H11599

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey MULTIBEAM

Field No Bay Hydrographer & *NRT-7*

Registry No. H11495

LOCALITY

State VIRGINIA

General Locality Elizabeth River

Locality Tanner Point to

Town Point

2005 - 2006

CHIEF OF PARTY
Lt(jg) Briana Welton, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H11599

INSTRUCTIONS The hydrographic sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the office.

FIELD NO.

State **Virginia**

General Locality **Elizabeth River**

Sublocality **Tanner Point to Town Point**

Scale **1:10,000** Date of Survey **05/23/2008 -- 06/06/2008**

Instructions Dated **05/23/2006** Project No. **OPR-S-E915-BH-NRT7-06**

Vessel **NOAA S/V Bay Hydrographer (S5501) and NRT7 (S3004)**

Chief of Party **LT (JG) Brianna Welton, NOAA**

Surveyed by **Bay Hydrographer and NRT7**

Soundings taken by echo sounder, hand lead, pole **MBES Reson 8125**

Graphic record scaled by

Graphic record checked by

Evaluation by Automated plot by

Verification by **Atlantic Hydrographic Branch**

Soundings in ~~**Meters**~~ ***Feet*** at **MLLW**

REMARKS: **Time in UTC.**

Red, Bold, Italic notes in the Descriptive Report were made during Office Processing.

Descriptive Report to Accompany Hydrographic Survey H11599

Project S-E915-BH-NRT7-06
Elizabeth River Demonstration Project
Scale 1:10,000
May-June 2006
NOAA S/V Bay Hydrographer (s5501) and NRT7 (s3004)
Chief of Party: LT(jg) Briana Welton, NOAA

A. AREA SURVEYED

This hydrographic survey was completed in accordance with Project Instructions S-E915-BH-NRT7-06* dated May 22, 2006 and NOS Hydrographic Specifications and Deliverables dated March 5, 2003 and June 2006, with the exception of deviations noted in this report. The survey area is in the Elizabeth River, VA, and was modified during acquisition to extend from Tanner Point to Town Point instead of Sewells Point to Norfolk. This survey corresponds to sheet "A" in the sheet layout provided with the Project Instructions*.

Project S-E915-BH-NRT7-06 was performed to test new and emerging hydrographic survey acquisition and processing procedures listed in the Project Instructions*. The Reson 7125 MBES data is the only data that is submitted with this report.

One hundred percent multi-beam echosounder (MBES) coverage was obtained in the survey area in waters eight meters and deeper. Phase-differencing bathymetric echosounder (PDBES) data were acquired with a Benthos C3D in depths between eight and four meters in the southern portion of the survey area around downtown Norfolk where junctions with LIDAR were deemed most possible.

Reson 7125 MBES data acquisition was conducted from May 23 to June 7, 2006, and C3D PDBES data acquisition was conducted September 12-15, 2006. The PDBES data acquisition was delayed until September to make time for continued acceptance testing and to allow time for the manufacturer to modify and improve the sonar to meet NOAA's specifications. The C3D PDBES data is not submitted with this survey as data analysis and processing procedures are under development. At the time of this report, it is undecided whether the C3D PDBES data acquired as part of this project will be submitted for application to the chart. ***Concur with clarification. C3D data was not submitted to AHB for review and/or charting application.***

The Regional Scheduling Officer for the Navy, Darren Davis, was contacted regarding NOAA access to Navy pier spaces within the survey area. Mr. Davis directed his subordinates via email to coordinate with the OIC, Bay Hydrographer to schedule the survey of Navy piers. However, OIC, Bay Hydrographer was unable to establish further communication with Navy schedulers and the survey vessel was not granted access to areas guarded by Navy patrol craft during survey operations. See the email correspondence exchanged regarding this issue in Appendix V*.
Filed with original field records

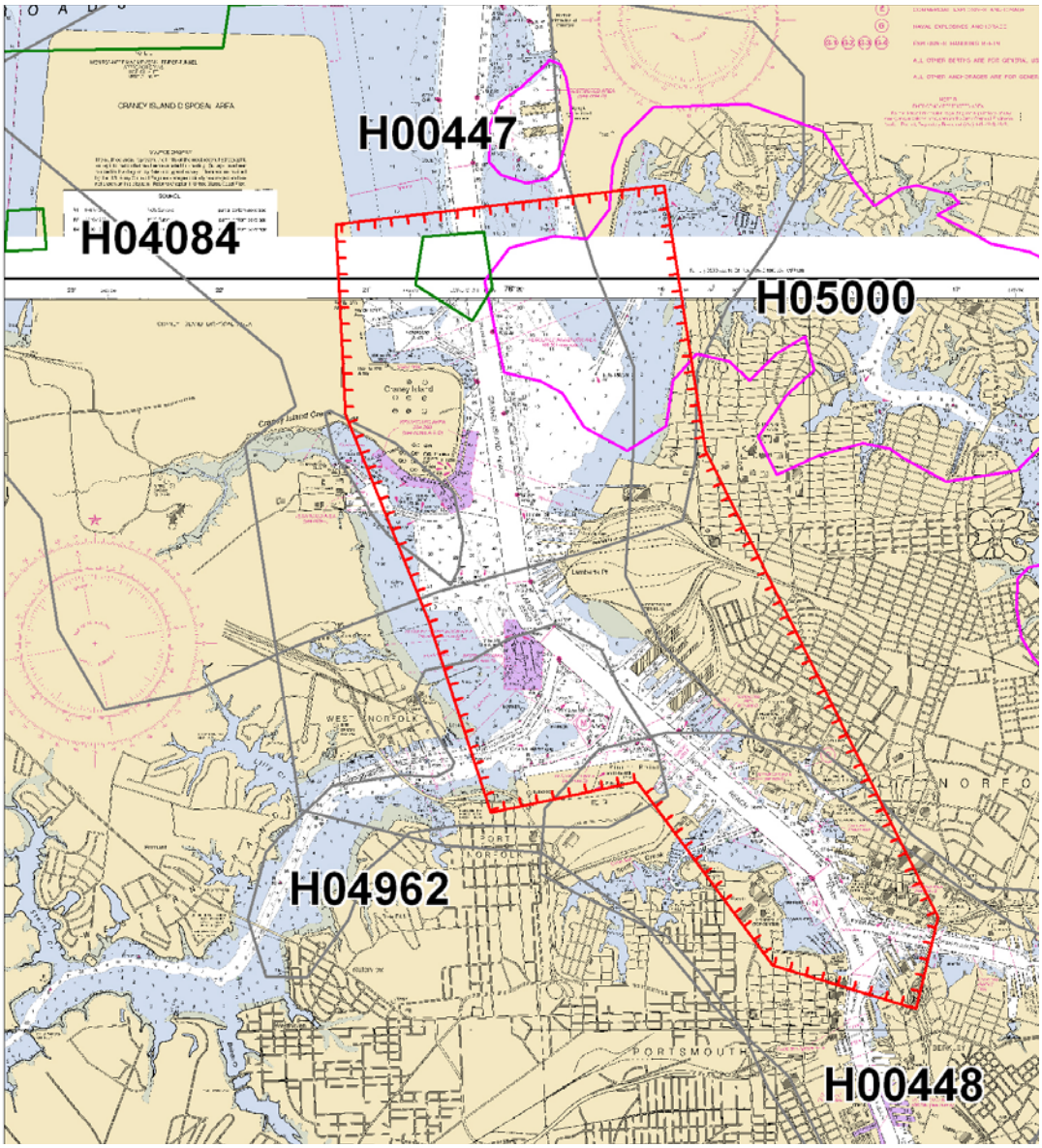


Figure 1. H11599 Survey Limits and Junction Surveys.

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *S-E915-BH-NRT7-06 Data Acquisition and Processing Report* (DAPR) ***, submitted under separate cover. Items specific to this survey, and any deviations from the DAPR are discussed in the following sections. ***Concur.***

Final, Approved Water Levels have been applied to this survey. See Section C. for additional information. ***Concur.***

B1. Equipment and Vessels

Data for this survey were acquired by the following vessels:

Hull Number	Name	Acquisition Type
s5501	BAY HYDROGRAPHER	Reson 7125 MBES

Table 1. Data Acquisition Vessels for H11599.

No unusual vessel configurations were used for data acquisition.

B2. Quality Control

Crosslines

Shallow-Water Multibeam (SWMB) crosslines totaled 4.8 nautical miles, comprising 5.0% of mainscheme hydrography. Cross line and main scheme bathymetry were manually compared in Caris HIPS Subset Mode. Cross lines agree with mainscheme hydrography with less than 0.1-meters of vertical and horizontal discrepancy, except where noted elsewhere in this report. ***Concur.***

Junctions

Junction comparisons were not performed as prior surveys were unavailable for comparison. ***Concur.***

Data Quality Factors

In several locations throughout the survey, there is a 10-20 centimeter vertical offset between adjacent lines. This offset is visible in the child layers of the surface, an example of which is displayed in Figure 2. The hydrogrpaher attributes this problem to “pole wobble”, which is typically observed in data acquired at speeds above five knots or in seas greater than two to three feet. In H11599, these sporadic “wobbles” are likely due to boat wake. ***Concur.***

****Filed with original field records***

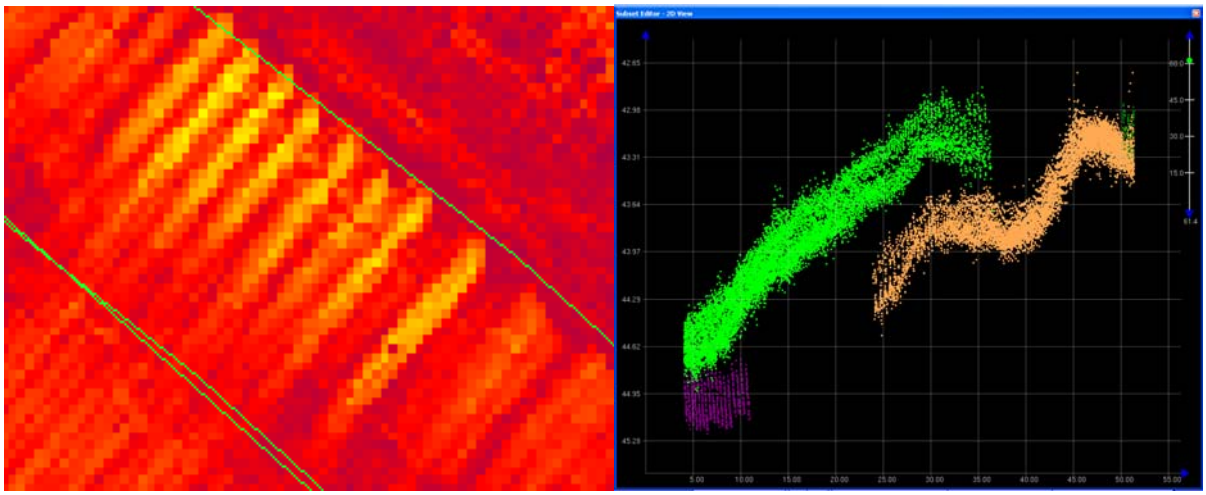


Figure 2. Example of Vertical Offset.

B3. Data Reduction

True Heave was not applied to MBES data acquired on May 23, 2006 (DN143) because it was not logged during acquisition. ***Concur.***

The True Heave file logged on June 1, 2006 (DN152) did not match the navigation time of the HDCS files for the coincident day. The Caris executable "FixTrueHeave.exe" was used to eliminate the timing errors in the file 2006_052.000, and therefore the file 052_2006.000.fixed is applied to MBES data acquired on DN152. See the email from NOAA Ship RAINIER personnel explaining the "FixTrueHeave" application in Appendix V* of this report. ***Filed with original field records***

Portions of lines 584_1908 (DN 2006-143), 572_1751 (DN 2006-150), 667_1453 (DN 2006-151) would not display in Caris Subset Editor but would display in Caris Swath Editor. The portion of these lines affected with this problem also did not grid. The remedy for this problem was to delete the three TrueHeave files from the affected HDCS line folders (TrueHeave, TrueHeaveLineSegments, and TrueHeaveTmIdx), and re-SVP-correct and re-merge the lines. This problem is related to the way in which Caris applies TrueHeave, and is discussed in Caris HelpDesk ticket number 00602065. ***Concur.***

Since H11599 was among the first NOAA surveys conducted with the Reson 7125, the data were initially converted with a beta converter file provided by Caris. When Caris HIPS/SIPS 6.1 was released early in 2007, the hydrographer learned that Reson 7125 data converted with a beta converter require re-conversion with Caris 6.1. The Caris Hydrographic Vessel File (HVF) also required modification such that the vessel offsets in the "swath" field were removed and retained only in the "svp" field. The waterline portion of the HVF was also set to "no" before re-correcting the data. The data were finally reconverted and re-processed. ***Concur.***

The new convert_Reson7K.dll packaged with Caris 6.1 includes code to apply transducer X-Y rotation during the sound velocity correction. This new treatment of the HVF applies to

Reson 7125 and Simrad sonar data only, and was first introduced in Caris 6.0SP2HF21. See the emails from the Caris HelpDesk on this subject in Appendix V of this report. The data required re-conversion due to a noted difference in the processed two-way travel time of the data converted with the beta converter and the Caris 6.1-supported converter. ***Concur.***

All other data reduction procedures for survey H11599 conform to those detailed in the *S-E915-BH-NRT7-06 DAPR**. ***Concur.***

B4. Data Representation

Though many BASE surfaces were used for the processing of H11599, the final submission is shown in Figures 3 and 4. Survey H11599 is submitted with four fieldsheets, one survey-wide field sheet and three smaller field sheets sized to contain less than $25x10^6$ nodes to speed data processing. Several soundings were flagged as "designated" to retain shoal depths in the finalized surface. ***Concur.***

Though many BASE surfaces were used for the processing of H11599, the final submission is shown in Figures 3 and 4. The submission field sheets have fewer than $25x10^6$ nodes. ***Concur.***

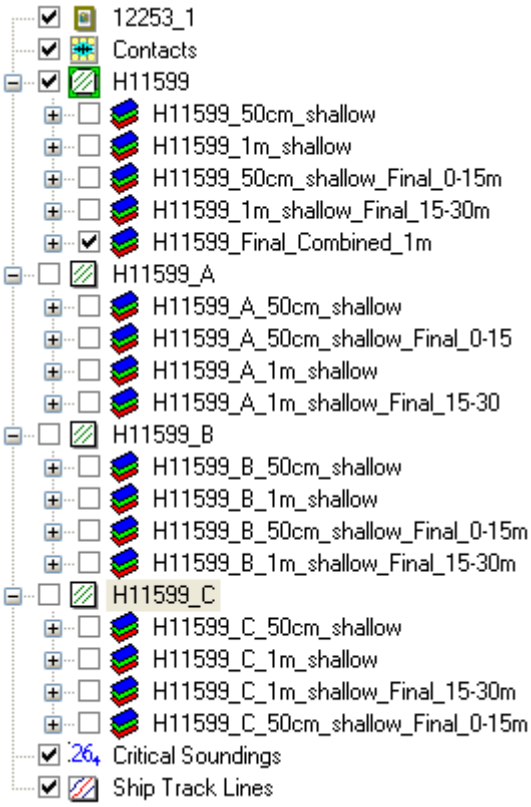


Figure 3: Field sheets and BASE surfaces submitted with H11599.

Filed with original field records

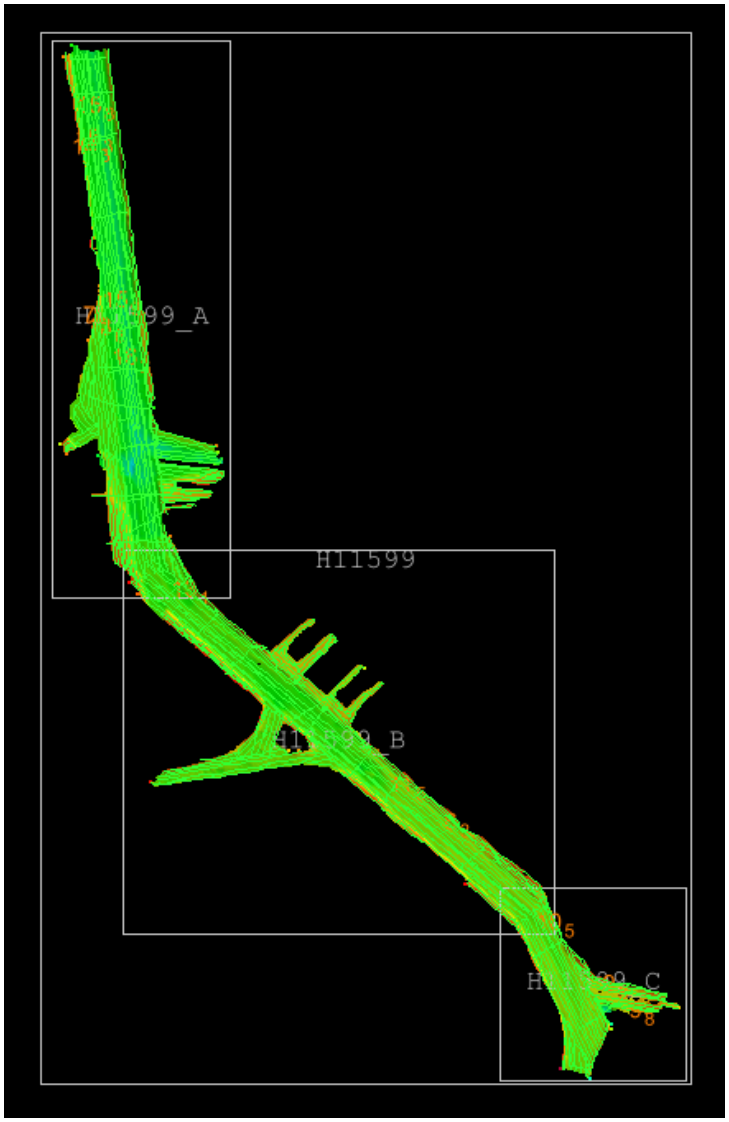


Figure 4: Layout of field sheets and CUBE surfaces submitted of H11599.

