

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

## ***PROJECT TX0601B***

### ***Port of Freeport, TX***

#### **Introduction**

Coastal Mapping Program (CMP) Project TX0601B provides digital shoreline data for key areas of change within the port of Freeport, Texas. The project extends from Velasco Heights in the north to Surfside Beach in the south and contains portions of the Brazos River and Intracoastal Waterway. 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 TX0601B was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for timely updates to NOAA's Electronic Navigational Chart (ENC) series. 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 satellite imagery in order to ascertain the need for more current shoreline data. The project source data was acquired from DigitalGlobe, Inc. and includes one (1) QuickBird satellite image, collected in February 2006 with a pixel resolution of 0.6 meters. A shift exists between the ENC and the raster navigational chart. Refer to the RB Memorandum of April 7, 2006, "Results of CSCAP Change Analysis for Freeport, Texas (TX0601B)," for further information.

#### **Field Operations**

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

#### **Compilation**

The data compilation phase of this project was initiated by a member of RSD in August 2008. Digital feature data was compiled in ESRI shapefile format from imagery using ESRI's ArcGIS 9.1 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. Selected features were further modified with additional descriptive information to refine general classification.

The horizontal accuracy reported by the vendor for the project imagery is 14.0 meters RMSE. For reporting purposes this accuracy was converted to the 95% confidence level ( $CE_{95} = 1.7308 * 14 = \mathbf{24\ meters}$ ) according to the methodology described by the FGDC National Standard for Spatial Data Accuracy. The image accuracy claimed by the vendor is the reported accuracy of

features compiled for this project. Due to a lack of ground control, no additional georeferencing was performed on the image.

Verified tide level data was obtained from the NOS reference tide station at Galveston, Texas, and corrections were applied to the Freeport Harbor substation. The tide level in the project area for all source imagery was determined to be 0.7 meters above MLLW. The elevation of the MHW datum in this area is about 0.8 meters.

The following table provides information on the satellite image used in the project completion:

Image #	Image Source	Source File Name	Acquisition Date/Time	Tide Level*
1	Quickbird	06FEB27172329-S2AS-005537419030_01_P001.tif	2006-02-27 23:29 GMT	0.7 m

\* Tide levels are given in meters above MLLW and are based on actual observations recorded by the NOS gauge at the Galveston Pier 21 reference station at the time of photography. Offsets were applied to the Freeport Harbor substation. The approximate tide range within the project area is 0.8 meters.

## Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of RSD. The final QC review was completed in September 2008. The review process included an 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 9.1. 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:

### RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Page size graphic plot of GC10725 file contents, attached to PCR
- Hardcopy of the CSCAP evaluation memorandum

### Remote Sensing Division Electronic Data Library

- Project database
- GC10725 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

### NOAA Shoreline Data Explorer

- GC10725 in shapefile format
- Metadata file for GC10725
- Digital copy of the PCR in Adobe PDF format

## End of Report

# PORT OF FREEPORT

## TEXAS



Overview



TX0601B

GC10725