F00573

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: Field Examination

Registry Number: F00573

LOCALITY

State: New York

General Locality: New York Harbor and Approaches

Sub-locality: Southern Manhattan Field Examinations

2009

CHIEF OF PARTY
CDR Shepard M. Smith
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

F00573

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

State:	**New York**
General Locality:	**New York Harbor and Approaches**
Sub-Locality:	**Southern Manhattan Field Examinations**
Scale:	**1:5,000** Date of Survey: **09/15/09 to 10/15/09**
Instructions Dated:	**22 July 2009** Project Number: **OPR-B310-TJ-09**
Vessel:	**NOAA Ship *Thomas Jefferson***
Chief of Party:	**CDR Shepard M. Smith, NOAA**
Surveyed by:	***Thomas Jefferson* Personnel**
Soundings by:	**Reson 7125 multibeam echo sounder.**
Graphic record scaled by:	**N/A**
Graphic record checked by:	**N/A**
Protracted by:	**N/A** Automated Plot: **N/A**
Verification by:	***Atlantic Hydrographic Branch Personnel***
Soundings in:	~~**Meters**~~ ***Feet*** **at MLLW**

Remarks: ***Bold, Italic, Red notes in the Descriptive Report were made during office processing.***
1) All Times are in UTC.
2) This is a Field Examination Hydrographic Survey.
3) Projection is NAD83, UTM Zone 18.

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Descriptive Report to Accompany Hydrographic Survey F00573

Project OPR-B310-TJ-09
New York Harbor and Approaches, NY
Southern Manhattan Field Examinations
Scale 1:5,000
September 15th and October 15th, 2009
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B310-TJ-09*, dated 22 July, 2009 and addendum dated 8 September, 2009. ***Filed with original field records.***

North Western Limit	South Western Limit	South Eastern Limit	North Eastern Limit
40°46'03.11" N 074°00'07.22" W	40°44'47.44" N 074°00'42.31" W	40°44'04.74" N 073°58'17.26" W	40°44'44.71" N 073°58'08.06" W

Data acquisition was conducted from September 15th and October 15th, 2009.

The purpose of the project is to provide accurate depths and object detection in the approaches to New York Harbor and support safe and efficient marine transportation in the region. This project will cover approximately 54 nm2 of critical survey area as designated in NOAA Hydrographic Survey Priorities, 2008 edition. The Southern Manhattan Field Examinations portion of the project is a modified survey area as per CHANGE No. 1 to Hydrographic Survey Project Instructions, which covers 5 separate survey areas on the Eastern and Western shoreline of Manhattan. Due to the distance between each survey, these areas are lettered sequentially from A to D, with D comprising two separate survey boundaries. See Figure 1, F00573 Survey Area.

	Linear Nautical Miles
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	10.11
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Lineal nautical miles of any combination of the above techniques (specify methods)	10.11
LNM Crosslines singlebeam and multibeam combined	0.00
LNM development lines non mainscheme	0
LNM shoreline/nearshore investigations	0
Number of Bottom Samples	0
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0
Total number of square nautical miles	0.05683

Table 1: Hydrographic Survey Statistics

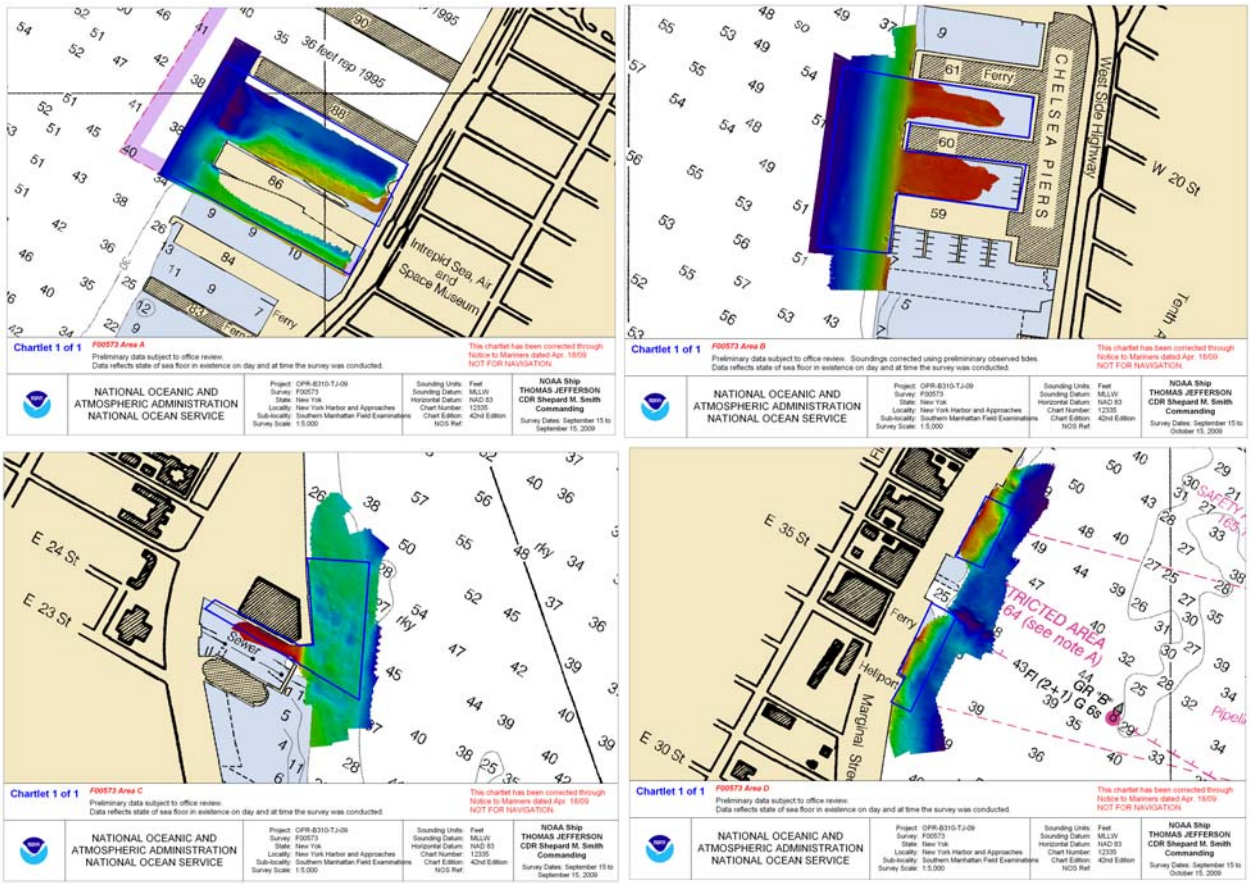


Fig. 1. F00573 Survey Areas.

Calendar Date	Julian Day
September 15	258
October 15	288

Table 2: MB Acquisition Dates

B. DATA ACQUISTION AND PROCESSING *See also Evaluation Report*

Refer to ***OPR-B310-TJ-09 Data Acquisition and Processing Report (DAPR)**** for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are included in this descriptive report. Data were acquired in all 4 survey areas on DN 258, and additional data were acquired in area B on DN 288 to support safe docking of the *Thomas Jefferson* at pier 59. ***Included as part of AHB H-Cell deliverables***

B 1. EQUIPMENT AND VESSELS

NOAA Launch 3102 acquired Reson 7125 multibeam echo sounder soundings and sound velocity profiles. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson's* DAPR and Hydrographic Systems Readiness Report (HSRR*) for a complete description of system integration and initial calibration results for equipment and sensors used for this survey. ***filed at Atlantic Hydrographic Branch.***

B.2.2 Sounding Coverage

As all areas of the survey are critical to navigation, this survey was conducted using object detection coverage multibeam. Bathymetry coverage was monitored by creating a BASE surface with 50 cm resolution, as per HTD 2009-2 for Object Detection Coverage in depth ranges 0-20 meters. Data density in the 50 cm grids met or exceeded the 5 soundings per node criteria in at least 95% of all survey areas. Data from Areas A and B were edited to within approximately 10 meters of their respective survey limits, after examination for significant features. Data acquisition within areas A, B and C were incomplete where the vessel was limited by shoal depths or where vessels occupied the adjacent pier space.

As per guidance from AHB, data along pier faces were edited to a distance extending 1 meter beyond the observed supporting piles, except in the case of Pier 88 in area A which has a customary fendering which extends 1.5 meters from the pier face. ***Concur. See survey correspondence.***

B 2.3 Crosslines

Crosslines were not collected during the course of the survey since the time within each survey area was less than 1 hour. As per email dated 10 Sept 2009 from AHB, quality control was performed using the standard deviation layer of the survey's CUBE surface. Areas of unusually high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or as described in Section 2.5 Systematic Errors.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with F00573:

Registry #	Scale	Date	Field Party	Junction side
H11395	1:10,000	2000	Thomas Jefferson	all
H11353	1:10,000	2000	Thomas Jefferson	all

Survey F00573, Area B junctions with survey H11395. Soundings between F00573 and H11395 agree within 2 feet.

Survey F00573 junctions with survey H11353 to the West. Soundings between F00573 and H12033 agree within 2 feet.

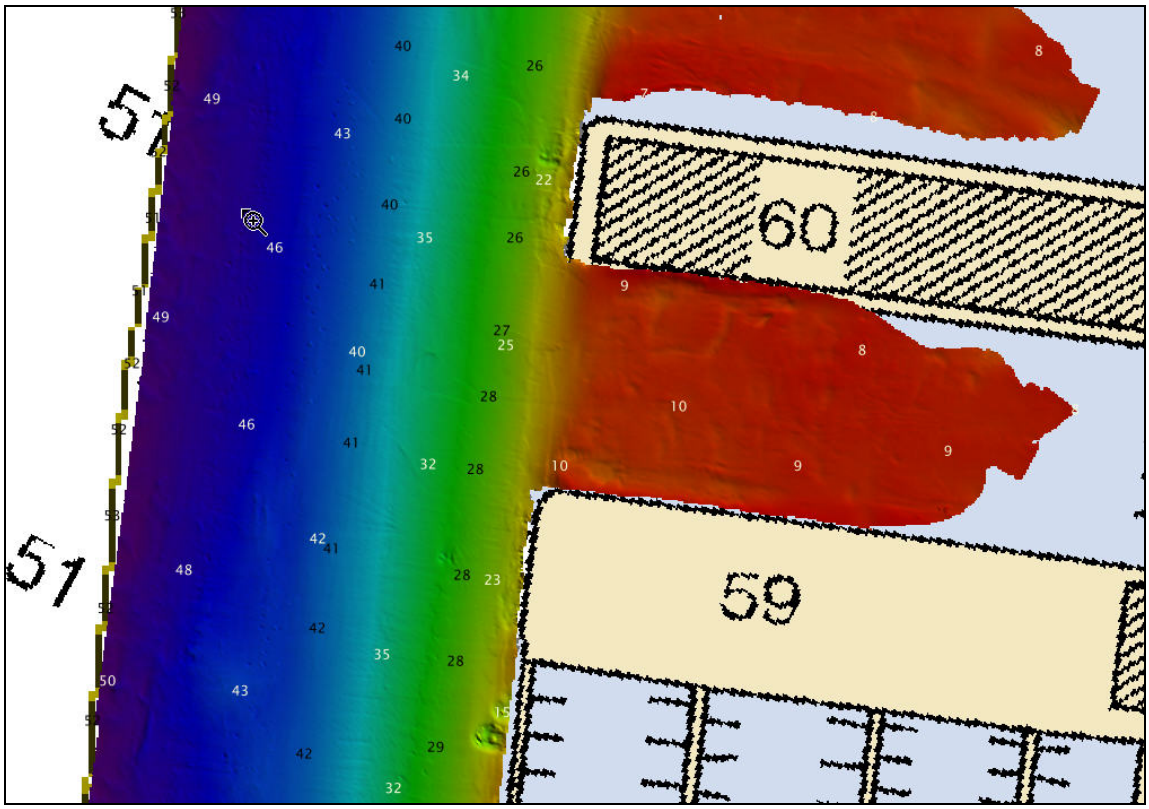


Fig 2. F00573 Junction Survey West. Previous in black, current white.

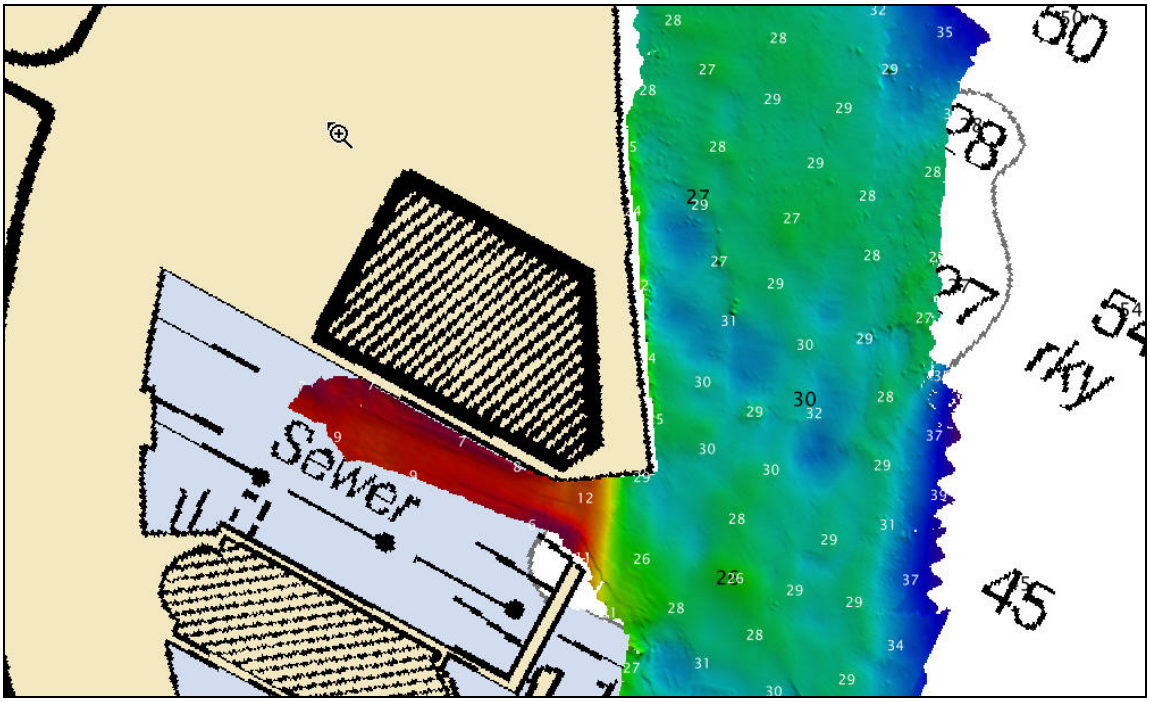


Fig 3. F00573 Junction Surveys. Previous in black, current white.

