NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT TX1903-CM-T

LNG Terminal, La Quinta Channel, Corpus Christi Bay, Texas

Introduction

NOAA Coastal Mapping Program (CMP) Project TX1903-CM-T provides highly accurate digital shoreline data for a new LNG terminal and surrounding areas in Corpus Christi Bay, Texas. 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

Project TX1903-CM-T was designed in response to a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA for shoreline data for a new LNG terminal in La Quinta Channel, Corpus Christi Bay. Based on analysis of project requirements and results of a source data search, it was determined that CMP procedures for multiple source projects would apply. Available source data deemed adequate for successful completion of this project included one tiled orthorectified pan-sharpened natural color WorldView-3 satellite image from DigitalGlobe, Inc., obtained via the NextView contract.

Field Operations

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

Georeferencing

Georeferencing tasks were conducted using Esri's ArcGIS desktop GIS software (v10.6.1) by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in May 2019. Aerotriangulated aerial imagery from a previous CMP project, TX1504B-CS-N, was used to control the satellite image. Within ArcGIS, the Georeferencing tool was used to spatially adjust the satellite image to match selected features visible in the imagery for TX1504B-CS-N. The accuracy of the georeferenced image is therefore expected to be equal to the accuracy of features compiled from the imagery for TX1504B-CS-N. This accuracy value was doubled in order to conservatively predict the accuracy of well-defined points measured in the satellite image. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation for this project was accomplished by a member of AB in May 2019. Digital feature data was compiled from the satellite image using ArcGIS. Several features were also incorporated into this project from the stereo-extracted control database from TX1504B-CS-N. Feature identification and attribution within the GC were based on image analysis of the digital photographs and information extracted from the appropriate NOAA nautical charts and other

ancillary sources. 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 Project TX1903-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features extracted from the satellite image were compiled to meet a horizontal accuracy of 2.0 meters at the 95% confidence level. The stereo-extracted features from the TX1504B-CS-N images were compiled to meet a horizontal accuracy of 1.0 meters at the 95% confidence level. See the Project Completion Report (PCR) for TX1504B-CS-N for information on how that accuracy was determined.

The table below provides further information on the imagery used to complete this project:

Satellite Imagery					
Date	**Time (GMT)**	**Source File ID (Tile)**		**Resolution**	**Tide Level***
01-19-2019	17:52	20190119_WV03_ORI_R1C1_NAD83.jp2		0.42 m	- 0.1 m
Aerial Imagery (TX1504B-CS-N)					
Date	**Time**	**Roll #**	**Line # / Photo #s**	**Resolution**	**Tide Level**
03-21-2016	19:53 – 19:54	16VC34	53-015 / 8372 – 8374	0.33 m	0.1 m

* Tide level is given in meters above MLLW and is based on actual observations at the NOS gauge at the USS Lexington, Corpus Christi TX, at the time of image acquisition. The elevation of the MHW tidal datum at the USS Lexington is 0.177 meters above MLLW.

Quality Control / Final Review

The final review of the project was completed by a senior member of RSD in May 2019, and included analysis of 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 software. All project data was evaluated for compliance to CMP requirements.

Comparison of the largest scale NOAA nautical chart with the project imagery and compiled feature data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used for comparison:

- 11309, Corpus Christi Bay, 42nd Ed. Jan. 2017

End Products and Deliverables

The following specifies the location and identification of the products generated during the completion of this project:

Remote Sensing Division Electronic Data Library

- Project Completion Report (PCR)
- Project database
- GC11507 in shapefile format
- CEF in shapefile format

