

H11997

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Type of Survey:	Basic Hydrographic
Registry Number:	H11997
LOCALITY	
State:	New York
General Locality:	Eastern Long Island Sound
Sub-locality:	3 NM North of Mulford Point
2008	
CHIEF OF PARTY CDR Tod Schattgen NOAA	
DATE	LIBRARY & ARCHIVES

HYDROGRAPHIC TITLE SHEET

H11997

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: **Eastern Long Island Sound**

Sub-Locality: **3 NM North of Mulford Point**

Scale: **1:20,000** Date of Survey: **9/15/2008-10/29/2008**

Instructions Dated: **7/28/2008** Project Number: **OPR-B370-TJ-08**

Vessel: **NOAA Ship *Thomas Jefferson***

Chief of Party: **CDR Tod Schattgen, NOAA**

Surveyed by: ***Thomas Jefferson* Personnel**

Soundings by: **Reson 7125, 8101, and 8125 echosounders**

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: **Feet at MLLW**

Remarks:

- 1) All Times are in UTC.***
- 2) This is a Basic Hydrographic survey.***
- 3) Projection is NAD83, UTM Zone 18***

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Descriptive Report to Accompany Hydrographic Survey H11997

Project OPR-B370-TJ-08
3 NM North of Mulford Point
Eastern Long Island Sound
Scale 1:20,000
October 15-October 29th, 2008
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B370-TJ-08, dated 7/28/2008. The survey area lies in the southeastern end of Long Island Sound.

Northern Limit	Southern Limit	Western Limit	Eastern Limit
41° 15' 04.76" N 072° 08' 47.45" W	41° 08' 33.27" N 072° 24' 21.61" W	41° 10' 09.53" N 072° 24' 28.61" W	41° 08' 33.27" N 072° 24' 21.61" W

Table A-1. Survey Limits

Data acquisition was conducted from September 15th to October 29th, 2008.

This project responds to a request from the Northeast Marine Pilots Association for contemporary hydrographic surveys to update the nautical charts in the Eastern Long Island Sound. The current vintage of hydrography dates back to as early as 1883 in the southern part of the project area. Petroleum and coal products constitute the bulk of the goods transported through the Sound. This project will cover approximately 85 sq. NM of critical survey area as designated in NOAA Hydrographic Survey Priorities, 2008 edition.

Survey H11997 is the result of the amalgamation of three separate surveys, originally designated sheets J (H11251), N and H (neither of which were given registry numbers in the project instructions.) This step was taken to maximize use of *Thomas Jefferson*'s operational time by minimizing turns between lines.

<i>Thomas Jefferson, Sheet Q H11997</i>	
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	824.7986
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Linear nautical miles of any combination of the above techniques (specify methods)	824.7986
LNM Crosslines singlebeam and multibeam combined	28.92669
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	N/A
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	7
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0
Total number of square nautical miles	67.10

Table A-2. Hydrographic Survey Statistics

Survey limits of H11997 are shown on the following page.

Calendar Date	Julian Day
September 15	259
September 16	260
September 17	261
September 18	262
September 19	263
September 20	264
September 21	265
September 22	266
September 23	267
October 29	303

