

D00213

NOAA Form 76-35A

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey: Response

Registry Number: D00213

LOCALITY

State: Virginia

General Locality: Chesapeake Bay

Sub-locality: Smith Point

2016

CHIEF OF PARTY
Robert W. Mowery

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET**D00213****INSTRUCTIONS:** The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Virginia**

General Locality: **Chesapeake Bay**

Sub-Locality: **Smith Point**

Scale: **1: 10,000**

Date of Survey: **6/14/2016**

Instructions Dated: **6/14/2016**

Project Number: **S-D911-BH2-16**

Field Unit: **Bay Hydro II**

Chief of Party: **Robert W. Mowery**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

H-Cell Compilation Units: **N/A**

Remarks:

The purpose of this survey was to locate concrete debris spilled from a barge near Smith Point. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <http://www.ncei.noaa.gov/>.



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration
Office of Coast Survey
R/V *Bay Hydro II* S-5401
Solomons, MD

30 August 2016

MEMORANDUM FOR: Peter S. Holmberg, NOAA
Acting Chief, Pacific Hydrographic Branch

FROM: Robert W. Mowery, NOAA
Acting Officer in Charge, R/V *Bay Hydro II*

SUBJECT: DR Memo for S-D911-BH2-16, Smith Point Response, VA

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ABSTRACT:

This Descriptive Report (DR) memo is for S-D911-BH2-16, Smith Point Response, VA sheet D00213. The DR memo takes the place of a written Descriptive Report and is delivered along with all processed data. The intent of this survey is to update NOAA Chart 12230 and 12228 for an obstruction near Smith Point, VA

The purpose of the survey was to locate the position of potential dangers to navigation off of Smith Point in the vicinity of the Maryland and Virginia line. A barge carrying concrete beams lost cargo on the western edge of the natural channel off Smith Point. The USCG was concerned the cargo may create Dangers to Navigation (DTON), as it was lost inside the traffic separation scheme.

R/V *Bay Hydro II* and personnel were deployed from Solomons, Maryland to locate the lost cargo. The sounding equipment used for the response was an Edgetech 4200 Side Scan Sonar (SSS) and a Kongsberg EM2040 Multibeam Echosounder (MBES). The “skunk” striping configuration was the most efficient data collection method to rapidly identify the location of the obstruction. Once identified in the SSS imagery, BHII collected multiple lines of MBES data to determine a least-depth and fully insonify the obstruction area.

Post processing of SSS and MBES data determined the sunken cargo was not a danger to navigation. A “Not for Navigation” Chartlet indicating the position of the sunken cargo was created and supplied to the Mid-Atlantic Navigation Manager.

SIDE SCAN SONAR DATA ACQUISITION:

The SSS data was acquired on 14 June 2016 with a dual frequency Edgetech 230kHz/540kHz Side Scan Sonar, towed from the 54 foot R/V *Bay Hydro II*. Range scales of 50 and 100 meters were selected to optimize survey time and image quality. The acquisition and





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R/V *Bay Hydro II* S-5401

Solomons, MD

processing workflows are found in Section B of the Data Acquisition and Processing Report (DAPR) associated with this document.

During operations, the towfish height was frequently adjusted due to the sloped nature of the survey area. In order to provide the highest quality imagery, height adjustments were made on-the-fly and recorded in the SSS acquisition software, Discover II. At times, the SSS depth fell outside the 8%-20% of the range scale as recommended by FPM 2.5.3.1.2 (for a towed system); however, the sunken cargo was easily identified. Because the data was not originally authorized for charting purposes, the hydrographer did not attempt any additional measures to stay within the range scale specifications.

A series of parallel survey lines were acquired over the reported lost cargo position. The sunken cargo was identified approximately 500m south of the reported position. Once identified at the 100m SSS range scale, the cargo was then surveyed at the 50m range scale to provide a higher quality image of the obstruction.

MULTIBEAM ECHOSOUNDER DATA ACQUISITION:

The MBES data was acquired simultaneously with the SSS data on 14 June 2016 with a Kongsberg EM2040 at 300kHz using 400 beams. The standard acquisition and processing procedures can be found in Section B of the DAPR.