C. VERTICAL AND HORIZONTAL CONTROL

Project S-E915-BH-NRT7-06 did not require horizontal control work or subordinate tide station installation and thus no Horizontal and Vertical Control Report is submitted. ***Concur.***

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The differential corrector beacons utilized for this survey are given in Table 2. ***Concur.***

Location	Frequency	Custodian	Range	Priority
Driver, VA	289 kHz	USCG	130nm	Primary

Table 2: Differential Corrector Sources for H11599.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide stations at Sewells Pt, VA (963-8610) and Money Pt, VA (863-9348) served as control for datum determination and as the primary source for water level reducers for survey H11599. ***Concur.***

The project instructions direct BAY HYDROGRAPHER to perform a comparison of discrete tide zoning with both TCARI and ellipsoidally-based surveys. However, this comparison was conducted by CO-OPS personnel. Email correspondence regarding this comparison is included in Appendix V***. ***Concur.***

No tertiary gauges were required. ***Concur.***

All data were reduced to MLLW using traditional discrete tide zones. **Verified, final approved water levels** were applied from stations Sewells Pt, VA (963-8610) and Money Pt, VA (863-9348) using the tide files 9638610.tid and 9639348.tid and final time and height correctors using the zone corrector file E915BH_NRT2006CORP.zdf. ***Concur with clarification. Preliminary zoning was accepted as final zoning.***

The request for Final Approved Water Levels for H11599 was submitted to CO-OPS on October 23, 2006, and received on November 30, 2006. This documentation is included in Appendix IV***. ***Concur.***

D. RESULTS AND RECOMMENDATIONS

D.1. Chart Comparison

D.1.a. Survey Agreement with Chart

Survey H11599 was compared with the following charts:

Chart	Scale	Edition and Date	Latest Notice to Mariners Applied
12253	1:25,000	44th Ed, Dec 2004	3/24/2007

Table 3: Charts compared with H11599

Survey H11599 is primarily of a USACE maintained channel. When survey H11599 was conducted, the charted tabulated channel depths (Table 4) were based on surveys from March 2005 (Chart 12253, 44th Ed., Dec./04, Corrected through 3/18/2006):

Filed with original field records

	Cranny Island Reach				*Lamberts Bend*				*Pinner Point to Town Point Reach*				*Town Point Reach*			
feet	48.1	51.2	50.8	46.2	39.4	45.1	40.1	39.4	38.6	39.8	39.7	39.2	38.5	39.8	39.7	39.2
meters	14.7	15.6	15.5	14.1	12	13.7	12.2	12	11.8	12.1	12.1	11.9	11.7	12.1	12.1	11.9

Table 4: Elizabeth River controlling depths based on USACE surveys of May 2005.

Since survey H11599, the channel has been resurveyed twice by the USACE, once in July of 2006 and once in May 2007. ***Concur.***

The Caris attribute filter was used to identify CUBE surface soundings shoaler than the tabulated depths on Chart 12253, 44th Ed., Dec./04, Corrected through 3/24/07 (Figure 5) and none were found. ***Concur.***

	Cranny Island Reach				*Lamberts Bend*				*Pinner Point to Town Point Reach*				*Town Point Reach*			
feet	51.2	51.4	50.6	49.9	43	43	43	43	38.6	39.8	39.7	39.2	38.5	39.8	39.7	39.2
meters	15.6	15.7	15.4	15.2	13.1	13.1	13.1	13.1	11.8	12.1	12.1	11.9	11.7	12.1	12.1	11.9

Table 5: Elizabeth River controlling depths based on USACE surveys of July 2006.

The surveyed areas outside of the USACE channel are generally several feet shoaler than charted, especially around the Town Point pier face, Nauticus, the NOAA Atlantic Marine Center, and the Craney Island Navy Fuel Pier. The depths around Lamberts Point Terminal piers P, L, N, 4, 5, and 6 are also shoaler than charted. The surveyed depths north of pier 6 are deeper than charted. ***Concur.***

The dredge project for the new APM shipping terminal south of Craney Island was underway during H11599, so many of the depths in the area have likely changed since the data were acquired. Also, the surveyed depths of Pinner Point pier are shoaler than charted, but the dredge project has recently been deepened as well. ***Concur.***

In general, the Elizabeth River is a heavily trafficked shipping channel with frequent dredge and construction projects. Re-survey should be conducted frequently to keep pace with these changes. ***Concur.***

The Hydrographer has determined that data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas. ***Concur.***

D.1.b. Dangers to Navigation *See Evaluation Report*

One (1) Danger to Navigation (DTON) was identified in survey H11599, and reported to the Marine Chart Division via email on January 11, 2007. The least depth on this pile changed from 23 to 25 feet after the data were re-converted, using the new Caris Reson 7125 converter described above. The original DTON submission package is included in Appendix ~~IV~~ ***I****.

Descriptions the DTON are included in the Survey Feature Report in Appendix ~~I~~ ***II****. ***Do not concur. See Evaluation Report***

D.1.c. Other Features *See Evaluation Report*

Automated Wreck and Obstruction Information System (AWOIS) Investigations
Thirty-four (34) AWOIS items fall the within the original survey limits of H11599. Of these, two fall within the modified area surveyed with the Reson 7125 MBES. Descriptions of each AWOIS item investigation are included in the Survey Feature Report in Appendix ~~I~~ ***II****. ***Concur.***

Additional Items

No additional charted items were investigated and no other features were located on survey H11599. ***Do not concur. See Evaluation Report***

D.2. Additional Results

D.2.a. Prior Survey Comparison

Prior survey comparison with H11599 was not performed. ***Concur.***

D.2.b. Shoreline Verification

Shoreline verification was not performed for survey H11599. However, it was noted at the time of acquisition of H11599 that a new cruise ship terminal was under construction near Nauticus National Maritime Center, and a dredge project for a new shipping terminal was ongoing south of Craney Island. ***Concur.***

D.2.c. Aids to Navigation

All aids to navigation (ATONs) were found to be correctly charted and serve their intended purpose. ***Concur.***

D.2.d. Overhead Features

The highway bridge between Norfolk and Berkley is located in the southeast portion of the survey area. The overhead clearance was not verified, but the horizontal clearance (150 feet) is correct and the position appears to be adequately charted. The bridge is located in a charted "Emergency Restricted Area." ***Concur.***

****Filed with original field records***

D.2.e. Submarine Cables, Pipelines, and Tunnels

Survey H11599 includes many charted cable and pipeline areas, though no singularly discernable trenches or pipelines were observed in the bathymetry. The Hydrographer recommends retaining the cable areas as charted because the survey area is in a metropolitan region with the majority of the survey in a channel maintained by the US Army Corps of Engineers (USACE). ***Concur.***

D.2.f. Ferry Routes

There is an uncharted ferry route between the downtowns of Norfolk and Portsmouth. Figures 5 and 6 depict the approximate location of the ferry terminals, between which the ferries operate. The hydrographer contacted David Jordan of Hampton Roads Transit, and received enthusiastic verbal permission to chart the ferry route, though he was unable to provide mapped information on the official route. More information about the ferry operation and route can be found at:
http://www.gohrt.com/schedulesandservices/paddlewheelferry.html. ***Concur.***

Figure 5: Google Earth Image of downtown Norfolk and downtown Portsmouth.

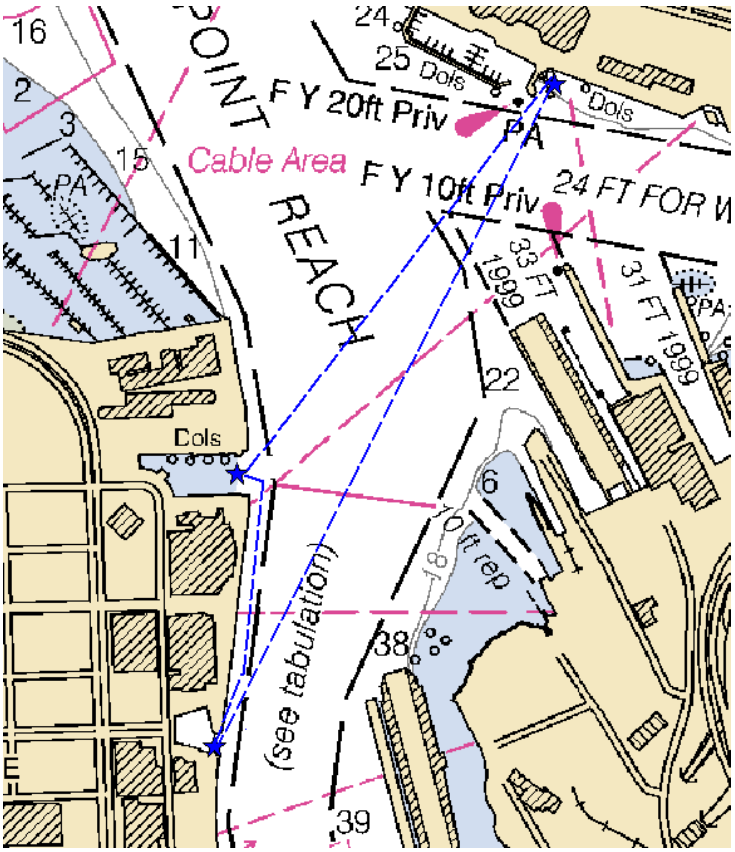


Figure 6: Approximate ferry route of Elizabeth River Paddlewheel Ferry.

Numerous local sight-seeing vessels also operate in the surveyed portion of the river, several of which depart and arrive in downtown Norfolk. ***Concur.***

D.2.g. Bottom Samples

Bottom samples were not performed in survey H11599. ***Concur.***

D.2.h Restricted Areas

Restricted areas are found throughout H11599. Some of the areas are occasionally patrolled by US Navy and Coast Guard patrol craft. ***Concur.***

D.2.i. Anchorage Areas

There are three charted anchorage areas in the survey area. Bottom samples were not performed during H11599, but the bathymetry did not reveal any features that would pose a risk for vessels anchoring in those areas. ***Concur.***

E. APPROVAL

I have completed and reviewed the attached survey data and reports. The survey data meets or exceeds requirements set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Project Instructions, and HSD Technical Directives, except where noted. These data are adequate to supersede charted data in their common areas. All data and reports are respectfully submitted to Atlantic Hydrographic Branch.

Briana Welton

Digitally signed by Briana Welton
DN: cn=Briana Welton, c=US, o=NOAA, ou=NOAA S/V BAY HYDROGRAPHER, email=briana.welton@noaa.gov
Reason: I am the author of this document
Date: 2007.12.07 08:24:31 -05'00'

LT(jg) Briana J. Welton, NOAA
Mid-Atlantic Region Hydro Team Leader
Navigation Response Branch

APPENDIX I

DANGERS TO NAVIGATION REPORT

H11599 - Danger to Navigation

Registry Number: H11599

State: VA

Locality: Elizabeth River

Sub-locality: Tanner Point to Town Point

Project Number: S-E915-BH-NRT7-06

Survey Dates: 06/01/2006 - 06/07/2006

Charts Affected

Number	Version	Date	Scale
12245	63rd Ed.	05/01/2004	1:20000
12253	44th Ed.	12/01/2004	1:20000
12206	30th Ed.	10/01/2003	1:40000
12222	46th Ed.	05/01/2004	1:40000
12207	21st Ed.	03/01/2004	1:80000
12221	76th Ed.	02/01/2005	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	1045/84 DTON- SUBM Pile	Pile	7.61 m	36° 53' 23.392" N	076° 20' 16.451" W	---
1.2	411/28 DtoN #1 Shoaling	Sounding	9.23 m	36° 52' 38.797" N	076° 19' 47.716" W	---
1.3	3179/30 DtoN #2 - Shoaling	Sounding	10.48 m	36° 52' 40.205" N	076° 19' 53.691" W	---
1.4	1620/157 DtoN #3 - Shoaling	Sounding	9.51 m	36° 52' 38.587" N	076° 19' 42.052" W	---

1 - DR_DToN

1.1) 1045/84 DTON- SUBM Pile

DANGER TO NAVIGATION

Survey Summary

Survey Position: 36° 53' 23.392" N, 076° 20' 16.451" W

Least Depth: 7.61 m

Timestamp: 2006-158.14:41:29.754 (06/07/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-158 / 403_1440

Profile/Beam: 1045/84

Charts Affected: 12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Pile submitted as DTON on Jan 11, 2007. Pile charted accurately.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-158/403_1440	1045/84	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

Cartographically-Rounded Depth (Affected Charts):

25ft (12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2)

4fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 6:least depth known

SORDAT - 20060607

SORIND - US,US,survy,H11599

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 7.605 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur. Submerged Pile is currently charted on the continual maintenanced raster chart. Retain as charted.