B 2.5 Systematic Errors

Some areas of the survey show high standard deviations (0.4 m) where horizontal positioning was questionable, likely due to a high multipath environment in the vicinity of steel vessels and large overhanging buildings. In most instances the horizontal offset does not exceed 2 meters, and in these areas the depth values remain consistent despite the offset. Figure 4 shows an example of an area with high horizontal offset and figure 5 its corresponding standard deviation residual values.

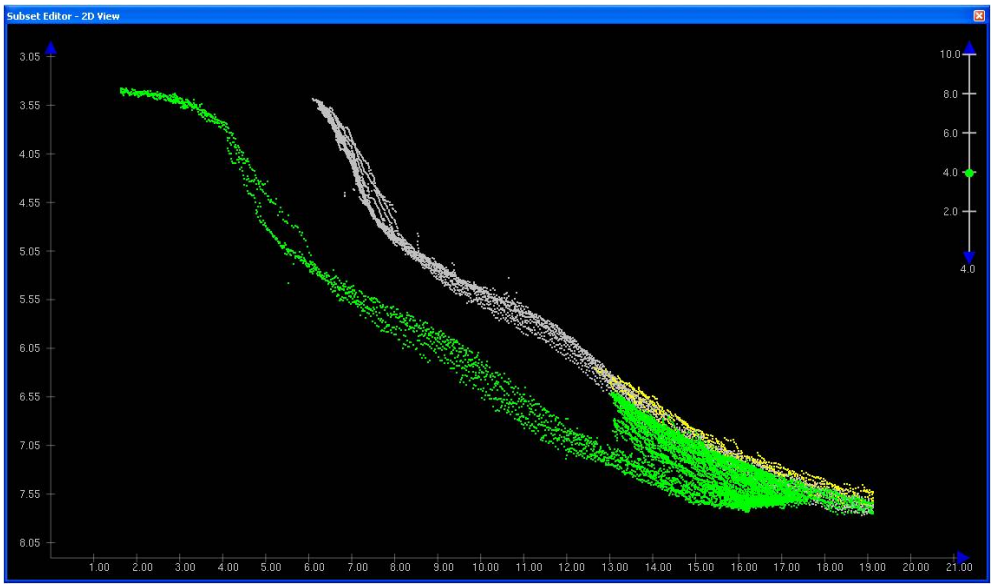


Fig 4. Horizontal offset 2D Subset

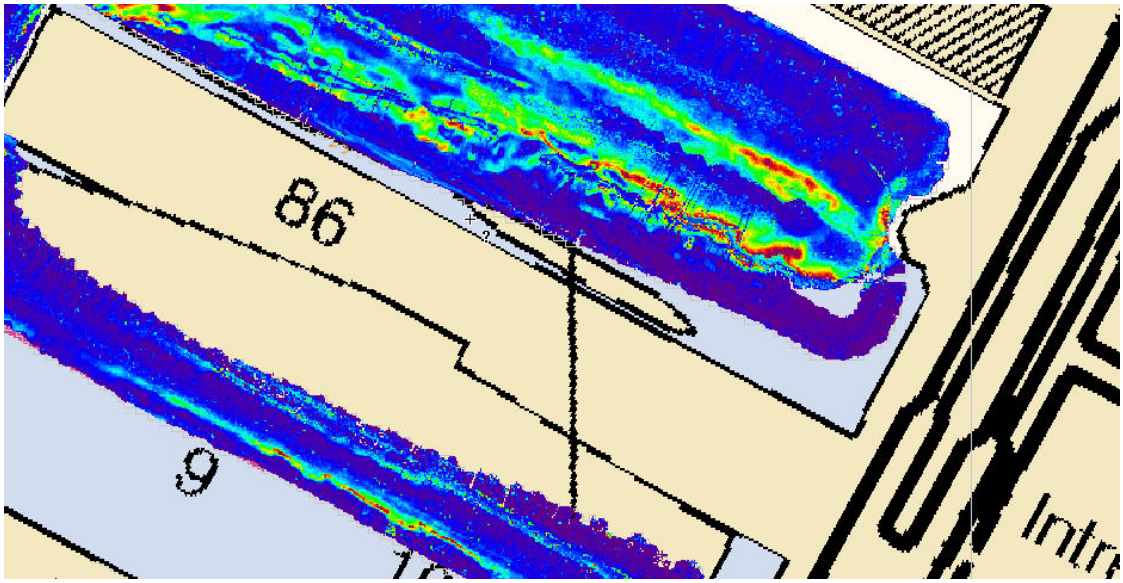


Fig 5. Horizontal offset, Std Dev Layer. Red > .4m

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified water levels from Sandy Hook, NJ (853-1680) and The Battery, NY (851-8750), using final zoning as provided by CO-OPS and illustrated in Figure 6. ***Concur.***

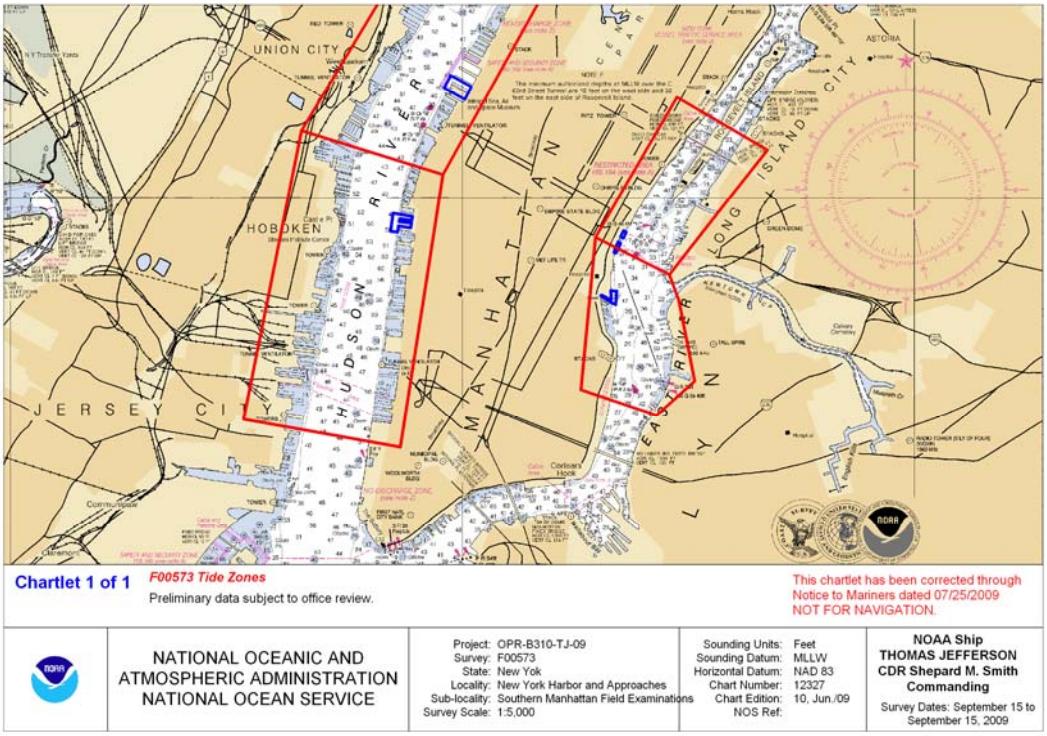


Fig 6. Final Tide Zoning

All other datum reduction procedures conform to those outlined in the DAPR**.**

All methods and instruments used for sound velocity correction were as described in the DAPR. A table detailing all sound velocity casts is located in Separate II of this Descriptive Report.

Sound velocity corrections for this survey were applied using only data from the SeaBird 19+ CTD. Application in CARIS HIPS was nearest in time.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2009 field season, Total Propagated Error (TPE) parameters for sound speed and tides are calculated separately for each project. The project-specific parameters for OPR-B310-TJ-09, Survey F00573 are as follows:

Project	Vessel	Total Tide error for measured and zoning	Sound Velocity Values		
			CTD	MVP	Surface
F00573	3102	0.09	4	n/a	0.2

Table 3: TPE Parameters

These values were calculated for all MBES data immediately following CARIS Merge.

B 4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces submitted as part of Survey F00573:

Name of Surface	***Resolution***	***Type***	***Purpose***
F00573_Area_A_Cube_NOAA_50cm_Final	0.5 meter	CUBE	Sounding Coverage
F00573_Area_B_Cube_NOAA_50cm_Final	0.5 meter	CUBE	Sounding Coverage
F00573_Area_C_Cube_NOAA_50cm_Final	0.5 meter	CUBE	Sounding Coverage
F00573_Area_D_Cube_NOAA_50cm_Final	0.5 meter	CUBE	Sounding Coverage

Table 4: BASE Surfaces

This survey was processed using HIPS/SIPS 7.0, which uses the csar format for all grids. All surfaces were computed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA_50cm for the 50cm meter coverage surfaces. Refer to the 2009 Data Acquisition and Processing Report, 2009 Field Procedures Manual, and CARIS HIPS and SIPS User Guide for further discussion.

B 4.3 Data cleaning

The survey data was cleaned using the swath and subset editor tools in CARIS. All areas of the BASE surface that indicated a high standard deviation were examined and cleaned as required such that no residual errors exist in the surface that exceed the IHO order 1 depth accuracy requirements.

C. VERTICAL AND HORIZONTAL CONTROL

As per FPM section 5.2.3.2.3 a HVCR report was not filed as no horizontal and vertical control stations were established by the field party for this survey. A summary of horizontal and vertical control for this survey follows.

C 1.1 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 18. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from the U.S. Coast Guard beacon at Sandy Hook, NJ (kHz 286) were used during this survey.

No horizontal control stations were established by the field party for this survey.

C 1.2 Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Sandy Hook, NJ (853-1680) and The Battery, NY (851-8750) serve as datum control for F00573. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 16 September 2009 in accordance with the FPM and project letter instructions. Verified tides with final TCARI constituents and residuals were applied to all sounding data on October 21, 2009.

D. RESULTS AND RECOMMENDATIONS *See also Evaluation Report*

D.1 Chart Comparison

D 1.1 Chart 13214 Comparison

Sounding data were compared to chart 12335, 43rd Edition, dated 1 April 2009 and corrected to USCG LNM through 30 June 2009, and NTM: 23 December 2006. Chart 12335 was compiled from recent Thomas Jefferson surveys (H11395 and H11353) and no significant changes were noted in the common areas. ***Concur.***

D 1.2 ENC US5NY1DM Comparison

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 0.3 meter or less. ***Concur.***

D.2 Additional Results

D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

AWOIS Record # 13239 is located within the limits of F00573 and is described in Appendix II of this report.

D.2.4 Shoreline

Changes to shoreline are evident in Areas A and D of the survey. Area A shows a widening of Pier 88 as seen in orthographic imagery file 42383393b.tif and as shown in Figure 7. Note this file must be opened using U.S. State Plane 1983/ New Jersey (2900) coordinates in imperial feet. Area D shows new pier construction as in seen in orthographic imagery file ny1003_wv_002_02_georef_s1.tif and Figure 8. ***See also Survey Correspondence for information about shoreline updates that have been and are being applied to the chart. See also Evaluation Report.***

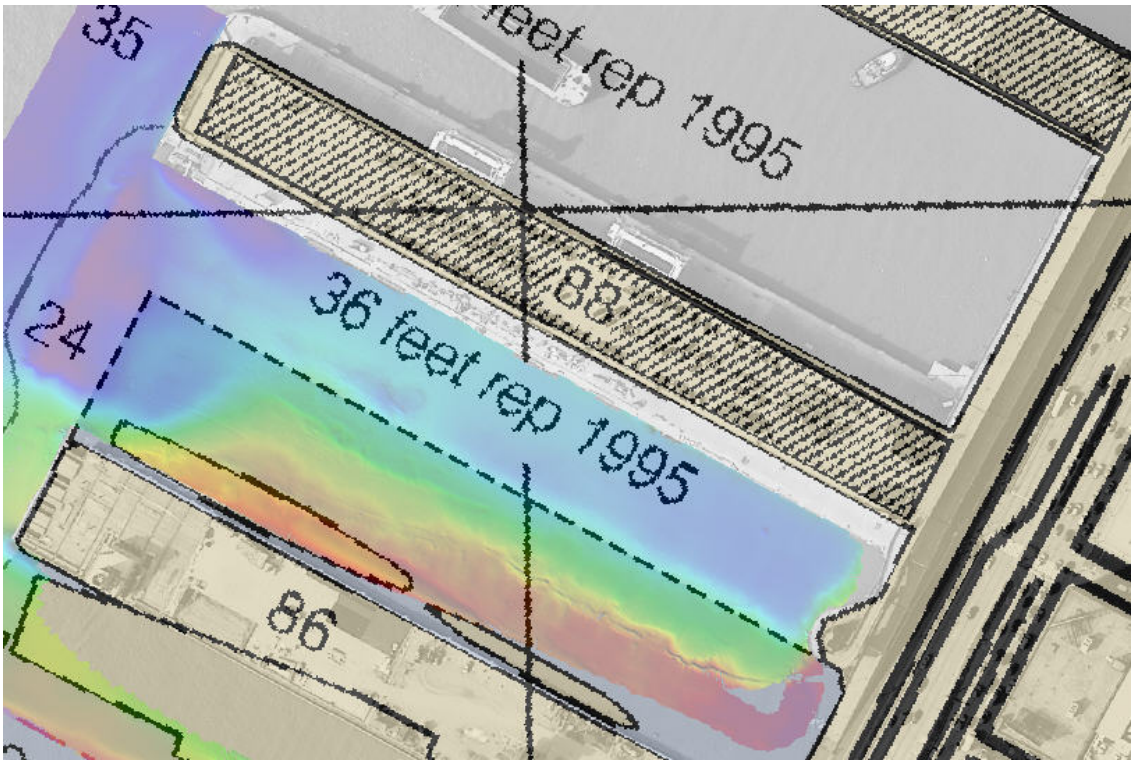


Fig 7. Area A extended pier 88.