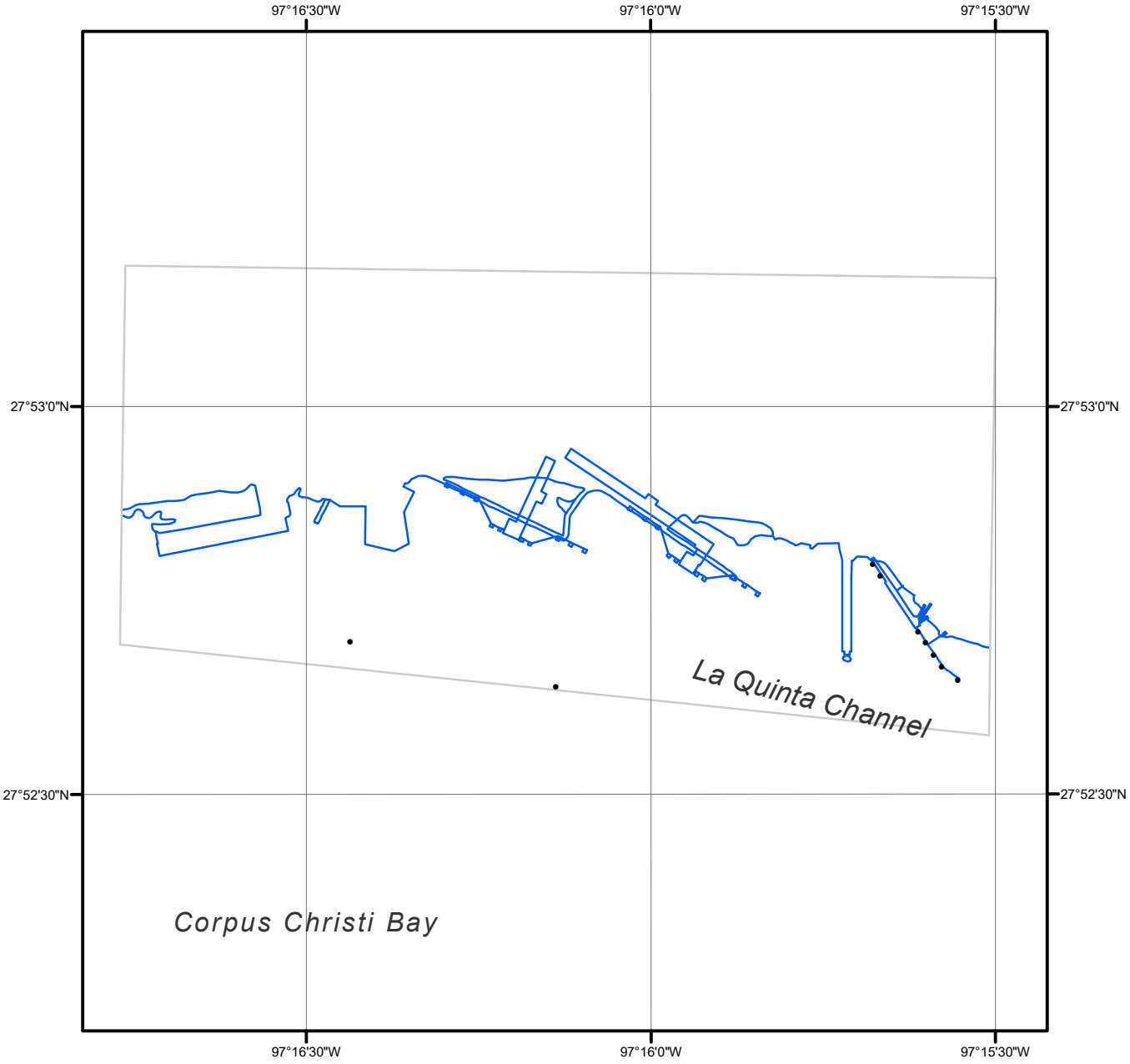
NOAA Shoreline Data Explorer

- GC11507 in shapefile format
- Metadata file for GC11507
- PCR in Adobe PDF format

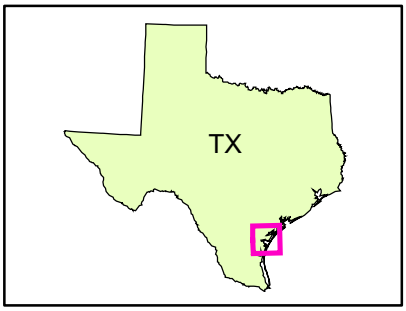
End of Report

LNG TERMINAL, LA QUINTA CHANNEL, CORPUS CHRISTI BAY

TEXAS



Overview



TX1903-CM-T

GC11507