NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT FL1616-CM-T

Dodge Island, Miami, Florida

Introduction

Coastal Mapping Program (CMP) Project FL1616-CM-T provides accurate digital shoreline data for key areas of change in the vicinity of Dodge Island in the port of Miami, Florida. The Geographic Cell (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 FL1616-CM-T was designed per a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA, in response to a significant shoreline change on Dodge Island. Based on 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 two orthorectified, pan-sharpened natural color satellite images (tiles) from DigitalGlobe, Inc., obtained through the NextView government contract. Upon receipt of project imagery, a comparison was conducted with the largest scale NOAA nautical chart coverage resulting in creation of a Chart Evaluation File (CEF) containing additional identified significant changes. The chart used for this comparison was 11468, Miami Harbor, FL, 44th Ed., March 2014, 1:12,000 scale.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project source data, which was obtained from external sources.

Georeferencing

Georeferencing tasks were conducted using Esri's ArcGIS[®] (v10.2.2) desktop GIS software by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in June 2016. Control/check points were measured from previously compiled feature data from GC10468 (FL9701). Within ArcGIS, the Georeferencing tool was used, and the georeferenced images were resampled using the Nearest Neighbor method with a 1st order polynomial model. The RMS of the residuals for measured check points was used to compute horizontal accuracies at the 95% confidence level (CE95) of 0.9 meters (GeoEye image) and 1.1 meters (WorldView image). These values were doubled and added to the CE95 of the source from which check points were obtained in order to conservatively predict the accuracy of well-defined points measured during the compilation process. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation was accomplished by AB personnel in June 2016. Digital feature data was compiled in shapefile format from the satellite imagery using ArcGIS (v10.2.2). Feature attribution was assigned in compliance with the Coastal Cartographic Object Attribute Source Table (C-COAST), which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP. Spatial data accuracies for FL1616-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 2.3 meters (GeoEye) or 2.8 meters (WorldView) at the 95% confidence level. These predicted accuracies of well-defined points are based on comparisons of at least 20 check points to an independent source of higher accuracy. Tide levels were not determined for this project, since no natural shoreline features, only man-made features, were compiled.

Image Source	Resolution	Source File (Tile) ID	Acquisition Date/Time	Tide Level
WorldView-2	0.5 m	20151110_1551_WV2_ORI_R1C1_georef.tif	2015-11-10 / 15:51 GMT	n/a
GeoEye-1	0.5 m	20151211_1611_GE1_ORI_R1C1_georef.tif	2015-12-11 / 16:11 GMT	n/a

Quality Control / Final Review

Quality control tasks were conducted upon project completion by senior CMP personnel in June 2016. The review process included an assessment of the identification and attribution of digital feature data within the GC 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 10.2.2. The entire suite of project products was evaluated for compliance to CMP requirements.