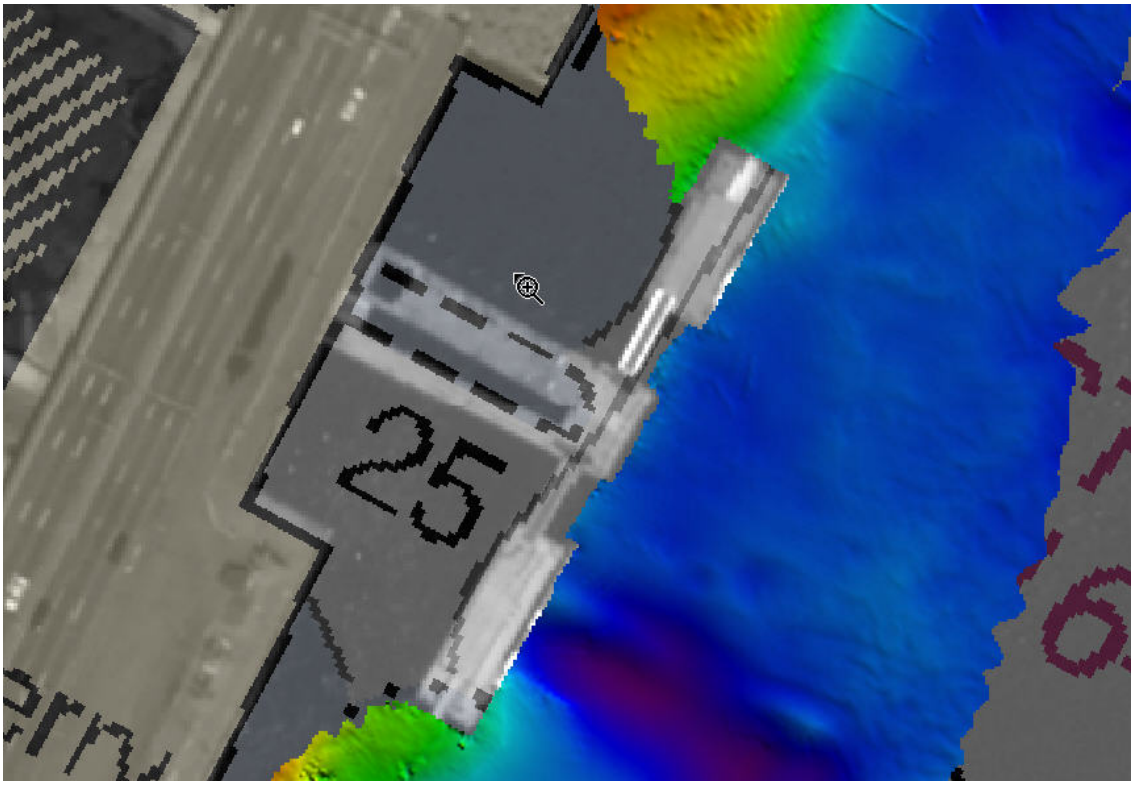


Fig 8. Area D new pier

D.2.5 Charted Features

One charted feature exists within the sheet limits of survey F00573. See AWOIS Items above.

D.2.6 Charted Pipelines and Cables

No charted Pipelines and Cables exist within the specified survey areas. ***Concur.***

D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no ferry routes, bridges, or overhead cable crossings within the limits of the survey. ***Concur.***

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found or reported to the NOAA's Office of Coast Survey. ***Concur.***

D 3.2 Shoals

Shoals are adequately depicted as currently charted. ***Concur.***

D.4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the limits of F00573. ***Concur.***

D.5 Coast Pilot Information

The Hydrographer has no recommendations for changes or addenda to the Coast Pilot.

D.6 Miscellaneous

Bottom Samples

Bottom samples were not collected in the survey areas.

Environmental Conditions and Notes

No unusual environmental conditions were observed in any of the survey areas.

D.8 Adequacy of Survey

This survey is considered complete and adequate to supersede charted depths within the common area as per requirements specified in the Project Letter Instructions. ***Concur.***

Summary and Recommendations for Additional Work

No additional work is needed to complete this survey. No changes significant to navigation have been noted and it is recommended that this survey receive normal processing priority.

E. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division's *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

The Data Acquisition and Processing Report for OPR-B310-TJ-09 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

_____ _____

LT Jasper D. Schaer, NOAA
Field Operations Officer

CDR Shepard M. Smith, NOAA
Commanding Officer

In addition, the following individual was responsible for overseeing data acquisition and processing of this survey:

Survey Manager: _____

Daniel B. Wright, NOAA
Chief Hydrographic Survey Technician

Appendix I

Dangers to Navigation

No Dangers to navigation were reported for survey F00573.

Appendix II

Survey Features Report

F00573 Survey Feature Report

Registry Number: F00573

State: New York

Locality: New York Harbor and Approaches

Sub-locality: Southern Manhattan Field Examinations

Project Number: OPR-B310-TJ-09

Survey Date: 09/15/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12335	43rd	04/01/2009	1:10,000 (12335_1)	USCG LNM: 06/30/2009 (07/14/2009) NGA NTM: 12/23/2006 (07/25/2009)
12327	101st	04/01/2008	1:40,000 (12327_1)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	USCG LNM: 06/23/2009 (07/14/2009) NGA NTM: 05/10/1997 (07/25/2009)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?
14500	27th	10/01/2002	1:1,500,000 (14500_1)	[L]NTM: ?

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS 13239 - delete	Shoal	7.39 m	40° 44' 36.5" N	073° 58' 15.4" W	---

1 - DR_Charted

1.1) AWOIS 13239 - delete

Survey Summary

Survey Position: 40° 44' 36.5" N, 073° 58' 15.4" W

Least Depth: 7.39 m (= 24.25 ft = 4.042 fm = 4 fm 0.25 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.999 m ; **TVU (TPEv)** ±0.334 m

Timestamp: 2009-258.16:20:06.413 (09/15/2009)

Survey Line: f00573 / tj_3102_reson7125_mb / 2009-258 / 000_1618

Profile/Beam: 869/69

Charts Affected: 12335_1, 12327_1, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1, 14500_1

Remarks:

Obstruction in multiple MB lines.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00573/tj_3102_reson7125_mb/2009-258/000_1618	869/69	0.00	000.0	Primary
ChartGPs - Digitized	1	9.14	036.2	Secondary (grouped)

Hydrographer Recommendations

Revise obstruction.

Cartographically-Rounded Depth (Affected Charts):

24ft (12335_1, 12327_1, 12363_1)

4fm (12300_1, 13006_1, 13003_1, 14500_1)

7.4m (5161_1)

S-57 Data

[None]

Office Notes

Do not concur, no Obstn is present, it appears it was removed when the new pier was constructed. Delete the charted 29 Obstn.

Feature Images

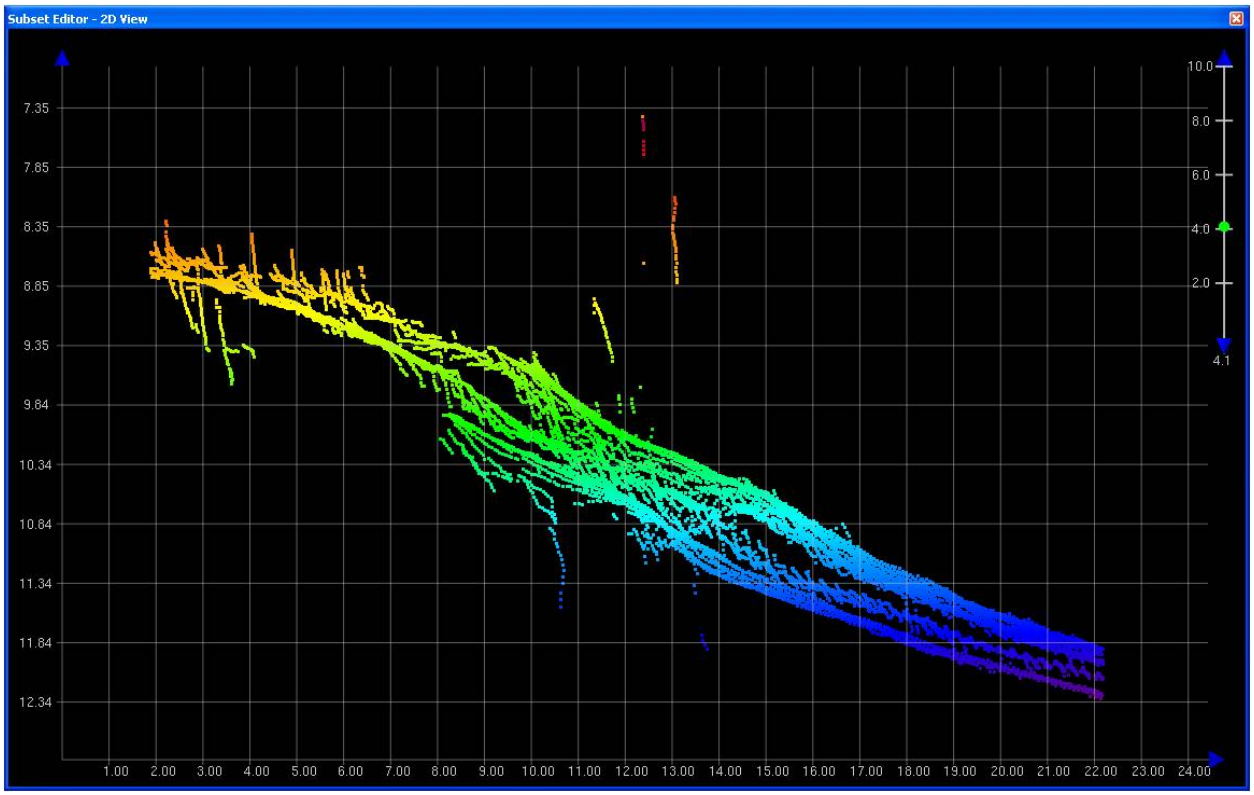
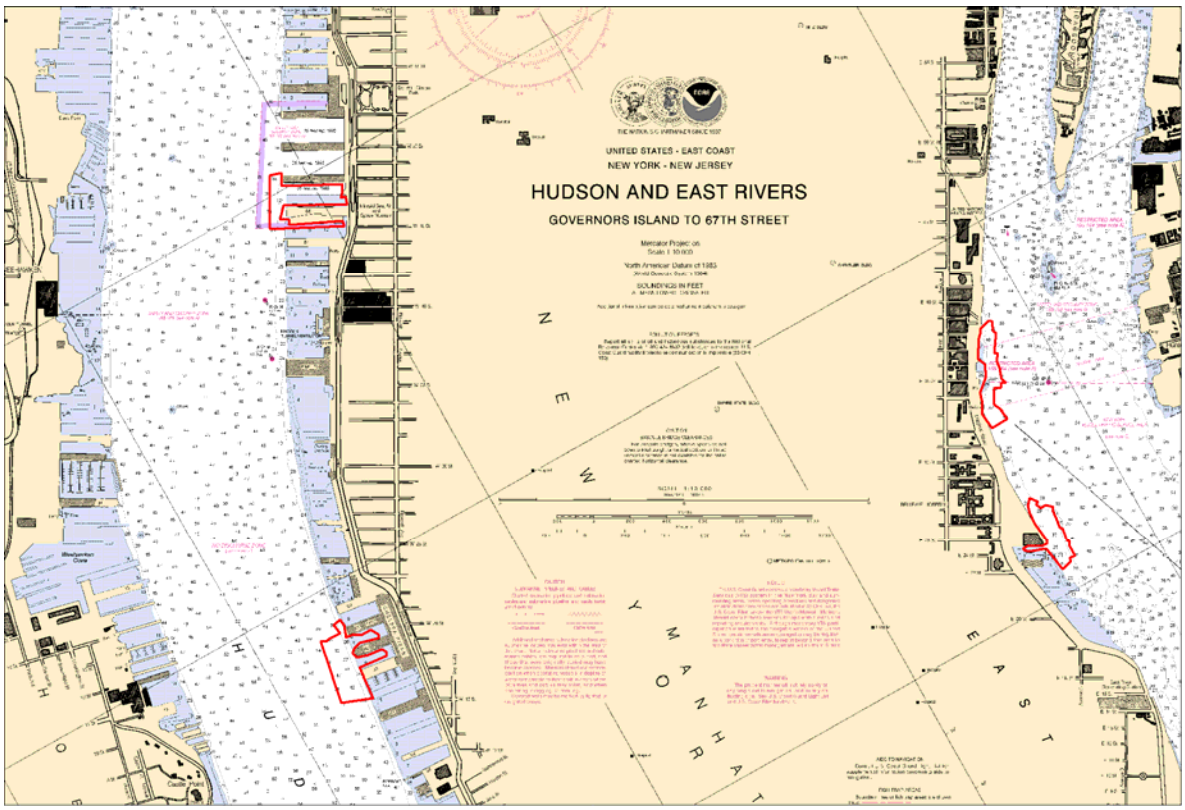


Figure 1.1.1

Appendix III

Progress Sketch



Thomas Jefferson

Survey Progress Estimate

FY2009 Field Season

OPS	FIELD							
Project Number and Name	Sheet Identifier	Registry Number	HQ Estimated SNM	Sheet Start Date	Sheet End Date	Smooth Tides Request Date	Smooth Tides Received Date	Cumulative % Complete at the end of September
OPR-B310, Appr. to New York Hbr	1	H12036	16	9/12/09				50%
	2	H11710	25					
	3	H12138	13	9/16/09				30%
	4	F00573	0.2	9/15/09	9/15/09	9/16/09	10/9/09	100%

Appendix IV

Tides and Water Levels

1. **Tide Notes**
2. **Request for Approved Tides**
3. **Final Tide Notes**

WATER LEVEL INSTRUCTIONS
OPR-B310-TJ-2009 New York Harbor and Approaches, NY & NJ (Revised2)
(09/02/2009 LH)

1.0. TIDES AND WATER LEVELS

1.1. Specifications

Tidal data acquisition, data processing, tidal datum computation and final tidal zoning shall be performed utilizing sound engineering and oceanographic practices as specified in National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD), dated April 2008, and OCS Field Procedures Manual (FPM), dated May 2008. Specifically reference Chapter 4 of the HSSD and Sections 1.5.8, 1.5.9, 2.4.3, and 3.4.2 of the FPM.

1.2. Vertical Datums

The tidal datums for this project are referenced to Chart Datum, Mean Lower Low Water (MLLW) and Mean High Water (MHW). Soundings are referenced to MLLW and heights of overhead obstructions (bridges and cables) are referenced to MHW.

