

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

## ***PROJECT AK1904A-CM-T***

### ***Sandborn Canal, Alaska***

#### **Introduction**

NOAA Coastal Mapping Program (CMP) Project AK1904A-CM-T provides accurate digital shoreline data for Sandborn Canal, an arm extending south from Port Houghton, in Alaska. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for coastal zone management applications.

#### **Project Design**

Project AK1904A-CM-T was designed in response to a request from Marine Chart Division (MCD) of NOAA's Office of Coast Survey. 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 three stereo pairs of WorldView commercial satellite imagery from DigitalGlobe, Inc. Of the three stereo pairs adjusted during the aerotriangulation (AT) phase of this project, the December 2016 pair was determined to be unsuitable for compilation and was therefore not used.

#### **Field Operations**

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

#### **Aerotriangulation**

Routine softcopy AT methods were applied to provide model parameters and orientation elements required for digital compilation. This work was performed by personnel of the Applications Branch (AB) of the Remote Sensing Division (RSD) in September 2019 utilizing BAE's SOCET SET (ver. 5.6) software on a Windows-based photogrammetric workstation. The Multi-Sensor Triangulation (MST) module of SOCET SET was used for point measurements and image adjustment. Within MST, the interactive point measurement tool was used to collect tie points and a simultaneous solve adjustment was then performed, computing a predicted horizontal circular error of 2.9 meters at the 95% confidence level. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

#### **Compilation**

Data compilation for this project was initiated by AB personnel in March 2020. Digital mapping was performed using the Feature Extraction software 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.

Spatial data accuracies for Project AK1904A-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 5.8 meters at the 95% confidence level. This predicted accuracy of compiled well-defined points is derived by doubling the circular error calculated from the AT statistics. The following table provides information on the imagery used to complete this project:

Image Source	Source File IDs (Image Pairs)	Acquisition Date/Time	GSD	Tide Level*
WorldView-1	13JUN18195811R3C1.../ 13JUN18195858R3C1...	2013-06-18 / 19:58 GMT	0.55-0.60 m	2.1 m
WorldView-1	16DEC05231125R2C1.../ 16DEC05231219R2C1...	2016-12-05 / 23:12 GMT	0.53-0.59 m	3.2 m
WorldView-2	19JUN28200119R3C1.../ 19JUN28200237R3C1...	2019-06-28 / 20:02 GMT	0.54-0.59 m	2.9 m

\* Tide Levels are given in meters above MLLW and are based on verified observations at the NOS tide station in Juneau, AK, with time and height offsets applied to the Port Houghton substation. The height of the MHW tidal datum at Port Houghton is approximately 4.4 meters above MLLW.

## Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of AB. The final QC review was completed in April 2020. The review process included analysis of AT 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 (ver. 10.7.1) 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:

- 17360, Etolin Island to Midway Island, 37<sup>th</sup> Ed., Jun. 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
- Project Completion Report (PCR)
- GC11556 in shapefile format
- CEF in shapefile format

### NOAA Shoreline Data Explorer

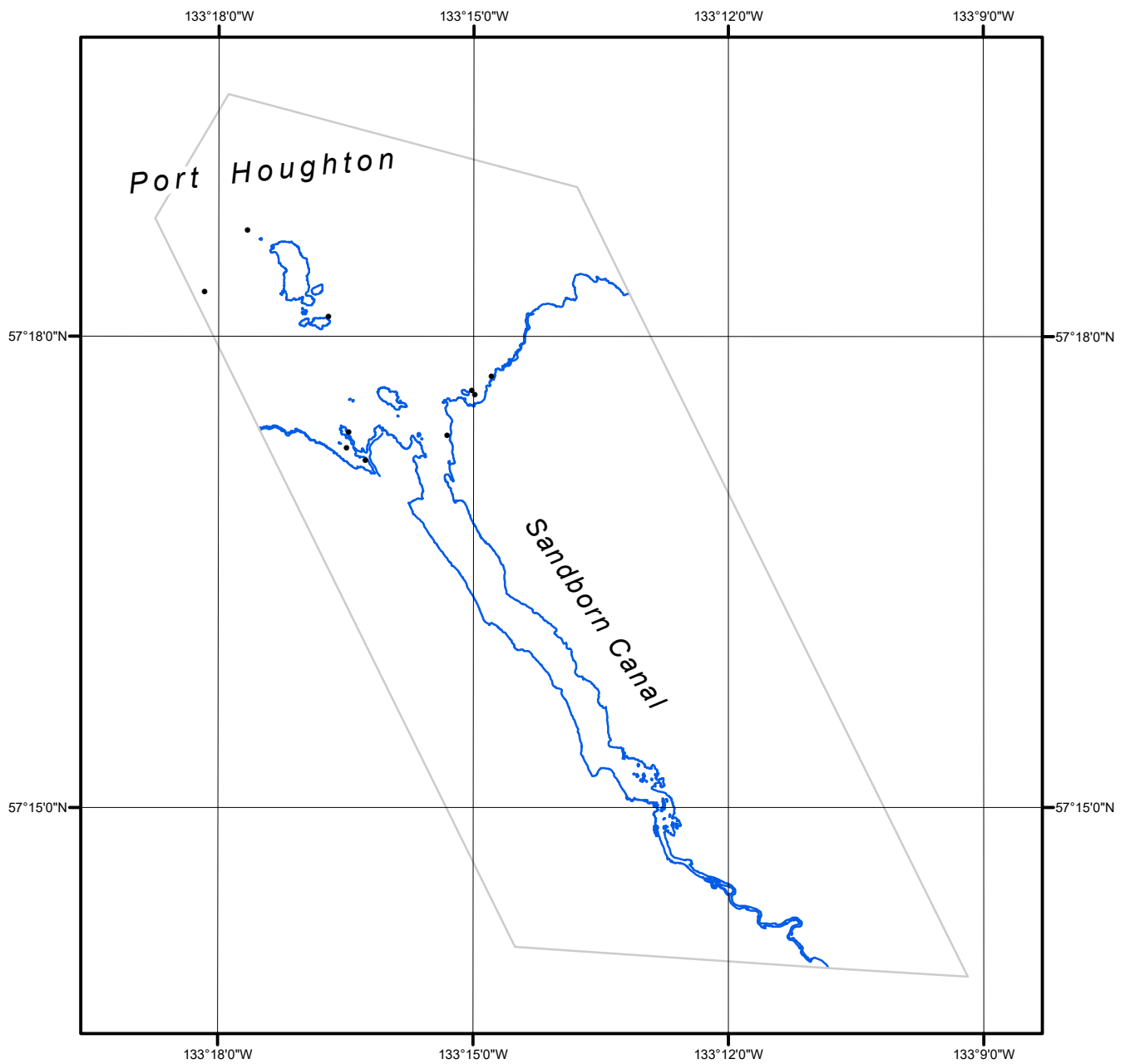
- GC11556 in shapefile format

- Metadata file for GC11556
- PCR in Adobe PDF format

**End of Report**

# SANDBORN CANAL

## ALASKA



Overview



AK1904A-CM-T

GC11556