Feature Images

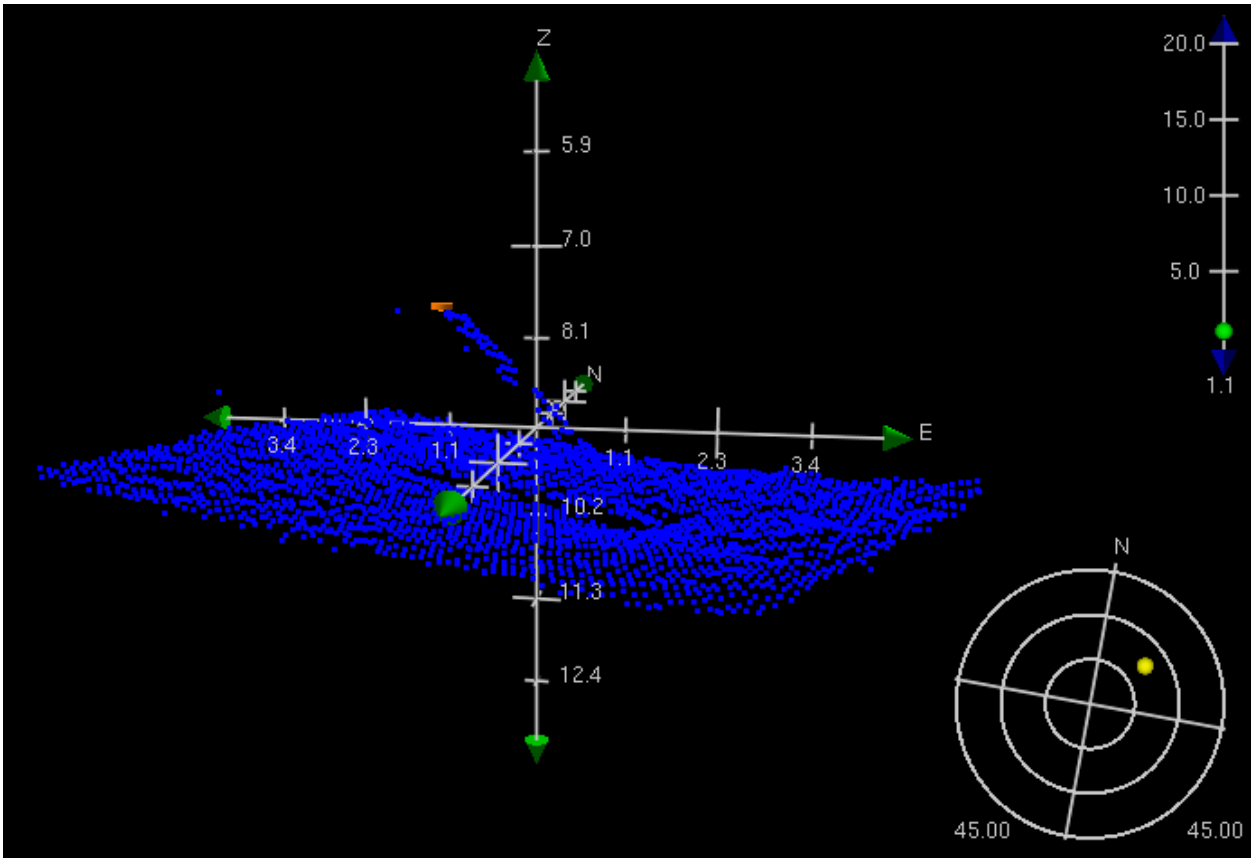


Figure 1.1.1

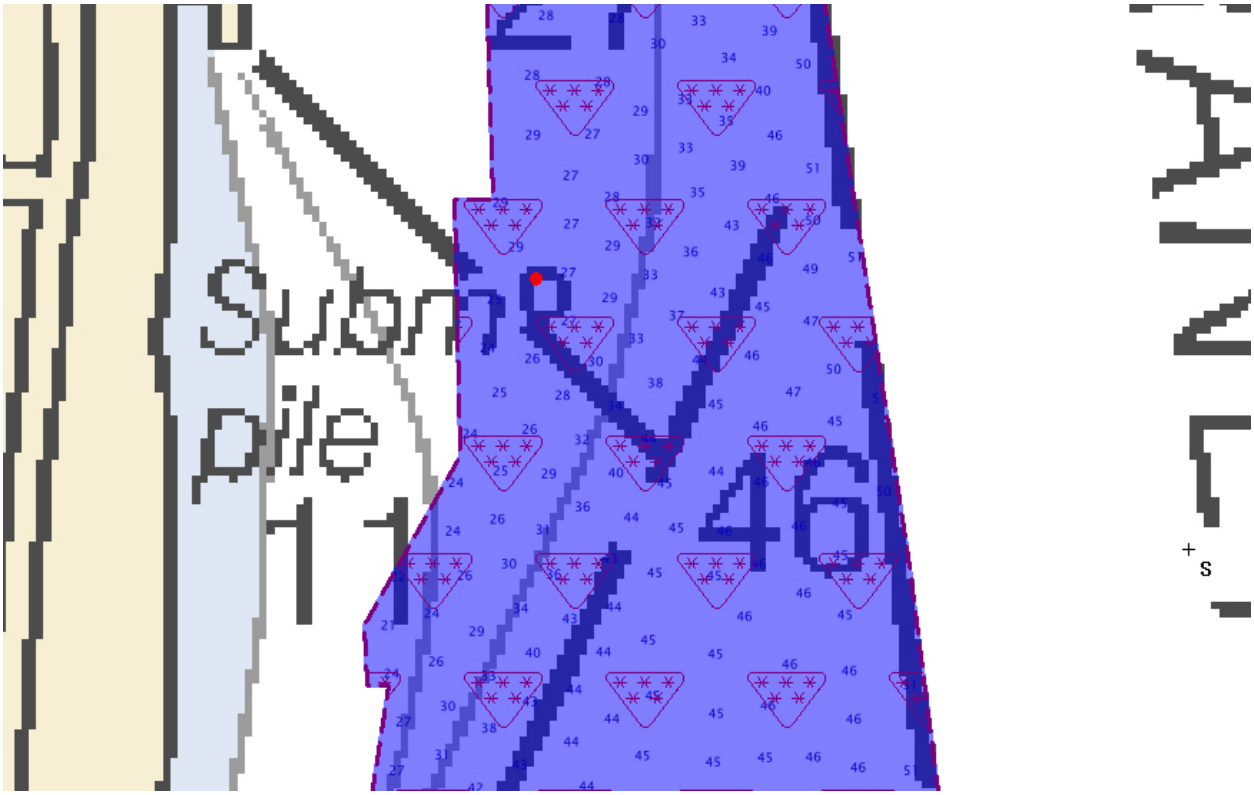


Figure 1.1.2

1.2) 411/28 DtoN #1 Shoaling

DANGER TO NAVIGATION

Survey Summary

Survey Position: 36° 52' 38.797" N, 076° 19' 47.716" W

Least Depth: 9.23 m

Timestamp: 2006-156.15:51:05.115 (06/05/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-156 / 431_1550

Profile/Beam: 411/28

Charts Affected: 12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Area shows evidence of significant shoaling. Current survey soundings of 30ft LD in area of charted 38ft.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-156/431_1550	411/28	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

30ft (12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2)

5fm (13003_1)

S-57 Data

[None]

Office Notes

Concur with clarification. Chart 32ft sounding at the surveyed location in Latitude 36°52'38.77"N, Longitude 076°19'46.84"W.

Feature Images

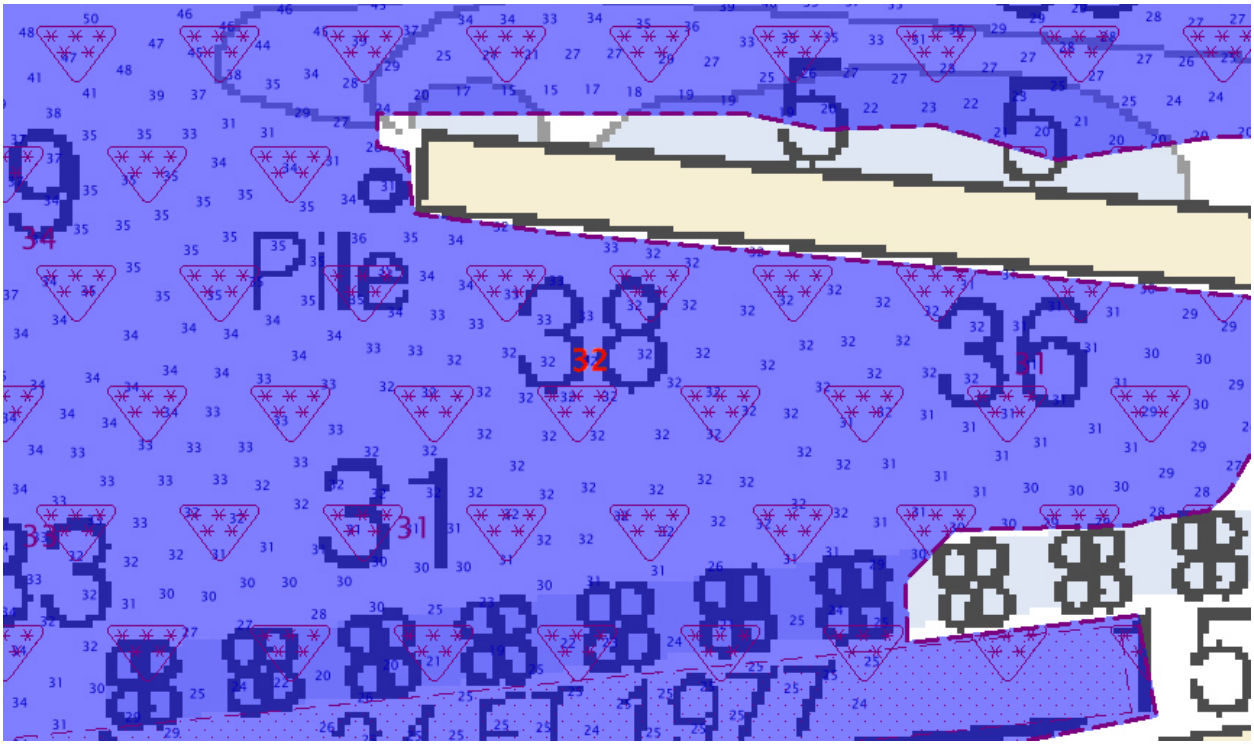


Figure 1.2.1

1.3) 3179/30 DtoN #2 - Shoaling

DANGER TO NAVIGATION

Survey Summary

Survey Position: 36° 52' 40.205" N, 076° 19' 53.691" W

Least Depth: 10.48 m

Timestamp: 2006-152.16:07:20.643 (06/01/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-152 / 554_1604

Profile/Beam: 3179/30

Charts Affected: 12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Evidence of shoaling in this entire area. Current survey soundings show LD of 34ft in area of charted 39ft.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-152/554_1604	3179/30	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

34ft (12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2)

5 ¾fm (13003_1)

S-57 Data

[None]

Office Notes

Concur with clarification. Chart 34ft sounding at the surveyed location in Latitude 36°52'39.99"N, Longitude 076°19'53.73"W.

Feature Images

Figure 1.3.1

1.4) 1620/157 DtoN #3 - Shoaling

DANGER TO NAVIGATION

Survey Summary

Survey Position: 36° 52' 38.587" N, 076° 19' 42.052" W

Least Depth: 9.51 m

Timestamp: 2006-152.16:02:16.387 (06/01/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-152 / 553_1600

Profile/Beam: 1620/157

Charts Affected: 12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Area shows evidence of significant shoaling. Current survey soundings of 31ft LD in area of charted 36ft.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-152/553_1600	1620/157	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

31ft (12245_1, 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2)

5 ¼fm (13003_1)

S-57 Data

[None]

Office Notes

Concur with clarification. Chart 31ft sounding at the surveyed location in Latitude 36°52'38.73"N, Longitude 076°19'41.35"W.

Feature Images

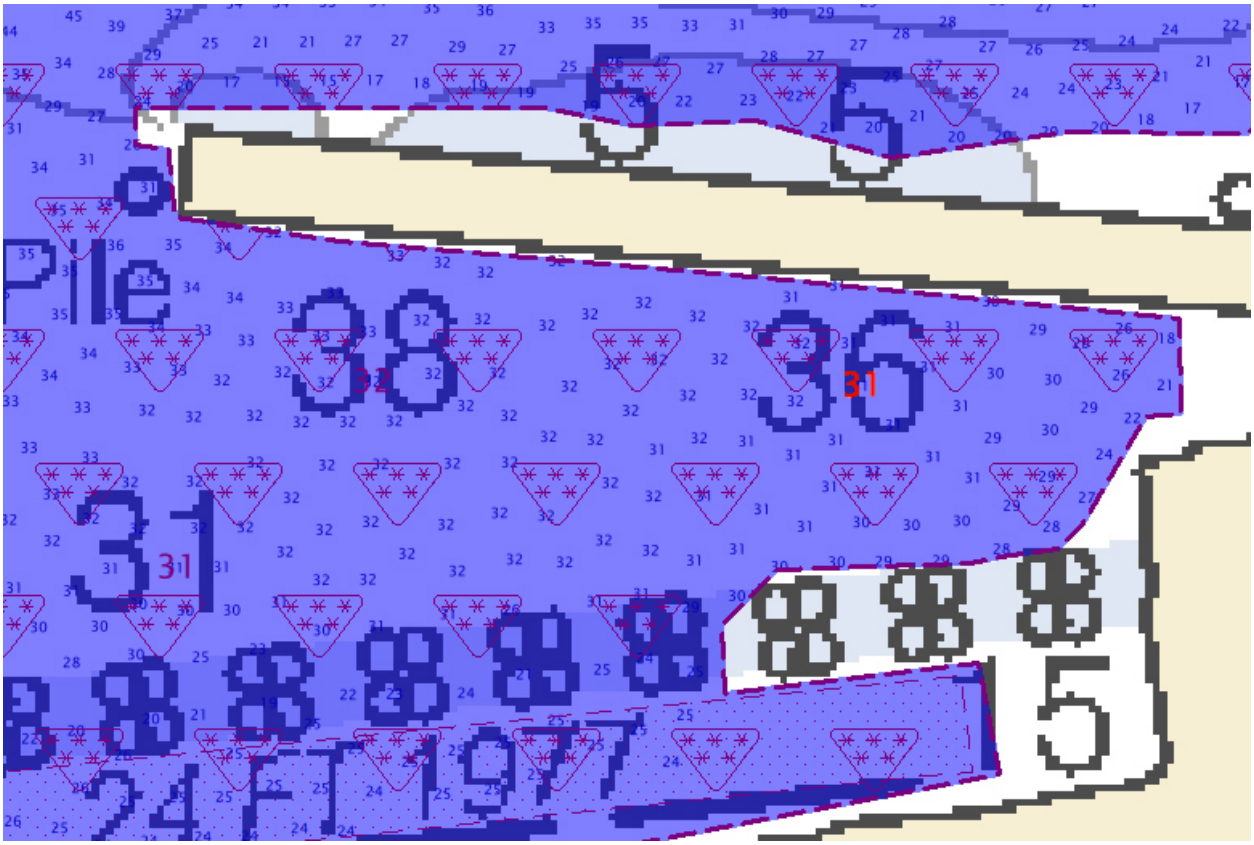


Figure 1.4.1

APPENDIX II
SURVEY FEATURES REPORT

H11599 - AWOIS

Registry Number: H11599

State: VA

Locality: Elizabeth River

Sub-locality: Tanner Point to Town Point

Project Number: S-E915-BH-NRT7-06

Survey Dates: 05/31/2006 - 06/06/2006

Charts Affected

Number	Version	Date	Scale
12253	44th Ed.	12/01/2004	1:20000
12206	30th Ed.	10/01/2003	1:40000
12222	46th Ed.	05/01/2004	1:40000
12207	21st Ed.	03/01/2004	1:80000
12221	76th Ed.	02/01/2005	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	8832/242 AWOIS #12496 Debris	Obstruction	6.32 m	36° 51' 15.117" N	076° 18' 19.084" W	12496
1.2	2259/227 AWOIS #13543	Sounding	9.83 m	36° 50' 27.684" N	076° 17' 19.462" W	13543

1 - DR_AWOIS

1.1) 8832/242 AWOIS #12496 Debris

Primary Feature for AWOIS Item #12496

Search Position: 36° 51' 15.410" N, 076° 18' 19.740" W

Historical Depth: 4.57 m

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

LNM / -- (6/1/03); DTON FROM NOAA SHIP WHITING (HLS REPORT, S-E604-WH-02). ADD 15 OBSTN HOMELAND SECURITY PROJECT REPORT-- S-E604-WH-02; DANGEROUS SUBMERGED OBSTRUCTION LOCATED DURING MAIN SCHEME SIDE SCAN SONAR OPERATIONS. IMAGERY INDICATED PRESENCE OF DEBRIS. SWMB SONAR OBTAINED A LD OF 15 FEET IN LAT. 36-51-15.41N, LONG. 76-18-19.74W. EVALUATOR RECOMMENDS CHARTING A 15 OBSTN AS SURVEYED. (ENT 6/23/04, SJV)

Survey Summary

Survey Position: 36° 51' 15.117" N, 076° 18' 19.084" W

Least Depth: 6.32 m

Timestamp: 2006-157.17:03:12.987 (06/06/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-157 / 406_1652

Profile/Beam: 8832/242

Charts Affected: 12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

AWOIS #12496. Debris verified in charted location. Surveyed least depth is deeper than charted.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-157/406_1652	8832/242	0.00	000.0	Primary
AWOIS_S-E915_ER_DEMO	AWOIS # 12496	18.57	119.2	Secondary

Hydrographer Recommendations

Update least depth on obstruction.

Cartographically-Rounded Depth (Affected Charts):

20ft (12253_1, 12206_1, 12222_1, 12207_1, 12221_1, 12280_2)

3 ½fm (13003_1)

S-57 Data

Geo object 1:	Obstruction (OBSTRN)
Attributes:	QUASOU - 1:depth known
	TECSOU - 3:found by multi-beam
	VALSOU - 6.321 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with Clarification. Delete charted OBSTN 15ft LD at latitude 36°51'15.40"N, longitude 076°18'19.70"W. Chart OBSTN 20ft LD in latitude 36°51'15.117"N, longitude 076°18'19.084"W.

Feature Images

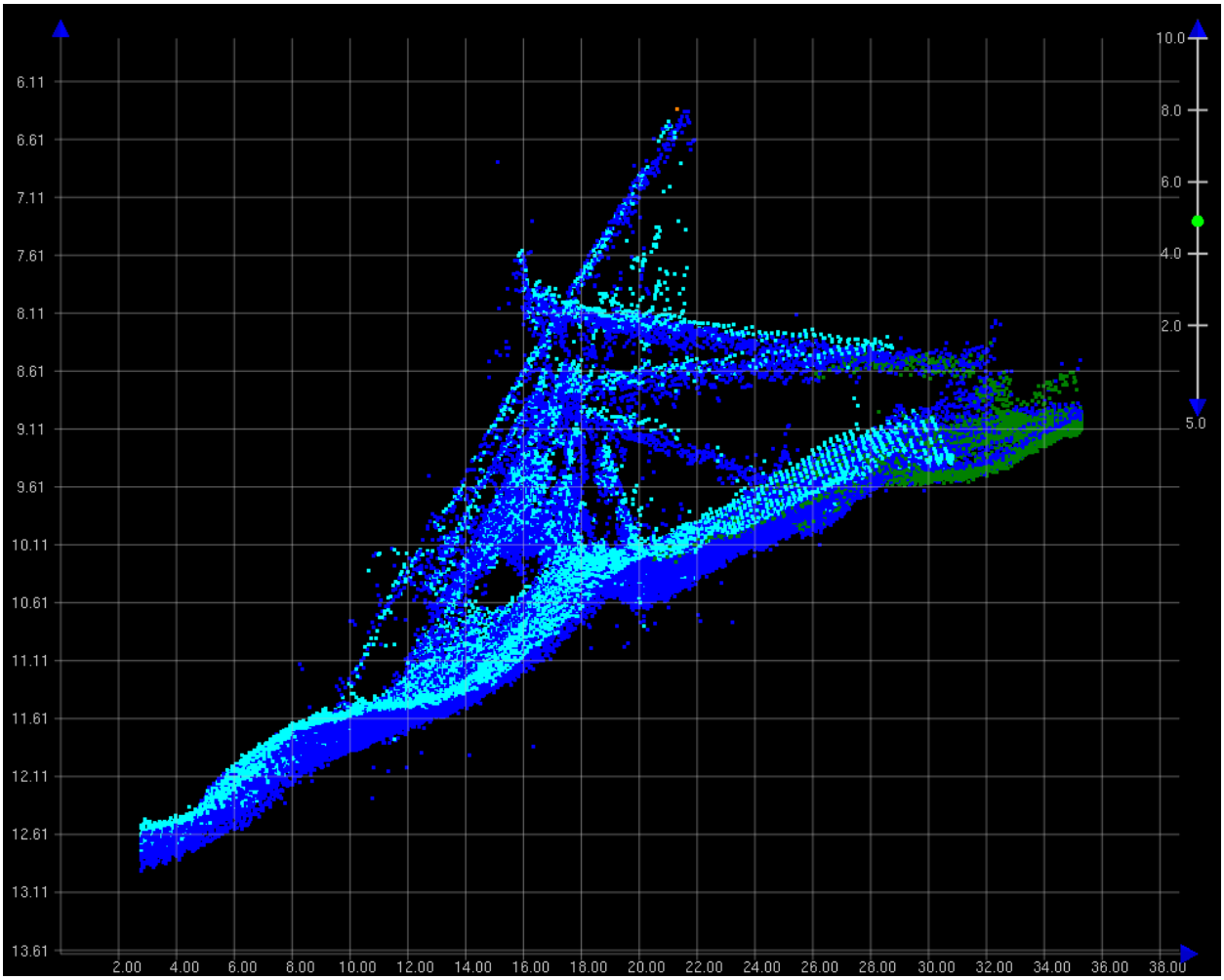


Figure 1.1.1

1.2) 2259/227 AWOIS #13543

Primary Feature for AWOIS Item #13543

Search Position: 36° 50' 27.200" N, 076° 17' 19.520" W

Historical Depth: [None]

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

UNDETERMINED SOURCE -- SUNKEN WRECK PA NOW CHARTED IN POSITION: 36 50 27.20 N, 076 17 19.52 W (NAD 83). UPDATED 3/14/2006 JCM.