The operating National Water Level Observation Network (NWLON) stations at The Battery, NY (8518750) and Sandy Hook, NJ (8531680) serve as datum control for the survey area including determination at each subordinate station.

1.2.1. Water Level Data Acquisition Monitoring

The Commanding Officer (or Team Leader) and the Center for Operational Oceanographic Products and Services (CO-OPS) are jointly responsible for ensuring that valid water level data are collected during periods of hydrography. The Commanding Officer (or Team Leader) is required to monitor the pertinent water level data via the CO-OPS Web site at http://tidesandcurrents.noaa.gov/hydro.shtml, email data transmissions through TIDEBOT, or through regular communications with CO-OPS/Engineering Division (ED) personnel before and during operations. During traditional non duty hours, the Commanding Officer/Team Leader may contact the Continuous Operational Real-Time Monitoring System (CORMS) watch stander who is available 24 hours/day - 7 days/week for assistance in assessing the status of applicable water level station operation. The CORMS watch stander may be contacted either by phone at 301-713-2540 or by Email: CORMS@noaa.gov. Problems or concerns regarding the acquisition of valid water level data identified by the Commanding Officer/Team Leader shall be communicated with CO-OPS/ED (Tom Landon, 301-713-2897 ext. 191, Email: Thomas.Landon@noaa.gov on the East Coast) to coordinate the appropriate course of action to be taken such as gauge repair and/or developing contingency plans for hydrographic survey operations. In addition, CO-OPS is required to coordinate with the Commanding Officer (or Team Leader) before interrupting the acquisition of water level data for any reason during periods of hydrography.

1.2.2. NWLON Water Level Station Operation and Maintenance

The operating water level stations at The Battery, NY (8518750) and Sandy Hook, NJ (8531680) will also provide water level reducers for this project. Therefore it is critical that they remain in operation during the survey. See Sections 1.1. and 1.2. concerning responsibilities.

No leveling is required at The Battery, NY (8518750) and Sandy Hook, NJ (8531680) by NOAA ship THOMASJEFFERSON personnel.

CO-OPS/FOD is responsible for the operation and maintenance of all NWLON primary control stations. If a problem is identified at an NWLON primary control station, FOD shall make all reasonable efforts to repair the malfunctioning station. However, CO-OPS may request assistance from the NOAA ship or NRT personnel in the actual repair of the water level station to facilitate a rapid repair. CO-OPS/FOD and the Commanding Officer (or Team Leader) shall maintain the required communications until the repairs to the water level station have been completed.

1.3. Tide Reducer Stations

1.3.1. No subordinate water level stations are required for this project, however, supplemental and/or back-up water level stations may be necessary depending on the complexity of the hydrodynamics and/or the severity of the environmental conditions of the project area. The installation and continuous operation of water level measurement systems (tide gauges) at subordinate station locations is left to the discretion of the Commanding Officer (or Team Leader), subject to the approval of CO-OPS. If the Commanding Officer (or Team Leader) decides to install additional water level stations, then a 30-day minimum of continuous data acquisition is required. For all subordinate stations, data must be collected throughout the entire survey period for which they are applicable, and not less than 30 continuous days. This is necessary to facilitate the computation of an accurate datum reference as per NOS standards.

Tide Component Error Estimation

The estimated tidal error contribution to the total survey error budget between Sandy Hook (8531680) and The Battery (8518750) is 0.18 meters at the 95% confidence level, and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Based on this analysis, no subordinate stations will be required at the survey areas. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

1.3.2. GOES Satellite Enabled Subordinate Stations

This section is not applicable for this project.

1.3.3. Benchmark Recovery and GPS Requirements

This section is not applicable for this project.

1.3.4. This section is not applicable for this project.

1.4. Discrete Tidal Zoning

1.4.1. The water level station at The Battery, NY (8518750) and Sandy Hook, NJ (8531680) are the reference stations for preliminary tides for hydrography in New York Harbor and Approaches. The time and height correctors listed below for applicable zones should be applied to the preliminary data at The Battery, NY (8518750) and Sandy Hook, NJ (8531680) during the acquisition and preliminary processing phases of this project. Preliminary data may be retrieved

in one month increments over the Internet from the CO-OPS Home Page at http://tidesandcurrents.noaa.gov/olddata and then clicking on "Preliminary Water Level". The Commanding Officer (or Team Leader) must notify CO-OPS/RDD personnel immediately of any problems concerning the preliminary tides. Preliminary data are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. For the time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the preliminary tides at the reference station. A positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights **relative to MLLW** at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

Zone	Time Corrector(mins)	Range Ratio	Predicted Reference Station
HR1	+12	x0.98	8518750
HR2	+24	x0.95	8518750
NY1	-6	x1.01	8531680
SHB1	0	x0.99	8531680
SHB2	+6	x0.96	8531680
SA1	-18	x1.00	8531680
SA2	-24	x0.96	8531680
SA3	-30	x0.91	8531680
SA4	-30	x0.87	8531680
SA13	-36	x0.87	8531680
SA14	-36	x0.91	8531680

1.4.2. Polygon nodes and water level corrections referencing The Battery, NY (8518750) and Sandy Hook, NJ (8531680) are provided in CARIS® format denoted by a *.zdf extension file name.

NOTE: The tide corrector values referenced to The Battery, NY (8518750) and Sandy Hook, NJ (8531680) are provided in the zoning file "B310TJ2009CORP_Rev2" for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a MapInfo® representation of West longitude

"Preliminary" data for the control water level station, The Battery, NY (8518750) and Sandy Hook, NJ (8531680), are available in near real-time and verified data will be available on a weekly basis for the previous week. These water level data may be obtained from the CO-OPS web site at http://tidesandcurrents.noaa.gov/olddata . From this site, click on either "Preliminary Water Level" or "Verified Water Level" to obtain preliminary or verified/historical water level data as appropriate.

Please contact the Hydrographic Planning Team at NOS.COOPS.HPT@noaa.gov and the Operational Engineering Team NOS.COOPS.OETTEAM@noaa.gov **before** survey operations begin and **once survey operations are completed** so that the appropriate CO-OPS water level stations are added to or removed from the CO-OPS Hydro Hot List (http://tidesandcurrents.noaa.gov/hydro).

1.4.3 Zoning Diagram(s)

Zoning diagrams, created in MapInfo® and Adobe PDF, are provided in digital format to assist with the zoning in section 1.4.1.

1.4.4 Final Zoning

Upon completion of project OPR-B310-TJ-2009, submit a Pydro generated request for smooth tides, with times of hydrography abstract and mid/mif tracklines attached. Forward this request to smooth.tides@noaa.gov . Provide the project number, as well as a sheet number, in the subject line of the email.
CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. After review, CO-OPS will send a notice indicating that the tidal zoning scheme sent with the project instructions has been approved for final zoning. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised tidal zoning scheme to the field group and project manager for final processing.

1.5 TideBot

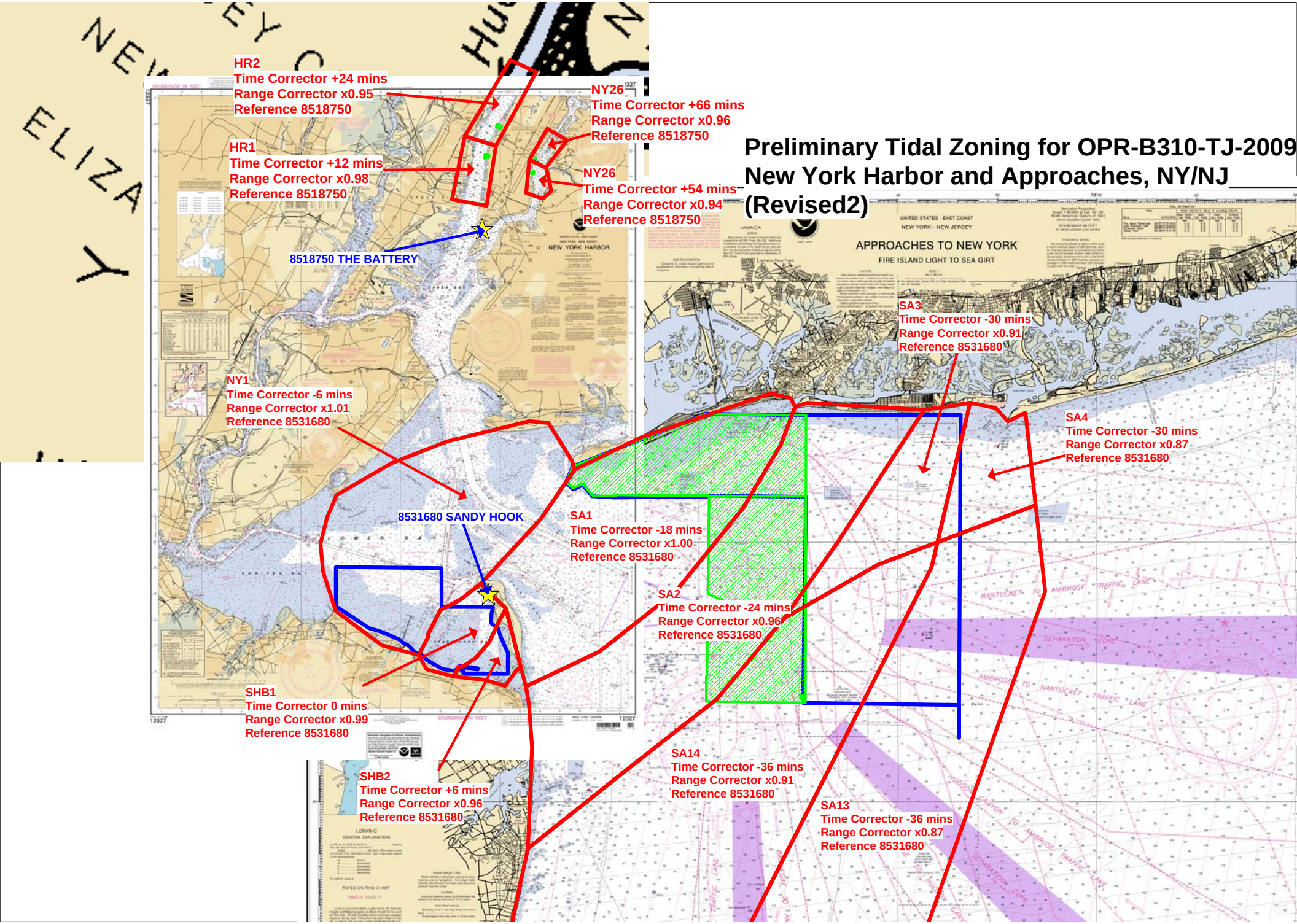
Preliminary and verified six minute water level time series data may be retrieved from the CO-OPS database via TideBot application. TideBot delivers timely preliminary/verified tidal and Great Lakes six minute water level observations via email to users on a scheduled, recurring basis. To access TideBot through an email account, send an email to TideBot@noaa.gov with the word "help" as the subject. An email reply will be sent with instructions on how to subscribe to TideBot for time series data retrieval.

1.6 Water Level Records

Submit water level data, such as leveling records, field reports, and any other relevant data/reports, including the data downloaded onto diskette/CD within 1 week after the end of each month or the end of hydrography to CO-OPS/ED. Refer to Section 1.1.

1.6.1 Water level records should be forwarded to the following address:

NOAA/National Ocean Service/CO-OPS
Chief, Engineering Division
N/OPS1 - SSMC4, Station 6531
1305 East-West Highway
Silver Spring, MD 20910



Preliminary Tidal Zoning for OPR-B310-TJ-2009 New York Harbor and Approaches, NY/NJ (Revised2)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Ship THOMAS JEFFERSON (MOA-TJ)
439 West York St
Norfolk, VA 23510-1145

September 16, 2009

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: CDR Shepard M. Smith, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

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

Transmit data to the following:

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

NOAA Ship Thomas Jefferson
439 West York Street
Norfolk, VA 23510
ATTN: Commanding Officer

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

Project No.:	OPR-B310-TJ-09
Registry No.:	F00573
State:	New York
Locality:	New York Harbor and Approaches
Sublocality:	Vicinity of Pier 86 (USS Intrepid)

Attachments containing:

1) an Abstract of Times of Hydrography,
2) digital MID MIF files of the track lines from Pydro

cc: N/CS33
MOCA/TJ

Generated by Pydro v9.6 (r2698) on Wed Sep 16 20:12:21 2009 [UTC]

Year_DOY	Min Time	Max Time
2009_258	12:19:56	16:57:28

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : October 9, 2009

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B310-TJ-2009
HYDROGRAPHIC SHEET: F00573

LOCALITY: Vicinity of Pier, New York Harbor and Approaches, NY
TIME PERIOD: September 15, 2009

TIDE STATION USED: 851-8750 The Battery, NY
Lat. 40° 42.0'N Long. 74° 1.0' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.443 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-B310-TJ-2009, F00573, on September 15, 2009.

