

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

## ***PROJECT VA1302***

### ***Northend Point, Back River, Virginia***

#### **Introduction**

Coastal Mapping Program (CMP) Project VA1302 provides highly accurate digital shoreline data for Northend Point, in Back River, Virginia. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for coastal zone management applications.

#### **Project Design**

Project VA1302 was designed per a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA, for GIS data in response to a report of significant shoreline changes to Northend Point and potential encroachment on nearby navigational channels. One panchromatic WorldView-1 satellite image from DigitalGlobe, acquired May 8, 2012, was obtained through the National Geospatial-Intelligence Agency (NGA) in response to this request. The WorldView image has a resolution of 0.5 meters.

#### **Field Operations**

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

#### **Georeferencing**

The positional accuracy of the WorldView image was assessed using check points extracted from previously aerotriangulated photography, and it was determined that no additional georeferencing tasks were necessary. The RMS of the residuals for all measured check points was used to compute a predicted horizontal circular error at the 95% confidence level (CE95) of 1.2 meters. This value was doubled and added to the CE95 of the image source from which check points were obtained in order to conservatively predict the accuracy of well-defined points measured during the compilation process. A hardcopy of this assessment is on file with other project data within the RSD Applications Branch (AB) Project Archive. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

#### **Compilation**

The compilation of cartographic feature data for this project was accomplished by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in March 2013. Using ESRI's ArcGIS 9.3 desktop GIS software, digital feature data was compiled in ESRI shapefile format. Feature attributes were established using the C-COAST specification file, which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP.

Spatial data accuracies for Project VA1302 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 2.7 meters at the 95% confidence level by comparing a minimum of twenty (20) check points to an independent source of higher accuracy. The table below provides detailed information on the image used for feature compilation.

Image Source	Source File Name	Acquisition Date/Time	Tide Stage*
WorldView-1	12MAY08160934-P1BS-052716259010_01_P001.tif	2012-05-08 / 16:09:34	0.9 m

\* Tide levels are given in meters above MLLW and are based on actual observations recorded by the NOS gauge at Hampton Roads, VA at the time of photography, with offsets applied to the Messick Point substation in Back River, VA, near the project area. The elevation of MHW is 0.8 meters above MLLW.

## Quality Control / Final Review

Quality control tasks were conducted by a senior cartographer within the CMP. The final QC review was completed in March 2013. The review process consisted of an assessment of the identification and attribution of cartographic features 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 9.3. The entire suite of project products was evaluated for compliance to CMP requirements.

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

12222 Chesapeake Bay, Cape Charles to Norfolk Harbor, 1:40,000 scale, 53<sup>rd</sup> Ed., Oct./11

## 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 GC10966 file contents, attached to PCR

### Remote Sensing Division Electronic Data Library

- GC10966 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- Chart Evaluation File in shapefile format

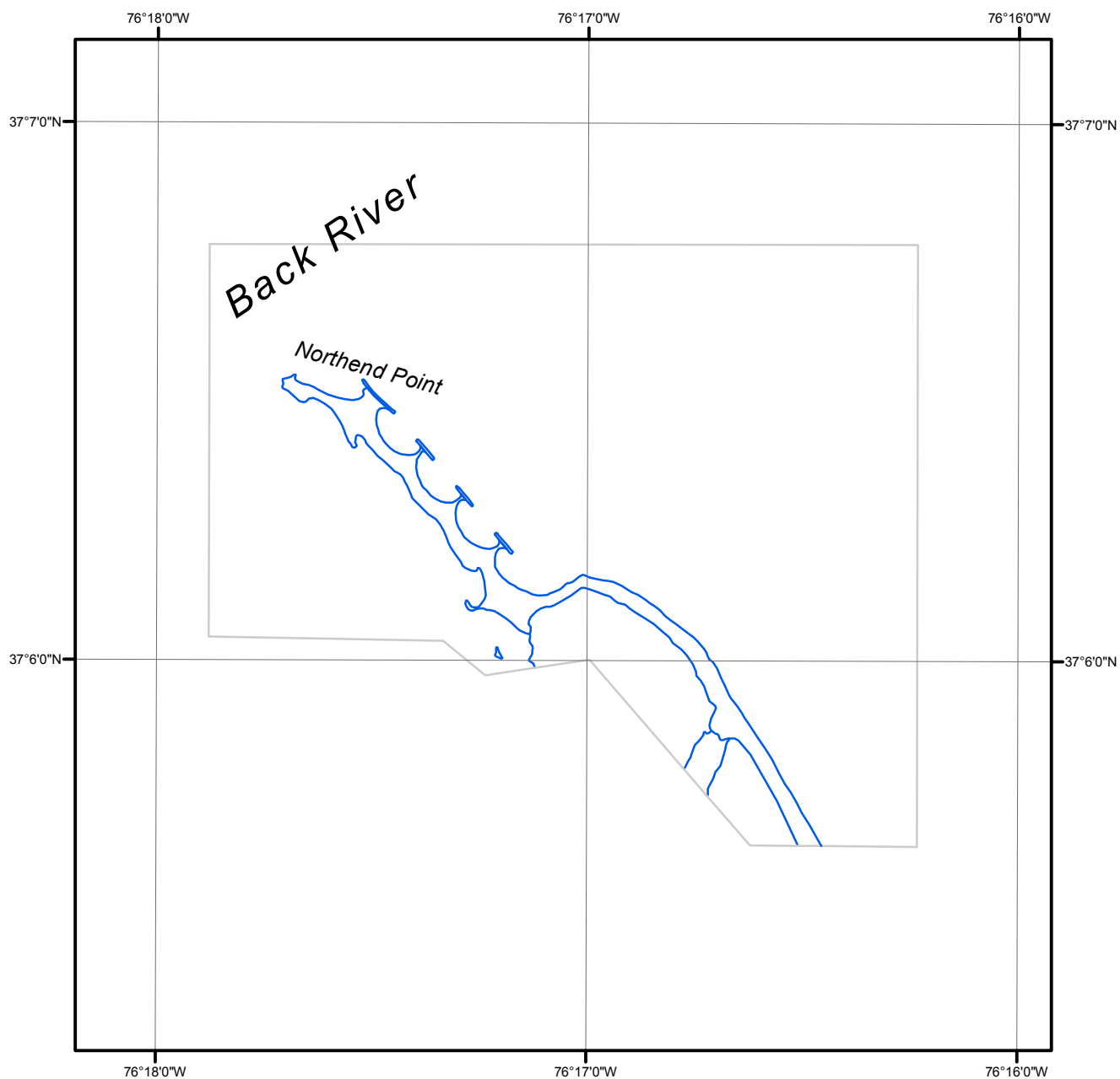
### NOAA Shoreline Data Explorer

- GC10966 in shapefile format
- Metadata file for GC10966
- Digital copy of the PCR in Adobe PDF format

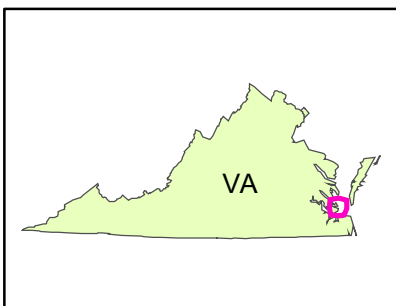
## End of Report

# NORTHEND POINT, BACK RIVER

## VIRGINIA



Overview



VA1302

GC10966