Survey Summary

Survey Position: 36° 50' 27.684" N, 076° 17' 19.462" W

Least Depth: 9.83 m

Timestamp: 2006-151.16:02:45.307 (05/31/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-151 / 670_1559

Profile/Beam: 2259/227

Charts Affected: 12253_1, 12206_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Half of AWOIS radius covered with multibeam. No wreck/wreckage found in data. Not possible to obtain further coverage in area with S/V BAY HYDROGRAPHER.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-151/670_1559	2259/227	0.00	000.0	Primary
AWOIS_S-E915_ER_DEMO	AWOIS # 13543	15.03	005.5	Secondary

Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	VALSOU - 9.827 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur. Retain as charted.

Feature Images

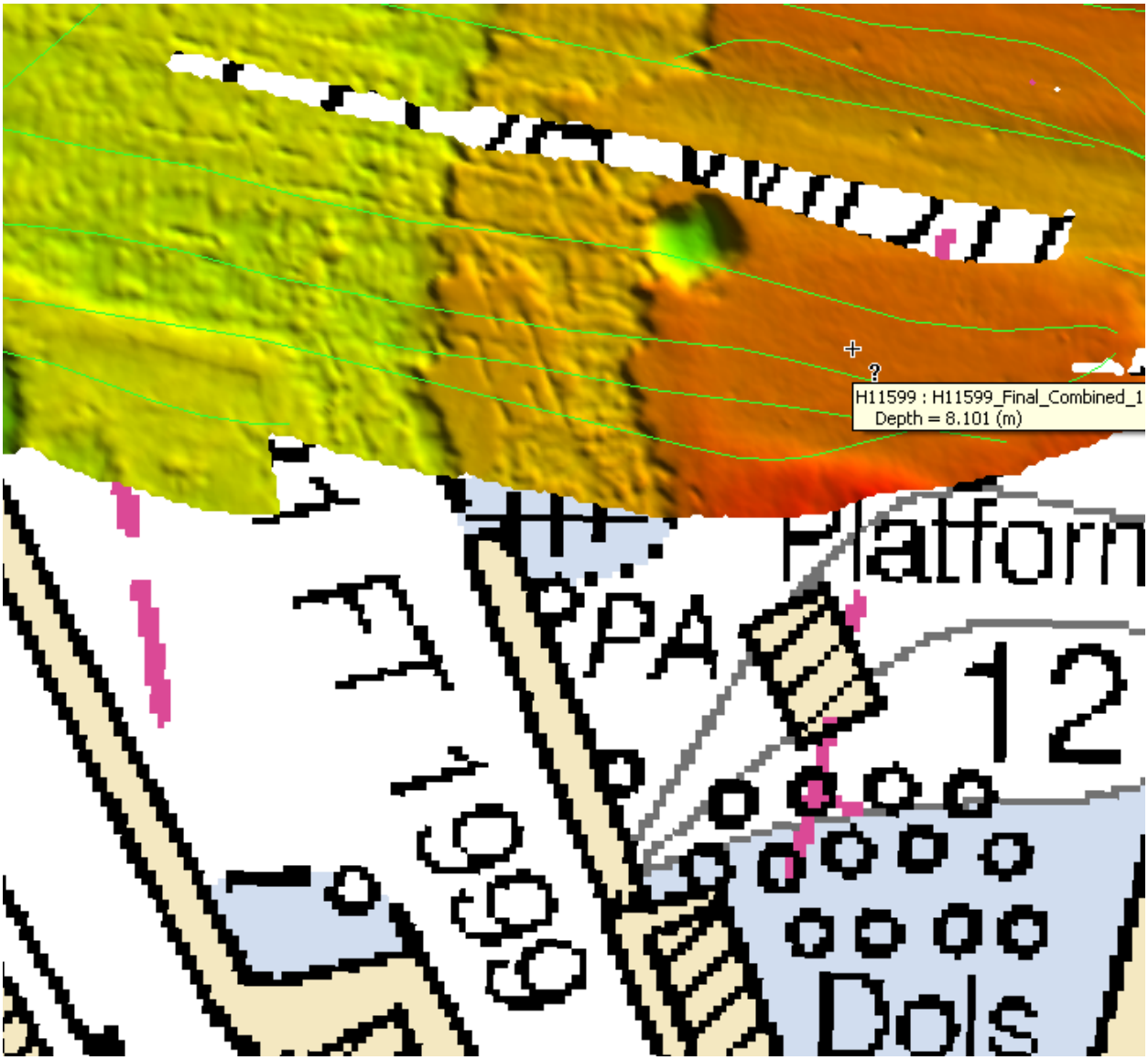


Figure 1.2.1

H11599 - Uncharted

Registry Number: H11599

State: VA

Locality: Elizabeth River

Sub-locality: Tanner Point to Town Point

Project Number: S-E915-BH-NRT7-06

Survey Date: 06/06/2006

Charts Affected

Number	Version	Date	Scale
12253	44th Ed.	12/01/2004	1:20000
12206	30th Ed.	10/01/2003	1:40000
12207	21st Ed.	03/01/2004	1:80000
12221	76th Ed.	02/01/2005	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	2831/130 Debris- Designated to retain shoal sounding	Obstruction	10.57 m	36° 50' 49.861" N	076° 17' 47.167" W	---

1 - DR_UnCharted

1.1) 2831/130 Debris- Designated to retain shoal sounding

Survey Summary

Survey Position: 36° 50' 49.861" N, 076° 17' 47.167" W

Least Depth: 10.57 m

Timestamp: 2006-157.16:55:58.346 (06/06/2006)

Survey Line: h11599 / bh_s5501_reson7125 / 2006-157 / 406_1652

Profile/Beam: 2831/130

Charts Affected: 12253_1, 12206_1, 12207_1, 12221_1, 12280_2, 13003_1

Remarks:

Debris- approx 1.5 meters off bottom and 4 meters long.

Designated to retain shoal sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11599/bh_s5501_reson7125/2006-157/406_1652	2831/130	0.00	000.0	Primary

Hydrographer Recommendations

Chart obstruction.

Cartographically-Rounded Depth (Affected Charts):

34ft (12253_1, 12206_1, 12207_1, 12221_1, 12280_2)

5 ¾fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

VALSOU - 10.570 m

WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart obstruction least depth 34ft in latitude 36°50'49.861"N, longitude 076°17'47.167"W.

Feature Images

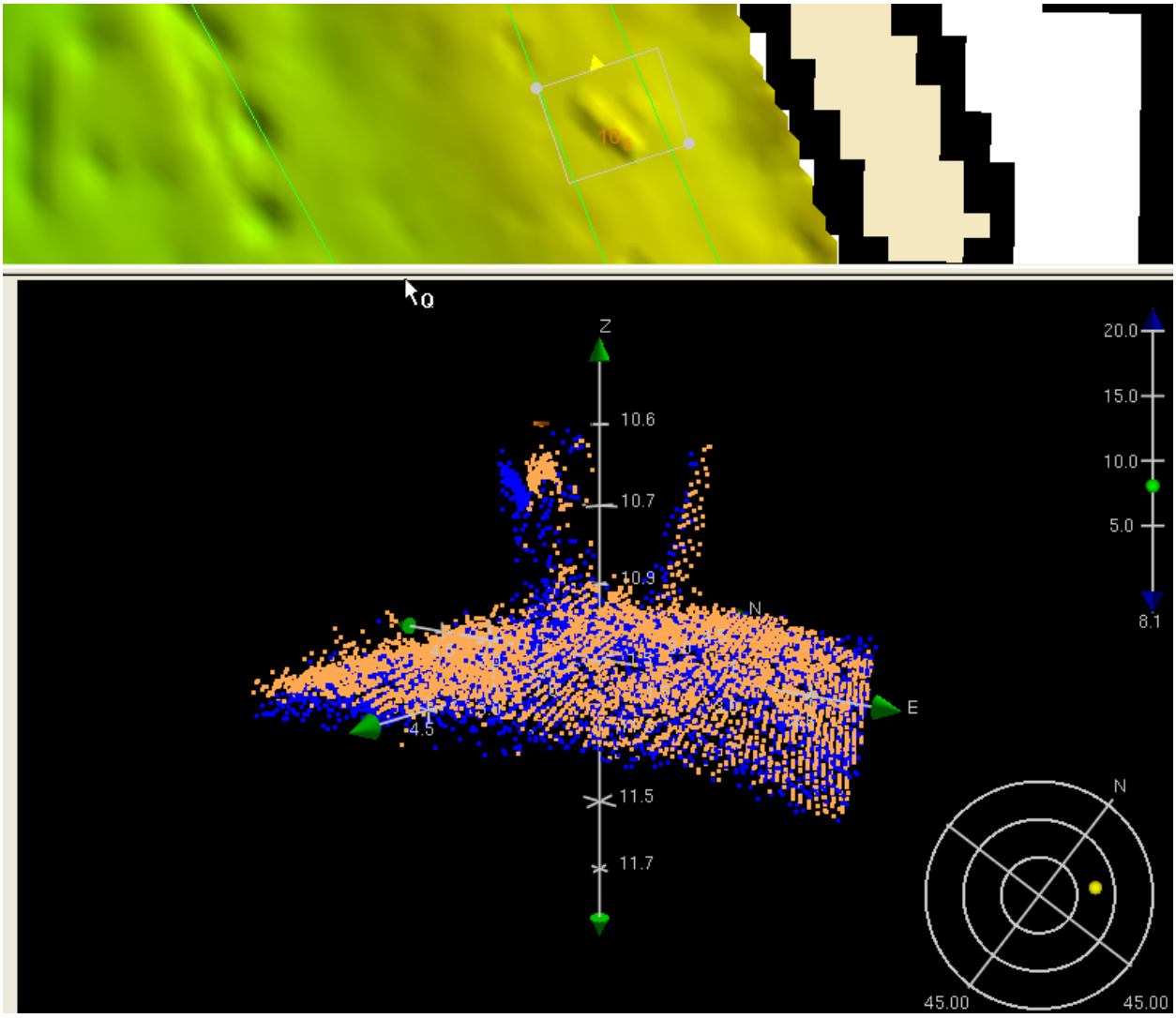
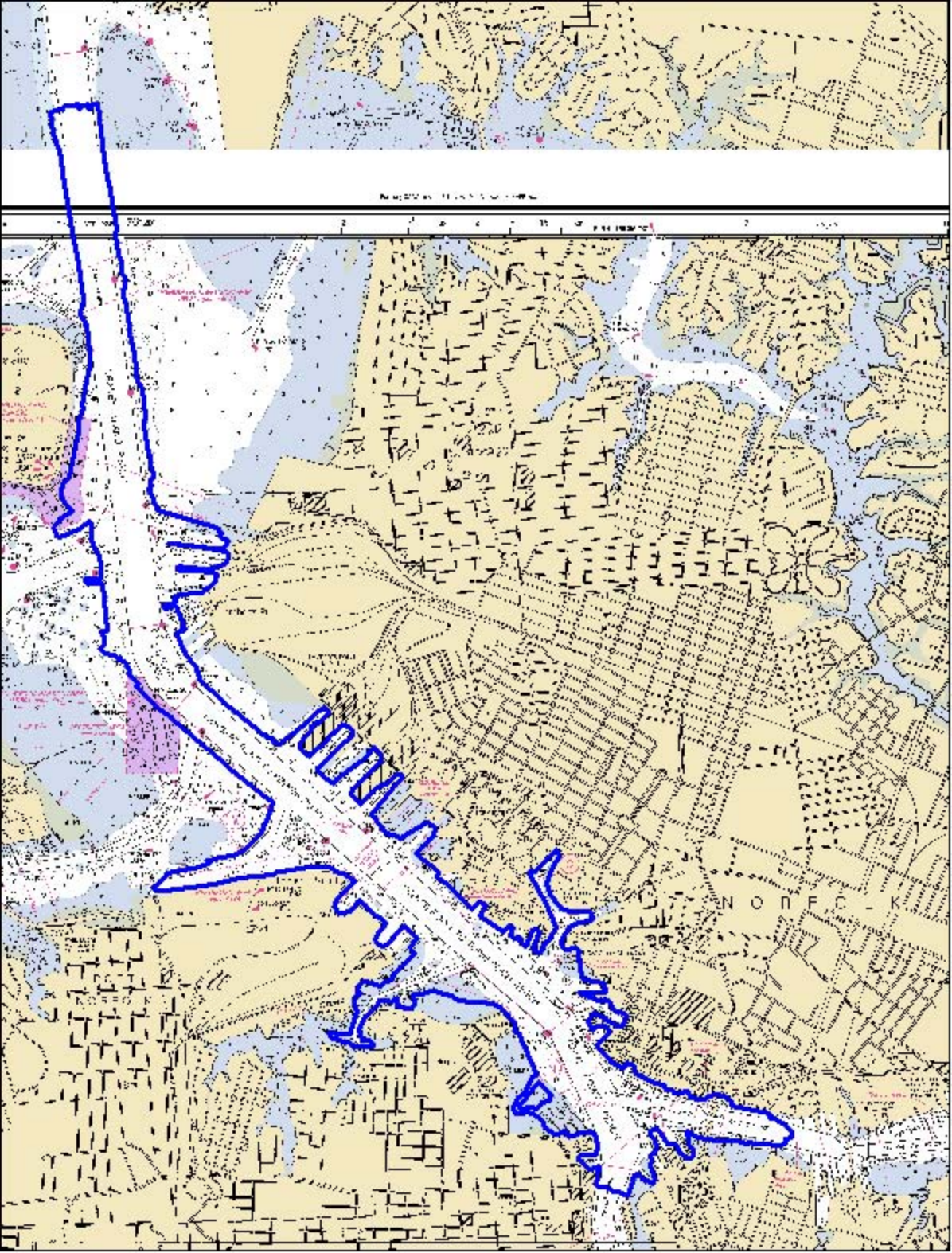


Figure 1.1.1

APPENDIX III
FINAL PROGRESS SKETCH AND SURVEY


N O П Е С - К

APPENDIX IV
TIDES AND WATER LEVELS

October 23, 2006

MEMORANDUM FOR:	Chief, Requirements and Development Division, N/OPS1
FROM:	LTJG Briana Welton, NOAA S/ V Bay Hydrographer / NRT7
SUBJECT:	Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to:

NOAA/NOS/Atlantic Hydrographic Branch
N/CS33, Building #2
439 West York Street
Norfolk, VA 23510
ATTN: Chief AHB

These data are required for the processing of the following hydrographic survey:

Project No.:	S-E915-BH-NRT7-06
Registry No.:	H11599
State:	VA
Locality:	Elizabeth River
Sublocality:	Sewells Point to Norfolk

Attachments containing:
1) an Abstract of Times of Hydrography,
2) digital MID MIF files of the track lines from pydro on CD/diskette

cc: N/CS33

Year_DOY	Min Time	Max Time
2006_143	19:08:35	20:20:45
2006_145	17:29:55	19:33:33
2006_146	15:04:49	16:01:50
2006_150	17:30:34	19:04:03
2006_151	14:30:06	18:35:19
2006_152	10:58:17	17:50:42
2006_156	10:49:13	18:01:58
2006_157	12:06:43	17:50:28
2006_158	13:14:32	17:17:34
2006_255	15:26:34	20:45:24
2006_256	12:44:40	19:12:32
2006_257	12:24:56	18:26:04

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : November 30, 2006

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: S-E915-BH-NRT7-2006
HYDROGRAPHIC SHEET: H11599

LOCALITY: Sewells Point to Norfolk, Elizabeth River, VA
TIME PERIOD: May 23 - September 14, 2006

TIDE STATION USED: 863-8610 Hampton Roads, VA
Lat. 36° 56.5’ N Long. Red, Bold, I
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.778 meters

TIDE STATION USED: 863-9348 Money Point, VA
Lat. 36 46.7' N Long. 076 18.1' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.914 meters