Multiple lines of MBES data were acquired over the obstruction in a star pattern to fully insonify the contacts. Multiple lines result in higher density of soundings which improve shoalest depth confidence and ensure coverage gaps do not exist.

COVERAGE:

The obstruction area was located approximately 0.8 nautical miles east of the Smith Point Lighthouse (Figure 1). The survey area was approximately 0.27 square nautical miles, with the Northwest corner of the survey area at 37° 53' 20.43"N, 076° 10' 27.37"W near the channel edge. The survey area extended south and east into the channel with the Southeast corner at 37° 52' 39.65"N, 076° 06' 48.17"W.





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National Oceanic and Atmospheric Administration

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R/V Bay Hydro II S-5401

Solomons, MD

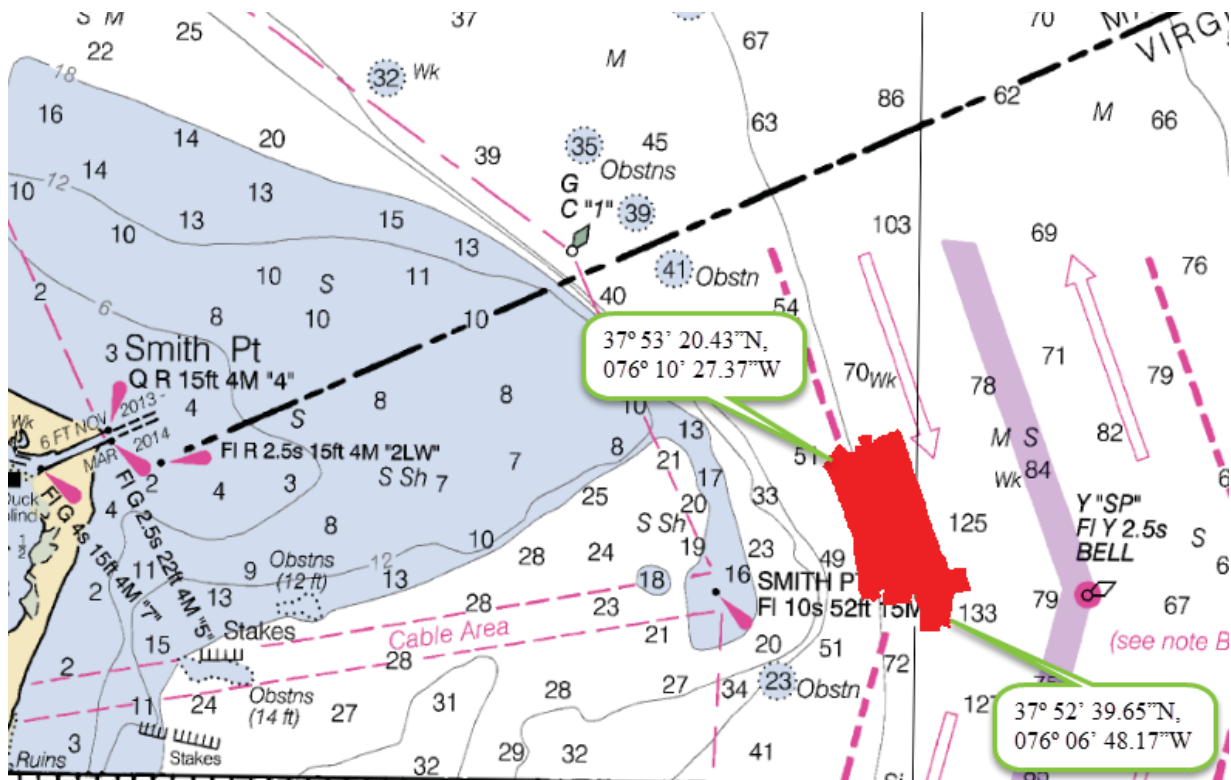


Figure 1: D00213 coverage, in red, overlaid onto NOAA Chart 12230.

CONTACTS:

An obstruction area, approximately 70m x 75m, was identified during the survey. A single contact was selected in each SSS line at the center of the obstruction area (Figure 2). Once the area was identified, only MBES data was collected, which provided more accurate positioning and true depths of the obstruction area. The center of the obstruction area was 37° 52' 50.09" N, 076° 09' 52.86" W.



