

# **NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT**

## ***PROJECT AK1202D-CM-T***

### ***Kuchiak Creek to Icy Cape Pass, Alaska***

#### **Introduction**

NOAA Coastal Mapping Program (CMP) Project AK1202D-CM-T provides digital shoreline data for the North Slope of Alaska, from Kuchiak Creek to Icy Cape Pass, including Utukok Pass, Akunik Pass, Kukpowruk Pass, Naokok Pass, Point Lay and the Kasegaluk Lagoon. 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 AK1202D-CM-T was designed to support NOAA Arctic mapping initiatives. 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 2011 and July 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 (AT) task was initiated by personnel of the Applications Branch (AB) of the Remote Sensing Division (RSD) in June, 2013 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 (ver. 5.6) using the DataThruWay (DTW, ver. 5.6) software module. The DTW import process converted stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. AT procedures were accomplished using the Multi-Sensor Triangulation (MST) module of SOCET SET. The Interactive Point Measurement (IPM) 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 3 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 2016, 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 cartographic features were further modified with additional descriptive information to refine general classification.

Cartographic features were compiled to meet a horizontal accuracy of 6.0 meters at the 95% confidence level. The range of tide in the project area is approximately 0.1 meter.

## **Quality Control / Final Review**

Quality control tasks were conducted during all phases of project completion by senior CMP personnel of AB. The review process included:

- 1) An analysis of AT results to include the assessment of a GPS check point (a Bollard at Point Lay: horizontal offset  $\approx$  4 meters) and an assessment of parallax within each stereo-model,
- 2) Assessment of the identification and attribution of cartographic features within the GC according to image analysis and criteria defined in C-COAST, and
- 3) Assessment 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 chart 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 16087, Icy Cape to Nokotlek Pt., 1:50,000, 8<sup>th</sup> Ed., Jan. 2015  
Chart 16088, Utukok Pass to Bloosom Shoals, 1:50,000, 6<sup>th</sup> Ed., Jan. 2015  
Chart 16101, Pt Lay and Approaches, 1:50,000, 7<sup>th</sup> Ed., Jan. 2015  
Chart 16102, Kuchiak Creek to Kukpowruk Pass, 1:50,000, 6<sup>th</sup> Ed., Jan. 2015  
Chart 16103, Cape Beaufort, 1:50,000, 6<sup>th</sup> Ed., Jan. 2015

## **End Products and Deliverables**

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

### **Remote Sensing Division Electronic Data Library**

- Project database
- GC11122 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

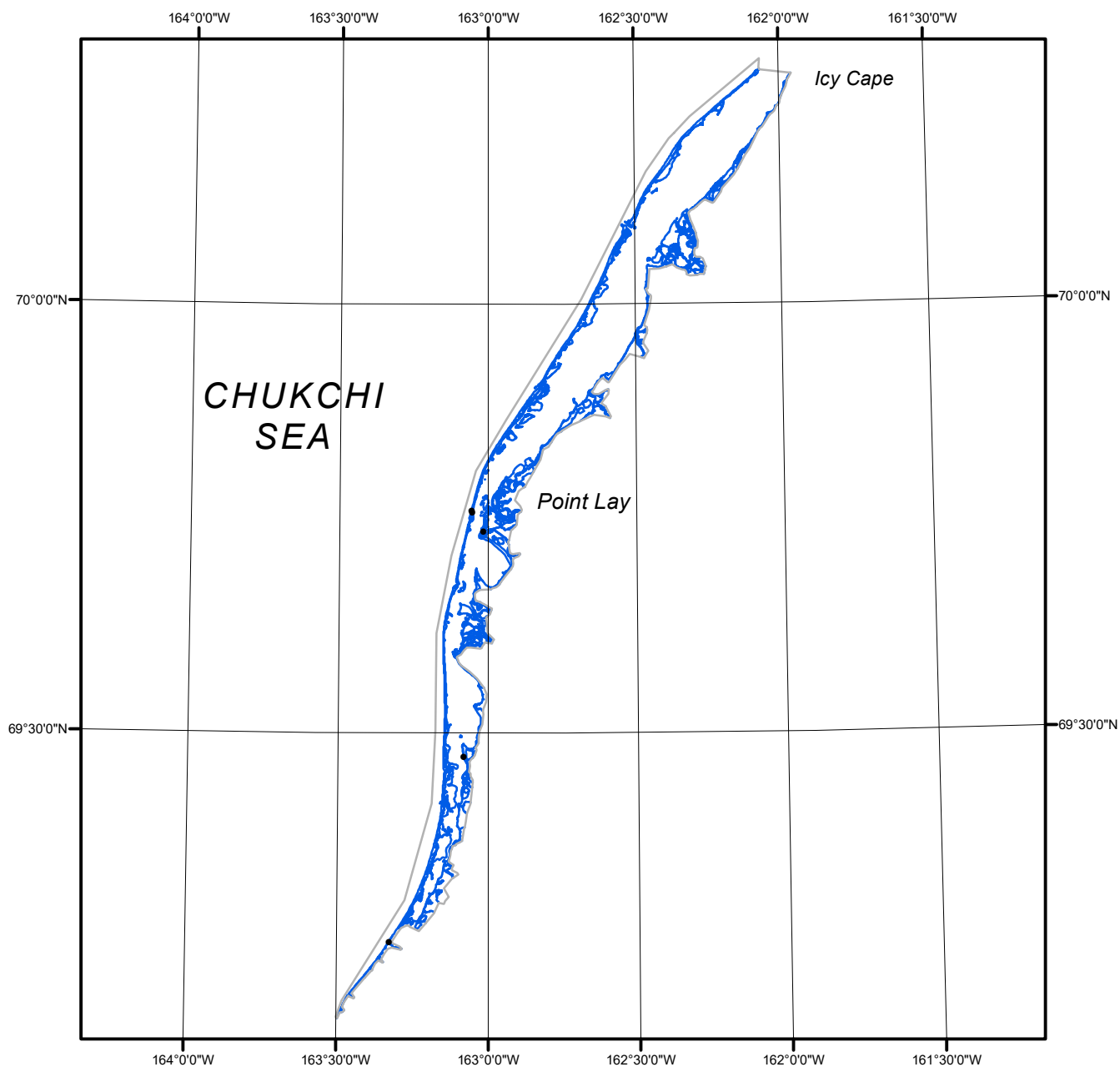
### **NOAA Shoreline Data Explorer**

- GC11122 in shapefile format
- Metadata file for GC11122
- Digital copy of the PCR in Adobe PDF format

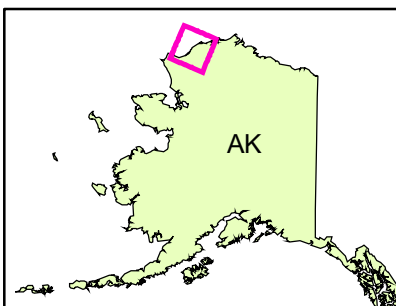
## **End of Report**

# KUCHIAK CREEK TO ICY CAPE PASS

## ALASKA



Overview



AK1202D-CM-T

GC11122