Table A-3. Dates of Acquisition

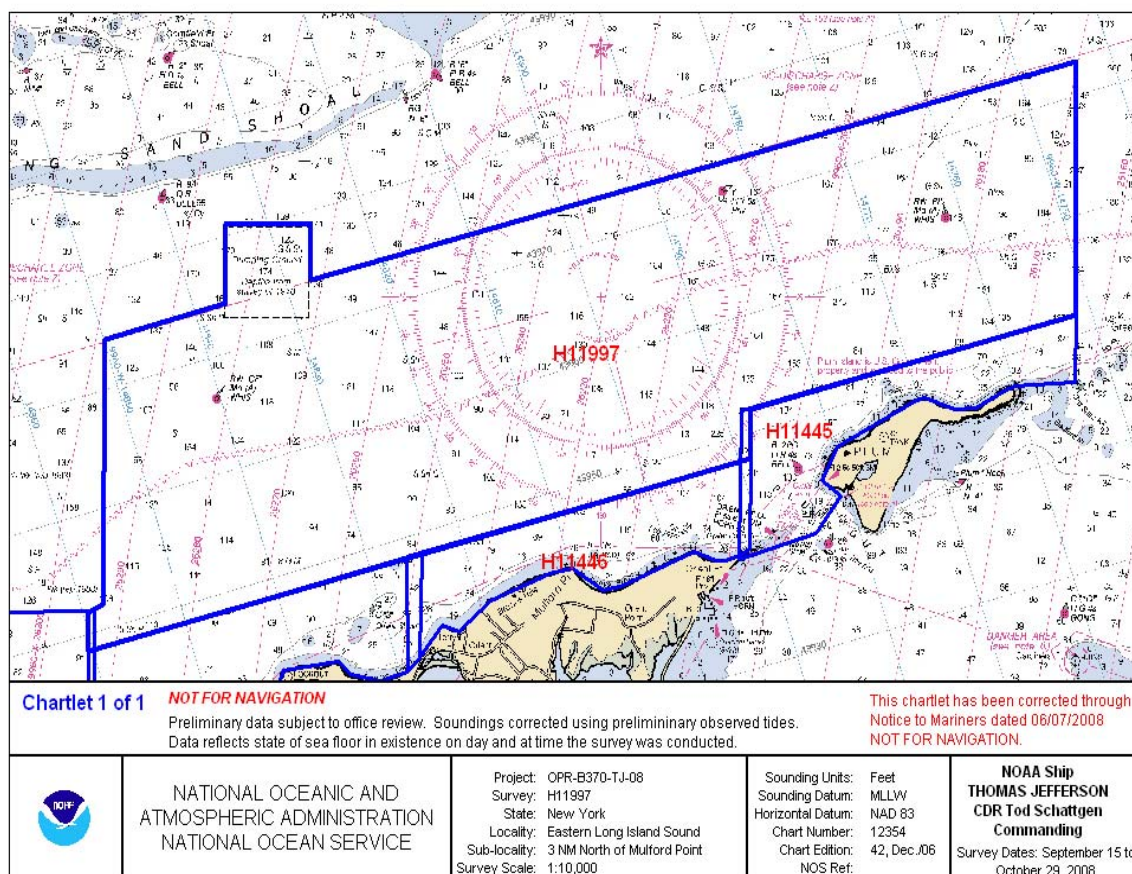


Figure A-1. Survey Limits

B. DATA ACQUISITION AND PROCESSING

Refer to **OPR-B370-TJ-08 Data Acquisition and Processing Report (DAPR) Spring Addendum-2008** 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.

B 1. EQUIPMENT AND VESSELS

Data was acquired by *Thomas Jefferson*, which acquired multibeam echosounder bathymetry and sound speed 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 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.

B.2.2 Sounding Coverage

As per the Letter Instructions, this survey was conducted using complete multibeam sonar coverage. Bathymetry coverage was monitored by the creation of 2 meter CUBE BASE Surfaces.

H11997 consists of the east-west limits of three different surveys, which were amalgamated into one.

B 2.3 Crosslines

Multibeam echosounder cross-lines totaling 28.926 linear nautical miles, comprising 3.5 percent of multibeam echosounder hydrography, were acquired during the course of the survey. Crosslines agreed within 3/10ths of one meter, or approximately one foot. As per HSSD 2008, Section 5.4.1.3, a surface difference between crosslines and mainscheme data was generated using CARIS Base Editor as the means to analyze the variation in draft and is included in separates IV, *Crossline Comparisons*.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H11997:

Registry #	Scale	Date	Field Party	Junction side
H11251	1:10000	2008	<i>Thomas Jefferson</i>	South
H11446	1:10000	2008	<i>Thomas Jefferson</i>	South
H11445	1:10000	2008	<i>Thomas Jefferson</i>	South

Table B-1. Junction Surveys

Survey H11997 was compared to survey H11251, H11445, and H11446, all of which junction to the south. Agreement was within two feet.

