NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT AK1106B-CM-T

Western Nunivak Island, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1106B-CM-T provides coastal zone mapping data for the western half of Nunivak Island, including West Mekoruk, Nash Harbor, Cape Mohican, and Cape Mendenhall. Project AK1106B-CM-T is a subproject of project AK1106-CM-T which covers all of Nunivak Island, located in the Bering Sea. The Geographic Cell (GC) may be used to complement the Nautical Charting Program (NCP) as well as geographic information systems (GIS) for a variety of coastal zone management applications.

Project Design

Project AK1106B-CM-T was designed per a request from the Hydrographic Surveys Division (HSD) of the Office of Coast Survey, NOAA, for GIS data in support of HSD operations. Based on an analysis of project requirements and the result of a source data search, it was determined that CMP procedures for multiple source projects would apply for this project. Available source data deemed adequate for successful completion of this project included sources acquired in July 2013.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project source data.

Aerotriangulation

The aerotriangulation (AT) task was accomplished by RSD personnel in November 2013. AT procedures were completed on a Digital Photogrammetric Workstation using the Multi-Sensor Triangulation (MST) module of SOCET SET ver. 5.6. Image files were imported into SOCET SET using the DataThruWay (version 5.6) software extension. The import process converted the stored compressed files to National Imagery Transmission Format (NITF 2.0) with headers and metadata.

The Automatic Point Measurement (APM) tool within MST was used to collect several tie points and a simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well-defined points in this project area of 5.0 meters at the 95% confidence level. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Digital feature data compilation for this project was accomplished by RSD personnel in April, 2015 using the Feature Extraction module of SOCET SET. 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.

Cartographic features were compiled to meet a horizontal accuracy of 8.0 meters at the 95% confidence level. Predicted tide levels were obtained from the harmonic tide station Mekoryuk, located at the Mekoryuk River Entrance, Nunivak Island, Alaska. The predicted water level during the source date and time of acquisition was 1.7 meters above MLLW. The height of the MHW datum at this station is 2.15 meters above MLLW.

Quality Control / Final Review

RSD personnel conducted quality control (QC) tasks during all phases of project completion. The final QC review was completed in April 2015. The review process included analysis of AT 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 software. All project data was evaluated for compliance to CMP requirements.

Comparisons of the largest scale NOAA nautical charts with source imagery and compiled project data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used in the comparison process:

- *16006, Bering Sea, 1:1,534,076 scale (Nash Harbor 1:40,000 inset), 35th Ed. Apr/08.*

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 GC11002 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC11003 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

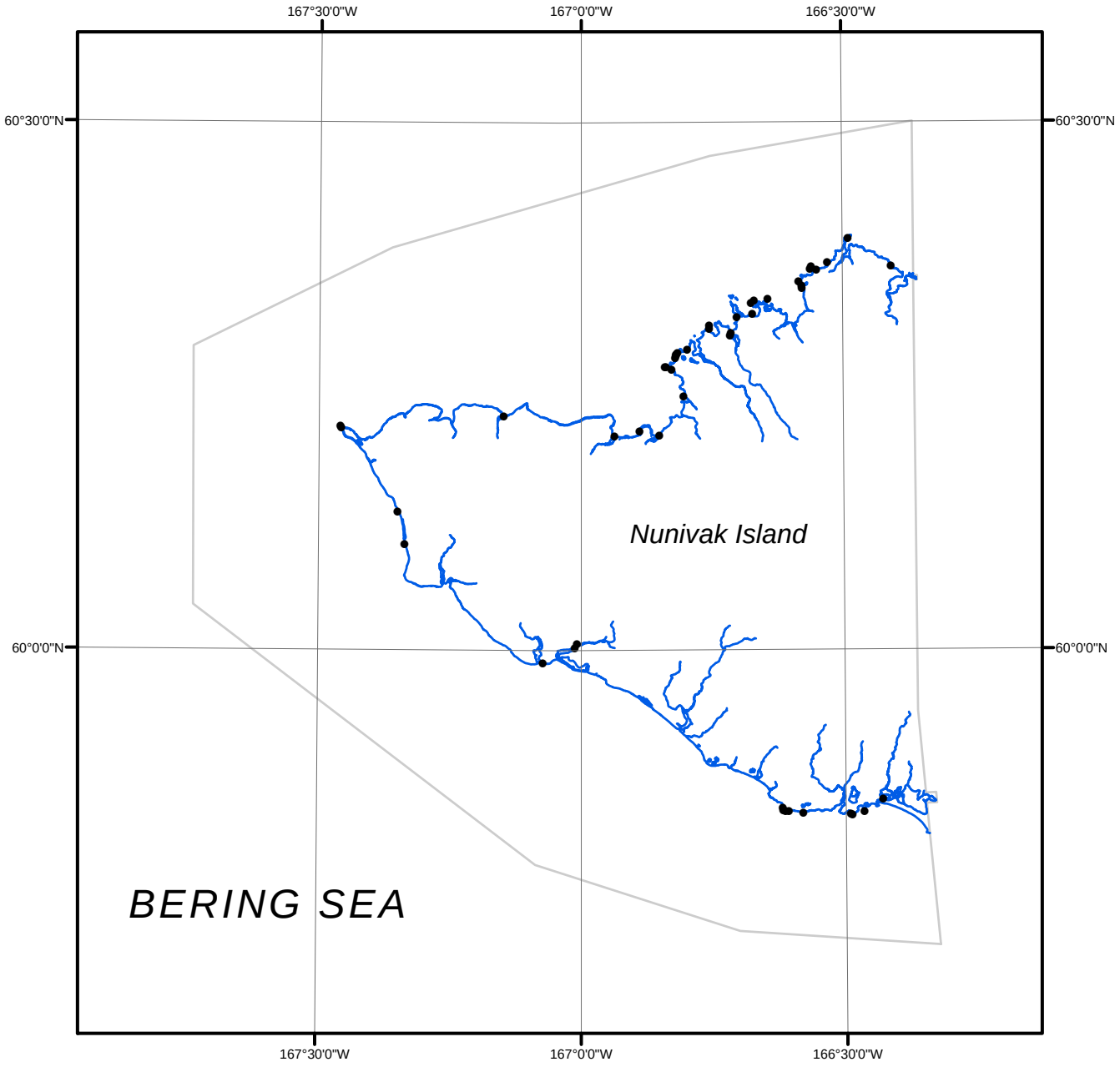
NOAA Shoreline Data Explorer

- GC11003 in shapefile format
- Metadata file for GC11003
- Digital copy of the PCR in Adobe PDF format

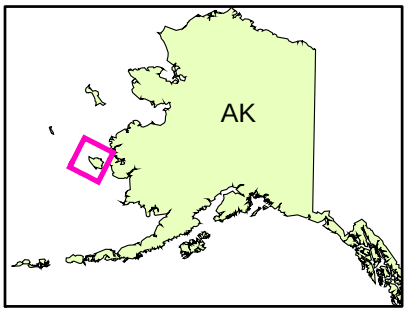
End of Report

WESTERN NUNIVAK ISLAND

ALASKA



Overview



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GC11003