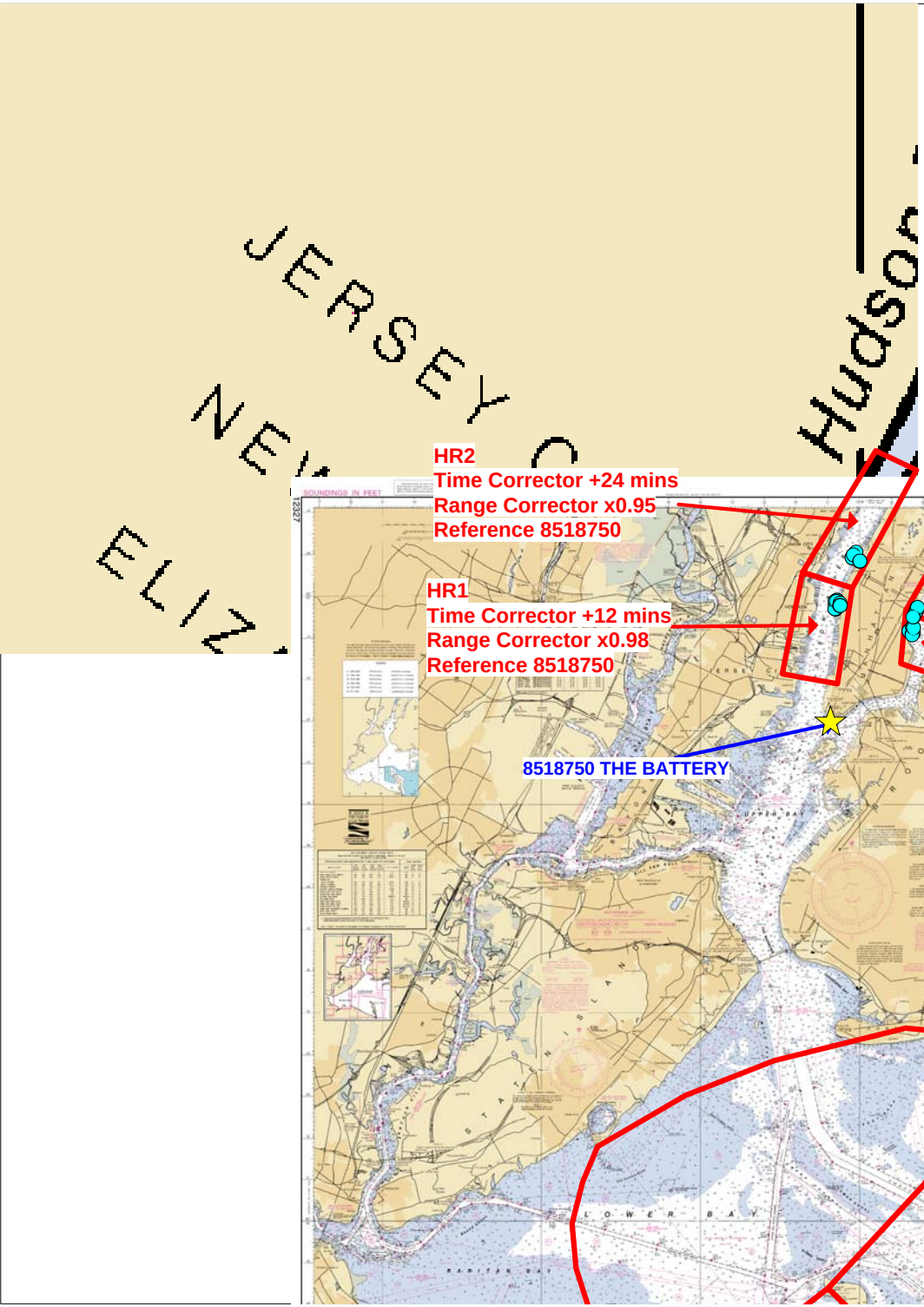
Please use the zoning file "B310TJCORP2009_Rev2" submitted with the project instructions for OPR-B310-TJ-2009. Zones HR1, HR2, NY25 and NY26 are the applicable zones for F00573.

Refer to attachments for zoning information.

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

_____
CHIEF, OCEANOGRAPHIC DIVISION

Final Tidal Zoning for OPR-B310-TJ-2009, F00573 New York Harbor and Approaches, NY/NJ (Preliminary as Final)

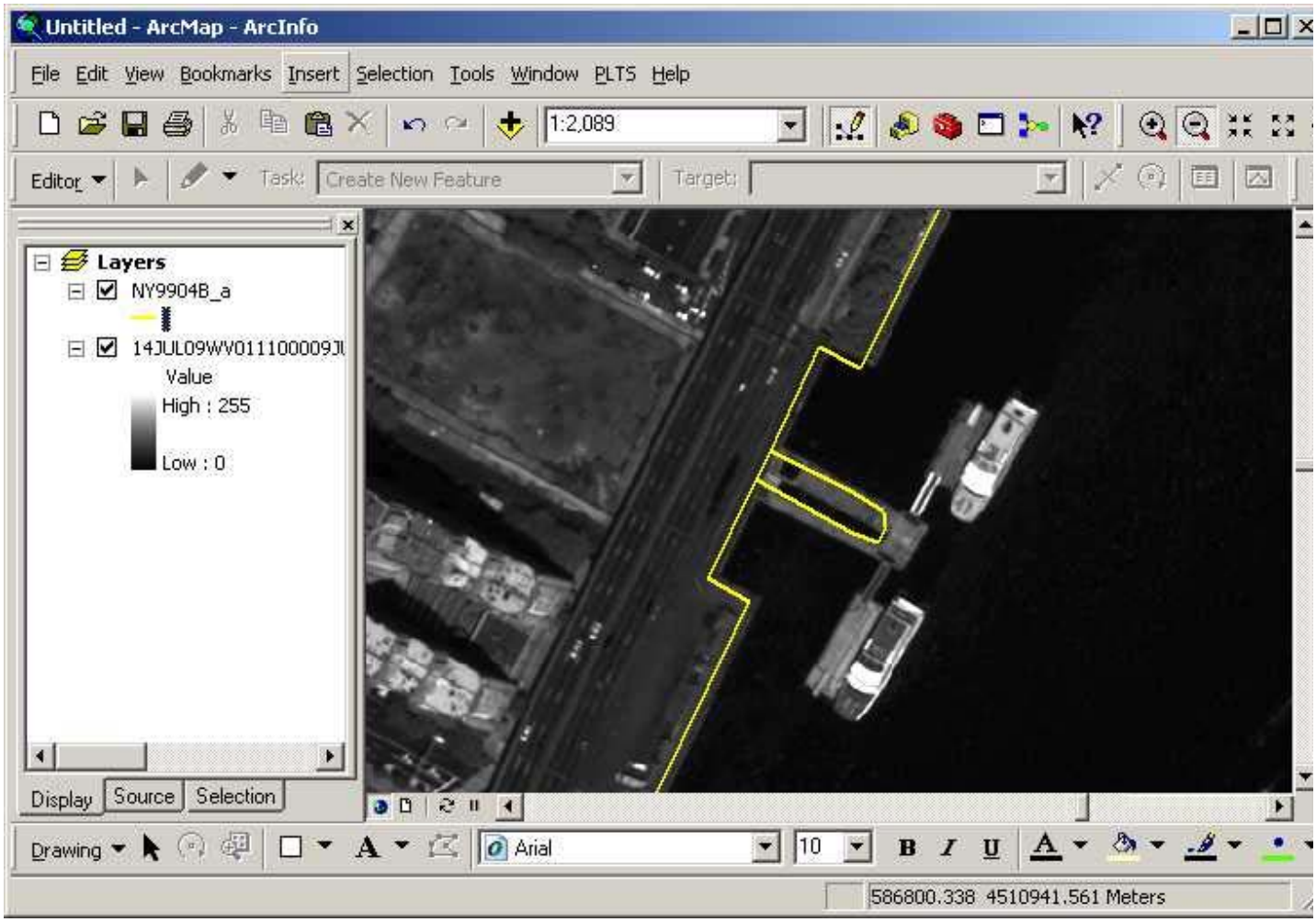


Appendix V

Supplemental Survey Records & Correspondence

Subject: Re: Orthophoto for East River
From: Mike Espey <Mike.Espey@noaa.gov>
Date: Fri, 16 Oct 2009 10:19:08 -0400
To: "co.thomas.jefferson" <CO.Thomas.Jefferson@noaa.gov>
CC: Mike Aslaksen <Mike.Aslaksen@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, LCDR Rick Brennan NOAA <Richard.T.Brennan@noaa.gov>, Olivia Hauser <Olivia.Hauser@noaa.gov>, daniel wright <Daniel.Wright@noaa.gov>, FOO.Thomas.Jefferson@noaa.gov

Shep,
RSD has obtained a July 14, 2009 WorldView 1 image that appears to show the new pier alignment. This image shows a new structure has been added to the pier ruin previously compiled by RSD in 1999-2000, widening the existing pier by 9 meters and lengthening it by 10 meters. Would you like to request that RSD compile the changes?

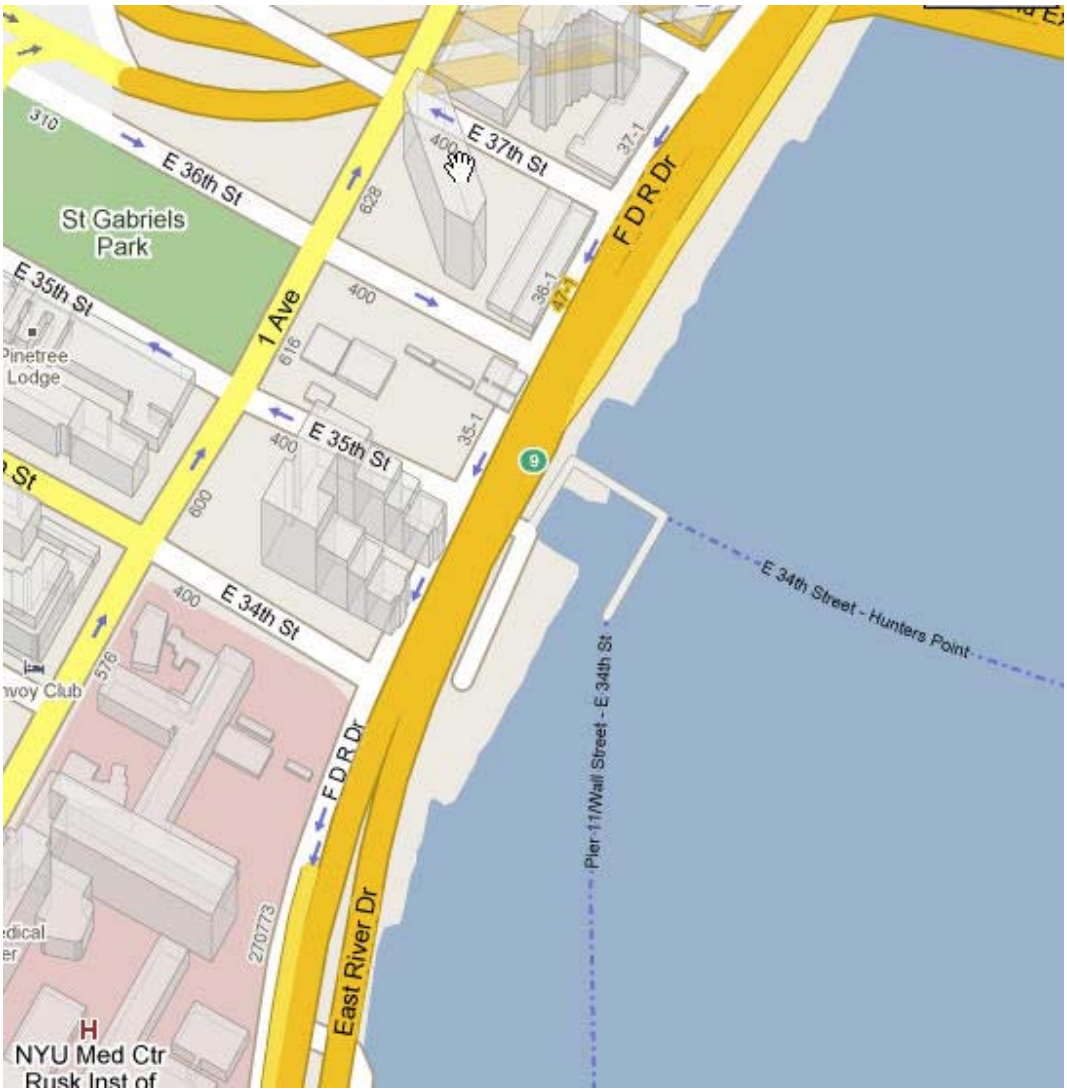


co.thomas.jefferson wrote:

> Mikes,
>
> The google map is more in line with the launch's reported observation of a new pier, and the sonar data, but we clearly don't propose to use it directly. We are going by there with the ship tomorrow first thing and will take a picture.

Thanks for looking,

Shep

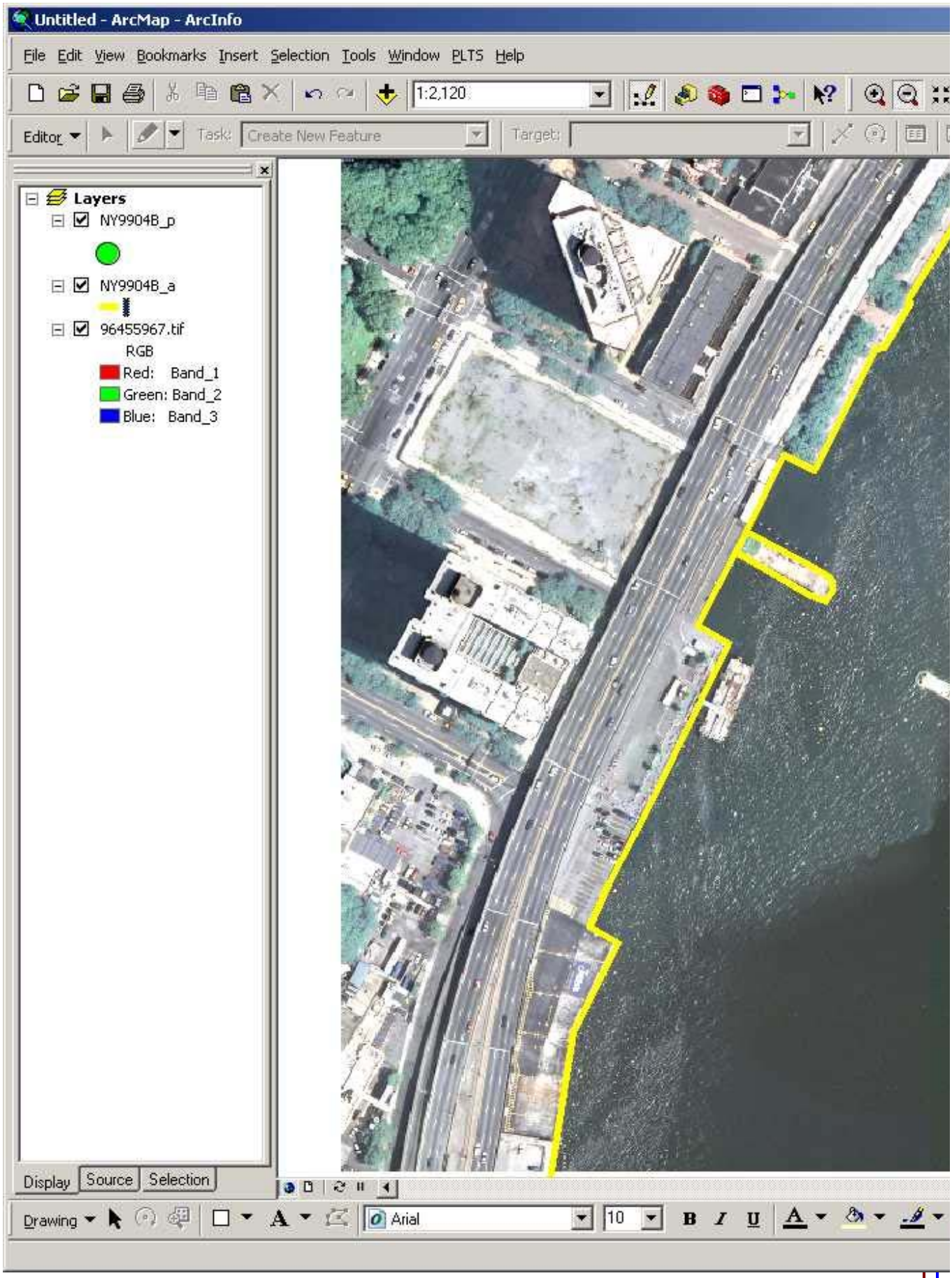


CDR Shepard Smith, NOAA
Commanding Officer
NOAA Ship Thomas Jefferson
439 West York St
Norfolk, VA 23510
757-647-0187

Mike Espey wrote:

> Previously released GC10512 (NY9904B), shown below (yellow vectors) superimposed on the ortho you sent, appears to include the pier facility in question, although it is attributed as "Pier.Ruins". The feature was charted as submerged ruins. Perhaps the existing charted feature simply needs to be re-attributed and re-symbolized as operational?
>
> If newer imagery is found today, we will let you know.

