

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1107C-CM-T

Sumner Strait to Threemile Arm, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1107C-CM-T provides coastal zone mapping data for a portion of Sumner Strait, Alaska, from Port Beauclerc and Port Protection in the south to Threemile Arm in the north. 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 AK1107C 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 results 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 and August 2003, and August 2005.

Field Operations

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

Aerotriangulation

The aerotriangulation portion of the project was accomplished by Remote Sensing Division (RSD) personnel in March 2015. The image files were imported into SOCET SET (ver. 5.6) using the DataThruWay software module. The importing process converted the stored and compressed files to a recognized native SOCET SET format (NITF 2.0) and included supporting data extension files consisting of previously measured sensor model parameters.

Aerotriangulation procedures were then completed on a Digital Photogrammetric Workstation 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, forecasting an average predicted horizontal circular error for all well-defined points of 5.6 meters at the 95% confidence level. This aerotriangulation solution, along with the related imagery, proved sufficient for the compilation phase. 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 May 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 for project AK1107C-CM-T were compiled to meet a horizontal accuracy of 8.6 meters at the 95% confidence level. Tidal information was obtained from the reference tide stations at both Ketchikan and Sitka, AK, and time and height offsets were applied to tidal substations in the project area. The water level in the project area at the times the source images were acquired varied between, 0.4 and 3.0 meters above MLLW. The height of the MHW datum in the project area is 3.3 – 3.6 meters above MLLW. Source data acquired in June 2003 was collected near low tide, enabling approximate delineation of MLLW referenced features.

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:

- Chart 17378, Port Protection, 1:20,000 scale, 14th Ed., Feb/04
- Chart 17360, Etolin Island to Midway Islands, 1:217,828 scale, 36th Ed., Mar/13

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 GC10960 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10960 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

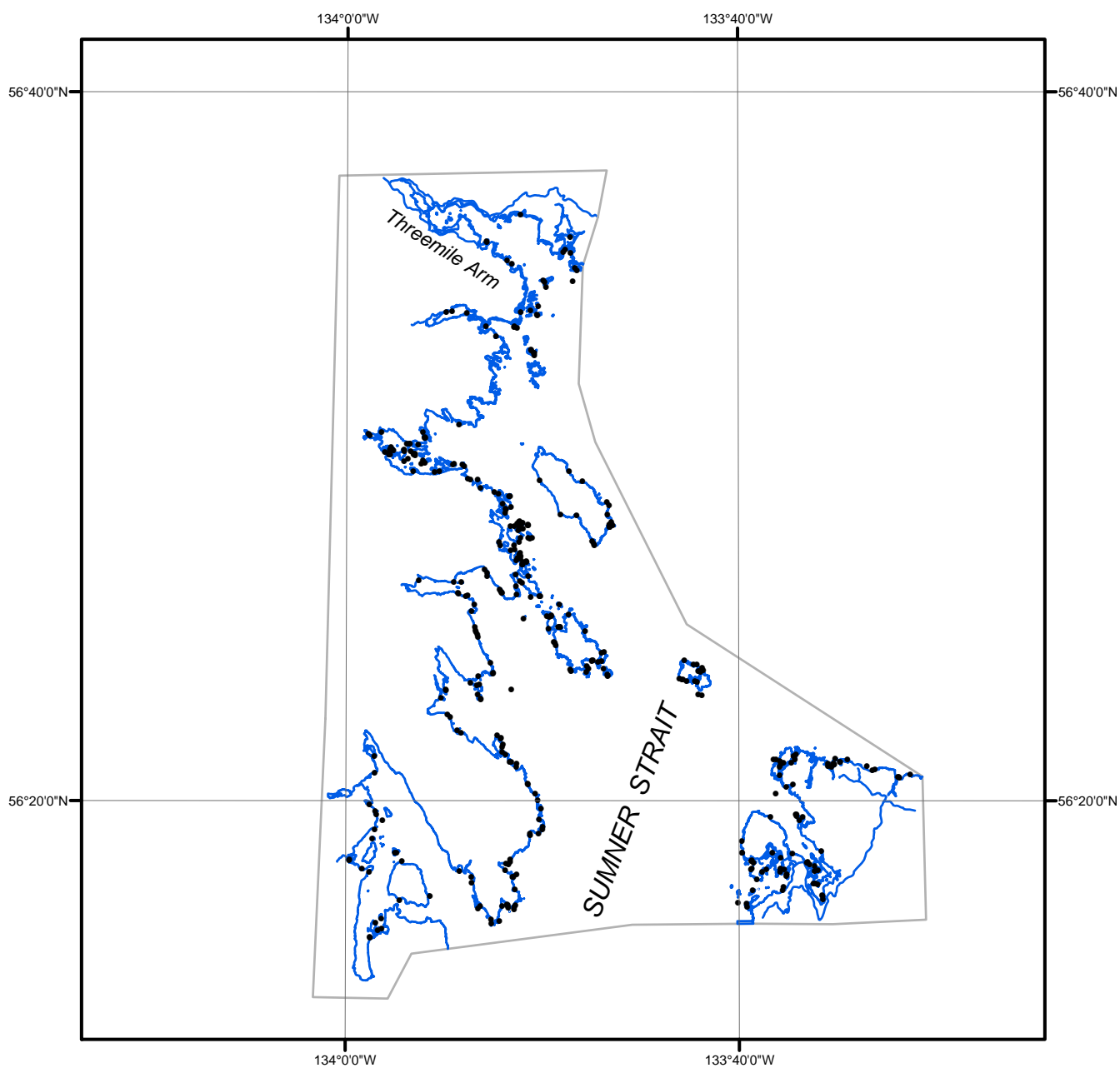
NOAA Shoreline Data Explorer

- GC10960 in shapefile format
- Metadata file for GC10960
- Digital copy of the PCR in Adobe PDF format

End of Report

SUMNER STRAIT TO THREEMILE ARM

ALASKA



Overview



AK1107C-CM-T

GC10960