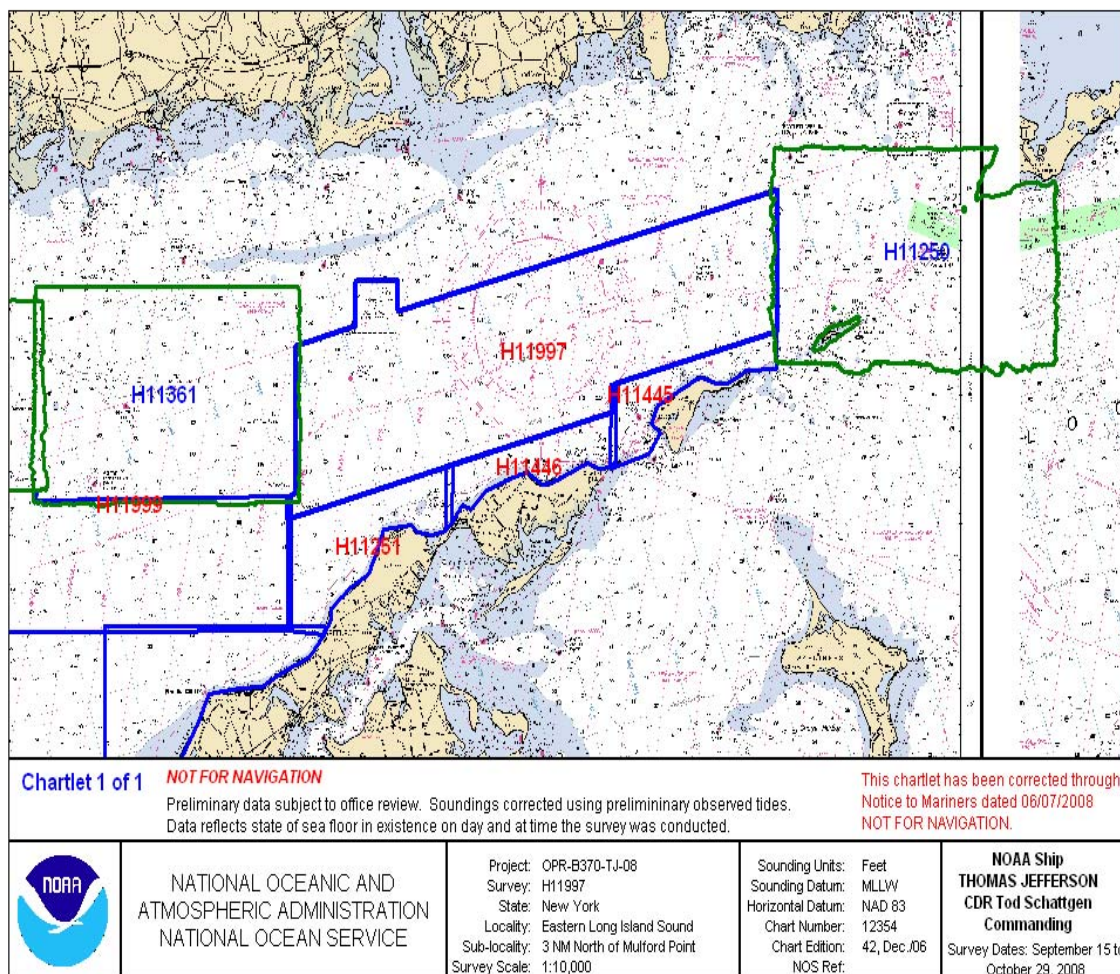


Figure B-1. Junction Surveys.

B 2.5 Systematic Errors

No systematic errors were encountered during data acquisition or processing.

B 3. CORRECTIONS TO ECHO SOUNDING

HDSC sounding data were reduced to mean lower-low water (MLLW) using approved tides from the primary stations at New London, CT (846-1490) and Bridgeport, CT (846-7150) adjusted for discrete zones provided by CO-OPS, as specified in the Letter Instructions and illustrated in Figure 4.

