

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

## ***PROJECT AK2201-CS-T***

### ***Dutch Harbor, Alaska***

#### **Introduction**

Coastal Mapping Program (CMP) Project AK2201-CS-T provides highly accurate digital shoreline data for key areas of change within Dutch Harbor, 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 a variety of coastal zone management applications.

#### **Project Design**

The design of Project AK2201-CS-T was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for updates to the NOAA chart suite in key U.S. ports. Project requirements were formulated as a result of analysis conducted within the Coast and Shoreline Change Analysis Program (CSCAP), in which NOAA nautical chart products are compared to contemporary high-resolution imagery to ascertain the need for more current shoreline data. One orthorectified WorldView-2 satellite image with a ground sample distance (GSD) of 0.5 meters was used for change analysis. A Chart Evaluation File (CEF) was forwarded to the Applications Branch (AB) of RSD once the change analysis was complete. Refer to the CSCAP Memorandum for Project AK2201-CS-T for details of the chart comparison process.

#### **Field Operations**

Routine CMP field operations did not apply for this project based on the origin of the project imagery, which was obtained from external sources.

#### **Georeferencing**

Refinement of the georeferencing of the imagery used in the CSCAP analysis was not necessary since the image compared favorably spatially with data sources used to check its geolocation and since the image vendor provided an acceptable accuracy assessment. DigitalGlobe reported an RMSE of 3.9 meters for the WorldView imagery, used to calculate a horizontal accuracy of 6.8 meters at the 95% confidence level for well-defined points measured during compilation. Positional data is referenced to the North American Datum of 1983 (NAD 83).

#### **Compilation**

Data compilation was accomplished by AB personnel in December 2021. Digital feature data was compiled in shapefile format from the satellite imagery using Esri's ArcGIS (ver. 10.81) desktop GIS software. 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.

Spatial data accuracies for AK2201-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. As indicated above, cartographic features were compiled to meet a horizontal accuracy of 6.8 meters at the 95% confidence level. The following table provides information on imagery used to complete this project:

Image Source	Source File (Tile) Name	Acquisition Date/Time	Tide Level*
WorldView-2	20210726_WV02_ORI_mos.jp2	2021-07-26 / 22:18:20 GMT	-0.2 m

\* Tide levels are given in meters above MLLW and based on verified observations recorded at the NOS gage in Unalaska, AK at the time of image acquisition. MHW is 1.01 meters above MLLW at the tide gage.

### **Quality Control / Final Review**

The final QC review was completed in September 2023. The review process included analysis of image georeferencing 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. The entire suite of project products was evaluated for compliance to CMP requirements.

### **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**

- CSCAP evaluation memorandum
- GC11753 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

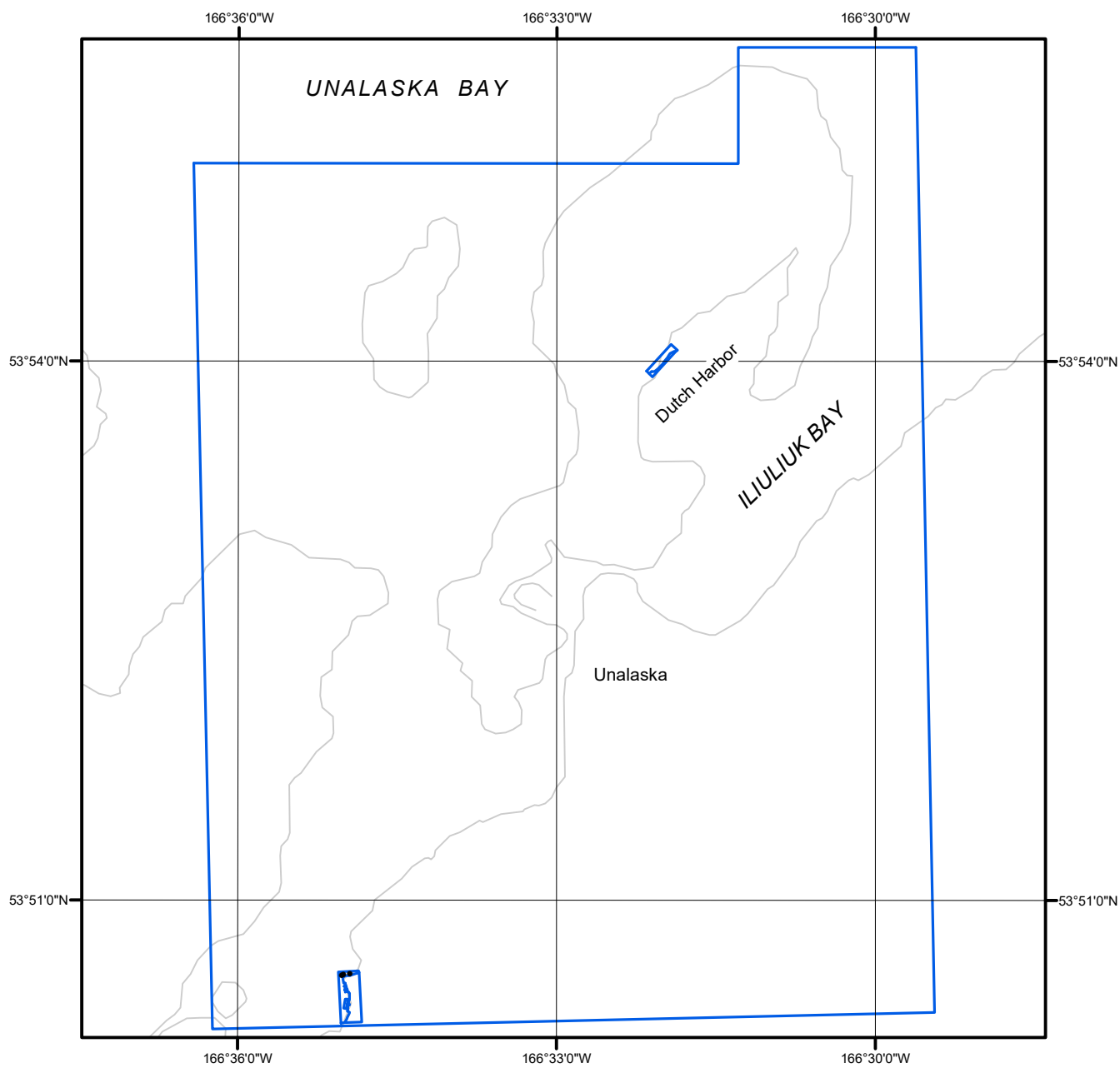
#### **NOAA Shoreline Data Explorer**

- GC11753 in shapefile format
- Metadata file for GC11753
- PCR in Adobe PDF format

### **End of Report**

# DUTCH HARBOR

## ALASKA



Overview



AK2201-CS-T

GC11753