NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT AK1002

Port Clarence, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1002 provides digital shoreline data for Port Clarence, Alaska. Port Clarence is located on the western coast of Seward Peninsula, near the Bering Strait. The Geographic Cell (GC10817) 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 AK1002 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 August 2007. Additional imagery from May, August, and October 2009 were used for reference in some locations, but the project was primarily compiled from the 2007 imagery.

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 accomplished by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in February 2010, 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 (SS, version 5.4.1) using the DataThruWay (version 5.4.1) software module. The import process converted 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 SS. The Automatic Point Measurement (APM) tool within MST was used to collect image points. The simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well defined points of 7 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 AB personnel in March 2010, using a DPW in conjunction with the SS 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 cartographic features were further modified with additional descriptive information to refine general classification.

Cartographic features were compiled to meet a horizontal accuracy of 10 meters. This reported accuracy is the total of the circular error derived from aerotriangulation statistics, along with an estimate of the additional error caused by the difficulty in interpreting the shoreline in the source imagery.

No MLLW contours were compiled. The tide level for these data was based on observations at the Nome, Norton Sound, Alaska station. The relative difference between the MHW datum and the MLLW datum was approximately 0.4 meters. The tide level for the August 2007 imagery recorded at the Nome station was between 0.5 and 0.7 meters above the MLLW datum.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by senior CMP personnel of RSD. The review process included an analysis of aerotriangulation results and the assessment of the identification and attribution of cartographic features 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 software. All project data was evaluated for compliance to CMP requirements.

Comparisons of the largest scale NOAA nautical chart, the 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:

Chart 16204 Port Clarence and Approaches, 6th Ed., 3/04, Scale 1:100,000

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 GC10817 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10817 in shapefile format

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

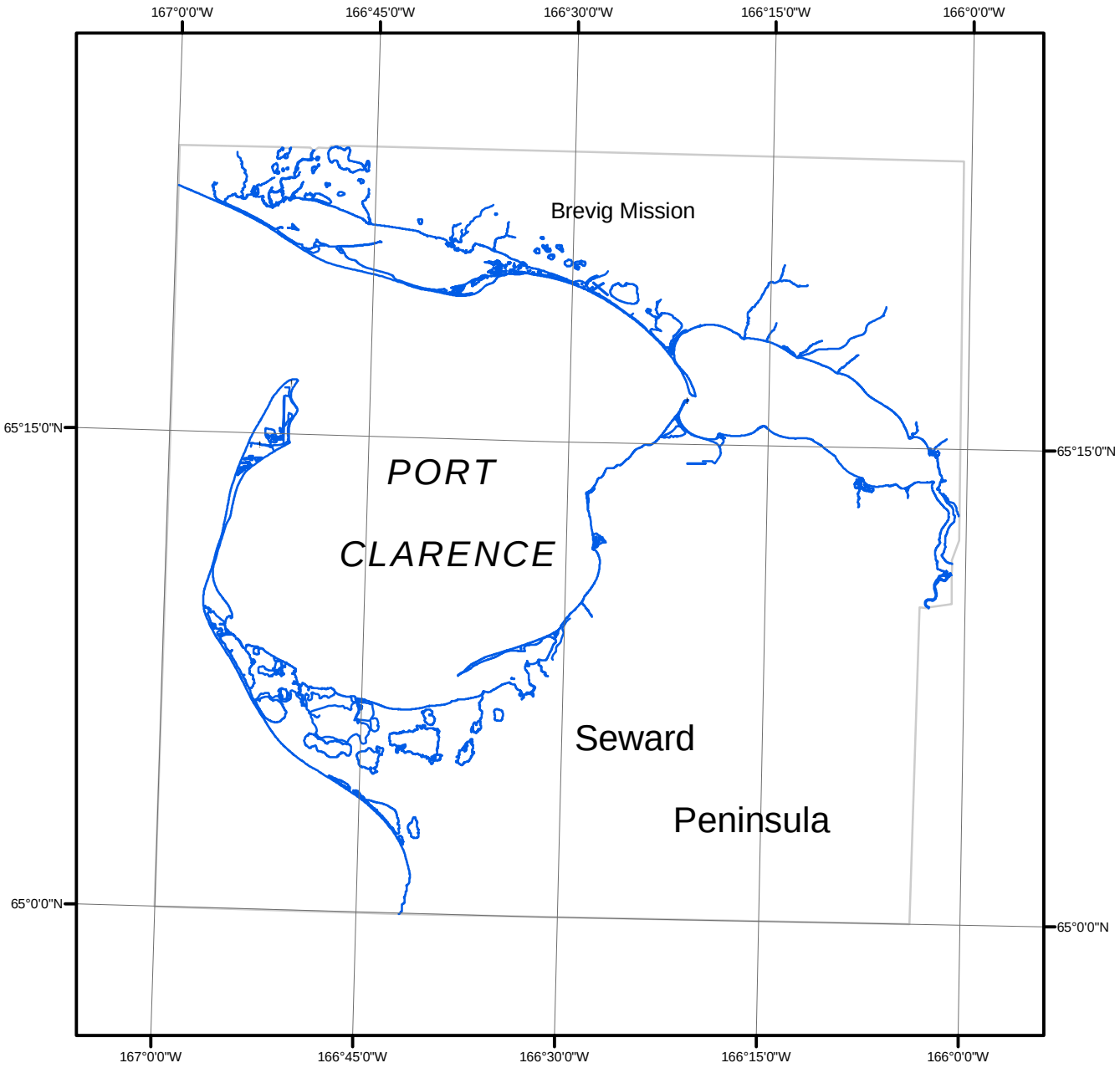
NOAA Shoreline Data Explorer

- GC10817 in shapefile format
- Metadata file for GC10817
- Digital copy of the PCR in Adobe PDF format

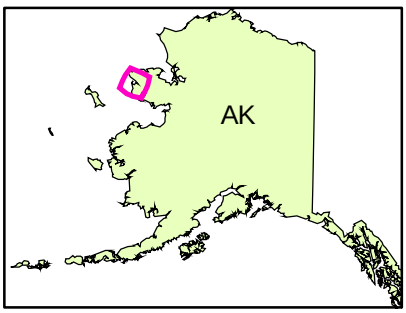
End of Report

PORT CLARENCE

ALASKA



Overview



AK1002

GC10817