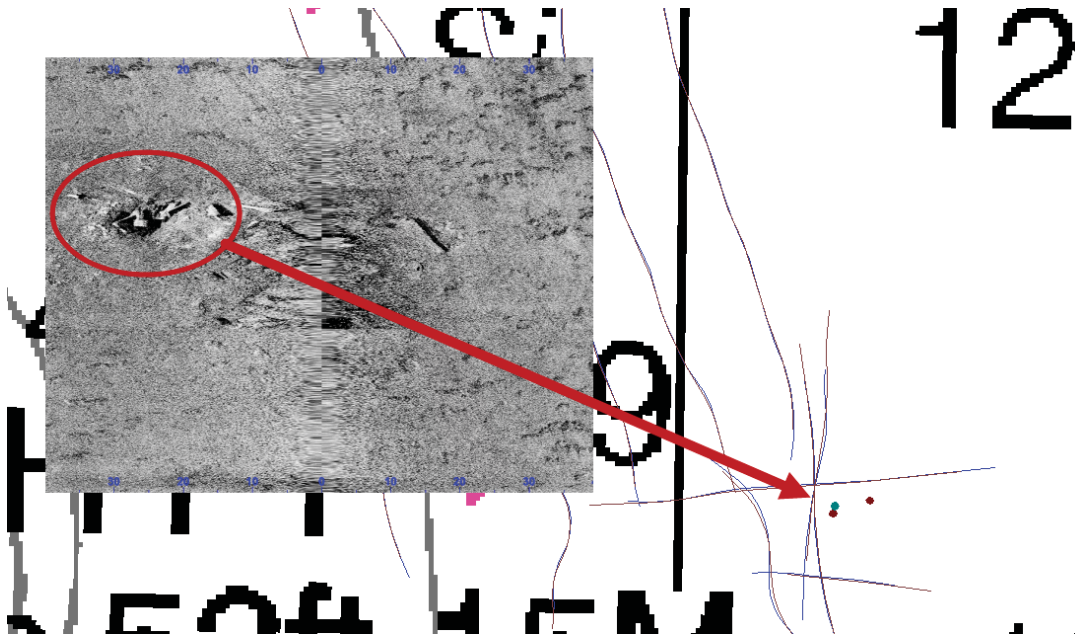


Figure 2: Position and SSS imagery of the sunken cargo overlaid onto NOAA Chart 12230.

With the obstruction area located on a natural slope, the shoalest depths were on the western side, closest to shore (Figure 3).

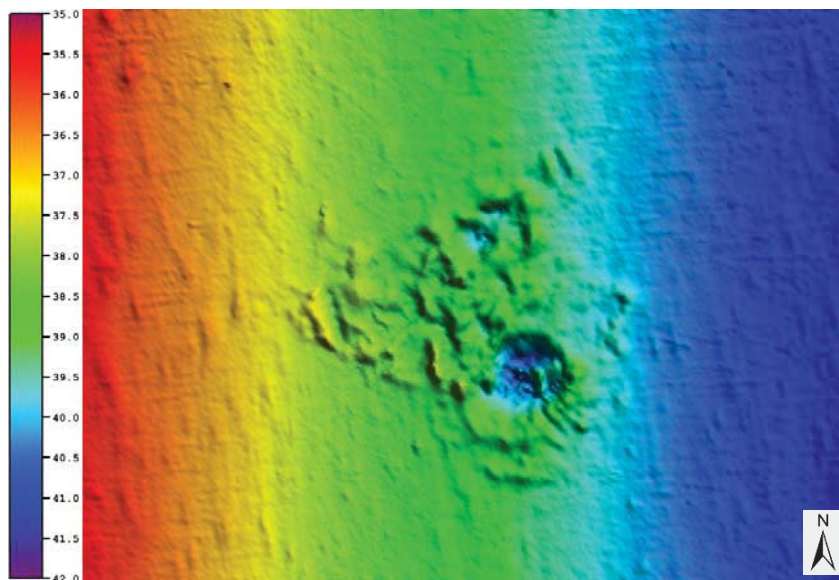


Figure 3: Bathymetric elevation model with a 5x vertical exaggeration.

