

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

## ***PROJECT LA2106-CS-T***

### ***Port of Intracoastal City, Louisiana***

#### **Introduction**

Coastal Mapping Program (CMP) Project LA2106-CS-T provides highly accurate digital shoreline data for key areas of change within the port of Intracoastal City, Louisiana. 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 LA2106-CS-T was accomplished by the Systems & Quality Assurance Branch (SQAB) of the Remote Sensing Division (RSD) in response to the need for 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. Commercial satellite imagery 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 LA2106-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 conducted by a member of the Applications Branch (AB) of RSD in June 2021. One pan-sharpened WorldView-3 image was obtained via the Enhanced View Web Hosting Site. A subset of the original image, which was downloaded as a set of tiles, was re-mosaicked and georeferenced using feature data from previous CMP project LA1101 using Esri's ArcGIS (ver. 10.8.1) desktop GIS software. Within ArcGIS, the Georeferencing tool was used, and the image was re-sampled using the Nearest Neighbor method with a 1st order polynomial model. Check points from LA1101 were used to assess the accuracy of the resampled imagery, and the RMS of the residuals for each measured check point was used to compute a predicted horizontal circular error (CE) of 0.8 meters for based on a 95% confidence level. This CE value was doubled and added to the accuracy of the source dataset from which the check points were extracted in order 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 a member of AB in June 2021. Digital feature data was compiled in shapefile format from the satellite imagery using Esri's ArcGIS 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 Project LA2106-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 2.2 meters at the 95% confidence level, which is a deductive estimate based on georeferencing statistics. The following table provides information on the satellite images used in the project completion:

Image Source	Source File ID	GSD	Acquisition Date/Time	Tide Level*
WorldView-3	202103009_WV03_ORI_2_(tile#).jp2	0.35 m	2021-03-09 / 16:59	-0.1

\* The predicted tide level at the time of photography is given in meters above MLLW and is based on tidal harmonics for the NOS station at Intracoastal City, LA. Actual tide levels at other stations in the region were running slightly higher than predictions at that time. The elevation of the MHW tidal datum at the Intracoastal City station is equal to 0.45 m above MLLW.

## Quality Control / Final Review

Quality control tasks were conducted subsequent to project completion in July 2021 by senior CMP personnel. The review process included analysis of the georeferencing 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. 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
- GC11727 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

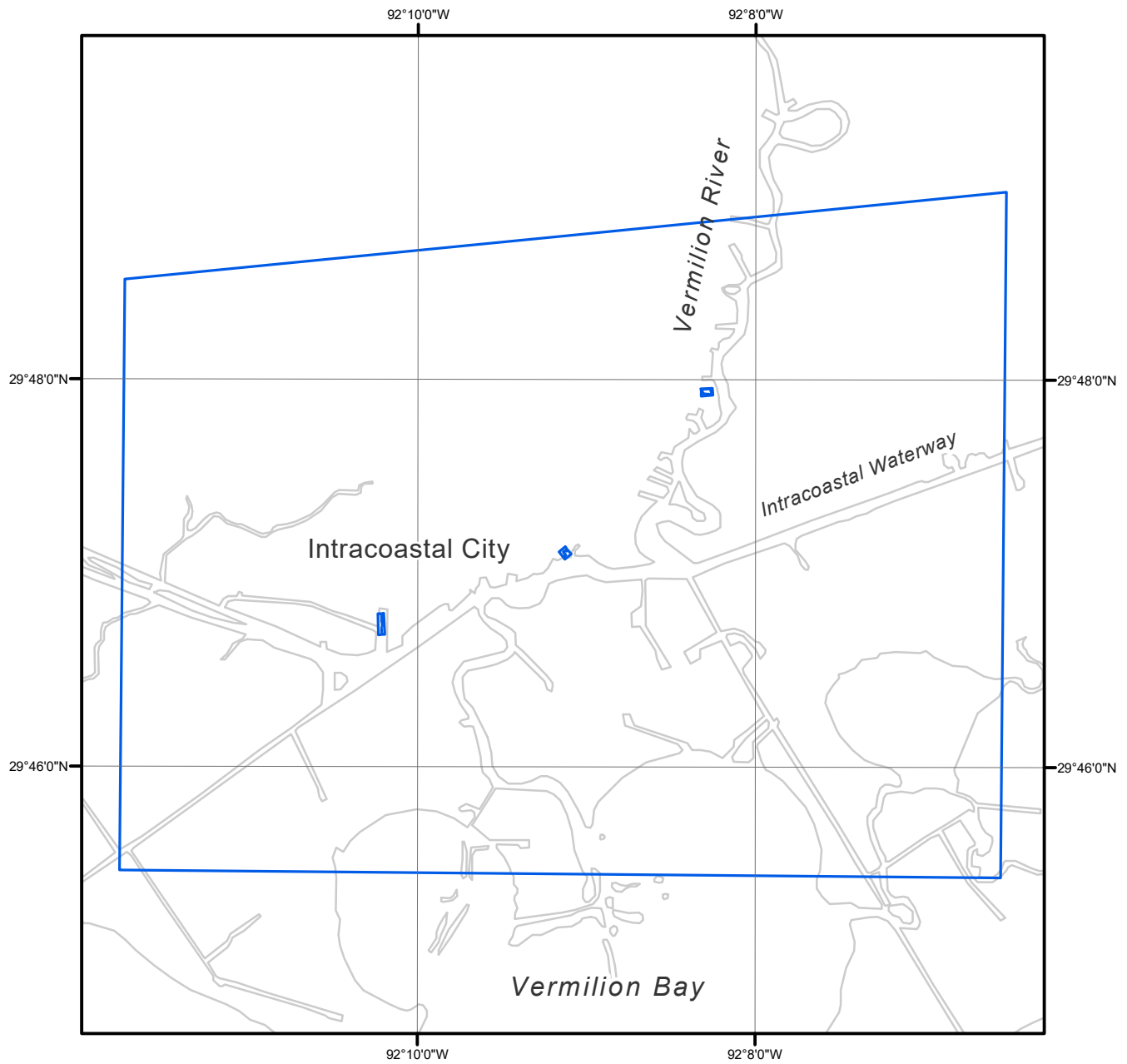
### NOAA Shoreline Data Explorer

- GC11727 in shapefile format
- Metadata file for GC11727
- PCR in Adobe PDF format

## End of Report

# PORT OF INTRACOASTAL CITY

## LOUISIANA



Overview



LA2106-CS-T

GC11727