REMARKS: RECOMMENDED ZONING

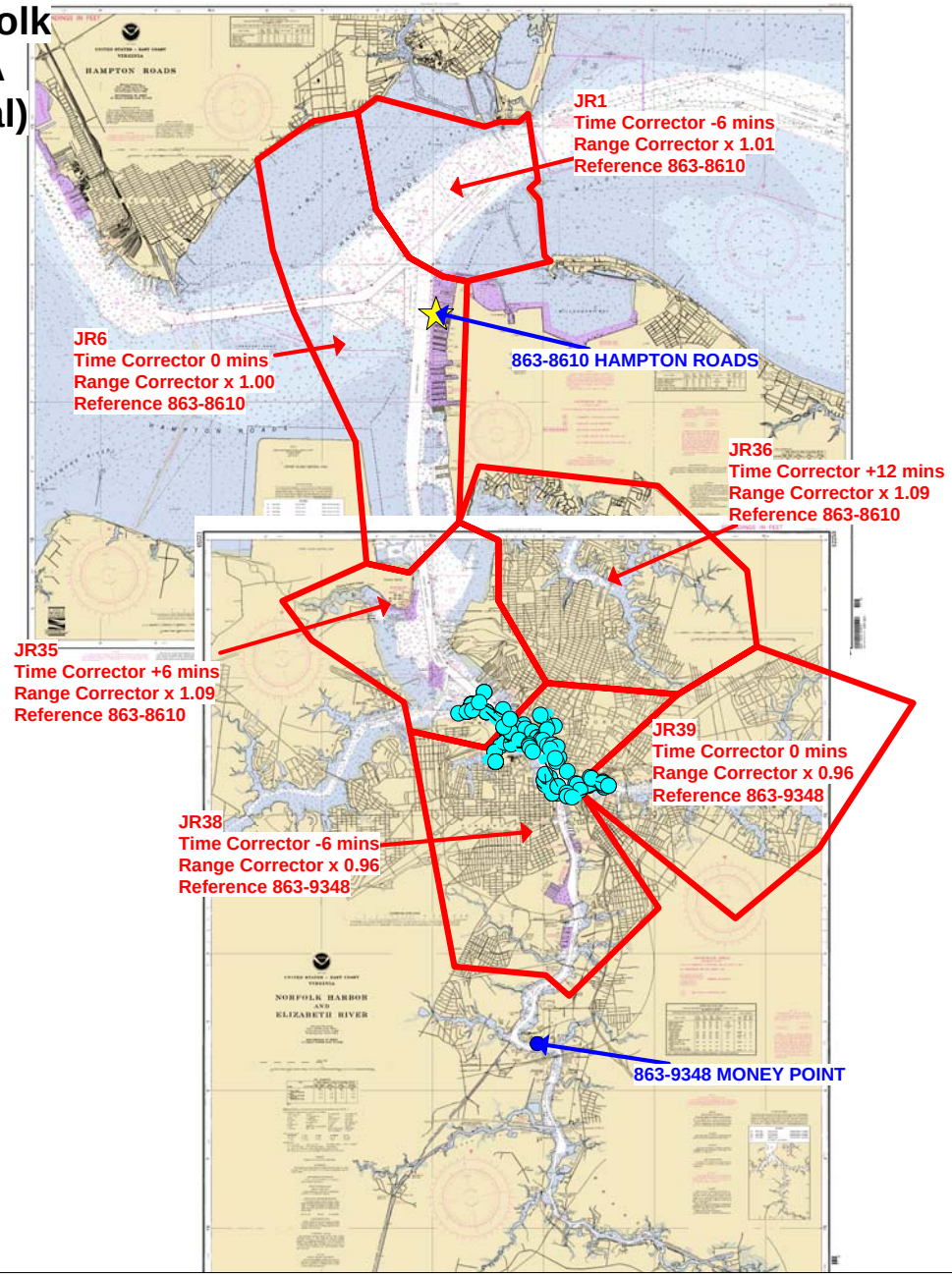
Preliminary zoning is accepted as the final zoning for project S-E915-BH-NRT7-2006, H11599.

Please use the zoning file "E915BH-NRT2006CORP" (MapInfo files and *.zdf) submitted with the project instructions for S-E915-BH-NRT7-2006. Zones JR1, JR6, JR35, JR36, JR38 & JR39 are the applicable zones for H11599.

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).

CHIEF, PRODUCTS AND SERVICES DIVISION

Final Tidal Zoning
for S-E915-BH-NRT7-2006, H11599
Sewells Point to Norfolk
Elizabeth River, VA
(Preliminary As Final)



APPENDIX V
SUPPLEMENTAL SURVEY AND CORRESPONDENCE

From "Jack L. Riley" <Jack.Riley@noaa.gov>
Sent Wednesday, May 9, 2007 11:55 am
To Mark Van Waes <Mark.Vanwaes@noaa.gov>
Cc Briana Welton <Briana.Welton@noaa.gov>
Bcc
Subject Re: [Fwd: Isis time stamping 1970-001 randomly]
Hello Mark,

I think so--RUDE and TJ have reported seeing XTF data offset back to 1970 too.
The following worked for them:

Use the Post Acquisition Tools program (listed in the Pydro installation group, under the Start menu):
File->Select XTF Files, then Tool->XTF->ISIS PC Time Adjustment.
You are prompted for an output directory for the adjusted XTF files, then you see the settings dialog. You enter the time adjustment as a sum of days, hours, minutes, and seconds -- so you need to translate your 37 years + into that format (suppose I should add a "years" entry too). The ISIS PC Time Adjustment tool affects all hydro data time stamps in the XTF file, including the "raw navigation" (precise time).
To remove file(s) listed in the Post Acquisition Tools "Lines to Process", select/highlight the line(s) and then press <Delete> key.

Jack

(RUDE & TJ e-mail thread re: this)

From:
Christiaan VanWestendorp <Christiaan.VanWestendorp@noaa.gov>
Date:
Fri, 04 May 2007 07:33:47 -0400

To:
Richard.T.Brennan@noaa.gov
CC:
Jack Riley <Jack.Riley@noaa.gov>

LCDR/Jack,

Thanks for the assistance on this one - worked like a charm! I'll try to give you a call today/this AM.

V/R,
LT Chris vW

Richard T Brennan wrote: Chris,

See Jack's response to the RUDE on your XTF issue. Let us know how this works.

Give me a call if you get a minute... I need to talk with you about TCARI issues.

Rick

Jack L. Riley wrote:

From:
Wesley Kitt <Wesley.Kitt@noaa.gov>
Date:
Wed, 04 Apr 2007 23:04:50 +0000
To:
Jack.Riley@noaa.gov

Hiya Jack,

Man, PYDRO is FULL of useful tools! <grin> Yes, it worked well! I found a great website which does the 37-year calculation for me and when I did an XTF dump found it to be only off by one hour for some reason, so I went back and added an hour, ran that tool and it seems right on now (to the nearest whole second anyway). Thanks for your help!

R,
Wes

Jack.Riley@noaa.gov wrote:

Hello Wes,

Try using the Post Acquisition Tools (listed in the Pydro installation group, under the Start menu). File->Select XTF Files, then Tool->XTF->ISIS PC Time Adjustment.
You are prompted for an output directory for the adjusted XTF files, then you see the settings dialog. You enter the time adjustment as a sum of days, hours, minutes, and seconds -- so you need to translate your 37 years + into that format (suppose I should add a "years" entry too). The ISIS PC Time Adjustment tool affects all hydro data time stamps in the XTF file, including the "raw navigation" (precise time). Let me know how it goes and if you need something different. I am out of the office this week, so I probably won't be able to do any major change this week -- just answer basic e-mail.

Jack

----- Original Message -----
From: Wesley Kitt <Wesley.Kitt@noaa.gov>
Date: Tuesday, April 3, 2007 10:42 am
Subject: SetXTFRawNavYMD

Hiya Jack,

Time for my first call to ya from the RUDE working off Florida. <grin>
We logged an Isis SSS line but later noticed the date said 1-Jan-1970. I was able to work around this by entering a line for 1970-001 in the hvf file but I know you know a "real" fix for it. I checked Pydro v7.3 (r2014) and in its macros was the subject of this email. When I tried to run it I got the message that it was only good for 2005 and 2006????? And to contact HSTP. Is there a "cure" for 2007 problems?
Thanks!

R,
Wes Kitt

Mark Van Waes wrote:
> Hi Jack,
>

> Bri is having a time stamping issue with some of her 7125 data. I've
> asked around and it doesn't appear than anyone else has seen quite the
> same thing. I recall that you had a time-fixing utility for a problem
> that RAINIER had a while back. Might that help in this case?
>
> Thanks,
> Mark
>
> -------- Original Message --------
> Subject: Isis time stamping 1970-001 randomly
> Date: Tue, 08 May 2007 14:58:59 -0400
> From: Briana.Welton@noaa.gov
> To: Mark.Vanwaes@noaa.gov
> CC: Olivia.Hauser@noaa.gov, Michael.Davidson@noaa.gov
>
>
>
> Isis did this to a few random files acquired on the same day to some
> Reson 7125 data. Discovered via xtfdump. Caris won't apply HVF due
> to dates.   Anyone else complaining about this?
>
>
> --
> *LT Mark Van Waes, NOAA*
> /NOAA Coast Survey Development Laboratory - HSTP West
> 7600 Sand Point Way NE, Building 3, Room 1001
> Seattle, WA 98115
> 206.526.6891 voice | fax 206.526.4514/ NOAA gull image
>
>

Subject:
Coast Pilot reviews from surveys H11599 and H11450
Date:
Tue, 11 Dec 2007 14:05:59 -0500
From:
Briana.Welton@noaa.gov
To:
coast.pilot@noaa.gov
CC:
Sarah.Eggleston@noaa.gov, Shep.Smith@noaa.gov

Good Afternoon,

Attached are two Coast Pilot reviews from surveys H11599 (S-E915-BH-NRT7-06, Elizabeth River, VA) and H11450 (OPR-E349-BH-05, Central Chesapeake Bay). I believe I already submitted these earlier this year, but I have no email record of it, so I'm submitting them again to be sure.

Thanks,

Bri

LTJG Briana Welton, NOAA
Hydro Team Leader
Mid-Atlantic Region
Navigation Response Branch

439 W York St
Norfolk, VA 23510
757-441-6319 x104
757-771-5304 (cell)

From Samuel Greenaway <Samuel.Greenaway@noaa.gov>
Sent Monday, February 26, 2007 1:25 pm
To Briana.Welton@noaa.gov
Cc
Bcc
Subject [Fwd: True Heave]
re: true Heave

-------- Original Message --------
Subject: True Heave
Date: Tue, 01 Aug 2006 18:31:14 -0800
From: FOO Rainier <foo.rainier@noaa.gov>
To: ChiefST Rainier <chiefst.rainier@noaa.gov>, Erin Campbell <erin.campbell@noaa.gov>,matt.boles@noaa.gov, Nick Gianoutsos <nick.gianoutsos@noaa.gov>, tonya.watson@noaa.gov, Samuel Greenaway <samuel.greenaway@noaa.gov>, Olivia Hauser <olivia.hauser@noaa.gov>, Laurel Jennings <laurel.jennings@noaa.gov>, Meghan McGovern <meghan.mcgovern@noaa.gov>, Nathan Eldridge <nathan.eldridge@noaa.gov>, Jamie Wasser <Jamie.Wasser@noaa.gov>, Toshi Uozumi <Toshi.Uozumi@noaa.gov>, Thomas Hardy <thomas.hardy@noaa.gov>, Shyla Allen <shyla.allen@noaa.gov>,timothy.m.smith@noaa.gov, amanda.vandyke@noaa.gov, "Shawn.Gendron" <Shawn.Gendron@noaa.gov>, marta.krynytzky@noaa.gov

As many of you are aware, we have been having some true heave issues as of late. Here are some of the problems:

1. Elac seems to be on a different clock than the POS (UTC vs GPS, it about 14s off). This is not being correctly accounted for in Caris, so things don't line up right in the final product. We will still aquire true heave for the Elac systems, but will not apply it yet.

2. If true heave logging begins partway through a line of data, that line will not process corectly in Caris. You will be able to see the line in swath editor, but it will not be seen in subset or a BASE surface (the processed depth files are somehow messed up). The fix is to reconvert the line and not apply true heave, and don't start logging true heave halfway through a line.

3. Order seems to be very important to Caris to get true heave right. When selecting the true heave files, you need to do so in chronological order. You can stack them up in the conversion utility, they just have to be in the right order.

4. This one is from Ben for fixing messed up true heave files:
If the files will not apply, try the "fixtrueheave" utility. Here are the directions:

a. Check the C:\CARIS\HIPS\60\Bin directory for the file "fixTrueHeave.exe". If you don't find it, copy it from L:\Software and Updates\Caris\Miscellaneous.

b. Once fixTrueHeave is on your computer, open a DOS window, and navigate to the directory where the TrueHeave files are stored. (e.g., H:\OPR-P183-RA-06_Shumagins\H11596\POS\1006\DN210)

c. Run the utility from the command line with the following context: "fixTrueHeave <trueheave filename> -trim". This will produce a new file with the same base name, but with the suffix "fixed" appended.
d. Return to HIPS and apply this new file to the appropriate lines.

The fixed file will have all extraneous data types removed (retaining only group 111), and should have timing loop-backs removed. My testing has indicated that this sometimes helps, and sometimes doesn't.

5. For the most part, true heave is working well and is improving our data quality. It a little quirky, and hard to get along with sometimes, but aren't you too.

Regards, Sam

Subject:
Additional DtoNs for H11599
Date:
Tue, 15 Jan 2008 14:31:06 -0500
From:
Sarah Eggleston <Sarah.Eggleston@noaa.gov>
To:
_NOS OCS MCD Navigation Dangers <mcd.dton@noaa.gov>

Attached is a zip file containing three additional dtons for project H11599.

Sarah M. Eggleston
NOAA - Atlantic Hydrographic Branch
Physical Scientist

H11599 Additional DtoNs.zip

Name:
H11599 Additional DtoNs.zip
Type:
Zip Compressed Data (application/x-zip-compressed)
Encoding:
base64

From Caleb.Gostnell@noaa.gov
Sent Wednesday, September 6, 2006 9:28 am
To Briana Welton <Briana.Welton@noaa.gov>
Cc
Bcc
Subject Fwd: [Fwd: Re: E915, Elizabeth River Project]
Bri,

Attached is a graphic of the lidar coverage for the Elizabeth River

demo project. Rick would like to concentrate our survey efforts in this region covering as close to shoreline as is safely feasible. Hope you had a good trip.

Cheers,

Caleb

----- Original Message -----
From LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>
Date Tue, 05 Sep 2006 16:27:42 -0400
To Caleb Gostnell <Caleb.Gostnell@noaa.gov>
Subject [Fwd: Re: E915, Elizabeth River Project]

Caleb,

See the attached jpg for the Topo Lidar Coverage.

Rick

-------- Original Message --------
Subject: Re: E915, Elizabeth River Project
Date: Tue, 05 Sep 2006 16:20:06 -0400
From: Jason Woolard <Jason.Woolard@noaa.gov>
To: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>
CC: Mike.Aslaksen <Mike.Aslaksen@noaa.gov>
References: <13c77135b8.135b813c77@noaa.gov>
<44F5910C.6070702@noaa.gov> <44F64947.2010201@noaa.gov>
<44F73F42.1090101@noaa.gov> <44FCDE20.3090703@noaa.gov>
<44FD73B7.3060908@noaa.gov> <44FD8960.3030304@noaa.gov>

Rick,

Attached is a map of the topo lidar and orthophoto coverage for Norfolk. Based on past experience with topo/bathy modeling the critical area is the very nearshore (where the topo lidar coverage stops and the multibeam coverage begins). Due to a lack of data this area is usually just interpolated based on the slope. If you guys focus the interferometric work in that zone this should be a pretty amazing dataset.

Also, I have yet to see the multibeam coverage. Do you have any idea what has been covered?

Jason

P.S. I talked to NGS-Norfolk today and you guys are set with a base station for next week.

LCDR Rick Brennan wrote:
> Jason,

>
> Do you have some neat lines for the Lidar coverage? We are going down
> next week to acquire the interferometric data and would like to make
> sure we focus on those areas where there is topo lidar before moving
> onto other areas. Thanks!
>
> Rick
>
> Jason Woolard wrote:
>> Sure, I'll get it together on DVD.
>>
>> Jason
>>
>> LCDR Rick Brennan wrote:
>>> Jason,
>>>
>>> Kurt Schwehr, the UNH researcher who wanted to use your LIDAR data
>>> will be here on Wednesday and Thursday. Any chance he could carry
>>> back a copy of the data?
>>>
>>> Rick
>>>
>>> Jason Woolard wrote:
>>>> Hi Jeremy,
>>>>
>>>> Just wanted to add to Rick's update.
>>>>
>>>> 1) NGS acquired topographic lidar last May using an Optech Airborne
>>>> Laser Terrain Mapper (ALTM) 2050. The data has a post spacing of ~1
>>>> meter and I have completed most of the processing. The only
>>>> remaining work involves some final manual editing.
>>>>
>>>> 2) EAARL data was not acquired for this area. The Elizabeth River
>>>> water conditions are not conducive to bathymetric lidar mapping. We
>>>> might be able to achieve some decent results in parts of the
>>>> southern Chesapeake Bay but definitely not this particular area of
>>>> interest.
>>>>
>>>> 3) We have a high resolution color orthophoto of the project area
>>>> from NOAA imagery acquired in 2003. I have this data in multiple
>>>> georeferenced image formats.
>>>>
>>>> Jason
>>>>
>>>>
>>>>
>>>> LCDR Rick Brennan wrote:
>>>>> Hi Jeremy,
>>>>>
>>>>> I'll try to give an update of where we are at. Once the AUV team
>>>>> gets back, I would like to have a progress meeting to discuss
>>>>> what's happened and where we need to go.
>>>>>
>>>>> 1) Problems with the interferometric acceptance test have pushed
>>>>> the acquisition of this data to September.
>>>>> 2) Reson 7125 bathymetry has been acquired. Bri has forwarded a
>>>>> coverage plot under a different cover. There is still bathymetry
>>>>> processing to be done on this data. We also need to run the 7125
>>>>> backscatter through the Geocoder/AVO process. I think the amount
>>>>> of coverage we have currently is plenty for our purposes, unless
>>>>> there is an operational need to carry it further.
>>>>> 3) Since there is no interferometric and no Riegl Laser Scanner,
>>>>> the data fusion has yet to occur. NGS has acquired Topo lidar.