Multiple obstructions were identified, but none qualify as dangers to navigation (DTON) based upon the depth of water and the obstruction height relative to the seafloor (HSSD Section 1.5) (Figure 4, 5, 6).



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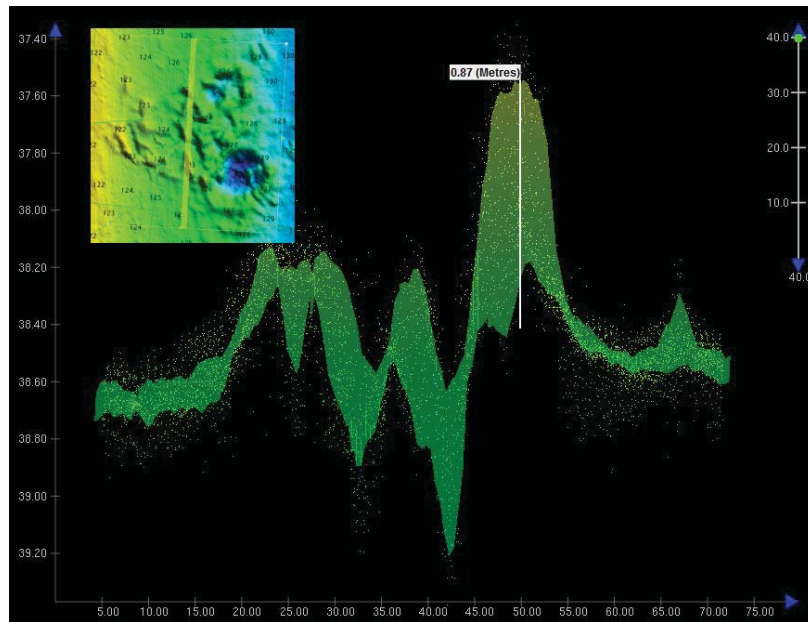


Figure 4: 2D cross section (yellow line in subset) of MBES data illustrating obstruction heights. Vertical exaggeration is set at 40x.

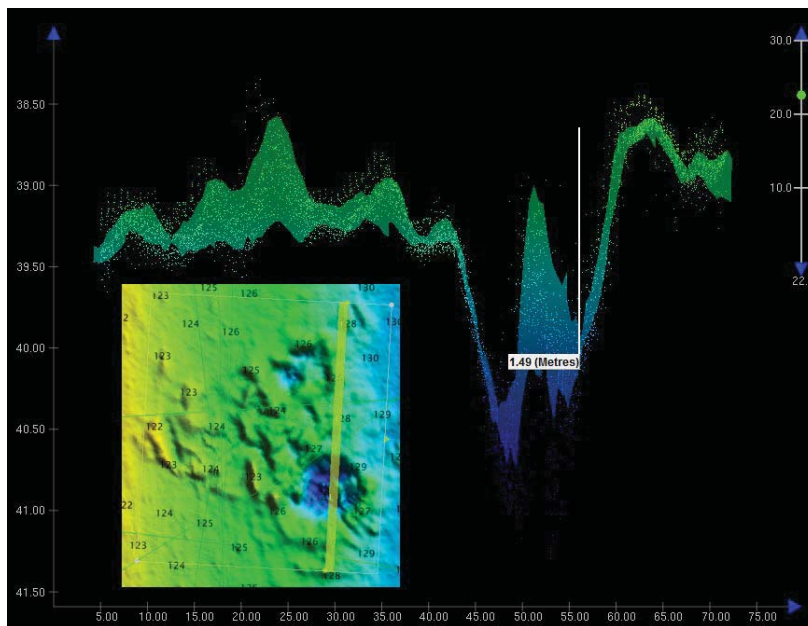


Figure 5: 2D cross section (yellow line in subset) of MBES data illustrating obstruction heights. Vertical exaggeration is set at 23x.





