

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT HI1503-CS-T

Kawaihae Harbor, Hawaii

Introduction

Coastal Mapping Program (CMP) Project HI1503-CS-T provides highly accurate digital shoreline data for key areas of change within Kawaihae Harbor, Hawaii. 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 HI1503-CS-T was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for expedited updates to the NOAA chart suite in key 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 in order to ascertain the need for more current shoreline data. A WorldView-2 commercial satellite image was utilized for the CSCAP analysis. A Chart Evaluation File (CEF) was created once the change analysis was complete. Refer to the CSCAP memorandum of December 2, 2014 for details regarding 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

The WorldView imagery was assessed for positional accuracy and determined to be suitable for feature compilation without the need for further image georeferencing tasks. The published locations of four (4) NGS geodetic control points and five (5) U.S. Coast Guard maintained navigational aids were used for this assessment. Additionally the image vendor provided a suitable accuracy assessment. The vendor reported an RMSE of 3.9 meters, which was used to calculate a horizontal accuracy of 6.8 meters at the 95% confidence level in order to predict the accuracy of well-defined points measured during feature compilation. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation was accomplished by RSD Applications Branch personnel in July 2015. Digital feature data was compiled in shapefile format from the satellite imagery using ArcGIS (ver. 10.2.2). 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 HI1503-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:

Sensor	Source File ID	Acquisition Date/Time	Tide Level*
WorldView-2	20140814_211240_wv02_ORI.tif	2014-08-14 / 21:12:40 GMT	0.4 m

* Tide levels are given in meters above MLLW and based on verified observations recorded at the NOS gage in Kawaihae at the time of image acquisition. The MHW tidal datum is 0.5 meters above MLLW at the NOS gage.

Quality Control / Final Review

The final QC review was completed in July 2015. 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 10.2.2. The entire suite of project products was evaluated for compliance to CMP requirements. A Chart Evaluation File (CEF) resulted from comparison of the project imagery with the largest scale NOAA nautical chart covering the project:

- 19330 Kawaihae Bay, 1:10,000 scale, 11th Ed., Sep /06

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
- GC11165 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

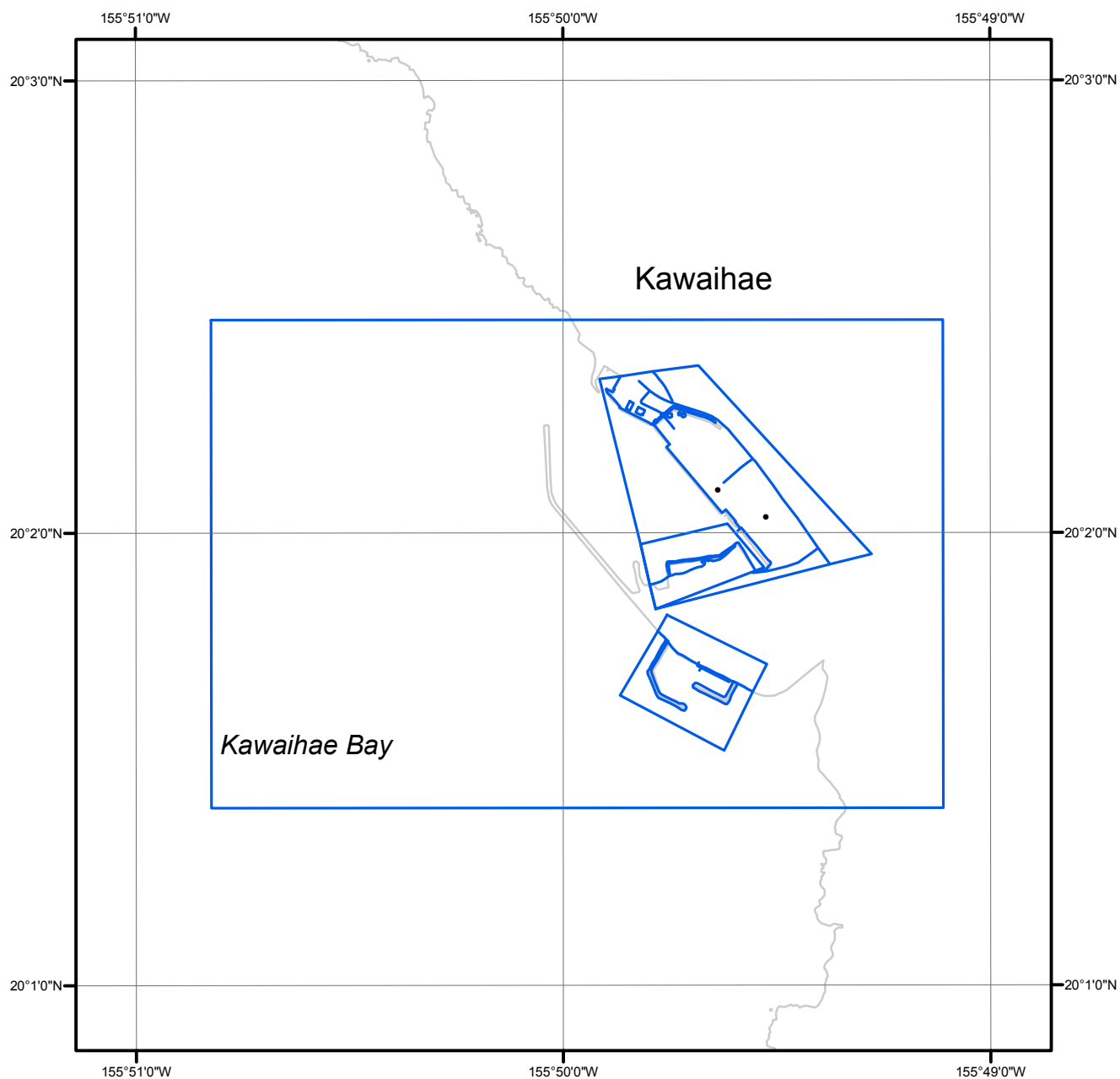
NOAA Shoreline Data Explorer

- GC11165 in shapefile format
- Metadata file for GC11165
- Digital copy of the PCR in Adobe PDF format

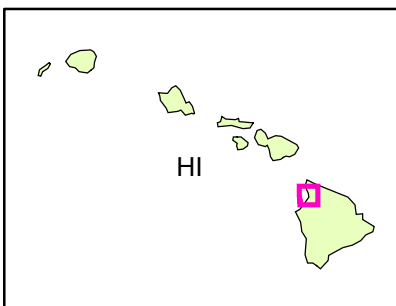
End of Report

KAWAIHAE HARBOR

HAWAII



Overview



HI1503-CS-T

GC11165