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

- GC11232 in shapefile format
- Project Completion Report (PCR)
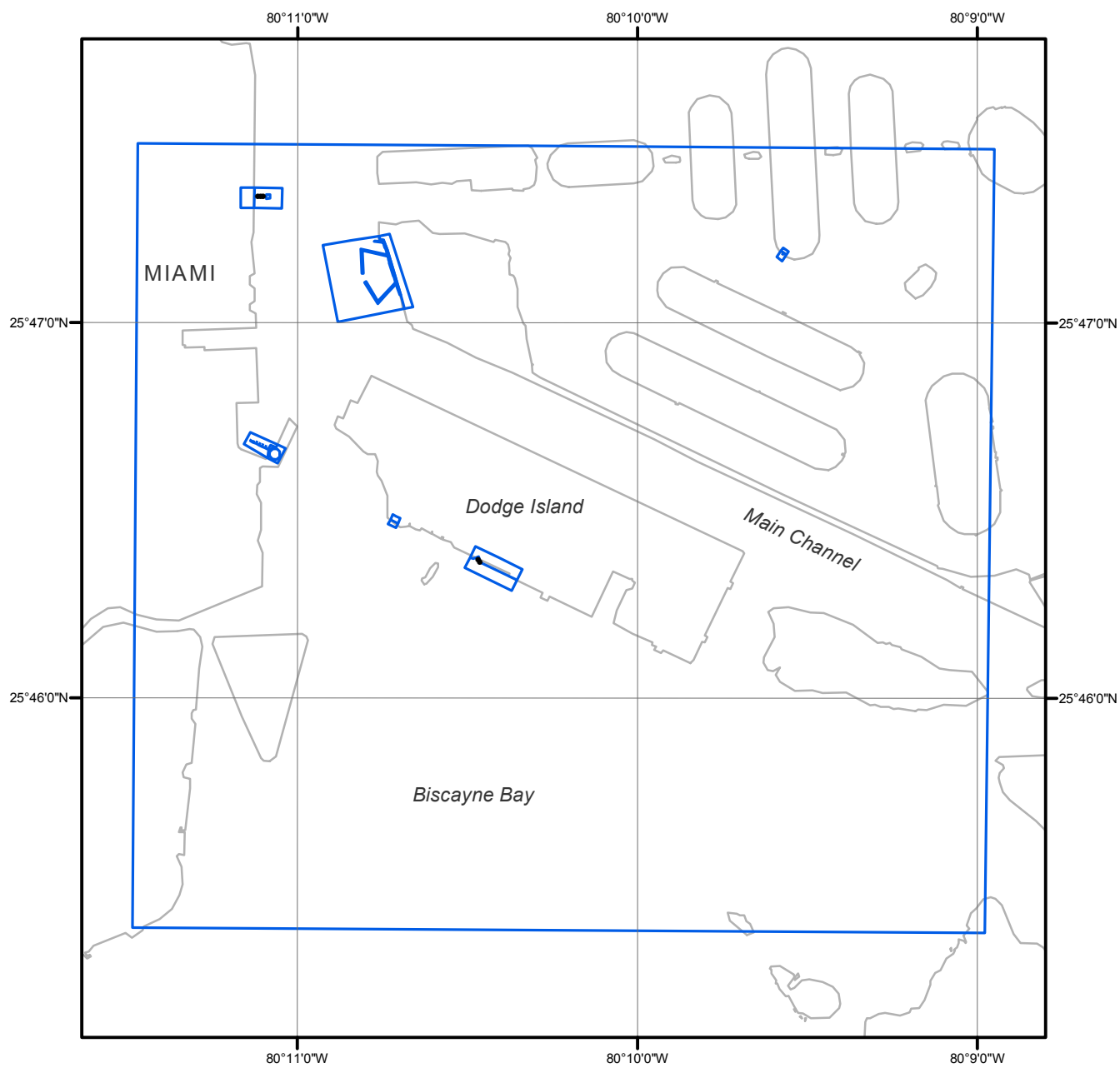- CEF in shapefile format

NOAA Shoreline Data Explorer

- GC11232 in shapefile format
- Metadata file for GC11232
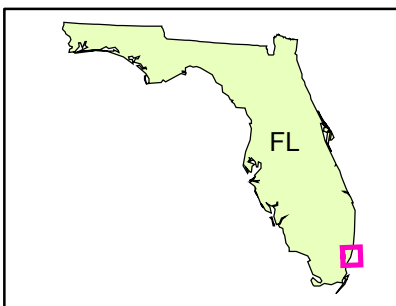- Digital copy of the PCR in Adobe PDF format

End of Report

DODGE ISLAND, MIAMI

FLORIDA

80°11'0"W   80°10'0"W   80°9'0"W

MIAMI

25°47'0"N   25°47'0"N

Dodge Island

Main Channel

25°46'0"N   25°46'0"N

Biscayne Bay

80°11'0"W   80°10'0"W   80°9'0"W

Overview

FL

FL1616-CM-T

GC11232

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA

U.S. DEPARTMENT OF COMMERCE