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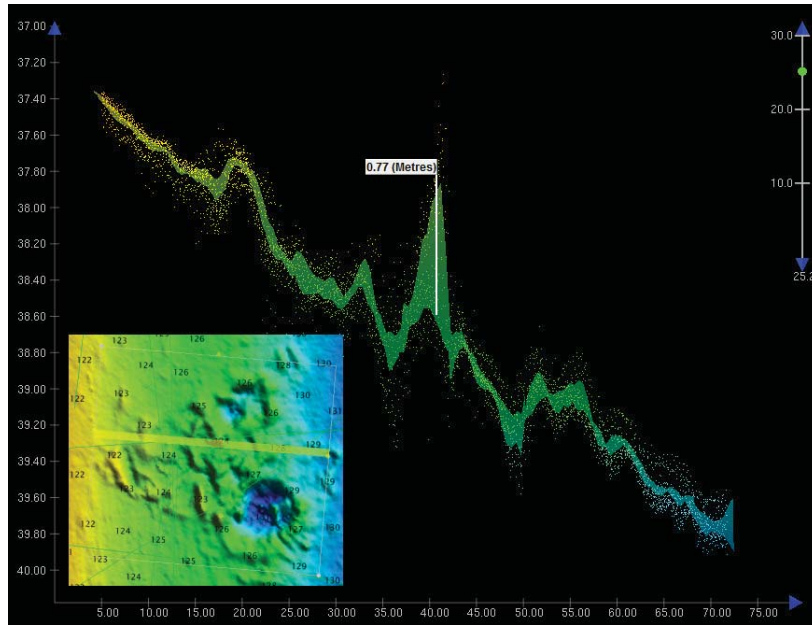


Figure 4: 2D cross section (yellow line in subset) of MBES data illustrating obstruction heights. Vertical exaggeration is set at 26x.

ADDITIONAL ACTIONS:

A chartlet was generated indicating the position of the obstructions and submitted to the Mid-Atlantic Navigation Manager and disseminated to the appropriate stakeholders. The sunken cargo is not considered a danger to navigation; however, an obstruction area applied to the chart using the acquired MBES data.



Meta Data for D00213	
Project	S-D911-BH2-16
Survey	D00213
State	Virginia
Locality	Chesapeake Bay
Sub Locality	Smith Point
Scale of Survey	1:10000
Sonars Used	Edgetech SSS and 3000, Kongsberg EM2040
Horizontal Datum	North American Datum of 1983 (NAD83)
Vertical Datum	Mean Lower Low Water (MLLW)
Vertical Datum Correction	TCARI Tide grid E911BH22016
Projection	Latitude-Longitude (NAD83) - UTM Zone
Field Unit	Bay Hydro II
Survey Dates	06/14/2016 – 06/14/2016
Chief of Party	Robert W. Mowery, NOAA
Submission Date	9/06/2016



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF COAST SURVEY
Pacific Hydrographic Branch
Seattle, Washington 98115-6349

December 27, 2016

MEMORANDUM FOR: Tara Wallace
Chief, Nautical Data Branch

THROUGH: Peter Holmberg
Acting Chief, Pacific Hydrographic Branch

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FROM: Toshi Wozumi
Acting Hydrographic Team Lead, Pacific Hydrographic Branch

