

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT NY1907-CS-T

Port of New York, New York and New Jersey

Introduction

Coastal Mapping Program (CMP) Project NY1907-CS-T provides highly accurate digital shoreline data for key areas of change in 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 NY1907-CS-T was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for timely updates to the NOAA chart suite within key U.S. ports. Project requirements were initially 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. Mosaicked color orthoimagery tiles from the New York State Digital Ortho-imagery Program (NYSDOP) was used for this analysis. A Chart Evaluation File (CEF) was forwarded to the Applications Branch (AB) of RSD once the change analysis was complete. Refer to the CSCAP memorandum for NY1907-CS-T 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 source data, which was obtained from external sources.

Georeferencing

Refining the georeferencing of the orthoimagery used for compilation of this project was not necessary since image positioning compared favorably spatially with sources used to verify its accuracy, and since an acceptable accuracy assessment was provided for the imagery. The source photography was aerotriangulated and the orthoimage accuracy analysis resulted in a reported circular error of 2 feet (0.6 meters) based on a 95% confidence level (CE95). For further information on the collection and processing of the orthoimagery, including horizontal accuracy, refer to the NYSDOP metadata on file within the RSD Electronic Data Library. All positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

The data compilation phase of this project was accomplished by AB personnel in September 2019. Using Esri's ArcGIS desktop GIS software (ver. 10.7), digital feature data was compiled in shapefile format from the orthoimagery. Feature identification and attribution within the GC

were based on image analysis of the orthoimages and information extracted from the appropriate NOAA nautical charts, U.S. Coast Guard Light List and other ancillary sources. 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 features were further modified with additional descriptive information to refine general classification.

Spatial data accuracies for Project NY1907-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 1.2 meters at the 95% confidence level, a predicted accuracy of compiled, well-defined points derived by doubling the CE95 reported by the image provider. Information on the images used to complete this project is provided in the table below, with additional information available in the NYSDOP metadata on file within the RSD Electronic Data Library.

Source File (Mosaic) ID	Acquisition Date	GSD (m)	Tide Level
brooklyn.jp2	4/14/2018 – 5/2/2018	0.15	n/a
manhattan1.jp2	4/14/2018 – 5/2/2018	0.15	n/a
manhattan2.jp2	4/14/2018 – 5/2/2018	0.15	n/a
Staten Island.jp2	4/14/2018 – 5/2/2018	0.15	n/a
967190.jp2	4/14/2018 – 5/2/2018	0.15	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 September 2019. The review process included analysis of the 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 software. 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:

Remote Sensing Division Electronic Data Library

- CSCAP evaluation memorandum
- GC11571 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

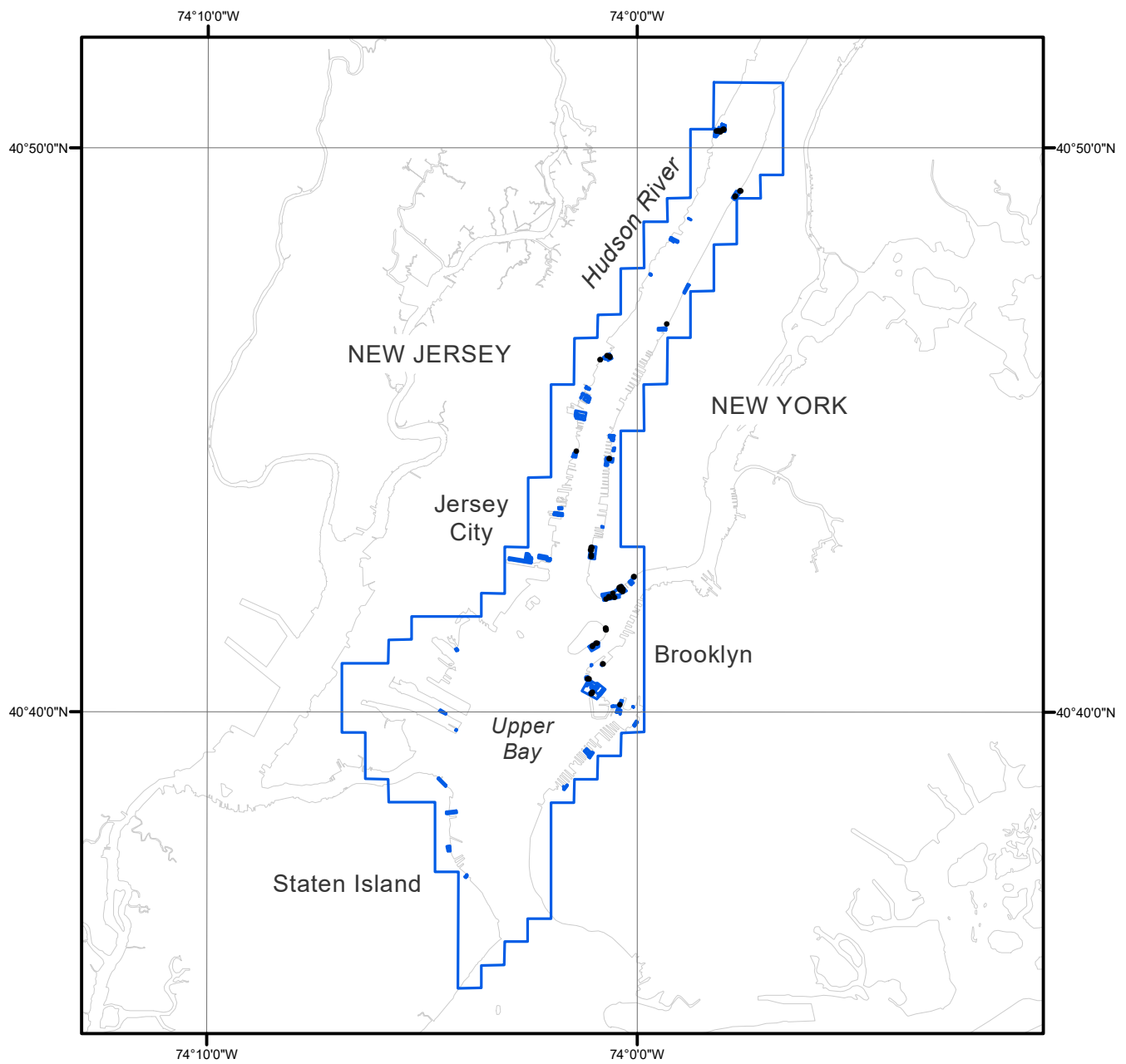
NOAA Shoreline Data Explorer

- GC11571 in shapefile format
- Metadata file for GC11571
- PCR in Adobe PDF format

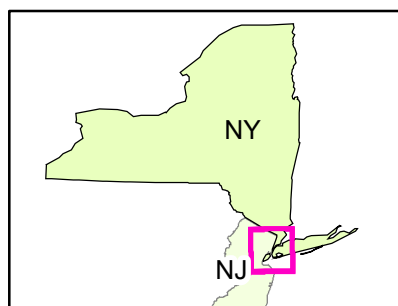
End of Report

PORT OF NEW YORK

NEW YORK AND NEW JERSEY



Overview



NY1907-CS-T

GC11571