NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT FL1201

Port Canaveral, Florida

Introduction

Coastal Mapping Program (CMP) Project FL1201 provides highly accurate digital shoreline data for key areas of change within Port Canaveral, 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 a variety of coastal zone management applications.

Project Design

The original design of Project FL1201 was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the general need for updates to NOAA's Electronic Navigational Chart (ENC) series. A standard change analysis was conducted within the Coast and Shoreline Change Analysis Program (CSCAP), in which NOAA nautical chart products are compared to contemporary high resolution imagery to ascertain the need for more current shoreline data. Subsequently a request for shoreline data was received from NOAA's Southeast District Navigation Manager, through the Office of Coast Survey's Marine Chart Division (MCD), to address significant shoreline changes which occurred since the completion of the CSCAP analysis. Although the imagery used in the CSCAP analysis served as a useful reference, all compilation was accomplished using new source data acquired for the purposes of the Navigation Manager's investigation of more recent changes. This data consisted of one Basic-level pan-sharpened color WorldView-2 satellite image from DigitalGlobe, with a spatial resolution of 0.5 meters, obtained through the National Geospatial-Intelligence Agency (NGA). A Chart Evaluation File (CEF) was forwarded from RB to the Applications Branch (AB) of RSD upon completion of the CSCAP analysis. Refer to the RB CSCAP memorandum of November 22, 2011, for more details of the chart comparison process.

Field Operations

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

Georeferencing

Rigorous refinement of the georeferencing of the WorldView image used for compilation was not necessary since the image compared favorably spatially with all of the data sources used to check its geolocation, and since DigitalGlobe provided an acceptable accuracy assessment for their imagery. However the imagery was shifted uniformly 3.9 meters (SE) to align with a large scale engineering drawing, produced by a private engineering firm for the Canaveral Port Authority, which agreed very closely (< 1.0 m) with NGS control points (2) in the project area. The accuracy of the WorldView image, reported by the vendor is 5.0 m. at the 90% confidence level (CE90). The reported accuracy is exclusive of viewing geometry and terrain distortions.

Compilation

Data compilation was performed by RSD personnel in February 2013. Digital feature data was compiled in shapefile format from the WorldView imagery using ESRI's ArcGIS 9.3.1 desktop GIS software. 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 FL1201 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 5.7 meters, based on the vendor reported CE90 accuracy converted to the 95% confidence level (CE95).

The following table provides information on satellite imagery used in the project completion:

Image Source	Image ID	Acquisition Date/Time	Tide Level
WorldView-1	11OCT21161622-P1BS-052561884010_02_P007_RPC.tif	2011-11-21 16:16 GMT	n/a
WorldView-2	12NOV22162151-P1BS-052854295090_01_P001_rpc.tif	2012-11-22 16:21 GMT	0.89

* Tide levels are given in meters above MLLW and are based on actual observations recorded by the NOS gauge at Trident Pier, FL, at the time of photography. The elevation of MHW is 1.09 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted by a senior member of RSD. The final QC review was completed in February 2013. The review process included analysis of the georeferencing results and 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 9.3.1. 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:

RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Page size graphic plot of GC10964 file contents, attached to PCR
- Hardcopy of the CSCAP evaluation memorandum
- Hardcopies of other information and communication related to project completion