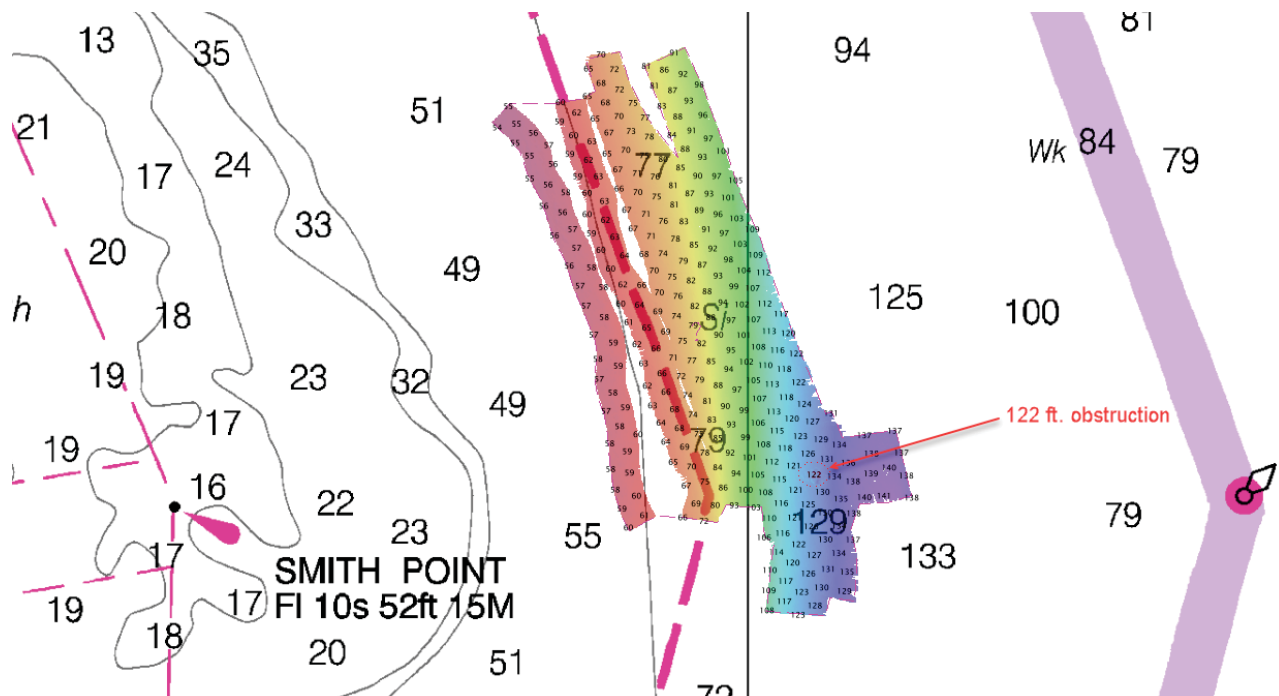
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SUBJECT: Recommendation for chart update

D00213 (Project S-D911-BH2-16, Smith Point, VA) was a small response survey to locate lost cargo from a concrete barge. Due to the small size of the survey it was not slated for full compilation to the chart. Based on survey results, PHB recommends the following updates be made to appropriate scale NOAA chart products.

- Chart 122-foot obstruction at: 37-52-50.3N 076-09-53.0W



D00213 survey data overlaid on NOAA RNC 12228





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : June 21, 2016

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: S-E911-BH2-2016
HYDROGRAPHIC SHEET: D00213

LOCALITY: Smith Point, Chesapeake Bay, VA
TIME PERIOD: June 14, 2016

TIDE STATION USED: 8571421 Bishops Head, MD
Lat. 38° 13.2' N Long. 76° 02.3' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.575 meters

TIDE STATION USED: 8577330 Solomons Island, MD
Lat. 38° 19.3' N Long. 76° 27.1' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.405 meters

TIDE STATION USED: 9635750 Lewisetta, VA
Lat. 37° 59.7' Long. 76° 27.9'
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.416 meters

TIDE STATION USED: 8636580 Windmill Point, VA
Lat. 37° 37.0' Long. 76° 17.4'
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.384 meters

REMARKS: RECOMMENDED Grid

Please use the TCARI grid "E911BH22016.tc" as the final grid for project S-E911-BH2-2016, D00213, during the time period on June 14, 2016.

Refer to attachments for grid information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