>>>>> I'm not sure of the status of the EARRL flights over the area.
>>>>> Riegl has stopped returning my calls, and no one is ever in the
>>>>> office who can answer my questions. I am pursuing some other
>>>>> vendors, but none (besides Riegl) have ever put their scanners on
>>>>> a moving vessel.
>>>>> 4) This comparison is currently underway. I have been working
>>>>> with Jack to determine how best to process the POS M/V trajectory
>>>>> data through CARIS. Monica Cisternelli has been doing a comparison
>>>>> between TCARI and Discrete Zones. She has had some interesting
>>>>> and encouraging success.
>>>>> 5) No KLEIN data, no interferometric. Might be good to do this
>>>>> comparison, however I'm not sure how much valuable information we
>>>>> will get out of the Elizabeth River. I think it might be better
>>>>> to do this comparison on the Solomon's Island targets.
>>>>>
>>>>> Rick
>>>>>
>>>>> Jeremy McHugh wrote:
>>>>>> Hi Bri and Rick,
>>>>>> From the outset of the project, the idea was to start near
>>>>>> Norfolk and progress northward to Sewells Point, so we intended
>>>>>> for you to stop at some northern limit. Is that generally what
>>>>>> has been done thus far? If it is not too much trouble, would you
>>>>>> please send me a basic coverage map for all the data that you
>>>>>> have as of now?
>>>>>>
>>>>>> For that project's scheduled tests listed below (copied from the
>>>>>> project instructions), what data have been acquired? Do we have
>>>>>> or will we have Klein side-scan imagery to compare to the
>>>>>> interferometric imagery? Gerd was very keen on having that
>>>>>> comparison done.
>>>>>>
>>>>>> Rick or Bri, what about topo LIDAR, EARRL, and Riegl XYZ data;
>>>>>> were any of those data acquired?
>>>>>>
>>>>>> Scheduled Tests:
>>>>>> (1) acquisition and processing of interferometric bathymetry and
>>>>>> imagery.
>>>>>> (2) acquisition and processing of Reson 7125 bathymetry and
>>>>>> backscatter.
>>>>>> (3) fusion of bathymetric data from the first two tests with
>>>>>> other gridded, remotely-sensed
>>>>>> datasets such as (a) topographic LIDAR data from the National
>>>>>> Geodetic Survey (NGS), (b)
>>>>>> EARRL topographic/bathymetric data from a potential joint project
>>>>>> between NGS and the
>>>>>> National Aeronautics and Space Administration (NASA), and (c) XYZ
>>>>>> point data and digital
>>>>>> photography of near-shore topographic and cultural features
>>>>>> acquired from a Riegl 3D laser
>>>>>> scanning system.
>>>>>> (4) comparison of traditional discrete tide zoning with both
>>>>>> TCARI and ellipsoidally-based
>>>>>> surveys corrected using modeled datum transformations from VDATUM.
>>>>>> (5) comparison of Klein side-scan sonar imagery with
>>>>>> interferometric sonar imagery.
>>>>>>
>>>>>> -Jeremy
>>>>>>
>>>>>>
>>>>>> Briana.Welton@noaa.gov wrote:
>>>>>>>> Hi Jeremy,
>>>>>>>>

>>>>>>> I'm writing to find out if it's okay with Ops to reduce the size
>>>>>>> of E915, aka Elizabeth River Project, to include the area over
>>>>>>> which we've already acquired swmb? I'll be down with Caleb and
>>>>>>> crew Sept 11 to complete interferometric acquisition over the
>>>>>>> same area. Once that's acquired, I think everyone involved
>>>>>>> would like to call that done. Let me know or give me a call to
>>>>>>> discuss further.   Thanks,
>>>>>>>
>>>>>>> Bri
>>>>>>>
>>>>>>
>>>>>
>>>>> --
>>>>>
>>>>> ----------
>>>>>
>>>>> *LCDR Richard Brennan, NOAA*
>>>>> Hydrographic Systems and Technology Program
>>>>> 1315 East-West Highway,SSMC3
>>>>> N/CS11, Station 7853
>>>>> Silver Spring, MD, 20910
>>>>> Work: 301-713-2653 x151
>>>>> Cell: 617-470-7289
>>>>>
>>>
>>> --
>>>
>>> ----------
>>>
>>> *LCDR Richard Brennan, NOAA*
>>> Hydrographic Systems and Technology Program
>>> 1315 East-West Highway,SSMC3
>>> N/CS11, Station 7853
>>> Silver Spring, MD, 20910
>>> Work: 301-713-2653 x151
>>> Cell: 617-470-7289
>>>
>
> --
>
> ----------
> *LCDR Richard Brennan, NOAA*
> Hydrographic Systems and Technology Program
> 1315 East-West Highway,SSMC3
> N/CS11, Station 7853
> Silver Spring, MD, 20910
> Work: 301-713-2653 x151
> Cell: 617-470-7289
>

--

LCDR Richard Brennan, NOAA
Chief, Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x152
Cell: 617-470-7289

Caleb,

See the attached jpg for the Topo Lidar Coverage.

Rick

-------- Original Message -------- Subject: Re: E915, Elizabeth River Project
Date: Tue, 05 Sep 2006 16:20:06 -0400
From: Jason Woolard <Jason.Woolard@noaa.gov>
To: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>
CC: Mike.Aslaksen <Mike.Aslaksen@noaa.gov>
References: <13c77135b8.135b813c77@noaa.gov> <44F5910C.6070702@noaa.gov>
<44F64947.2010201@noaa.gov> <44F73F42.1090101@noaa.gov> <44FCDE20.3090703@noaa.gov>
<44FD73B7.3060908@noaa.gov> <44FD8960.3030304@noaa.gov>

Rick,

Attached is a map of the topo lidar and orthophoto coverage for Norfolk.
Based on past experience with topo/bathy modeling the critical area is
the very nearshore (where the topo lidar coverage stops and the
multibeam coverage begins). Due to a lack of data this area is usually
just interpolated based on the slope. If you guys focus the
interferometric work in that zone this should be a pretty amazing dataset.

Also, I have yet to see the multibeam coverage. Do you have any idea
what has been covered?

Jason

P.S. I talked to NGS-Norfolk today and you guys are set with a base
station for next week.

LCDR Rick Brennan wrote:
> Jason,
>
> Do you have some neat lines for the Lidar coverage? We are going down
> next week to acquire the interferometric data and would like to make
> sure we focus on those areas where there is topo lidar before moving
> onto other areas. Thanks!
>
> Rick
>
> Jason Woolard wrote:
>> Sure, I'll get it together on DVD.
>>
>> Jason
>>
>> LCDR Rick Brennan wrote:
>>> Jason,
>>>
>>> Kurt Schwehr, the UNH researcher who wanted to use your LIDAR data
>>> will be here on Wednesday and Thursday. Any chance he could carry

>>> back a copy of the data?
>>>
>>> Rick
>>>
>>> Jason Woolard wrote:
>>>> Hi Jeremy,
>>>>
>>>> Just wanted to add to Rick's update.
>>>>
>>>> 1) NGS acquired topographic lidar last May using an Optech Airborne
>>>> Laser Terrain Mapper (ALTM) 2050. The data has a post spacing of ~1
>>>> meter and I have completed most of the processing. The only
>>>> remaining work involves some final manual editing.
>>>>
>>>> 2) EAARL data was not acquired for this area. The Elizabeth River
>>>> water conditions are not conducive to bathymetric lidar mapping. We
>>>> might be able to achieve some decent results in parts of the
>>>> southern Chesapeake Bay but definitely not this particular area of
>>>> interest.
>>>>
>>>> 3) We have a high resolution color orthophoto of the project area
>>>> from NOAA imagery acquired in 2003. I have this data in multiple
>>>> georeferenced image formats.
>>>>
>>>> Jason
>>>>
>>>>
>>>>
>>>> LCDR Rick Brennan wrote:
>>>>> Hi Jeremy,
>>>>>
>>>>> I'll try to give an update of where we are at. Once the AUV team
>>>>> gets back, I would like to have a progress meeting to discuss
>>>>> what's happened and where we need to go.
>>>>>
>>>>> 1) Problems with the interferometric acceptance test have pushed
>>>>> the acquisition of this data to September.
>>>>> 2) Reson 7125 bathymetry has been acquired. Bri has forwarded a
>>>>> coverage plot under a different cover. There is still bathymetry
>>>>> processing to be done on this data. We also need to run the 7125
>>>>> backscatter through the Geocoder/AVO process. I think the amount
>>>>> of coverage we have currently is plenty for our purposes, unless
>>>>> there is an operational need to carry it further.
>>>>> 3) Since there is no interferometric and no Riegl Laser Scanner,
>>>>> the data fusion has yet to occur. NGS has acquired Topo lidar.
>>>>> I'm not sure of the status of the EARRL flights over the area.
>>>>> Riegl has stopped returning my calls, and no one is ever in the
>>>>> office who can answer my questions. I am pursuing some other
>>>>> vendors, but none (besides Riegl) have ever put their scanners on
>>>>> a moving vessel.
>>>>> 4) This comparison is currently underway. I have been working
>>>>> with Jack to determine how best to process the POS M/V trajectory
>>>>> data through CARIS. Monica Cisternelli has been doing a comparison
>>>>> between TCARI and Discrete Zones. She has had some interesting
>>>>> and encouraging success.
>>>>> 5) No KLEIN data, no interferometric. Might be good to do this
>>>>> comparison, however I'm not sure how much valuable information we
>>>>> will get out of the Elizabeth River. I think it might be better
>>>>> to do this comparison on the Solomon's Island targets.
>>>>>
>>>>> Rick
>>>>>
>>>>> Jeremy McHugh wrote:

>>>>>> Hi Bri and Rick,
>>>>>> From the outset of the project, the idea was to start near
>>>>>> Norfolk and progress northward to Sewells Point, so we intended
>>>>>> for you to stop at some northern limit. Is that generally what
>>>>>> has been done thus far? If it is not too much trouble, would you
>>>>>> please send me a basic coverage map for all the data that you
>>>>>> have as of now?
>>>>>>
>>>>>> For that project's scheduled tests listed below (copied from the
>>>>>> project instructions), what data have been acquired? Do we have
>>>>>> or will we have Klein side-scan imagery to compare to the
>>>>>> interferometric imagery? Gerd was very keen on having that
>>>>>> comparison done.
>>>>>>
>>>>>> Rick or Bri, what about topo LIDAR, EARRL, and Riegl XYZ data;
>>>>>> were any of those data acquired?
>>>>>>
>>>>>> Scheduled Tests:
>>>>>> (1) acquisition and processing of interferometric bathymetry and
>>>>>> imagery.
>>>>>> (2) acquisition and processing of Reson 7125 bathymetry and
>>>>>> backscatter.
>>>>>> (3) fusion of bathymetric data from the first two tests with
>>>>>> other gridded, remotely-sensed
>>>>>> datasets such as (a) topographic LIDAR data from the National
>>>>>> Geodetic Survey (NGS), (b)
>>>>>> EARRL topographic/bathymetric data from a potential joint project
>>>>>> between NGS and the
>>>>>> National Aeronautics and Space Administration (NASA), and (c) XYZ
>>>>>> point data and digital
>>>>>> photography of near-shore topographic and cultural features
>>>>>> acquired from a Riegl 3D laser
>>>>>> scanning system.
>>>>>> (4) comparison of traditional discrete tide zoning with both
>>>>>> TCARI and ellipsoidally-based
>>>>>> surveys corrected using modeled datum transformations from VDATUM.
>>>>>> (5) comparison of Klein side-scan sonar imagery with
>>>>>> interferometric sonar imagery.
>>>>>>
>>>>>> -Jeremy
>>>>>>
>>>>>>
>>>>>> Briana.Welton@noaa.gov wrote:
>>>>>>> Hi Jeremy,
>>>>>>>
>>>>>>> I'm writing to find out if it's okay with Ops to reduce the size
>>>>>>> of E915, aka Elizabeth River Project, to include the area over
>>>>>>> which we've already acquired swmb? I'll be down with Caleb and
>>>>>>> crew Sept 11 to complete interferometric acquisition over the
>>>>>>> same area. Once that's acquired, I think everyone involved
>>>>>>> would like to call that done. Let me know or give me a call to
>>>>>>> discuss further.   Thanks,
>>>>>>>
>>>>>>> Bri
>>>>>>>
>>>>>>
>>>>>
>>>>> --
>>>>>
>>>>> ----------
>>>>>
>>>>> *LCDR Richard Brennan, NOAA*
>>>>> Hydrographic Systems and Technology Program

>>>>> 1315 East-West Highway,SSMC3
>>>>> N/CS11, Station 7853
>>>>> Silver Spring, MD, 20910
>>>>> Work: 301-713-2653 x151
>>>>> Cell: 617-470-7289
>>>>>
>>>
>>> --
>>>
>>> ----------
>>>
>>> *LCDR Richard Brennan, NOAA*
>>> Hydrographic Systems and Technology Program
>>> 1315 East-West Highway,SSMC3
>>> N/CS11, Station 7853
>>> Silver Spring, MD, 20910
>>> Work: 301-713-2653 x151
>>> Cell: 617-470-7289
>>>
>
> --
>
> ----------
> *LCDR Richard Brennan, NOAA*
> Hydrographic Systems and Technology Program
> 1315 East-West Highway,SSMC3
> N/CS11, Station 7853
> Silver Spring, MD, 20910
> Work: 301-713-2653 x151
> Cell: 617-470-7289
>

--

LCDR Richard Brennan, NOAA
Chief, Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x152
Cell: 617-470-7289

File: norfolk_lidar_and_ortho.jpg

From CARIS Customer Services <support@caris.com>
Sent Wednesday, March 21, 2007 10:07 am
To Briana.Welton@noaa.gov
Cc FOO.Thomas.Jefferson@noaa.gov Michael.Davidson@noaa.gov

michael.annis@noaa.gov
Bcc
Subject CARIS HelpDesk - Request 00700575

Dear Briana Welton:
Please note that request number 00700575, entitled "HIPS 6.1 treatment of 7125 data" was updated as indicated below, by Shirley Ahilan on Wednesday, March 21, 2007 [11:07].
Comments have been added as follows:
Hi,
I re-opened this request to clarify certain details regarding the vessel file for processing xtf data collected using Reson 7125.

In my earlier comments I meant to specify that the Z value of the transducer offset must be set in the SVP section of the vessel file. This is to maintain the correct location of the Transducer in the water column, when referencing the SVP data for the Sound Velocity Correction (SVC).

As I said earlier, For a Reson 7K file (in the native .s7k format), if all the transducer offsets are applied during acquisition, then the HVF swath section would be set to zero. In order to maintain the same HVF that could be used for both SV corrected data, as well as non-SV corrected data, the user would set up transducer offsets XYZ in the SVP section, and leave the swath section with zeros

For processing Reson 7125 xtf file, the same vessel file can be used and during SV correction the sounding are rotated by the transducer XYZ offsets in the SVP section of the HVF and since the swath section is all zero?s the offsets will not be applied again.

Also, the application of waterline should be set to NO, so that they don?t get reapplied during merge process. This is specific to the processing of certain Systems in HIPS when the Waterline is used for the SVC, such as Reson 7125 and Simrad.

You need to reapply SVC and Merge the data again so that these changes are taken into account. Also, re-compute your base surface.

If you have any question add to this request.

Thanks Shirley

Best Regards,
CARIS Customer Services
support@caris.com
http://support.caris.com
Tel: +1-506-458-8533 Fax: +1-506-459-3849

From CARIS Customer Services <support@caris.com>
Sent Friday, March 9, 2007 3:05 pm
To Briana.Welton@noaa.gov
Cc FOO.Thomas.Jefferson@noaa.gov Michael.Davidson@noaa.gov
michael.annis@noaa.gov
Bcc
Subject CARIS HelpDesk - Request 00700575

Dear Briana Welton:
Please note that request number 00700575, entitled "HIPS 6.1 treatment of 7125 data" was updated as indicated below, by Shirley Ahilan on Friday, March 9, 2007 [16:05].
Comments have been added as follows:
Hi Mike,
Prior to Hotfix 21 for HIPS 6.0.2, Reson 7125 xtf data was being SV corrected as any other xtf data (i.e) in the vessel file the X and Y offsets were given in both, the swath and svp section. So you would not see any offsets after SV correcting and Merging.

After Hotfix 21, SV correction for Reson 7125 rotates soundings by the transducer XY offsets in the SVP section of the HVF. If you specify an identical set of XY values in the Swath section as the SVP section, then the offsets are doubly applied, i.e. once during the SV correction and once during Merge process.

