NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT AK1101

Nushagak Bay, Alaska

Introduction

Coastal Mapping Program (CMP) Project AK1101 provides coastal zone mapping data of portions of the coastline of Nushagak Bay in the vicinity of Bristol Bay, Alaska. The project area includes Cape Constantine near the southern mouth of Nushagak Bay and extends to Wood River and Nushagak River in the north. Other features within the project area include Protection Point, Clarks Point, the Igushik and Snake Rivers, and the town of Dillingham. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) and coastal zone management activities.

Project Design

This project was designed per a request from the NOAA Hydrographic Surveys Division (HSD) of the Office of Coast Survey, NOAA, for cartographic 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 2010, September 2010, October 2011, and May 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 accomplished by Remote Sensing Division (RSD) Applications Branch (AB) personnel in September 2012 using 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 (version 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 automatic point measurement (APM) tool within MST was used to collect several tie points, some of which were manually re-measured, 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 7 meters at the 95% confidence level. Positional data is referenced to the North American Datum of 1983 (NAD 83).

Compilation

The data compilation phase of this project was accomplished by RSD AB personnel in October, 2012. 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 meters at the 95% confidence level. Tide levels were obtained from NOS stations Snag Point, Clarks Point, and Protection Point. The relative difference in meters between the MHW datum and the MLLW datum for these three tide stations are 5.6, 5.8, and 4.9 respectively. The predicted water levels in the project area at the time the source images were acquired varied from -0.2 meters below to 5.6 meters above the MLLW datum.

Quality Control / Final Review

RSD AB personnel conducted quality control (QC) tasks during all phases of project completion. The final QC review was completed in December 2012. 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 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:

16322, Bristol Bay, 1:100,000 scale (1:10,000 inset), 8th Ed., Mar. /04

End Products and Deliverables

The following specifies the location and identification of the products generated during the completion of this project:

RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Page-size graphic plot of GC10955 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10955 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

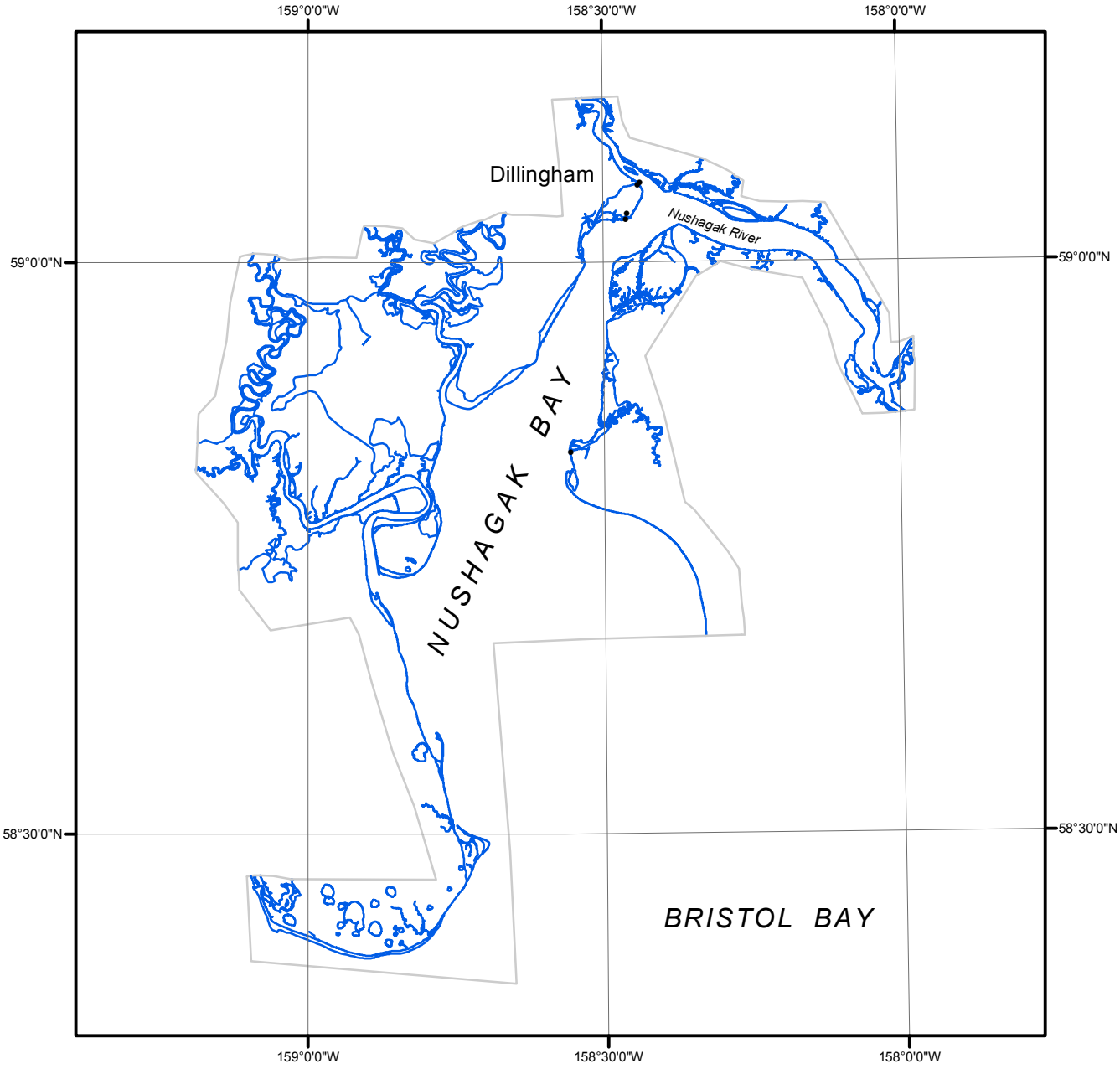
NOAA Shoreline Data Explorer

- GC10955 in shapefile format
- Metadata file for GC10955
- Digital copy of the PCR in Adobe PDF format

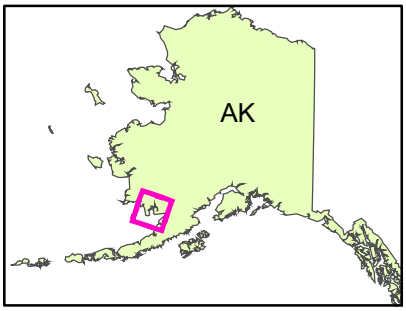
End of Report

NUSHAGAK BAY

ALASKA



Overview



AK1101

GC10955