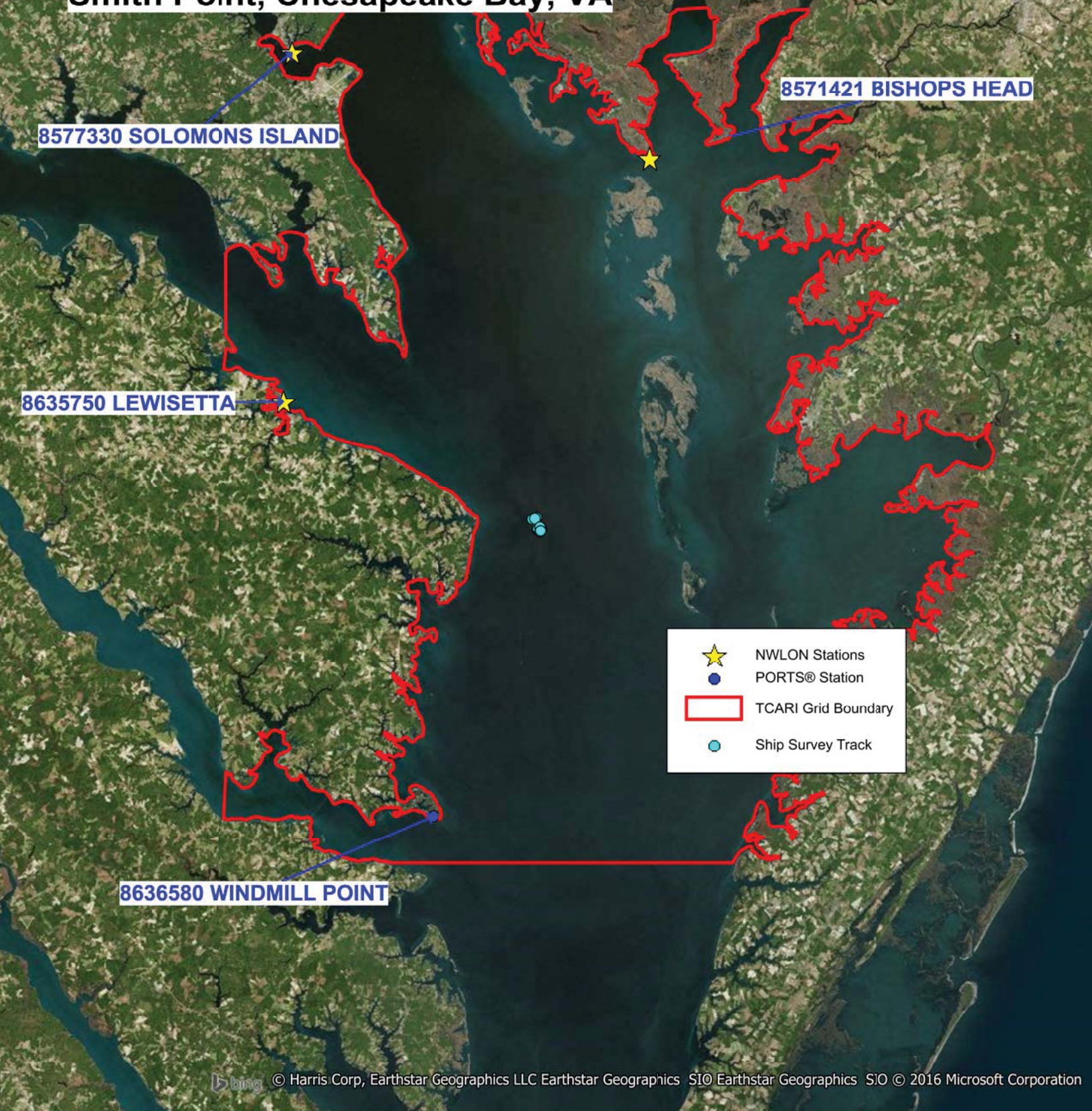
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CHIEF, PRODUCTS AND SERVICES BRANCH



**Preliminary as Final TCARI Grid for
S-E911-BH2-16, D00213
Smith Point, Chesapeake Bay, VA**



APPROVAL PAGE

D00213

D00213 was a small response survey to locate lost cargo from a concrete barge. A chart letter was submitted to MCD on 12/27/2016 advising an obstruction be charted at the location of the debris identified in the survey. Due to the small size of the survey it was not slated for full compilation to the chart.

The following products will be sent to NGDC for archive:

- D00213_DR_Memo.pdf
- Processed survey data and records
- 1m BAG
- D00213_GeoImage.pdf

The survey evaluation and verification has been conducted according to current OCS specifications and procedures.

Approved:_____

Toshi Wozumi

Acting Hydrographic Team Lead, Pacific Hydrographic Branch

The survey has not been approved for chart updates. The data will be archived at NGDC so that it can be made available for other uses.

Approved:_____

Peter Holmberg

Acting Chief, Pacific Hydrographic Branch