For a Reson 7K file (in the native .s7k format), if all the transducer offsets are applied during acquisition, then the HVF swath section would be set to zero. In order to maintain the same HVF that could be used for both SV corrected data, as well as non-SV corrected data, the user would set up transducer offsets in the SVP section, and leave the swath section with zeros.

XTF file does not contain processed data, only raw data, therefore it is necessary to specify transducer XYZ in the swath section, and zeros in the SVP section. The same HVF file therefore, CANNOT be used to process both .s7k and .xtf data.

Moreover, it was noticed that when converting the data using the beta converter, that you sent me, the travel time is different. So you will be seeing a difference in the data being converted using your HIPS 6.0.2 Beta converter and HIPS 6.1.

Since the HIPS converter you were using was not an official release and was meant for Beta testing, we did not recommend using it for final processing. To get the correct data converted we would suggest using the HIPS v6.1 converter.

If you have any question or comments add to this request.

Thanks Shirley

Best Regards,
CARIS Customer Services
support@caris.com
http://support.caris.com
Tel: +1-506-458-8533 Fax: +1-506-459-3849

DOCUMENT IS SIGNED ON BEHALF OF THE COMPANY.

From Christiaan VanWestendorp <Christiaan.VanWestendorp@noaa.gov>
Sent Thursday, March 15, 2007 2:07 pm
To ')">"CARI<sup<super Services" <support@caris.com>
Cc Briana.Welton@noaa.gov FOO.Thomas.Jefferson@noaa.gov
Michael.Davidson@noaa.gov michael.annis@noaa.gov
Bcc
Subject Re: CARIS HelpDesk - Request 00700575
Attachments vCard(christiaan.vanwestendorp) 1K

Hi, Shirley,

Until this point, we were not aware that SVP offsets were being "doubly" applied to data. We've noticed that both in Caris 6.0 and 6.1, when you enter offsets into Swath, they are automatically copied into SVP. Is this the case also for the 8101 and 8125 HVFs? Should we be deleting the SVP offsets from the HVFs for all Reson platforms?

- Chris van Westendorp
FOO, NOAA Ship THOMAS JEFFERSON

CARIS Customer Services wrote:

Dear Briana Welton:
Please note that request number 00700575, entitled "HIPS 6.1 treatment of 7125 data" was updated as indicated below, by Shirley Ahilan on Thursday, March 15, 2007 [14:50].
Comments have been added as follows:
Hi,
If you have no further comments or question and feel this issue can be closed, please do so at your earliest convenience or send us notice and we can close it for you.

Thanks Shirley

Best Regards,
CARIS Customer Services
support@caris.com
http://support.caris.com
Tel: +1-506-458-8533 Fax: +1-506-459-3849

From CARIS Customer Services <support@caris.com>
Sent Thursday, March 15, 2007 2:46 pm
To Briana.Welton@noaa.gov
Cc FOO.Thomas.Jefferson@noaa.gov Michael.Davidson@noaa.gov
michael.annis@noaa.gov
Bcc

Subject CARIS HelpDesk - Request 00700575

Dear Briana Welton:
Please note that request number 00700575, entitled "HIPS 6.1 treatment of 7125 data" was updated as indicated below, by Shirley Ahilan on Thursday, March 15, 2007 [15:46].
Comments have been added as follows:
Hi,
The SVP code will not normally apply transducer XY rotation during its processing. Therefore having XY location in the SVP will have no effects. The only exceptions to this is for simrad, and reson s7k data stored in XTF, or s7k files.

Thanks Shirley

Best Regards,
CARIS Customer Services
support@caris.com
http://support.caris.com
Tel: +1-506-458-8533 Fax: +1-506-459-3849

From Caleb.Gostnell@noaa.gov
Sent Thursday, March 1, 2007 9:45 am
To Corey.Allen@noaa.gov
Cc Briana.Welton@noaa.gov
Bcc
Subject Fwd: Re: Fwd: Re: Elizabeth River Project data submission
Attachments vCard(Doug.Baird) 1K

FYI - Once it is cleaned we will need to do a chart comparison with the C3D data in Elizabeth River to see if it is worthwhile to push the data through to the chart...

----- Original Message -----
From Doug Baird <Doug.Baird@noaa.gov>
Date Thu, 01 Mar 2007 08:35:35 -0500
To Caleb.Gostnell@noaa.gov
Subject Re: Fwd: Re: Elizabeth River Project data submission

Well, then lets examine the C3D coverage in detail, and determine if the
extra work of getting the test data through to a nav surface is worth
the additional sounding data that would actually fit on the chart.

Caleb.Gostnell@noaa.gov wrote:
> Doug,
>
> Bri just forwarded this along. Does this have any impact as to whether
> or not we want to try to chart the C3D data?
>
> Thanks,
>
> Caleb
>
>
> ----------
>
> Subject:
> Fwd: Re: Elizabeth River Project data submission
> From:
> Briana.Welton@noaa.gov
> Date:
> Wed, 28 Feb 2007 16:56:54 -0500
> To:
> Caleb.Gostnell@noaa.gov
>
> To:
> Caleb.Gostnell@noaa.gov
>
>
>
> ----------
>
From LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>
Sent Wednesday, October 25, 2006 5:33 pm
To Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Cc Briana.Welton@noaa.gov ')"> "Michael.Riddle" <Michael.Riddle@noaa.gov> Tod
Schattgen <Tod.Schattgen@noaa.gov> Doug Baird <Doug.Baird@noaa.gov>
Bcc
Subject Re: Elizabeth River Project data submission
All,

I spoke with Mike Brown yesterday regarding the source data for the
soundings in the Elizabeth River. It appears that all the data shown on
the chart is pre 1900 and is not in the geodas data set. Apparently the
smooth sheets for these prior surveys had no geo-referencing on them to
facilitate scanning, so they just never got scanned. Needless to say,
we would have no data, outside of what the COE submits within the
channel if we had to reproduce these charts. It also hints at how bad
the data outside the channel probably is, given all the dredging that
has occurred since those surveys were run. For what its worth, the data
we acquired this summer should definitely get onto the chart, one way or
the other. HSTP will do what it can to assist with this...

Rick

Jeremy McHugh wrote:

> Hi Bri,
> I did not see any other replies to your email except Mike's call for
> the survey outline, so I figured I would offer up some guidance about
> what to do with that survey and its data in case you are still wondering.
>

> Back when I wrote the project instructions, the idea was to treat this
> survey, as much as possible, as a normal hydro survey in terms of data
> submission to AHB. That is why we assigned a registry number
> etc...This would mean the standard submission of a DR, all the 7125
> and C3D data, AWOIS etc. I don't know about v-datum. It seems that AHB
> and HSTP would need to discuss that.
>
> Hope that helps.
>
> For now, please:
> 1. send in the survey outline like Mike said
> 2. request final water-levels from COOPS (cc me on that request and
> let me know when you actually receive them from COOPS)
> 3. send the data directory size report (see section 6.13.3 of project
> instructions)
>
> -Jeremy
>
>
>
> Michael.Riddle wrote:
>
>>Hi Bri,
>>For a start the survey outline could be submitted
>>to
>>survey.outlines@noaa.gov for all of the bathy coverage.
>>Thanks
>>
>>Briana.Welton@noaa.gov wrote:
>>
>>
>>>I'm sorry to have missed the ER Project meeting last week. One of the
>>>things I was hoping to address is the hydro survey part. Last time we
>>>spoke I know it was agreed that HSTP would be taking care of the data
>>>processing, but I can't remember if there was a conclusion regarding
>>>what would happen with submittal to AHB as a hydro survey (DR, approved
>>>water level requests and letters, survey outlines, AWOIS, PSS, etc,
>>>etc). Also, what parts of the project (7125, c3d? with what v-datum,
>>>etc) are actually going to be submitted to the Branch?
>>>
>>>
>>
>>
>>
>
>--
>Jeremy McHugh, Physical Scientist
>NOAA's National Ocean Service, Office of Coast Survey
>301-713-2702 x117
>

--

LCDR Richard Brennan, NOAA
Chief, Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x152
Cell: 617-470-7289

All,

I spoke with Mike Brown yesterday regarding the source data for the soundings in the Elizabeth River. It appears that all the data shown on the chart is pre 1900 and is not in the geodas data set. Apparently the smooth sheets for these prior surveys had no geo-referencing on them to facilitate scanning, so they just never got scanned. Needless to say, we would have no data, outside of what the COE submits within the channel if we had to reproduce these charts. It also hints at how bad the data outside the channel probably is, given all the dredging that has occurred since those surveys were run. For what its worth, the data we acquired this summer should definitely get onto the chart, one way or the other. HSTP will do what it can to assist with this...

Rick

Jeremy McHugh wrote:

Hi Bri,
I did not see any other replies to your email except Mike's call for the survey outline, so I figured I would offer up some guidance about what to do with that survey and its data in case you are still wondering.

Back when I wrote the project instructions, the idea was to treat this survey, as much as possible, as a normal hydro survey in terms of data submission to AHB. That is why we assigned a registry number etc...This would mean the standard submission of a DR, all the 7125 and C3D data, AWOIS etc. I don't know about v-datum. It seems that AHB and HSTP would need to discuss that.

Hope that helps.

For now, please:
1. send in the survey outline like Mike said
2. request final water-levels from COOPS (cc me on that request and let me know when you actually receive them from COOPS)
3. send the data directory size report (see section 6.13.3 of project instructions)

-Jeremy

Michael.Riddle wrote:
Hi Bri,
For a start the survey outline could be submitted
to
survey.outlines@noaa.gov for all of the bathy coverage.
Thanks

Briana.Welton@noaa.gov wrote:

I'm sorry to have missed the ER Project meeting last week. One of the things I was hoping to address is the hydro survey part. Last time we spoke I know it was agreed that HSTP would be taking care of the data processing, but I can't remember if there was a conclusion regarding what would happen with submittal to AHB as a hydro survey (DR, approved water level requests and letters, survey outlines, AWOIS, PSS, etc, etc). Also, what parts of the project (7125, c3d? with what v-datum,

etc) are actually going to be submitted to the Branch?

--
Jeremy McHugh, Physical Scientist
NOAA's National Ocean Service, Office of Coast Survey
301-713-2702 x117

--

LCDR Richard Brennan, NOAA
Chief, Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x152
Cell: 617-470-7289

From <Briana.Welton@noaa.gov>
Sent Sunday, June 4, 2006 8:29 pm
To "Davis ')"> Darren CIV NS Norfolk Port OPS" <darren.davis1@navy.mil>
Cc M_NRFK_CNRMA_PORTOPS_SCHEDULERS <NRFK_CNRMA_PORTOPS_SCHEDULERS@navy.mil>
"Rodriguez ')"> Jose J CDR NS Norfolk Port OPS" <jose.j.rodriguez3@navy.mil>
"Brant James S LT NS Norfolk ')"> Port Operations" <james.s.brant@navy.mil>
"Dowell Norman J QMC NS Norfolk ')"> Port OPS" <norman.dowell@navy.mil>
"Hawkinson ')"> Sandra L CIV NS Norfolk Port OPS" <sandra.hawkinson@navy.mil>
Tod Schattgen <Tod.Schattgen@noaa.gov> jake.yoos@noaa.gov
Bcc
Subject Re: NOAA SURVEY OF HAMPTON ROADS AREA
All,

We have surveyed up to the 8-meter depth contour from Waterside to Cranney
Island Reach. I have attached .jpgs of the areas over which we nearing 100% multibeam coverage. We are planning on cleaning up gaps and doing cross-checks this week, and leaving the area on Thursday, 08 June 2006. Bay Hydrographer will be back later this summer (dates TBD) to survey from Cranney Island Reach to mouth of the Elizabeth River. If there are any Navy pier faces in this area that you would like surveyed, please let me know how I can obtain access. I will contact you again when I know the dates of our return to Norfolk.

V/r,

LT(jg) Briana Welton, NOAA
NOAA S/V Bay Hydrographer
410-916-3831

----- Original Message -----
From: "Davis, Darren CIV NS Norfolk Port OPS" <darren.davis1@navy.mil>
Date: Tuesday, May 23, 2006 12:06 pm
Subject: NOAA SURVEY OF HAMPTON ROADS AREA

> Good morning All,

>
> The Survey Vessel BAY HYDROGRAPHER will be in the area 23 May - 13
Jun
> 06 conducting survey operations. It is our desire to allow them
> accessto the piers and berths as available for detailed
> hydrographic surveys
> of our facilities.
>
> QMCS Hunt - please communicate with LT Welton (410) 916-3831 or
> briana.welton@noaa.gov and provide her a schedule of when our
> facilitiesare available for survey.
>
> Please ensure this access is passed throughout the organization.
>
> V/r
> Darren Davis
> Naval Station Norfolk
> Regional Port Operations
> Scheduling Officer
> 1530 Gilbert Street
> Bldg. W313, 2nd Deck, Room 206
> Norfolk, VA 23511-2722
> (757) 445-0167 office
> (757) 438-3253 cell
> (757) 444-0838 secure voice
> darren.davis1@navy.mil
> davisd@cnrma.navy.smil.mil
>
>

File: Eliabeth River Coverage DN152.JPG

File: Waterside_DN152.JPG

From Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Sent Thursday, August 31, 2006 9:29 am
To Briana.Welton@noaa.gov Robert G Roberson <Robert.G.Roberson@noaa.gov> Tod Schattgen <Tod.Schattgen@noaa.gov> Annemieke Raymond <Annemieke.Raymond@noaa.gov>

Cc Doug Baird <Doug.Baird@noaa.gov> Michael Riddle <Michael.Riddle@noaa.gov> Caleb Gostnell <Caleb.Gostnell@noaa.gov> Jake Yoos <Jake.Yoos@noaa.gov> Jason Woolard <Jason.Woolard@noaa.gov>
Bcc
Subject New Sublocality-- S-E915, Elizabeth River Demo Project

---

Good Morning Bri,
Thanks for the MapInfo table showing your coverage. You are right, everyone seems to be in agreement with cutting off the survey where you MB coverage ends in the north. Good luck with interferometric acquisition! Hopefully all will go smoothly and we will get some usable nearshore data.

I want to take this opportunity to rename the sublocality of this survey to Elizabeth River- Tanner Point to Town Point to better reflect the coverage that you will eventually submit.

Annie and Tod/ROBO, the final registry details should read as follows:

Sheet Letter: A
Hydrographic Survey Registry Number: H11599
Sublocality: Elizabeth River- Tanner Point to Town Point
Scale: 1:10,000
Estimated SNM: 10

This is for S-E915-BH/NRT-7-06, Elizabeth River Demonstration Project, VA
-Jeremy

Briana.Welton@noaa.gov wrote:

I've attached the .tif of the Reson 7125 coverage. It's the same that I sent after BH left Norfolk in June, as we haven't acquired anything else for this project since then. We have 100% Reson 7125 to the 8-m contour from Waterside to Cranney Island Reach. We're hopefully going to get interferometric in the 8-4-m contour areas in the same area. From my standpoint, I believe that is all BH is going to do. Isn't there fairly recent sss from a different survey?

Thanks,

Bri

----- Original Message -----
From: Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Date: Wednesday, August 30, 2006 3:22 am
Subject: Re: E915, Elizabeth River Project

Hi Bri and Rick,
From the outset of the project, the idea was to start near Norfolk and
progress northward to Sewells Point, so we intended for you to stop at
some northern limit. Is that generally what has been done thus far? If
it is not too much trouble, would you please send me a basic coverage
map for all the data that you have as of now?

For that project's scheduled tests listed below (copied from the project
instructions), what data have been acquired? Do we have or will we have
Klein side-scan imagery to compare to the interferometric imagery?

Gerd
was very keen on having that comparison done.

Rick or Bri, what about topo LIDAR, EARRL, and Riegl XYZ data; were any
of those data acquired?

Scheduled Tests:
(1) acquisition and processing of interferometric bathymetry and
imagery.(2) acquisition and processing of Reson 7125 bathymetry
and backscatter.
(3) fusion of bathymetric data from the first two tests with other
gridded, remotely-sensed
datasets such as (a) topographic LIDAR data from the National
Geodetic
Survey (NGS), (b)
EARRL topographic/bathymetric data from a potential joint project
between NGS and the
National Aeronautics and Space Administration (NASA), and (c) XYZ
point
data and digital
photography of near-shore topographic and cultural features
acquired
from a Riegl 3D laser
scanning system.
(4) comparison of traditional discrete tide zoning with both TCARI
and
ellipsoidally-based
surveys corrected using modeled datum transformations from VDATUM.
(5) comparison of Klein side-scan sonar imagery with
interferometric
sonar imagery.

-Jeremy

Briana.Welton@noaa.gov wrote:

Hi Jeremy,

I'm writing to find out if it's okay with Ops to reduce the size

of

E915, aka Elizabeth River Project, to include the area over

which

we've already acquired swmb? I'll be down with Caleb and crew

Sept 11

to complete interferometric acquisition over the same area.

Once

that's acquired, I think everyone involved would like to call

that

done. Let me know or give me a call to discuss further.

