NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT WA2506-CS-T

Port of Longview, Washington

Introduction

Coastal Mapping Program (CMP) Project WA2506-CS-T provides highly accurate digital shoreline data for key areas of change in the port of Longview, Washington. 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 WA2506-CS-T was accomplished by the Systems and Quality Assurance Branch (SQAB) of the Remote Sensing Division (RSD) in response to the need for updates to the NOAA Electronic Navigational Chart (ENC) series 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 in order to ascertain the need for more current shoreline data. One orthorectified 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 for WA2506-CS-T 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 source data. Existing sources of horizontal control were used for the georeferencing process.

Georeferencing

Georeferencing tasks were initiated by a member of the Applications Branch (AB) of the RSD in December 2024. The project satellite image was adjusted to features from previous CMP Project WA0201 using Esri's ArcGIS Pro (ver. 3.3.1) desktop GIS software. Within ArcGIS Pro, the Georeferencing tool was used, and the imagery was re-sampled using a 1st Order Polynomial transformation. Check points, extracted from WA0201, were used to statistically assess the accuracy of the georeferenced imagery. The RMS of the residuals for each measured check point was used to compute a predicted horizontal circular error (CE) of 1.12 meters based on a 95% confidence level. This CE value was doubled and added to the accuracy of the source from which check points were extracted to conservatively predict the accuracy of 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 2024. Digital feature data was compiled from the satellite imagery using ArcGIS Pro. 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 WA2506-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 3.0 meters at the 95% confidence level, which is a deductive estimate based on georeferencing statistics.

The following table provides information on the source imagery used to complete this project:

Image Source	Source File Name	GSD	Acquisition Date/ Time (GMT)	Tide Level*
WorldView-2	20241005_WV02_ORI_NAD83.jp2	0.5 m	10-5-2024 / 19:22	-0.2 m

* Tide level is given in meters above MLLW and is based on verified observations recorded at the time of image acquisition by the NOS gauge at Longview, WA (#9440422). The elevation of MHW at the Longview station is 1.220 meters above MLLW.

Quality Control / Final Review

Final review tasks were completed in December 2024. 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
- Project database
- GC12054 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

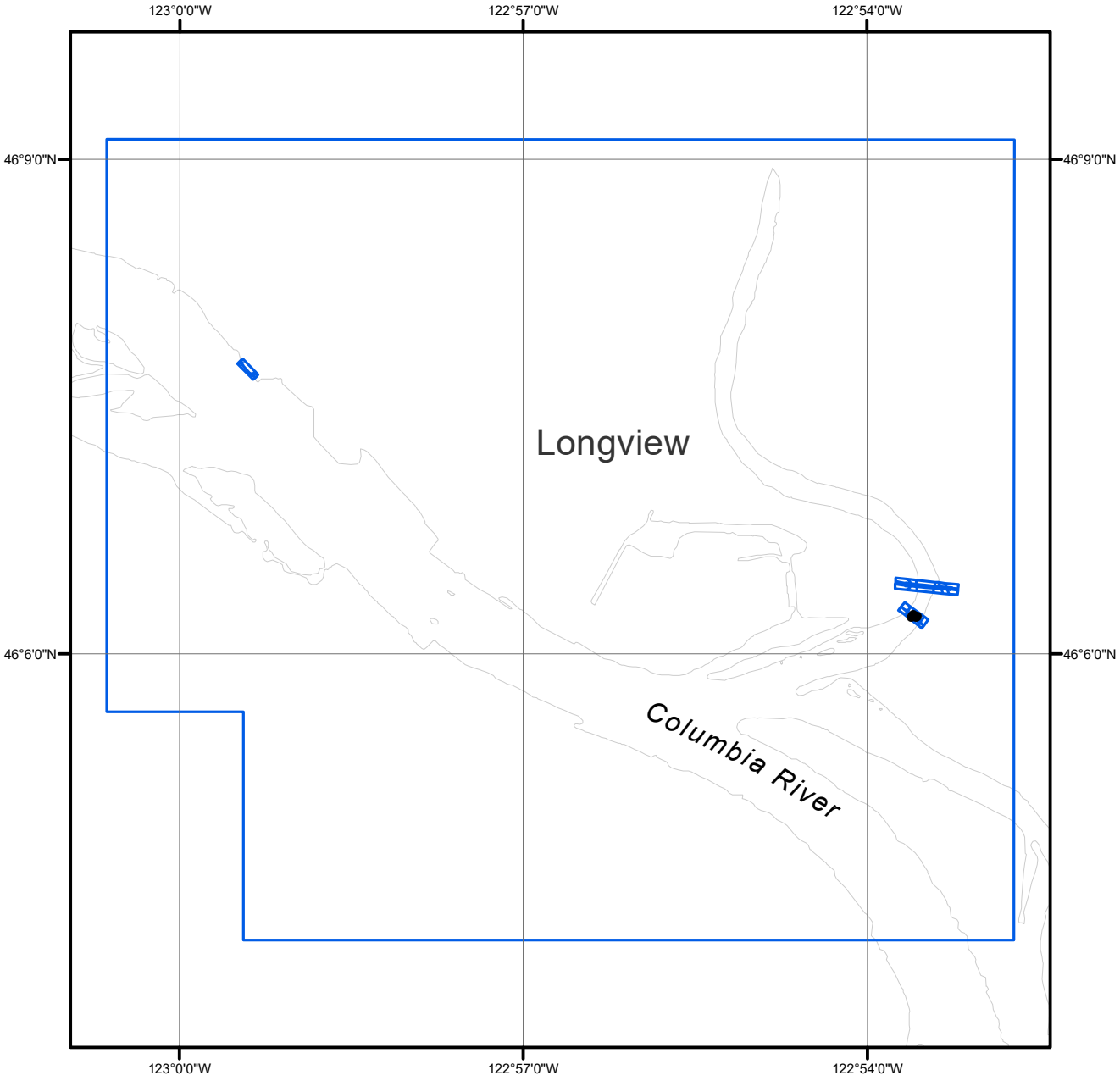
NOAA Shoreline Data Explorer

- GC12054 in shapefile format
- Metadata file for GC12054
- PCR in Adobe PDF format

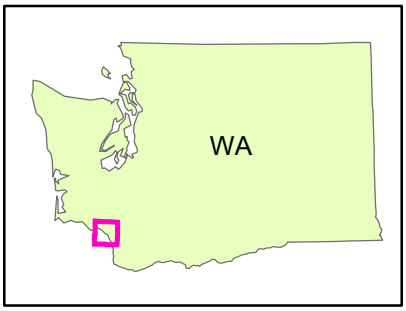
End of Report

PORT OF LONGVIEW

WASHINGTON



Overview



WA2506-CS-T

GC12054