-Mike



co.thomas.jefferson wrote:

Mike and Mike,

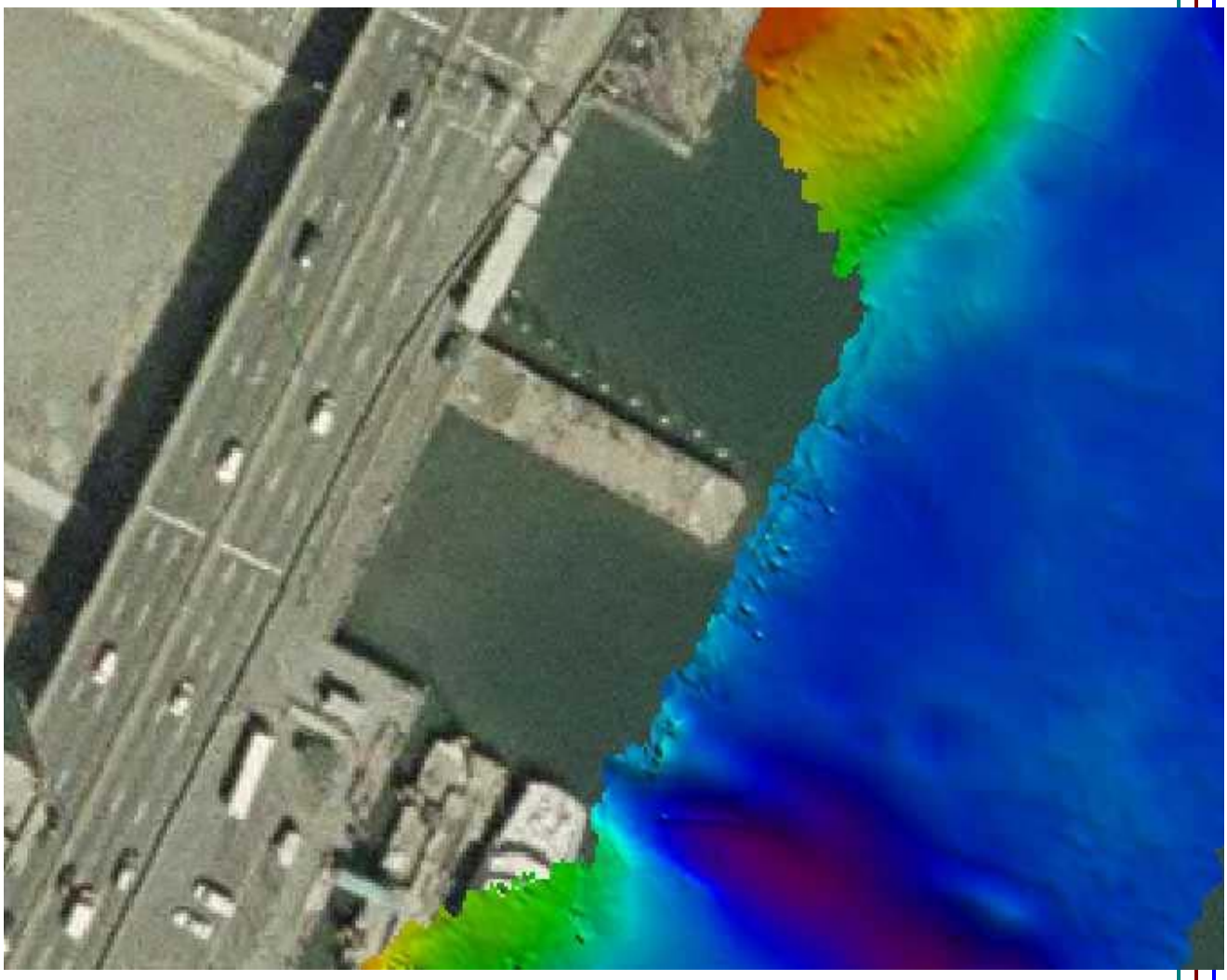
We have a little shoreline problem on an FE we did in the East River, NYC. There appears to be a new ferry terminal or pier facility that is not on the chart. We have pilings that we think are part of the new pier in our multibeam but want to confirm before we edit them out. We also want to get the new pier facility on the chart.

The area in question is bounded by 40-44-44N to the North, 073-58-07W to the East, 40-44-30N to the South, and 073-58-23W to the West. We tried what we could get online (2006 and 2007 NY City and County orthos), but these don't show the new facility (below). Do you have access to anything more recent? Half meter or better resolution, we can deal with any common projection, as long as it is known and clear in the metadata. We plan to submit this survey to AHB this Friday, so we would need it by Wednesday if we are going to be able to make use of it.

I have attached an ortho of the area for reference.

Thanks,

Shep



--

CDR Shepard Smith, NOAA
Commanding Officer
NOAA Ship Thomas Jefferson
439 West York St
Norfolk, VA 23510
757-647-0187

Mike Espey <mike.espey@noaa.gov>
Chief, Applications Branch
Remote Sensing Division
NOAA, National Geodetic Survey

Subject: Fwd: F00573 shoreline
From: Bryan Chauveau <Bryan.Chauveau@noaa.gov>
Date: Tue, 27 Jul 2010 15:36:22 -0400
To: Matthew Wilson <Matthew.Wilson@noaa.gov>

-------- Original Message --------
Return-path: <Mike.Espey@noaa.gov>
Received: from mmp1.nems.noaa.gov ([140.90.121.156]) by mail.nos.noaa.gov (Sun Java System Messaging Server 6.2-7.05 (built Sep 5 2006)) with ESMTP id <0KYR00JW8T885HB0@mail.nos.noaa.gov> for Bryan.Chauveau@noaa.gov; Thu, 04 Mar 2010 13:40:56 -0500 (EST)
Received: from [10.71.13.2] by mmp1.nems.noaa.gov (Sun Java System Messaging Server 6.2-2.05 (built Apr 28 2005)) with ESMTPSA id <0KYR00GJKT882510@mmp1.nems.noaa.gov>; Thu, 04 Mar 2010 13:40:56 -0500 (EST)
Date: Thu, 04 Mar 2010 13:40:56 -0500
From: Mike Espey <Mike.Espey@noaa.gov>
Subject: re: Project F00573 shoreline request .....[Fwd: NY1003 (East River) Released]
To: Bryan Chauveau <Bryan.Chauveau@noaa.gov>
Cc: _NOS NGS.Shoreline.Request <NGS.Shoreline.Request@noaa.gov>
Message-id: <4B8FFEB8.5050005@noaa.gov>
MIME-version: 1.0
Content-type: multipart/mixed; boundary=----------040306030001080005030108
User-Agent: Thunderbird 2.0.0.23 (Windows/20090812)
Original-recipient: rfc822;Bryan.Chauveau@noaa.gov

Bryan,
As I understand, your shoreline request consists of two changes:
1) a new pier in Area D of the survey, and
2) a widened pier (88) in Area A.

Regarding #1, the new pier identified in the hydro survey was recently compiled, in October 2009, and released to MCD (see email below). This data is available to you now, utilizing the link provided below.

As for #2 (pier 88), RSD has located an imagery source and, barring unforeseen problems, will be able to provide expedited compilation of this change. AHB will be notified upon completion. Feel free to let me know if you have any questions.
-Mike

-------- Original Message --------
Subject: NY1003 (East River) Released
Date: Thu, 22 Oct 2009 17:47:07 -0400
From: Tim Blackford <Tim.Blackford@noaa.gov>
To: Tara Wallace <Tara.Wallace@noaa.gov>, "ocs.ndb" <OCS.NDB@noaa.gov>, Christopher Hare <Christopher.Hare@noaa.gov>, Ward Kyle <Kyle.Ward@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>, Mark T Lathrop <Mark.T.Lathrop@noaa.gov>, Richard T Brennan <Richard.T.Brennan@noaa.gov>, Gary Nelson

<Gary.Nelson@noaa.gov>

CC: Lyn Preston <Lyn.Preston@noaa.gov>, Steve Soherr <Steve.Soherr@noaa.gov>, Mike Aslaksen <Mike.Aslaksen@noaa.gov>, Eric Berkowitz <Eric.W.Berkowitz@noaa.gov>, Mike Espey <Mike.Espey@noaa.gov>, Steve Matula <Steve.Matula@noaa.gov>, Jonathan Neuhaus <Jonathan.Neuhaus@noaa.gov>, Brian Baldwin <Brian.Baldwin@noaa.gov>, Doug Graham <Doug.Graham@noaa.gov>

References: <4A8EFA38.3020207@noaa.gov> <4A8EFB00.9040006@noaa.gov> <4AC4FAFF.5070208@noaa.gov> <4ACA52FA.70103@noaa.gov>

RE: Completion of Project NY1003

NY1003 (East River, 3rd Street to Hell Gate, NY) GC10787.

The Final Geographic Cell (in shapefile format) for this project is now available from the NOAA Shoreline Data Explorer (NSDE):

http://www.ngs.noaa.gov/newsys_ims/shoreline/index.cfm
(recommended browser IE 5.1 or greater) FGDC compliant metadata and the Project Completion Report may also be downloaded from the NSDE.

For questions on shoreline data posted to the NSDE site, please contact:

Tim Blackford
Systems and Quality Assurance Branch
RSD/NGS/NOS/NOAA
301-713-2675 x140

Subject: Re: F00573 tides
From: "co.thomas.jefferson" <co.thomas.jefferson@noaa.gov>
Date: Tue, 06 Oct 2009 17:47:58 -0400
To: Jeremy.McHugh@noaa.gov
CC: jasper schaer <jasper.schaer@noaa.gov>, James.M.Crocker@noaa.gov, "shep.smith" <Shep.Smith@noaa.gov>, "_NOS.CO-OPS.HTP" <NOS.COOPS.HPT@noaa.gov>

If the alternative does not substantially increase the estimated error propagated to the survey areas, then my vote is for sooner than later. We would like to get this off our plate.

Shep

CDR Shepard Smith, NOAA
Commanding Officer
NOAA Ship Thomas Jefferson
439 West York St
Norfolk, VA 23510
757-647-0187

Jeremy.McHugh@noaa.gov wrote:

> Hi Jasper,
> Please let us know what you would prefer - non-preliminary as final Final Tide note sooner or potentially (based on 2009 levels) a preliminary as final tide note later.
> thanks,
> Jeremy
>
> ----- Original Message -----
> From: Carolyn Lindley <Carolyn.Lindley@noaa.gov>
> Date: Tuesday, October 6, 2009 4:03 pm
> Subject: Re: F00573 tides
> To: Jeremy.McHugh@noaa.gov
> Cc: "_NOS.CO-OPS.HTP" <NOS.COOPS.HPT@noaa.gov>, jasper schaer <jasper.schaer@noaa.gov>, James.M.Crocker@noaa.gov, "shep.smith" <Shep.Smith@noaa.gov>
>
> > Hi Jeremy,
> > We have found an issue with our gauge at The Battery 851-8750. We are currently waiting on 2009 levels for this station which will hopefully resolve the issue. If not, we will need to investigate an alternative gauge to use for control. We don't yet know when the 2009 levels will be taken so we can't yet give an estimate on delivery of the tide note if we use The Battery. If time is of the essence, we can forego waiting on levels for The Battery and see what we can do with an alternative gauge. Please let us know what you would prefer - non-preliminary as final Final Tide note sooner or potentially (based on 2009 levels) a preliminary as final tide note later.
> > Thanks,
> > Carolyn
> >
> > Jeremy.McHugh@noaa.gov wrote:
> >
> > > Hi HPT,
> > > Could you please let us know when to expect final tides for TJ's
> > F00573? That survey is part of the OPR-B310-TJ-09 project.
> >
> > > thanks,
> > > Jeremy
> > >
> > > ----- Original Message -----
> > > From: jasper schaer <jasper.schaer@noaa.gov>

Date: Tuesday, October 6, 2009 3:35 pm
Subject: F00573 tides
To: Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Cc: James.M.Crocker@noaa.gov, "shep.smith" <Shep.Smith@noaa.gov>

> Jeremy-
>
> F00573's final smooth tides request have passed the 2 week mark since
> their request on 9/16/09. Would you look into this, please?
>
> r-js

Subject: Re: Crossline comparison
From: Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>
Date: Thu, 10 Sep 2009 13:00:35 -0400
To: "mark.blankenship" <Mark.Blankenship@noaa.gov>
CC: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/
LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

> Chris,
> You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?
> Mark

LCDR Chris van Westendorp <christiaan.vanwestendorp@noaa.gov>
Atlantic Hydrographic Branch
NOAA OCS

Hook, NJ; Coast Guard Station Kings Point, NY; and Coast Guard Aids to Navigation Team New York, Bayonne, NJ.

(2572) (3) *Commercial Waterfront Facilities*. All waters within 25 yards of each commercial waterfront facility that is capable of accepting barge, ferry or other commercial vessels. For purposes of this section, "commercial waterfront facility" means all piers, wharves, docks and similar structures to which barge, ferry or other commercial vessels may be secured; areas of land or water under and in immediate proximity to them; buildings on such structures or contiguous to them; and equipment and materials on such structures and in such buildings.

