NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT NY1402-CS-T

Port of New York, New York and New Jersey

Introduction

NOAA Coastal Mapping Program (CMP) Project NY1402-CS-T provides a highly accurate database of new coastal feature data for key areas of change within the port of New York, in New York and New Jersey. 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 design of Project NY1402-CS-T was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for updates to the NOAA Electronic Navigational Chart (ENC) series. Project requirements were formulated as a result of analysis 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. A Chart Evaluation File (CEF) was created and forwarded to the Applications Branch (AB) of RSD once a change analysis was completed. Refer to the RB CSCAP memorandum of January 6, 2014 for 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 imagery, which was obtained from external sources.

Georeferencing

Available source data deemed adequate for successful completion of this project included twenty-four color orthophoto mosaics from the National Agriculture Imagery Program (NAIP) consisting of imagery acquired between 6/22/2013 – 8/5/2013 with a Leica Geosystems ADS-52 digital scanner. The orthomosaics were assessed for positional accuracy using sixty-two photo-identifiable ground control points extracted from previously completed CMP project NY9904. The RMS of the standard deviations of the residuals for each measured check point were used to compute a predicted horizontal circular error (CE) of 1.4 meters based on a 95% confidence level. This CE value was doubled and added to the CE95 of the source in order to conservatively predict the accuracy of well-defined points measured during the compilation process.

Compilation

Data compilation was performed by RSD personnel in May 2014. Using Esri's ArcGIS 10.2.1 desktop GIS software, digital feature data was compiled in shapefile format from the orthomosaic imagery. 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 NY1402-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 4.7 meters at the 95% confidence level. This predicted accuracy of compiled well-defined points is based on the accuracy assessment described above.

The following table provides information on the imagery used to complete this project:

Image Source	Resolution	Source ID	Acquisition Date/Time	Tide Level*
NAIP orthomosaic (ADS40)	1.0 m	New_York_2013_1m_NC1-NC6.tif	2013-06-22, 09:23–09:47 GMT	1.2 – 1.4
NAIP orthomosaic (ADS40)	1.0 m	New_Jersey_2013_1m_NC8-NC19.tif	2013-08-02, 09:32–10:11 EDT	0.6 – 0.9
NAIP orthomosaic (ADS40)	1.0 m	New_Jersey_2013_1m_NC1-NC9.tif	2013-08-05, 14:00–14:32 EDT	0.4 – 0.3

* Tide levels are given in meters above MLLW and are based on actual observations recorded by NOS reference gauges throughout the project area with offsets applied to the appropriate substations within the project area. The height of the MHW tidal datum in the project area varies between 1.2 – 1.7 meters above MLLW.

Quality Control / Final Review

The final review of the project was completed by a senior member of RSD in September 2014, and included analysis of aerotriangulation 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 10.1 software. All project data 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 GC11082 file contents, attached to PCR
- Hardcopy of the CSCAP evaluation memorandum

Remote Sensing Division Electronic Data Library

- GC11082 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

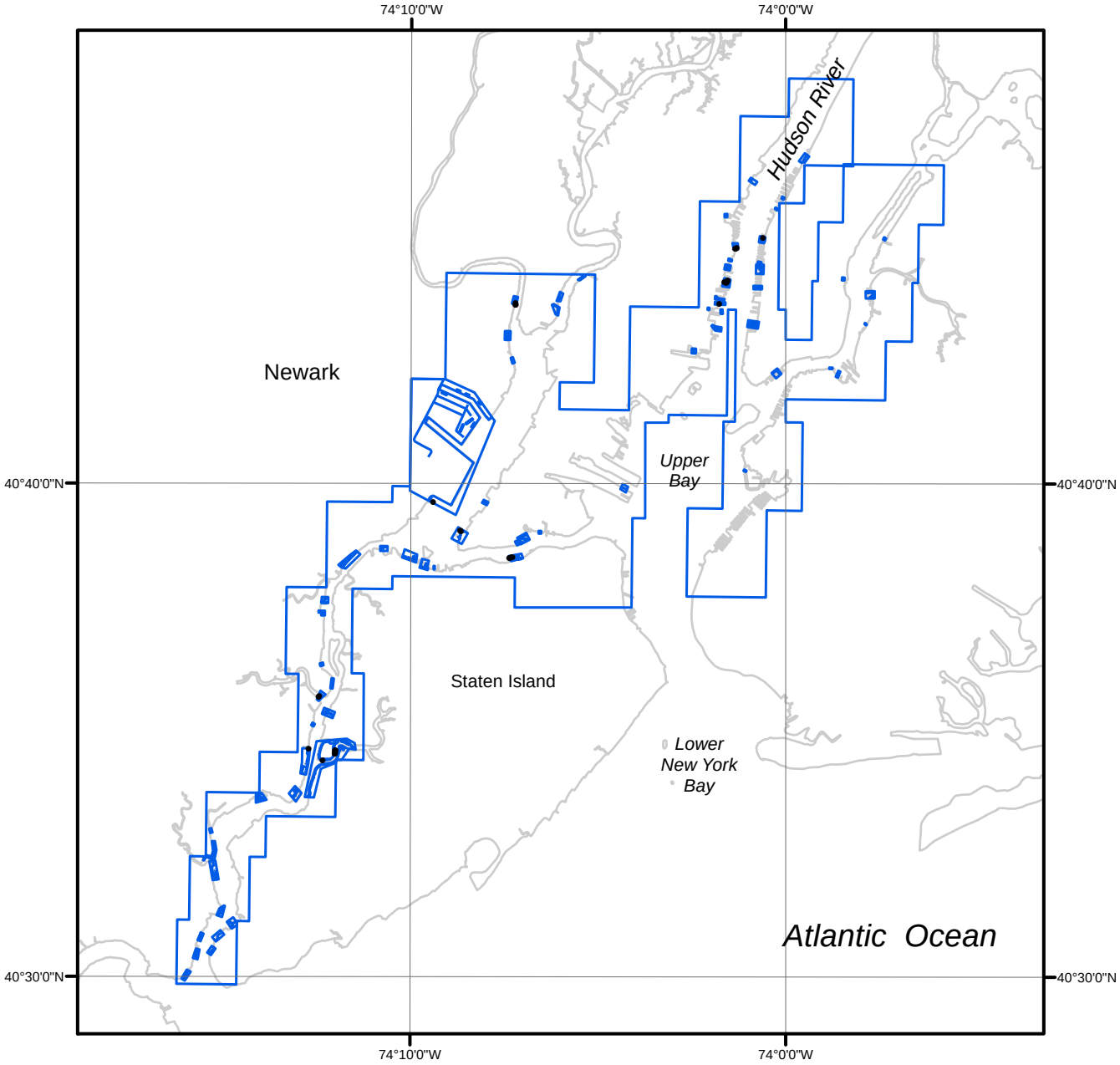
NOAA Shoreline Data Explorer

- GC11082 in shapefile format
- Metadata file for GC11082
- Digital copy of the PCR in Adobe PDF format

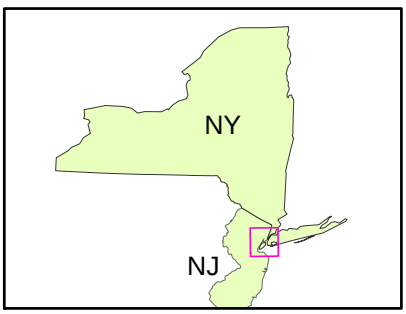
End of Report

PORT OF NEW YORK

NEW YORK AND NEW JERSEY



Overview



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