Thanks,

Bri

--
Jeremy McHugh, Physical Scientist
NOAA's National Ocean Service, Office of Coast Survey
301-713-2702 x117

From LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>
Sent Wednesday, August 30, 2006 10:28 pm
To Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Cc Briana.Welton@noaa.gov Michael.Riddle@noaa.gov Caleb Gostnell <Caleb.Gostnell@noaa.gov> Doug Baird <Doug.Baird@noaa.gov> Jake Yoos <Jake.Yoos@noaa.gov> Jason Woolard <Jason.Woolard@noaa.gov> Gerd Glang <Gerd.Glang@noaa.gov>
Bcc
Subject Re: E915, Elizabeth River Project
Hi Jeremy,

I'll try to give an update of where we are at. Once the AUV team gets back, I would like to have a progress meeting to discuss what's happened and where we need to go.

1) Problems with the interferometric acceptance test have pushed the acquisition of this data to September.
2) Reson 7125 bathymetry has been acquired. Bri has forwarded a coverage plot under a different cover. There is still bathymetry processing to be done on this data. We also need to run the 7125 backscatter through the Geocoder/AVO process. I think the amount of coverage we have currently is plenty for our purposes, unless there is an operational need to carry it further.
3) Since there is no interferometric and no Riegl Laser Scanner, the data fusion has yet to occur. NGS has acquired Topo lidar. I'm not sure of the status of the EARRL flights over the area. Riegl has stopped returning my calls, and no one is ever in the office who can answer my questions. I am pursuing some other vendors, but none (besides Riegl) have ever put their scanners on a moving vessel.
4) This comparison is currently underway. I have been working with Jack to determine how best to process the POS M/V trajectory data through CARIS. Monica Cisternelli has been doing a comparison between TCARI and Discrete Zones. She has had some interesting and encouraging success.
5) No KLEIN data, no interferometric. Might be good to do this comparison, however I'm not sure how much valuable information we will get out of the Elizabeth River. I think it might be better to do this comparison on the Solomon's Island targets.

Rick

Jeremy McHugh wrote:

> Hi Bri and Rick,
> From the outset of the project, the idea was to start near Norfolk and
> progress northward to Sewells Point, so we intended for you to stop at
> some northern limit. Is that generally what has been done thus far? If
> it is not too much trouble, would you please send me a basic coverage
> map for all the data that you have as of now?
>
> For that project's scheduled tests listed below (copied from the

> project instructions), what data have been acquired? Do we have or
> will we have Klein side-scan imagery to compare to the interferometric
> imagery? Gerd was very keen on having that comparison done.
>
> Rick or Bri, what about topo LIDAR, EARRL, and Riegl XYZ data; were
> any of those data acquired?
>
> Scheduled Tests:
> (1) acquisition and processing of interferometric bathymetry and imagery.
> (2) acquisition and processing of Reson 7125 bathymetry and backscatter.
> (3) fusion of bathymetric data from the first two tests with other
> gridded, remotely-sensed
> datasets such as (a) topographic LIDAR data from the National Geodetic
> Survey (NGS), (b)
> EARRL topographic/bathymetric data from a potential joint project
> between NGS and the
> National Aeronautics and Space Administration (NASA), and (c) XYZ
> point data and digital
> photography of near-shore topographic and cultural features acquired
> from a Riegl 3D laser
> scanning system.
> (4) comparison of traditional discrete tide zoning with both TCARI and
> ellipsoidally-based
> surveys corrected using modeled datum transformations from VDATUM.
> (5) comparison of Klein side-scan sonar imagery with interferometric
> sonar imagery.
>
> -Jeremy
>
>
> Briana.Welton@noaa.gov wrote:
>
>> Hi Jeremy,
>>
>> I'm writing to find out if it's okay with Ops to reduce the size of
>> E915, aka Elizabeth River Project, to include the area over which
>> we've already acquired swmb? I'll be down with Caleb and crew Sept
>> 11 to complete interferometric acquisition over the same area. Once
>> that's acquired, I think everyone involved would like to call that
>> done. Let me know or give me a call to discuss further.
>> Thanks,
>>
>> Bri
>>
>
>

--

LCDR Richard Brennan, NOAA
Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x151
Cell: 617-470-7289

Hi Jeremy,

I'll try to give an update of where we are at. Once the AUV team gets back, I would like to have a progress meeting to discuss what's happened and where we need to go.

1) Problems with the interferometric acceptance test have pushed the acquisition of this data to September.
2) Reson 7125 bathymetry has been acquired. Bri has forwarded a coverage plot under a different cover. There is still bathymetry processing to be done on this data. We also need to run the 7125 backscatter through the Geocoder/AVO process. I think the amount of coverage we have currently is plenty for our purposes, unless there is an operational need to carry it further.
3) Since there is no interferometric and no Riegl Laser Scanner, the data fusion has yet to occur. NGS has acquired Topo lidar. I'm not sure of the status of the EARRL flights over the area. Riegl has stopped returning my calls, and no one is ever in the office who can answer my questions. I am pursuing some other vendors, but none (besides Riegl) have ever put their scanners on a moving vessel.
4) This comparison is currently underway. I have been working with Jack to determine how best to process the POS M/V trajectory data through CARIS. Monica Cisternelli has been doing a comparison between TCARI and Discrete Zones. She has had some interesting and encouraging success.
5) No KLEIN data, no interferometric. Might be good to do this comparison, however I'm not sure how much valuable information we will get out of the Elizabeth River. I think it might be better to do this comparison on the Solomon's Island targets.

Rick

Jeremy McHugh wrote:

Hi Bri and Rick,
From the outset of the project, the idea was to start near Norfolk and progress northward to Sewells Point, so we intended for you to stop at some northern limit. Is that generally what has been done thus far? If it is not too much trouble, would you please send me a basic coverage map for all the data that you have as of now?

For that project's scheduled tests listed below (copied from the project instructions), what data have been acquired? Do we have or will we have Klein side-scan imagery to compare to the interferometric imagery? Gerd was very keen on having that comparison done.

Rick or Bri, what about topo LIDAR, EARRL, and Riegl XYZ data; were any of those data acquired?

Scheduled Tests:
(1) acquisition and processing of interferometric bathymetry and imagery.
(2) acquisition and processing of Reson 7125 bathymetry and backscatter.
(3) fusion of bathymetric data from the first two tests with other gridded, remotely-sensed
datasets such as (a) topographic LIDAR data from the National Geodetic Survey (NGS), (b)
EARRL topographic/bathymetric data from a potential joint project between NGS and the
National Aeronautics and Space Administration (NASA), and (c) XYZ point data and digital
photography of near-shore topographic and cultural features acquired from a Riegl 3D laser
scanning system.
(4) comparison of traditional discrete tide zoning with both TCARI and ellipsoidally-based
surveys corrected using modeled datum transformations from VDATUM.

(5) comparison of Klein side-scan sonar imagery with interferometric sonar imagery.

-Jeremy

Briana.Welton@noaa.gov wrote:

Hi Jeremy,

I'm writing to find out if it's okay with Ops to reduce the size of E915, aka Elizabeth River Project, to include the area over which we've already acquired swmb? I'll be down with Caleb and crew Sept 11 to complete interferometric acquisition over the same area. Once that's acquired, I think everyone involved would like to call that done. Let me know or give me a call to discuss further.
Thanks,

Bri

--

LCDR Richard Brennan, NOAA
Hydrographic Systems and Technology Program
1315 East-West Highway,SSMC3
N/CS11, Station 7853
Silver Spring, MD, 20910
Work: 301-713-2653 x151
Cell: 617-470-7289

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey H11599 (2006)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

HSTP PYDRO version 7.3 r2252
CARIS HIPS/SIPS version 6.1 SP1 HF 1-6
CARIS Bathy Database Manager version 2.1 HF 1-4
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3

B.2. QUALITY CONTROL

B.2.1. H-Cell

The AHB source depth grid for the survey's nautical chart update product entailed creating a combined 1m grid from the three 1m and three 50cm field submitted grids. The survey scale selected soundings were extracted from the 1m combined surface. The selected sounding set is approximately 10 to 20 times the number of charted depths. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Pre-Compile Process Log attached prior to this document. The SAHOB files included sounding selections (SOUNDG), features (SBDARE), Meta objects (M_COVR, M_QUAL), and cartographic Blue Notes. The individual SAHOB files were inserted into one BASE Manager feature layer and exported to S57 format in order to create the H-Cell deliverable.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CU.000) with all values measured in feet following NOAA sounding rounding rules.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The H11599 CARIS H-Cell final deliverables include the following products:

US511599_CU.000	**1:20,000 Scale**	**H11599 H-Cell with Chart Scale Selected Soundings**
US511599_SS.000	**1:10,000 Scale**	**H11599 Selected Soundings (Survey Scale)**
US511599_BlueNotes.000	**1:20,000 Scale**	**H11599 Cartographic Notes**

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

12253 (45th Edition, 10/07)
Corrected through NM 10/20/2007
Corrected through LNM 10/16/2007
1:20,000

ENC Comparison

US5VA15M
Hampton Roads Virginia
Edition 16
Update Application Date 2008-01-14
Issue Date 2008-03-13
References: Chart 12245

US5VA17M
Norfolk Harbor and Elizabeth River
Edition 14
Update Application Date 2008-01-16
Issue Date 2008-01-16
References: Chart 12253

D.1.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section "D" and Appendix I & II of the Descriptive Report. The following exceptions are noted:

1. Three Dangers to Navigation were submitted by the Branch to the Marine Chart Division, N/CS3.1, Silver Spring, Maryland. Refer to the Descriptive Report Appendix I for more information on these items.

2. Three charted piles in the vicinity of 36° 52' 50.3"N, 076° 19' 40.8"W were disproved by 100% MBES coverage, but were not mentioned by the field unit. Recommend deleting piles from ENC US5VA17M. Refer also to the US511599_BlueNotes.000 file. A charting discrepancy exists between chart 12253 and ENC US5VA17M. The piles are located in the ENC US5VA17M, and not portrayed on raster chart 12253. Google map image portrays the MORFAC (dolphin) but does not portray the piles. See Image 1.

Image 1: Google satellite imagery centered at 36°51’48.6”N, 076°18’44.3”W

3. A pile is currently charted within ENC US5VA17M and on Chart 12253 in Latitude 36°52’07.08”N, Longitude 087°19’53.74”W. The feature was not addressed by the field unit during data processing nor the documentation. During office review, the feature is visible within the bathy data set at the charted location. Recommend the charted pile to be retained as charted.

4. A dolphin (MORFAC) is located within the ENC US5VA17M in Longitude 36°52’06.75”N, Longitude 076°19’53.5”W. The feature was not addressed by the field unit during data processing nor the documentation During office review, the feature is visible within the bathy data set at the charted location. Recommend the charted dolphin to be retained as charted.

D.3. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

D.4. ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

AHB PRE-COMPILATION PROCESS

REGISTRY No.	H11599
PROJECT No.	S-E915-BH-NRT7-06
FIELD UNIT	S/V BAY HYDROGRAPHER(s5501) AND NRT 7 (S3004)
PRE-COMPILER	Bridget Williams
LARGEST SCALE CHART	12253, edition 45, 20071001 12245, edition 66, 20071001
CHART SCALE	1:20000 1:20000
SURVEY SCALE	1:10000
DATE OF SURVEY	May 23-June 7, 2006 for Reson 7125
CONTENT REVIEW DATE	03/14/08 1pm-2pm

Components	File Names
Product Surface Creation	PS_H11599_10k_100mrad_5mres.hns
Shifted Surface	PS_H11599_10k_200mrad_10mres_Shifted.hns
Contour Layer	PS_H11599_10k_200mrad_10mres_Contours.hob
Survey Scale Soundings	H11599_SS_Soundings.hob
Chart Scale Soundings	H11599_CU_Soundings.hob
Feature Layer	H11599_Features.hob
Meta-Objects Layer	H11599_MetaObjects.hob
Blue Notes	H11599_BlueNotes.hob

SPECIFICATIONS:

I. COMBINED SURFACE: No combined surface created

II. PRODUCT SURFACE (SOUNDINGS):
   a. Scale: 1:10000
   b. Radius: 100m
   c. Resolution: 5m

   d. Depth
      i. Minimum: 3.899m
      ii. Maximum: 25.974m

   PRODUCT SURFACE (CONTOURS):
   a. Scale: 1: 10000
   b. Radius: 200m
   c. Resolution: 10m

III. SHIFTED SURFACE:
   a. Single Shift Value: -.229 *-0.229m (feet) / -1.372m (fathoms)*

IV. CONTOUR LAYER:
   a. Use a Depth List: H11599_NOAA_depth_curves_list.txt
   b. Output Options:
      i. Create contour lines:
         1. Line Object: DEPCNT
         2. Value Attribute: VALDCO

V. SOUNDING SELECTION:

a. Selection Criteria:

i. Radius

ii. Shoal biased

iii. Use Single-Defined Radius: 12.3 distance on ground (m)

iv. Filter: Generalized !=1

VI. FEATURES:

a. Brought in from Survey

Total No. 4

b. Brought in from ENC

ENC: US5VA15M

Total No. 3

ENC: US5VA17M

Total No. 8

VII. META-OBJECTS:

a. M_COVR attributes

Acronym	Value
INFORM	H11599
SORDAT	20060607
CATCOV	1, coverage available
SORIND	US,US,survy,H11599

b. M_QUAL attributes

Acronym	Value
CATZOC	A2
INFORM	H11599, S-E915-BH-NRT7-06, NOAA S/V Bay Hydrographer (s5501) and NRT 7 (s3004)
POSACC	10
SORDAT	20060607
SORIND	US,US,survy,H11599
SUREND	20060607
SURSTA	20060523

VIII. NOTES:

LIDAR was imported as a Dense, source data type, at a grid resolution of 5m though the method of shoalest depth true position. File names: Norfolk_bathy_meters_neg_soundings_navd88_edited.hns, Topo_navd88_meters_edit.hns

LIDAR of both bathymetry and topography was viewed; the topography was used in conjunction to survey H11599, for shoreline verification (Figure 1).

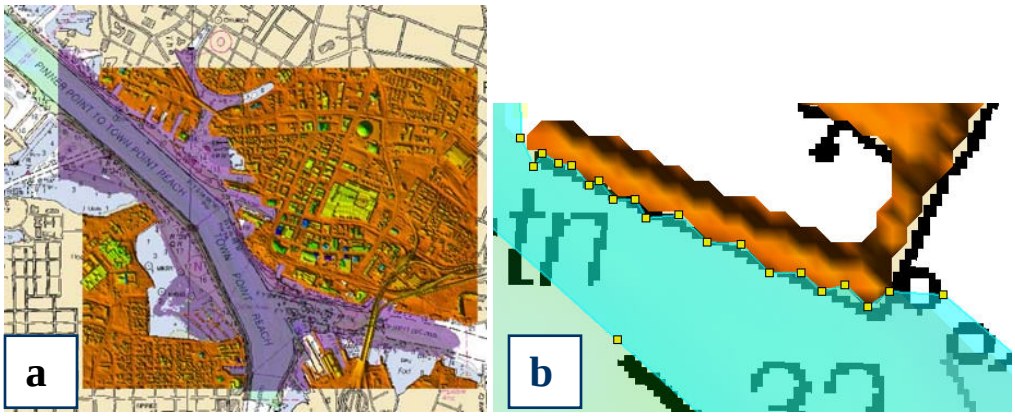


Figure 1. LIDAR data, Norfolk VA, bathymetry and topology (a). Shoreline verification, as seen with the M_COVR to the LIDAR data (b).

At Lambert's Point, Pier 6, there is a 32 sounding in the SS layer where the text "32 ft rep 1998" points to. The 32 ft sounding is now in the CU layer (Figure 2).

Figure 2. Blue note at Pier 6 of Lambert's Point.

A section of H11599 will be superseded by the survey F00540 (Figure 3).

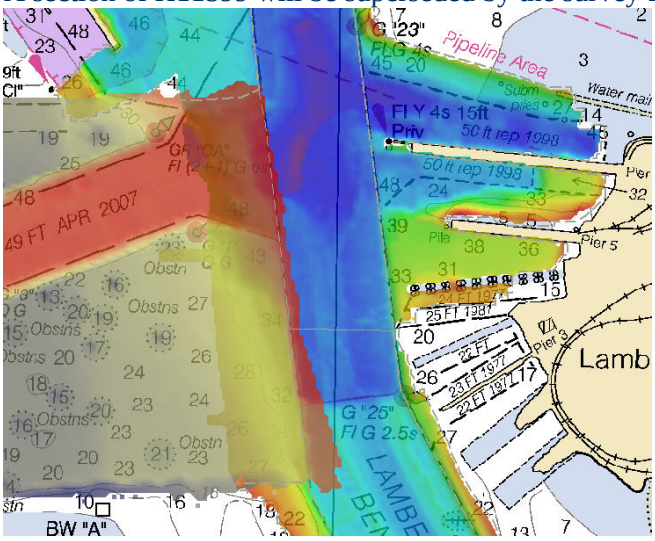


Figure 3. F00540 which will supersede H11599 in common areas.

APPROVAL SHEET
H11599

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Bridget E. Williams
2008.03.28
14:10:59 -04'00'

Bridget Williams
Hydrographic Intern
Atlantic Hydrographic Branch

Sarah M Eggleston
Sarah M Eggleston
2008.03.28
13:59:05 -04'00'

Sarah M. Eggleston
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: Shepard M. Smith
Shepard Smith
I am approving this document
2008.03.31 16:42:23 -04'00'

Shepard Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Paul Turner
AWOIS and SURF
check
2008.04.18 11:50:01
-04'00'