Report

BRIDGES - ICW, MELBOURNE TO LAKE WORTH CREEK

FLORIDA



Overview



FL1807-CM-T

GC11398