

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1107A-CM-T

Davidson Inlet and Warren Island, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1107A-CM-T provides digital shoreline data for the southern part of Sumner Strait, Alaska. The project includes Warren Island, the southern portion of Kosciusko Island and Davidson Inlet and the northern part of Heceta Island. 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 AK1107A-CM-T was designed per a request from the Hydrographic Surveys Division (HSD) of the Office of Coast Survey, NOAA, for cartographic data in support of HSD field operations. Based on an analysis of project requirements, and as a 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 June 2012.

Field Operations

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

Aerotriangulation

The aerotriangulation task was initiated by RSD personnel in January 2015 utilizing a Digital Photogrammetric Workstation (DPW), which is a configuration of computer hardware, modular software components and other associated peripheral devices. The image files were imported into SOCET SET (version 5.6) using the DataThruWay (ver. 5.6) software extension. The import process converted the stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. Aerotriangulation procedures were accomplished using the Multi-Sensor Triangulation (MST) module of SOCET SET. The interactive point measurement tool within MST was used to collect several tie points and a simultaneous solve adjustment was then performed. Upon successful completion of this process, MST provided the standard deviations for each aerotriangulated ground point, which were used to compute a predicted horizontal circular error of 7.9 meters based on a 95% confidence level. 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 initiated by RSD in March 2015. The digital mapping was performed using a DPW in conjunction with the SOCET SET Feature Extraction software module. 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 10.9 meters at the 95% confidence level. Tidal information was obtained from the NOS reference station at Sitka, AK, and time and height offsets were applied to tidal substations in the project area. The elevation of the MHW datum at these substations is 3.1 – 3.3 meters. The water level at the times the source images were acquired varied between 1.9 and 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 the Applications Branch of RSD. The final QC review was completed in May 2015. The review process included analysis of 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 10.2 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 charts were used in the comparison process:

- 17402, Southern Entrances to Sumner Strait, 1:40,000 scale, 12th Ed., Dec. 2010
- 17403, Davidson Inlet and Sea Otter Sound, 1:40,000 scale, 15th Ed., May 2014
 - 17403 Inset, Edna Bay, 1:10,000 scale

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 GC10954 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10954 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

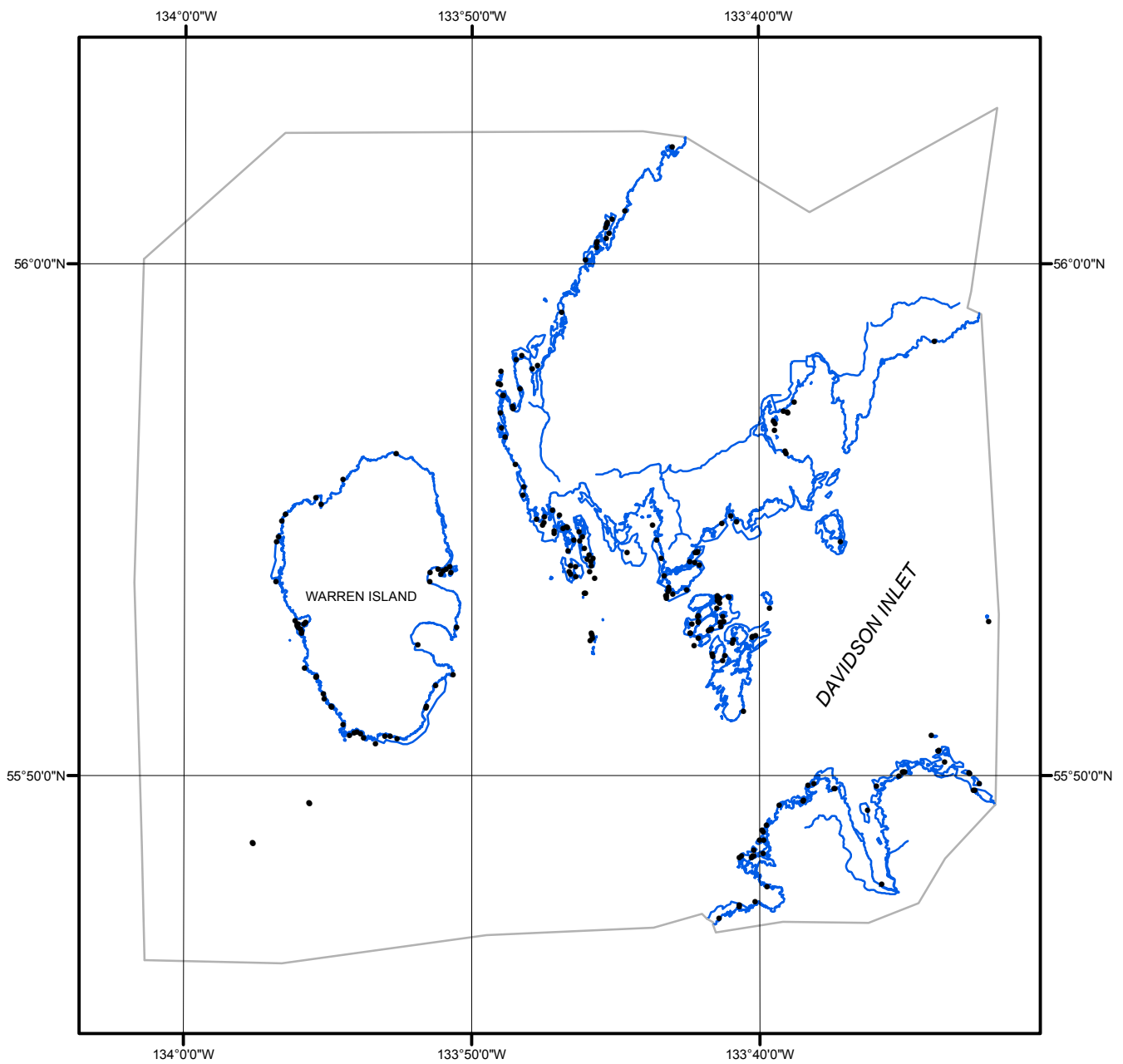
NOAA Shoreline Data Explorer

- GC10954 in shapefile format
- Metadata file for GC10954
- Digital copy of the PCR in Adobe PDF format

End of Report

DAVIDSON INLET AND WARREN ISLAND

ALASKA



Overview



AK1107A-CM-T

GC10954