(2573) (i) When a barge, ferry or other commercial vessel is conducting transfer operations at a commercial waterfront facility, the 25-yard zone is measured from the outboard side of the commercial vessel.

(2574) (ii) Vessels may transit through any portion of the zone that extends into the navigable channel for the sole purpose of direct and expeditious transit through the zone so long as they remain within the navigable channel, maintain the maximum safe distance from the commercial waterfront facility and do not stop or loiter within the zone.

(2575) (4) *Liberty and Ellis Islands*. All waters within 150 yards of Liberty Island, Ellis Island, and the bridge between Liberty State Park and Ellis Island.

(2576) (5) *Bridge Piers and Abutments, Overhead Power Cable Towers, Piers and Tunnel Ventilators*. All waters within 25 yards of any bridge pier or abutment, overhead power cable tower, pier or tunnel ventilators south of the Troy, NY Locks. Vessels may transit through any portion of the zone that extends into the navigable channel for the sole purpose of direct and expeditious transit through the zone so long as they remain within the navigable channel, maintain the maximum safe distance from the waterfront facility and do not stop or loiter within the zone.

(2577) (6) *New York City Passenger Ship Terminal, Hudson River, NY.*

(2578) (i) *Location*. All waters of the Hudson River bound by the following points: From the northeast corner of Pier 96 where it intersects the seawall, thence west to approximate position 40°46'23.1"N., 073°59'59.0"W., thence south to approximate position 40°45'55.3"N., 074°00'20.2"W. (NAD 1983), thence east to the southeast corner of Pier 84 where it intersects the seawall, thence north along the shoreline to the point of origin.

(2579) (ii) *Enforcement period*. This zone will be enforced whenever passenger vessels are pierside at Pier 88, 90 or 92 or whenever the passenger ship terminal or the adjacent Intrepid Sea, Air and Space Museum, Manhattan is being used as an Emergency Operations Center. The activation and termination of a particular zone will be announced in accordance with 33 CFR 165.7.

(2580) (7) *La Guardia Airport, Bowery and Flushing Bays, Queens, NY.–*

(2581) (i) *Location: 200-Yard Zone*. All waters of Bowery and Flushing Bays within approximately 200 yards of La Guardia Airport bound by the following points: Onshore at Steinway, Queens in approximate position

(2582) 40°46'32.1"N., 073°53'22.4"W., thence to

(2583) 40°46'52.8"N., 073°53'09.3"W., thence to

(2584) 40°46'54.8"N., 073°52'54.2"W., thence to

(2585) 40°46'59.3"N., 073°52'51.3"W., thence to

(2586) 40°47'11.8"N., 073°53'17.3"W., thence to

(2587) 40°47'13.0"N., 073°53'16.1"W. on Rikers Island, thence easterly along the Rikers Island shoreline to approximate position

(2588) 40°47'12.9"N., 073°52'17.9"W., thence to

(2589) 40°47'16.7"N., 073°52'09.2"W., thence to

(2590) 40°47'36.1"N., 073°51'52.5"W., thence to

(2591) 40°47'35.1"N., 073°51'50.5"W., thence to

(2592) 40°47'15.9"N., 073°52'06.4"W., thence to

(2593) 40°47'14.5"N., 073°52'03.1"W., thence to

(2594) 40°47'10.6"N., 073°52'06.7"W., thence to

(2595) 40°47'01.9"N., 073°52'02.4"W., thence to

(2596) 40°46'50.4"N., 073°52'08.1"W., thence to

(2597) 40°46'26.8"N., 073°51'18.5"W., thence to

(2598) 40°45'57.2"N., 073°51'01.8"W., thence to

(2599) 40°45'51.2"N., 073°50'59.6"W., thence to

(2600) 40°45'49.5"N., 073°51'07.2"W., thence to

(2601) 40°45'58.8"N., 073°51'13.2"W., thence to

(2602) 40°46'02.3"N., 073°51'20.1"W., thence to

(2603) 40°45'48.4"N., 073°51'37.0"W., (NAD 1983) thence along the shoreline to the point of origin.

(2604) (ii) *Location: 100-Yard Zone*. All waters of Bowery and Flushing Bays within approximately 100 yards of La Guardia Airport bound by the following points: Onshore at Steinway, Queens in approximate position

(2605) 40°46'32.1"N., 073°53'22.4"W., thence to

(2606) 40°46'50.6"N., 073°53'07.3"W., thence to

(2607) 40°46'53.0"N., 073°52'50.9"W., thence to

(2608) 40°46'57.6"N., 073°52'47.9"W., thence to

(2609) 40°47'11.8"N., 073°53'17.3"W., thence to

(2610) 40°47'13.0"N., 073°53'16.1"W., on Rikers Island, thence easterly along the Rikers Island shoreline to approximate position

(2611) 40°47'12.9"N., 073°52'17.9"W., thence to

(2612) 40°47'16.7"N., 073°52'09.2"W., thence to

(2613) 40°47'36.1"N., 073°51'52.5"W., thence to

(2614) 40°47'35.1"N., 073°51'50.5"W., thence to

(2615) 40°47'15.9"N., 073°52'06.4"W., thence to

(2616) 40°47'14.5"N., 073°52'03.1"W., thence to

(2617) 40°47'07.9"N., 073°52'09.2"W., thence to

(2618) 40°47'01.4"N., 073°52'06.1"W., thence to

§165.160 Safety and Security Zones: Liquefied Hazardous Gas Vessel, Liquefied Hazardous Gas Facility and Designated Vessel Transits, New York Marine Inspection Zone and Captain of the Port Zone.

(2552) (a) *Location*. The following areas are safety and security zones:

(2553) (1) All waters of the New York Marine Inspection Zone and Captain of the Port Zone within a 200-yard radius of any Liquefied Hazardous Gas (LHG) vessel or LHG facility.

(2554) (2) [Suspended]

(2555) (b) [Suspended]

(2556) (c) *Regulations*. (1) The general regulations contained in 33 CFR 165.23 and 165.33 apply.

(2557) (2) All persons and vessels must comply with the instructions of the Coast Guard Captain of the Port or the designated on-scene patrol personnel. These personnel comprise commissioned, warrant, and petty officers of the Coast Guard onboard Coast Guard, Coast Guard Auxiliary, local, state, and federal law enforcement vessels. Upon being hailed by U.S. Coast Guard patrol personnel by siren, radio, flashing light, or other means, the operator of a vessel shall proceed as directed.

(2558) (3) The Captain of the Port will notify the maritime community of periods during which these zones will be enforced by methods in accordance with 33 CFR 165.7 and will identify DV vessel transits by way of electronic mail broadcast.

§165.164 Security Zones; Dignitary Arrival/Departure New York, NY.

(2559) (a) The following areas are established as security zones:

(2560) (1) *Location*. Wall Street heliport: All waters of the East River within the following boundaries: East of a line drawn between approximate position 40°42'01"N., 074°00'39"W. (east of The Battery) to 40°41'36"N., 074°00'52"W. (NAD 1983) (point north of Governors Island) and north of a line drawn from the point north of Governors Island to the southwest corner of Pier 7 North, Brooklyn; and south of a line drawn between the northeast corner of Pier 13, Manhattan, and the northwest corner of Pier 2 North, Brooklyn.

(2561) (2) *[Reserved]*

(2562) (3) *Location*. Marine Air Terminal, La Guardia Airport: All waters of Bowery Bay, Queens, New York, south of a line drawn from the western end of La Guardia Airport at approximate position 40°46'47"N., 073°53'05"W. (NAD 1983) to the Rikers Island Bridge at approximate position 40°46'51"N., 073°53'21"W. (NAD 1983) and east of a line drawn between the point at the Rikers Island Bridge to a point on the shore in Queens, New York, at approximate position 40°46'36"N., 073°53'31"W. (NAD 1983).

(2563) (4) *Location*. All waters of the East River bound by the following points: 40°44'37"N., 073°58'16.5"W. (the base of East 35th Street, Manhattan), then east to 40°44'34.5"N., 073°58'10.5"W. (about 175 yards offshore of Manhattan), then northeasterly to 40°45'29"N., 073°57'26.5"W. (about 125 yards offshore of Manhattan at the Queensboro Bridge), then northwesterly to 40°45'31"N., 073°57'30.5"W. (Manhattan shoreline at the Queensboro Bridge), then southerly to the starting point at 40°44'37"N., 073°58'16.5"W. All nautical positions are based on North American Datum of 1983.

(2564) (5) *Location*. All waters of the East River north of a line drawn from approximate position 40°44'37"N., 073°58'16.5"W. (the base of East 35th Street, Manhattan), to approximate position 40°44'23"N., 073°57'44.5"W. (Hunters Point, Long Island City), and south of the Queensboro Bridge. All nautical positions are based on North American Datum of 1983.

(2565) (6) The security zone will be activated 30 minutes before the dignitaries' arrival into the zone and remain in effect until 15 minutes after the dignitaries' departure from the zone.

(2566) (7) The activation of a particular zone will be announced by facsimile and marine information broadcasts.

(2567) (b) *Regulations*. (1) The general regulations contained in 33 CFR 165.33 apply.

(2568) (2) All persons and vessels shall comply with the instructions of the Coast Guard Captain of the Port or the designated on-scene-patrol personnel. These personnel comprise commissioned, warrant, and petty officers of the Coast Guard. Upon being hailed by a U.S. Coast Guard vessel using siren, radio, flashing light, or other means, the operator of a vessel shall proceed as directed.

§165.165 [Removed].

§165.169 Safety and Security Zones: New York Marine Inspection Zone and Captain of the Port Zone.

(2569) (a) *Safety and security zones*. The following waters within the New York Marine Inspection Zone and Captain of the Port Zone are safety and security zones:

(2570) (1) *Indian Point Nuclear Power Station (IPNPS)*. All waters of the Hudson River within 300-yard radius of the IPNPS pier in approximate position 41°16'12.4"N., 073°57'16.2"W. (NAD 83).

(2571) (2) *U.S. Coast Guard Cutters and Shore Facilities*. All waters within 100 yards of: Each moored, or anchored, Coast Guard Cutter; Coast Guard Station New York; Staten Island, NY; Coast Guard Station Sandy

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY F00573 (2009)

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.

A. AREA SURVEYED

No changes from DR.

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 9.10 (r2824)
CARIS HIPS/SIPS version 6.1 SP2
CARIS Bathy DataBASE version 2.3 HF16
CARIS Bathy DataBASE version 2.1 SP1
DKART INSPECTOR, version 5.1
CARIS HOM version 3.3
CARIS S57 Composer version 2.1

B.2. QUALITY CONTROL

B.2.1. H-Cell

The final products from the review were four surfaces for each of the four separate field examination areas. Each surface was generated at a 50cm resolution and combined at 1m resolution. The dense sounding selection was taken from this combined surface using a shoal-biased radius of 0.5mm at the scale of the largest raster chart (1:10,000).

In order to create depth curves, a TIN was created from the dense sounding selection, and as surface interpolated from this TIN at a 4m resolution. The interpolated surface was shifted by -0.229m to account for NOAA sounding rounding conventions, and the depth curves were generated from this shifted, interpolated surface. The depth curves were utilized during chart sounding selection and are included in the submission to MCD for reference only.

The interpolated surface (not the shifted surface) was utilized to perform an initial chart sounding selection, using a shoal-biased radius of 50m, which correlates approximately with the observed chart spacing in the survey areas. These initial chart soundings were selected with a filter to exclude interpolated soundings, which ensures the resulting selection is a subset of the dense sounding selection, as well as a means of ensuring that the shoalest soundings in the survey area are acknowledged. Finally, the

initial chart sounding selection was then manually edited in accordance with AHB best practices regarding co-existence with features, seabed areas, contours, current chart soundings, and shoreline construction; acknowledgment of key bathymetric highs and deeps; standards of sufficient chart sounding density; representation of most seaward shoal soundings; and analysis of a difference surface between the chart soundings and the original combined grid.

Meta objects were drawn to encompass the areas of chart compilation, at time scaled forward or withdrawn slightly in order to clarify whether a particular charted sounding is intended to be superseded or retained. In certain areas the meta objects were trimmed based on the extents of existing shoreline construction objects from the ENC.

The pre-compilation components of the H-Cell include depth areas (DEPARE), depth contours (DEPCNT), sounding selections (SOUNDG), features (SLCONS), US5NY1DM_ENC Features (SBDARE), meta objects (M_COVR, M_QUAL), and cartographic Blue Notes ($CSYMB).

All of the components with the exception of the dense sounding selection and depth contours were inserted into one feature layer (including the Bluenotes, as dictated by Hydrographic Technical Directive 2008-8), and this layer was exported into S-57 format in order to create the H-Cell deliverable. Similarly, the sounding selection and depth contours were exported into S-57 format separately, and then both S-57 files were processed in CARIS HOM to convert the metric units to feet/fathoms and feet. The final products are two S-57 files, in Lat/Lon NAD-83, one that contains the chart soundings, features, meta objects, and bluenotes (F00573_CS.000), and one that contains the sounding selection and depth contours (F00573_SS.000). Finally, quality assurance checks were made utilizing CARIS S-57 Composer version 2.1 validation checks and DKART INSPECTOR, version 5.1, tests.

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

F00573 CARIS H-Cell final deliverables include the following products:

F00573_CS.000	1:10,000 Scale	F00573 H-Cell with Chart Scale Selected Soundings
F00573_SS.000	1:5,000 Scale	F00573 Selected Soundings (Survey Scale)

B.2.2. Junctions

No changes from DR.

C. VERTICAL AND HORIZONTAL CONTROL

Final corrections were applied by the field unit and no other tidal corrections were required.

