

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT MD1101

Annapolis Harbor, Maryland

Introduction

Coastal Mapping Program (CMP) Project MD1101 provides highly accurate digital shoreline data for key areas of change within Annapolis Harbor, Maryland. 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 MD1101 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 (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 satellite imagery in order to ascertain the need for more current shoreline data. Available source data deemed adequate for successful completion of this project included one panchromatic WorldView-2 satellite image from DigitalGlobe, obtained through the National Geospatial-Intelligence Agency (NGA). A Chart Evaluation File (CEF), created during the analysis process, was forwarded to the Applications Branch (AB) of RSD once the change analysis was complete. Refer to the RB CSCAP memorandum of April 6, 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

Georeferencing tasks were not necessary as the WorldView image compared very favorably spatially with previously compiled highly accurate shoreline data (GC10604, w/a horizontal accuracy = 1.6 meters), and since DigitalGlobe provided an acceptable accuracy assessment for their imagery. The accuracy of the WorldView image, reported by the vendor at the 90% confidence level (CE90=6.5 m), was converted to CE95 for standard CMP reporting purposes. As a means of further verifying the vendor's accuracy assessment, comparisons were made between published locations of four (4) NGS third order geodetic control points and their locations as measured within the WorldView imagery. These comparisons revealed offsets ranging from 1-3 meters.

Compilation

Data compilation was performed by RSD personnel in August 2012. 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 MD1101 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 7.4 meters at the 95% confidence level.

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

Image Source	Image ID	Acquisition Date/Time	Tide Level
WorldView-2	18SEP10WV021100010SEP18160100-P1BS-052459648010_01_P001_rpc.img	2010-09-18 16:01 GMT	n/a

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 August 2012. 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 GC10947 file contents, attached to PCR
- Hardcopy of the CSCAP evaluation memorandum

Remote Sensing Division Electronic Data Library

- GC10947 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

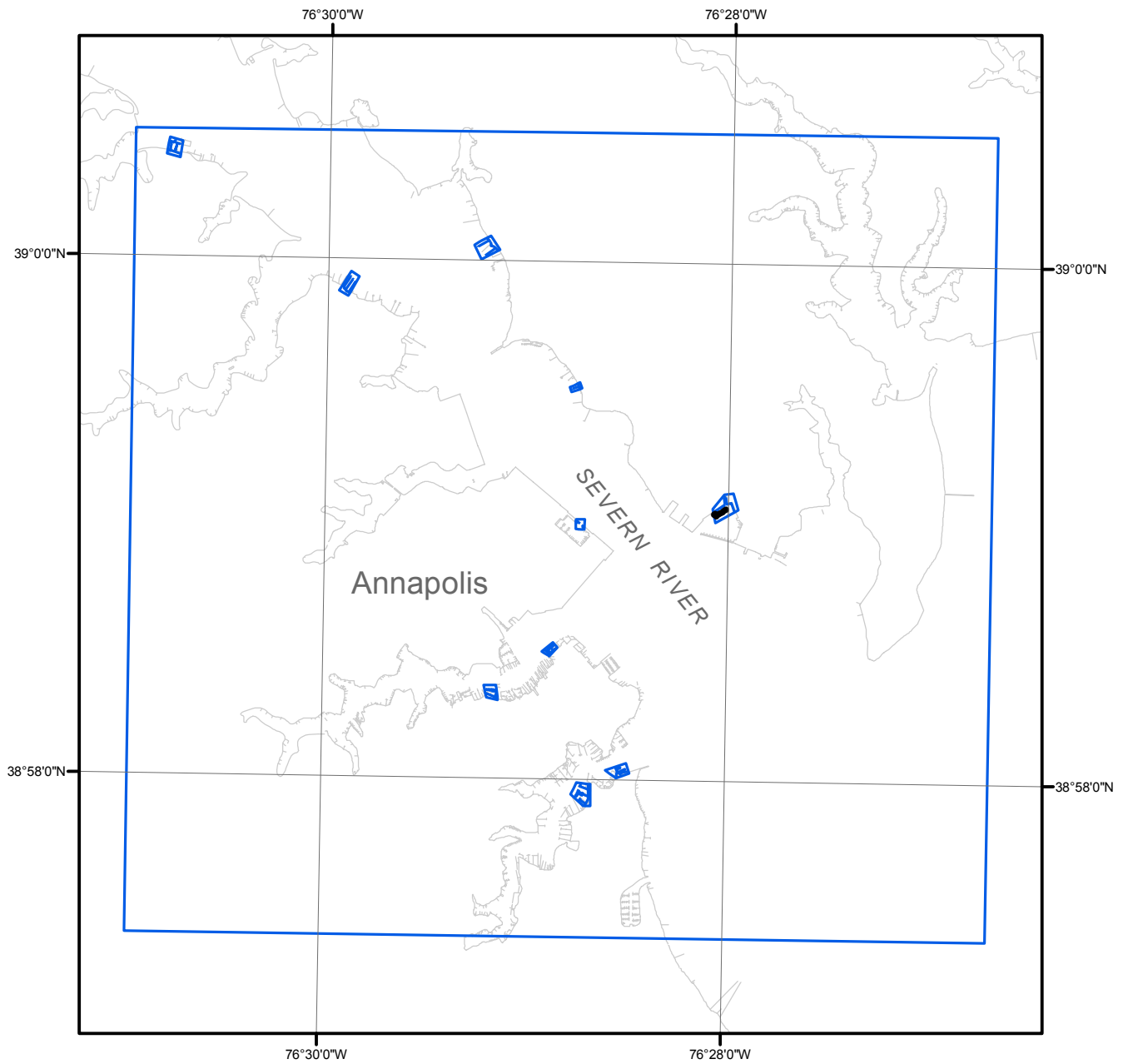
NOAA Shoreline Data Explorer

- GC10947 in shapefile format
- Metadata file for GC10947
- Digital copy of the PCR in Adobe PDF format

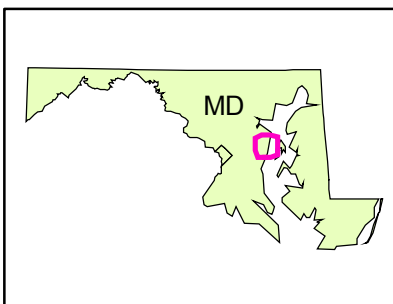
End of Report

ANNAPOLIS HARBOR

MARYLAND



Overview



MD1101

GC10947