

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT PA0901

Ports of Philadelphia and Camden-Gloucester, Pennsylvania and New Jersey

Introduction

NOAA Coastal Mapping Program (CMP) Project PA0901 provides a highly accurate database of new digital shoreline data for the ports of Philadelphia, Pennsylvania and Camden-Gloucester, New Jersey, and vicinity. 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 PA0901 was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for 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 imagery in order to ascertain the need for more current shoreline data. Refer to the updated CSCAP memorandum of June 1, 2009 for more details of the analysis.

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

One orthophoto mosaic from the National Agriculture Imagery Program (NAIP) was georeferenced by a member of AB using ESRI ArcGIS® desktop GIS software (ver. 9.3.1). Control/check points were measured from previously compiled feature data from GC10625 (CMP Project NJ0301C). See the Project Completion Report for NJ0301C for details on the source of the checkpoints used in this assessment, including the imagery and accuracy. Within ArcGIS, the Georeferencing tool was used, and the imagery was re-sampled using the Nearest Neighbor method with a 1st order polynomial model. The RMS of the residuals for measured check points were used to compute a horizontal accuracy at the 95% confidence level (CE95) of 2.1 meters for the satellite image. This value was 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 performed by RSD personnel in December 2013. Digital feature data was compiled in shapefile format from the ortho imagery using Esri ArcGIS (ver. 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 PA0901 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 4.9 meters at the 95% confidence level by comparing a minimum of twenty (20) check points to an independent source of higher accuracy.

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

Image Source	Resolution	Source ID	Acquisition Date/Time	Tide Level
USDA/FSA	1.0 m	ortho_1-1_1n_s-nj007_2008_21.sid	9/22/2008	n/a

Quality Control / Final Review

Quality control tasks were conducted upon project completion by senior CMP quality assurance personnel in January 2014. 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 9. 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 CSCAP memorandum
- Hardcopy of the Project Completion Report (PCR)
- Page size graphic plot of GC11044 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC11044 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- Chart Evaluation File in shapefile format

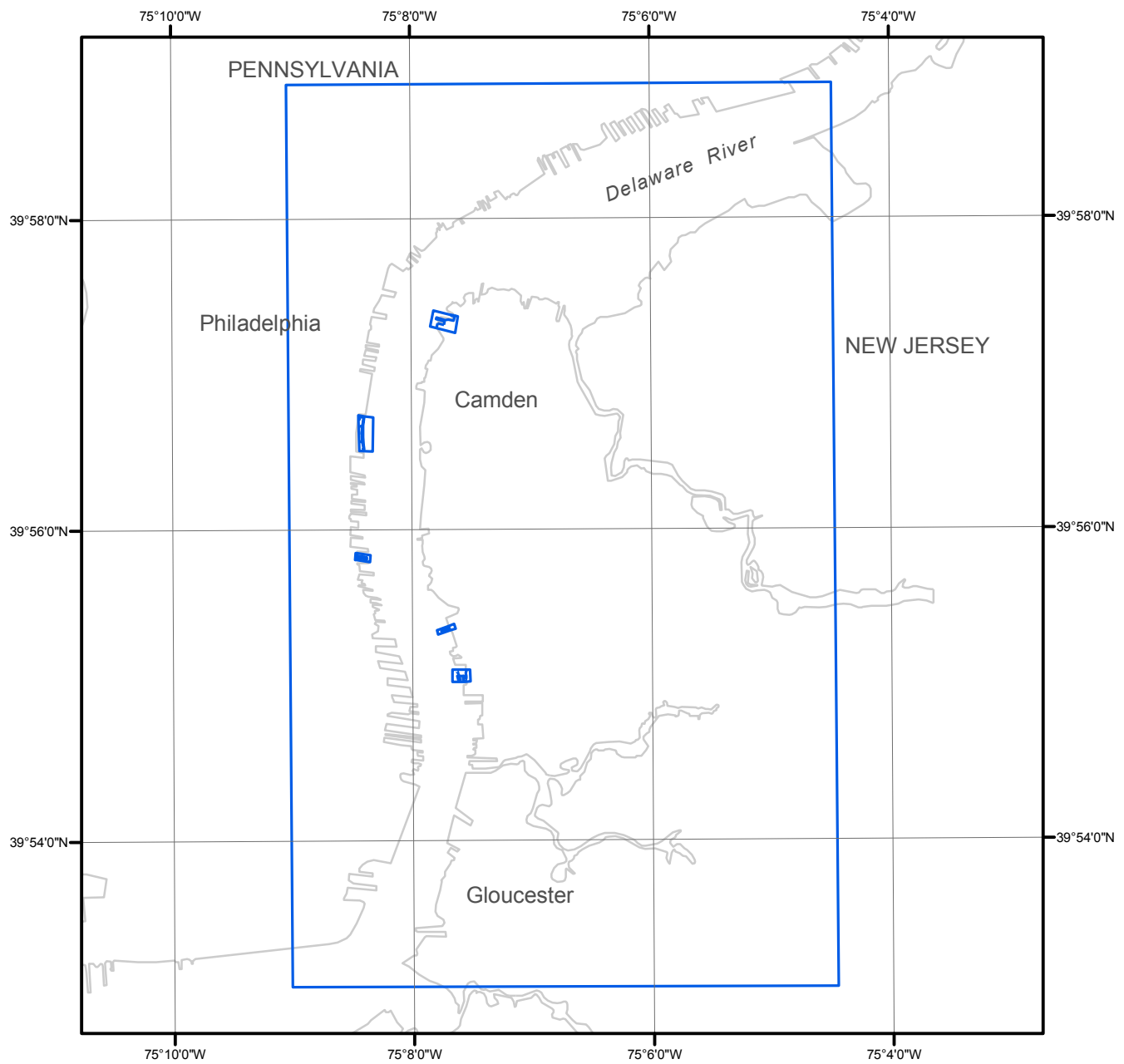
NOAA Shoreline Data Explorer

- GC11044 in shapefile format
- Metadata file for GC11044
- Digital copy of the PCR in Adobe PDF format

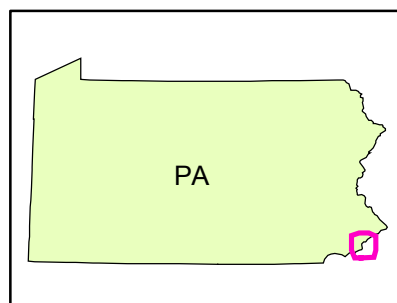
End of Report

PORTS OF PHILADELPHIA & CAMDEN-GLOUCESTER

PENNSYLVANIA AND NEW JERSEY



Overview



PA0901

GC11044