D. RESULTS AND RECOMMENDATIONS

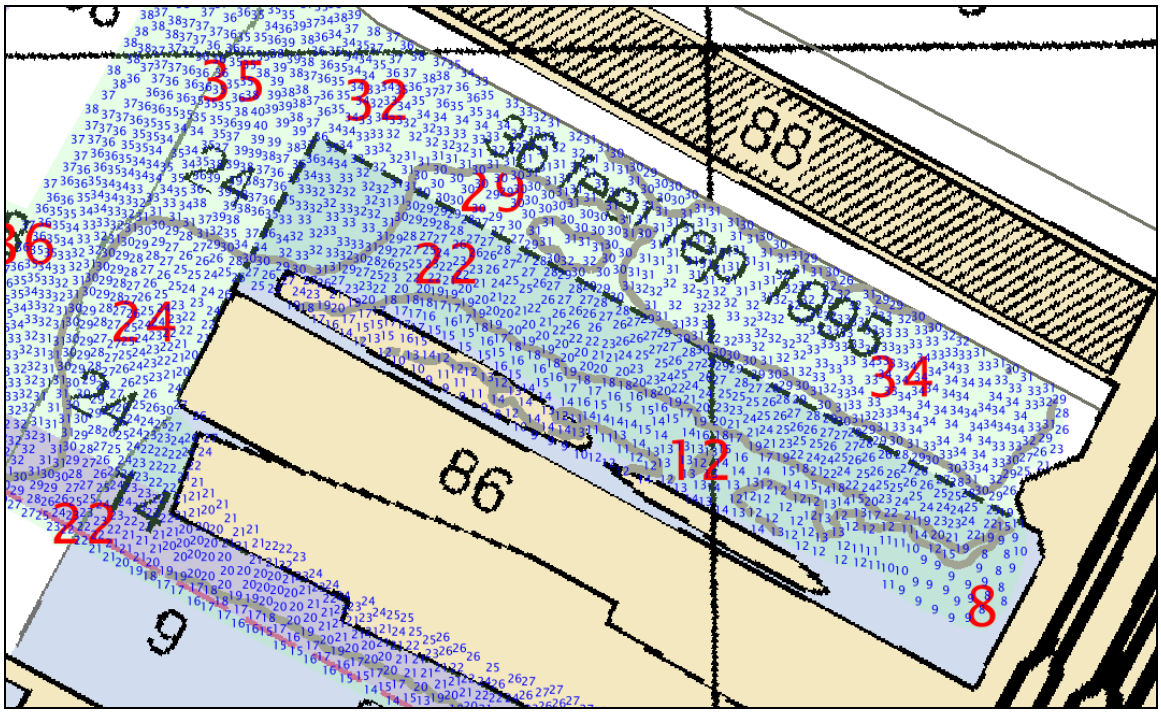
D.1 CHART COMPARISON — **12335 (43rd Edition, 04/01/2009)**
Corrected through NM 02/13/2010
Corrected through LNM 02/02/2010
Scale 1:10,000

ENC Comparison — **US5NY1DM**
Hudson and East Rivers Governors Island to 67th St
Edition 15
Application Date 07/08/2009
Issue Date 07/28/2009
Chart 12335

D.1.1 Hydrography

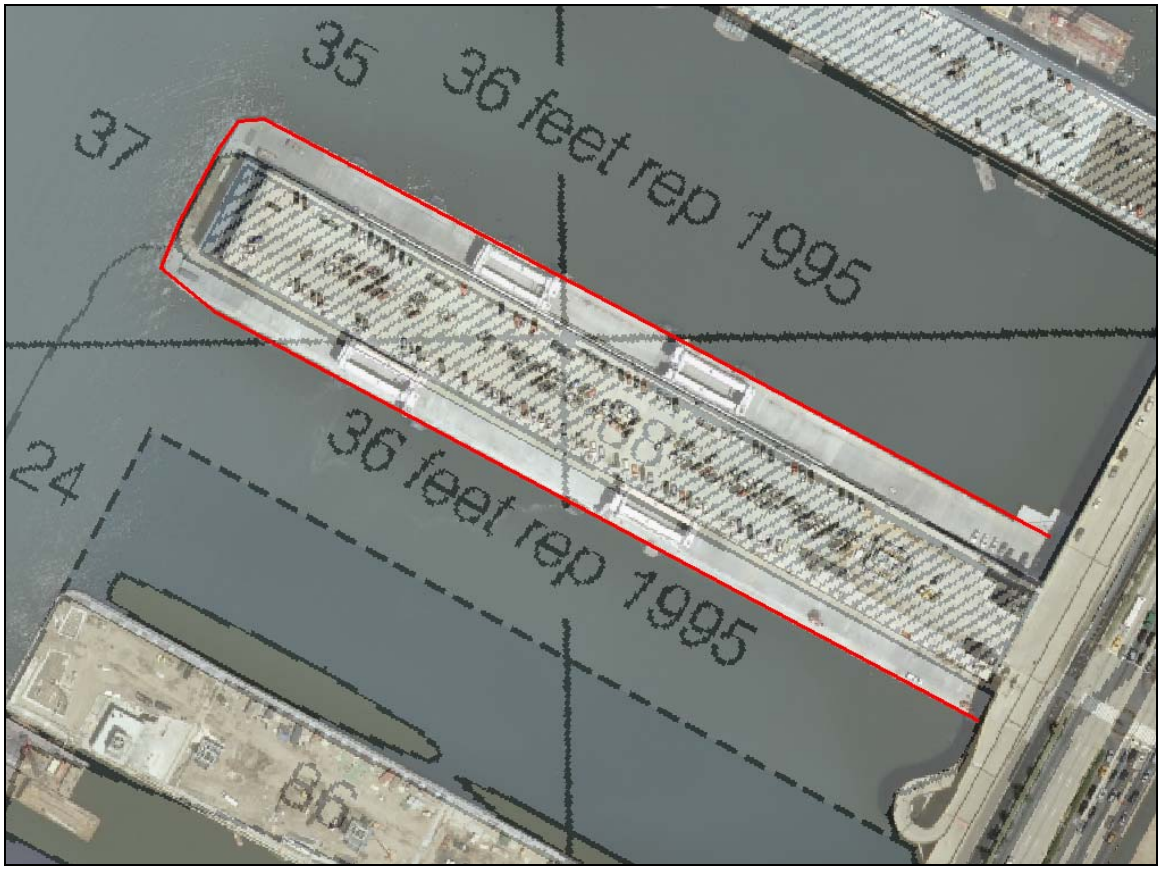
- **Pier 87:**

No evidence of the ruins of Pier 87 were observed in the survey data. For this reason it is recommended that the Shoreline Construction (SLCONS) object representing the remains of this pier be removed from the ENC and raster chart. Recommend to replace the dashed line and blue tint with the chart soundings and contours as included in the H-Cell and observed in the screen capture below. In addition, coverage was scaled back to exclude the charted hulks from compilation. Any soundings or contours that coincide with the charted hulks can be dismissed. It is also recommended to delete the text "36 feet rep 1995" and replace with the chart soundings and contours included within the H-Cell and as observed below.



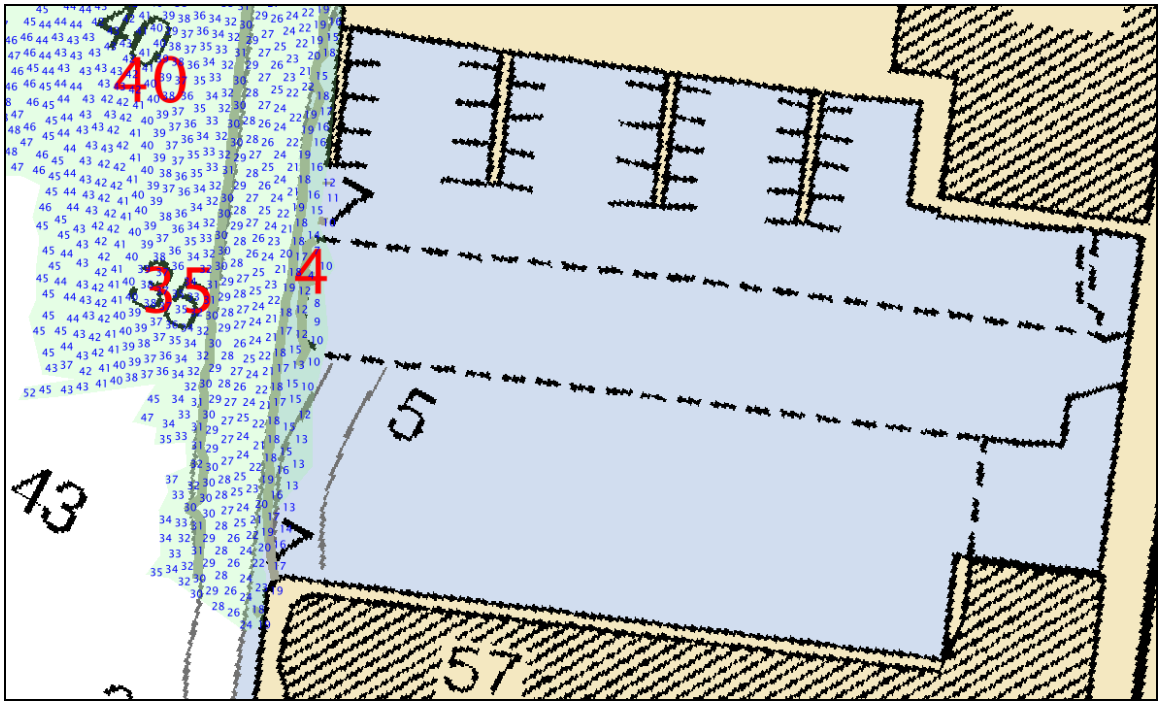
- **Pier 88:**

It was noted during field work that the extents of this pier had changed. Orthoimagery (2008 USGS High Resolution State Orthoimagery for Long Island New York) was obtained during compilation and utilized to draw the new extents of Pier 88, and these extents are included within the H-Cell as a Shoreline Construction object (SLCONS). Recommend to revise the extents of Pier 88 based on these results, as observed below (updated Pier 88 extents in red).



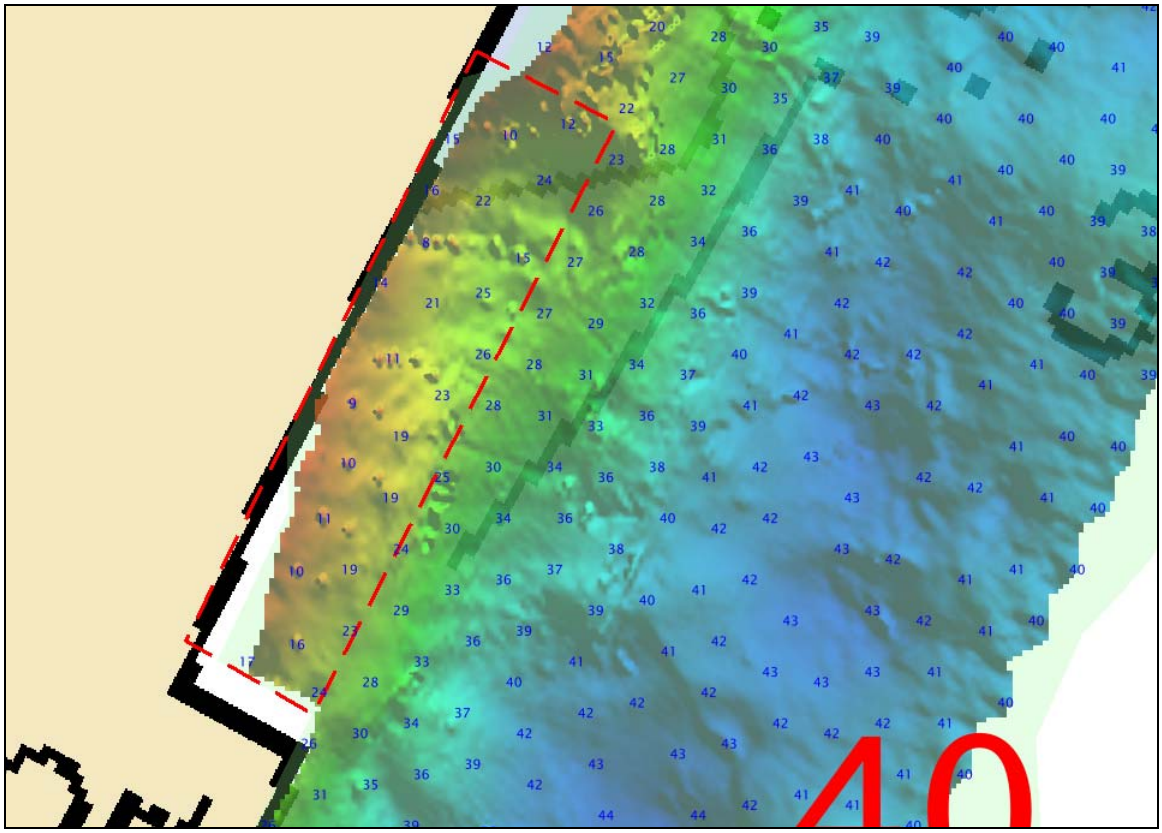
- **Pier 58:**

Only the most seaward extent of Pier 58 was surveyed, and a 4 foot shoal was discovered. It is recommended to chart the 4 foot sounding, as it is a seaward shoal and near an area of high boat traffic. Furthermore, it is recommended to add "Ruined" to the CONDTN attribute of the Shoreline Construction (SLCONS) which describes the current state of Pier 58.



- **Uncharted Pier Ruins**

In area D, several uncharted submerged piles were observed in the data (see BASE surface and shoal soundings below). These submerged piles appear to be the remnants of a pier, now submerged and ruined. In lieu of charting each individual submerged pile, it is recommended to chart a submerged, ruined pier using a Shoreline Construction (SLCONS) object with the attributes “always under water” for Water Level (WATLEV) and “Ruined” for Condition (CONDTN). The recommended bounds for the pier ruins are included within the H-Cell and shown below (red, dashed line).



- **Uncharted Pier**

The field unit observed a new, uncharted pier in the location of charted pier ruins, and included an analysis with obtained orthoimagery. The existence of the pier was confirmed during survey review. The reviewer placed an official request into RSD and obtained the official extents of the new pier in the form of a shape file delineated from GC10787 (see DR Appendix V for correspondence). During compilation, the shape file was converted into Shoreline Construction (SLCONS) objects and included within the H-Cell. The source of these objects is GC10787, as attributed in the Source Indicator (SORIND). Recommend to chart the new pier as included within the H-Cell, also observed in the screen capture below (red lines delineate the extents of the new pier).

D.2. ADDITIONAL RESULTS

D.2.1. Aids to Navigation

There were no charted Aids to Navigation within the limits of F00573.

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.

APPROVAL SHEET
F00573

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 review per the Hydrographic Surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Digitally signed by Matthew J Wilson
DN: cn=Matthew J Wilson, o=NOAA, ou=Atlantic Hydrographic Branch, email=matthew.wilson@noaa.gov, c=US
Date: 2010.07.29 09:06:51 -04'00'

Matthew J. Wilson
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.

Richard T. Brennan
I am approving this document
2010.07.31 18:22:35 -04'00'

Approved: _____

Richard T. Brennan
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Rachel Medley
AWOIS and SURF
check complete
2010.08.04
11:32:59 -04'00'