Remote Sensing Division Electronic Data Library

- GC10964 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

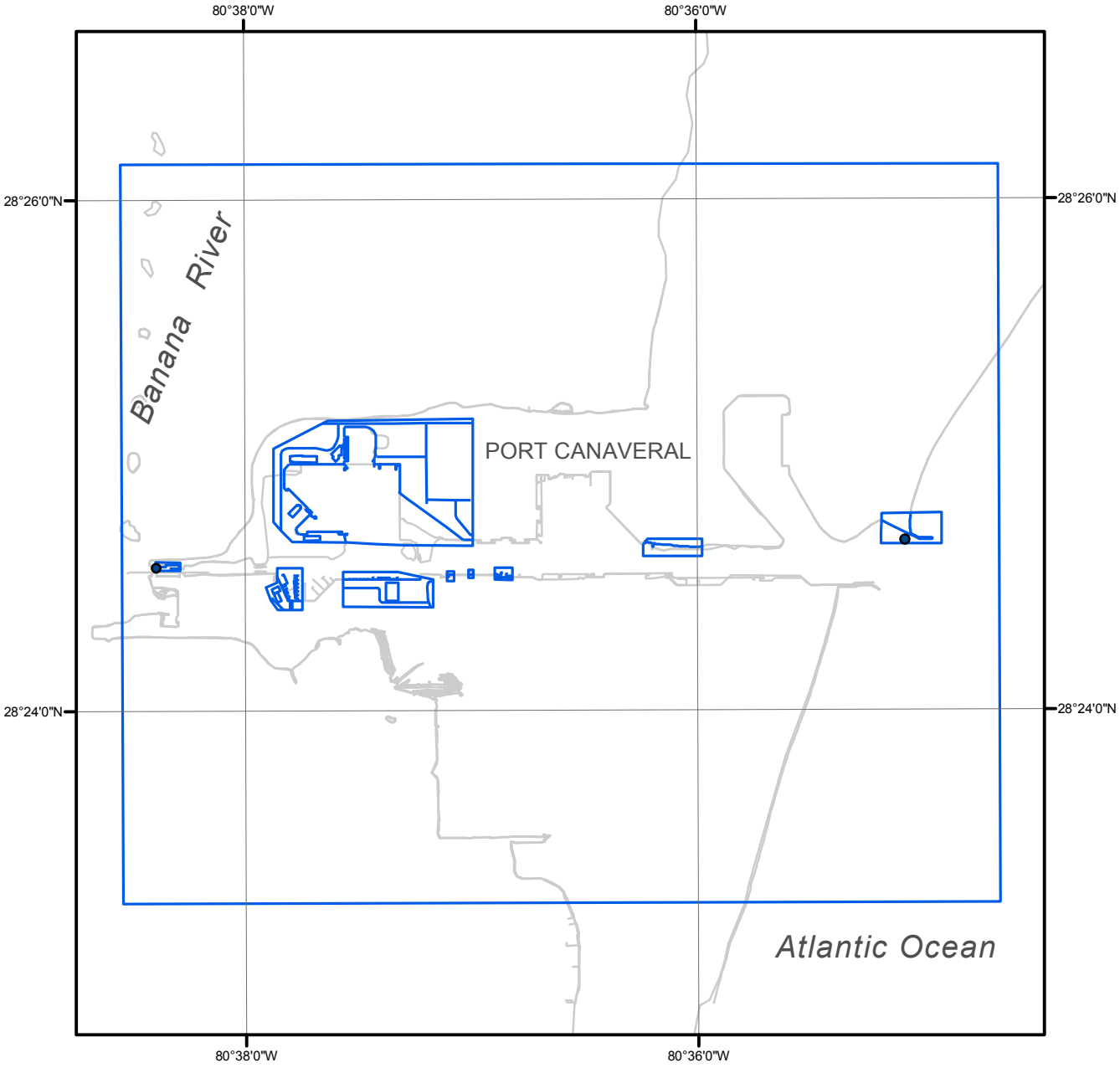
NOAA Shoreline Data Explorer

- GC10964 in shapefile format
- Metadata file for GC10964
- Digital copy of the PCR in Adobe PDF format

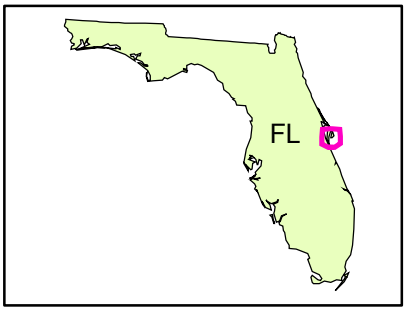
End of Report

PORT CANAVERAL

FLORIDA



Overview



FL1201

GC10964