NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT NY1004

Port Jefferson, New York

Introduction

NOAA Coastal Mapping Program (CMP) Project NY1004 provides a highly accurate database of new digital shoreline data for area of Port Jefferson including, Conscience Bay and Setauket Harbor, New York. 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 NY1004 was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for timely updates to NOAA's Electronic Navigational Chart 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 satellite imagery in order to ascertain the need for more current shoreline data. Refer to the RB memorandum, "Results of CSCAP Change Analysis for Port Jefferson, New York", for details regarding 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. Existing sources of horizontal control were used for the georeferencing process.

Georeferencing

One GeoEye-1 panchromatic image with a spatial resolution of 0.50 meters from GeoEye, Inc., obtained through the National Geospatial-Intelligence Agency (NGA), was georeferenced using Erdas IMAGINE 9.3 software on a Windows platform. Ground control, photogrammetrically measured from previously completed project NY0401, was imported into IMAGINE and used to georeference the satellite image. Within IMAGINE the Raster Geometric Correction tool was used with a 1st order polynomial model. The imagery was resampled using the Nearest Neighbor sampling method. The RMS of the residuals for measured check points was used to compute a horizontal circular error at the 95% confidence interval (CE95) of 1.0 meters for the satellite image. This CE value was tripled and added to the CE95 of the source imagery from which ground control points were extracted, in order to conservatively predict the accuracy of well-defined points measured during the compilation process. A Georeferencing Report was written and is on file with other project data within the AB Project Archive. Positional data is referenced to the North American Datum of 1983 (NAD 83).

Compilation

The data compilation phase of this project was accomplished by RSD in November 2010. Digital feature data was compiled in ESRI shapefile format from imagery using ESRI's ArcGIS 9.3 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. Selected cartographic features were further modified with additional descriptive information to refine general classification.

Spatial data accuracies for Project NY1004 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 3.5 meters the 95% confidence level. This predicted accuracy of well-defined points is based on a minimum of twenty (20) check points that were compared to an independent source of higher accuracy.

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

Image Source	Source File Name	Acquisition Date/Time	Tide Level*
GeoEye-1	16aug09ov05010005v090816p00003366284a222000100942m_001536712_rpc_geoidht.tif	2009-08-16, 15:57 GMT	0.6-0.7

* Tide levels are given in meters above MLLW and are based on actual observations recorded by the NOS tide gauge at Bridgeport, CT (sta. #8467150) with offsets applied to sub-stations in the project area. The elevation of the MHW tidal datum at in the project area is equal to 2.1 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of AB. The final QC review was completed in December 2010. The review process included analysis of the aerotriangulation, 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. 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 Georeferencing Report
- Hardcopy of the Project Completion Report (PCR)
- Page size graphic plot of GC10856 file contents, attached to PCR
- Hardcopy of the CSCAP evaluation memorandum

Remote Sensing Division Electronic Data Library

- GC10856 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- Chart Evaluation File (CEF) in shapefile format

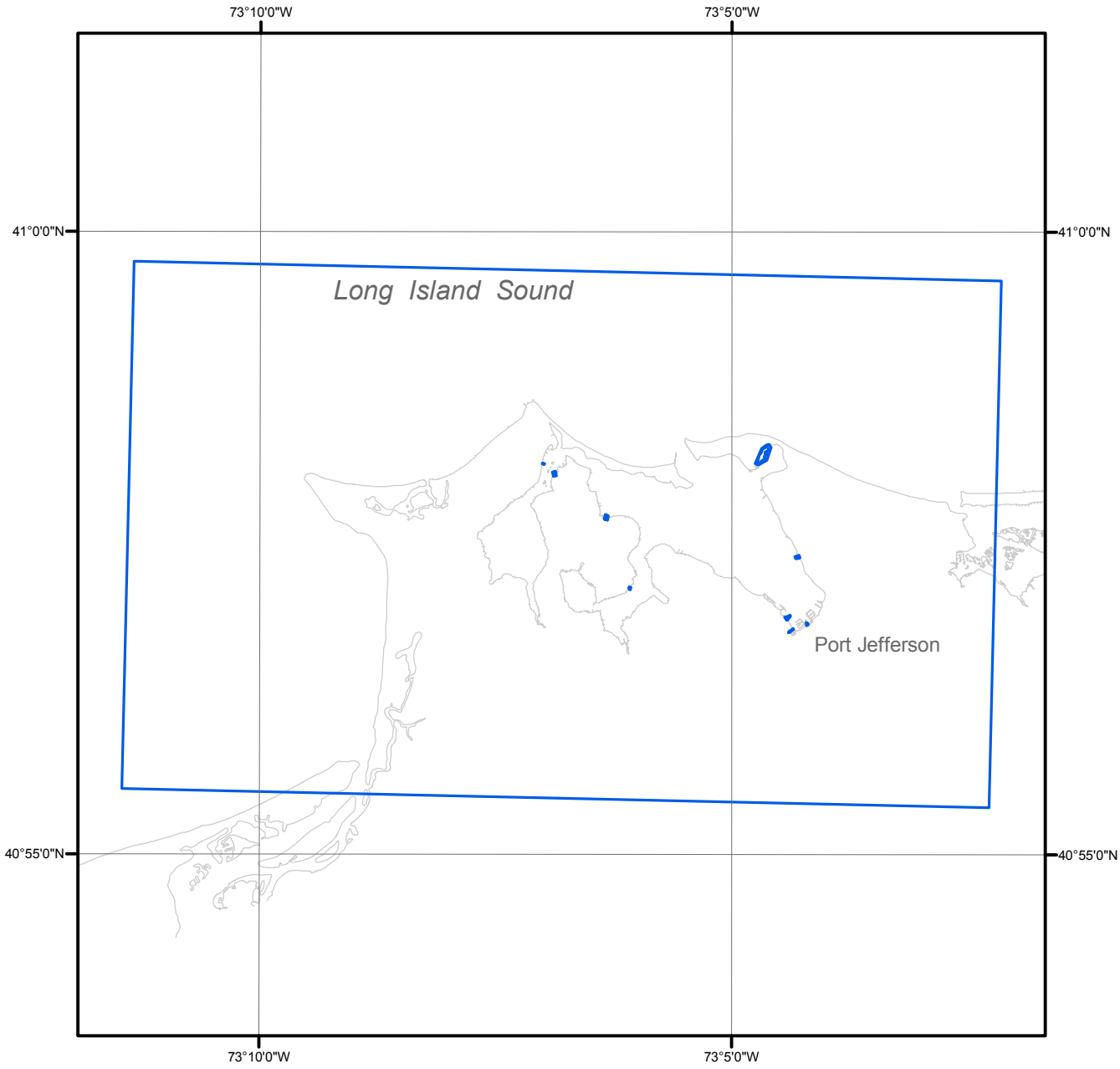
NOAA Shoreline Data Explorer

- GC10856 in shapefile format
- Metadata file for GC10856
- Digital copy of the PCR in Adobe PDF format

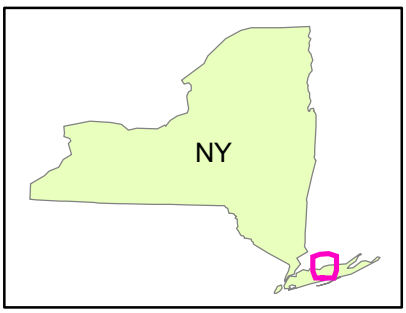
End of Report

PORT JEFFERSON

NEW YORK



Overview



NY1004

GC10856