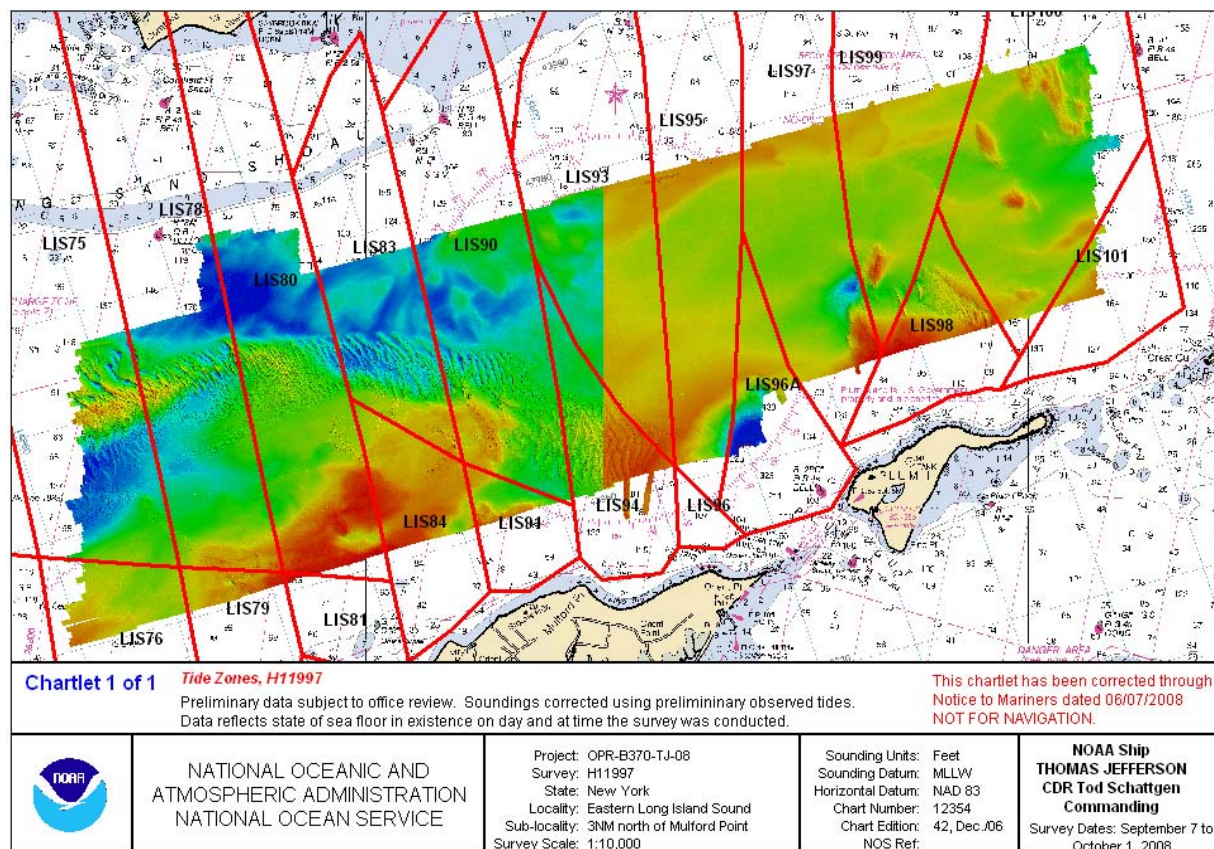


Figure B-2 Final Tide Zoning

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.

B 4. DATA PROCESSING

B 4.1 Total Propagated Uncertainty

For the 2008 field season, Total Propagated Uncertainty (TPU) parameters for sound speed and tides are calculated separately for each project. The project-specific parameters for OPR-B370-TJ-08, Survey H11997 are as follows:

Vessel	Tide Values		Sound Speed Values	
	Measured	Zoning	Measured	Surface
S222 MVP	0	0.19	1	0.2

Table B-2. 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 and Mosaics submitted as part of Survey H11997:

<i>Name of Fieldsheet</i>	<i>Resolution</i>	<i>Type</i>	<i>Purpose</i>
H11997_1/H11997_1_2m_CUBE_Deep	2m	CUBE	Coverage assessment
H11997_2/H11997_2_2m_CUBE_Deep	2m	CUBE	Coverage assessment

B-3. H11997 Field Sheets

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. IHO Order 1 was selected and the CUBE configuration was set to “Deep”. Refer to the 2008 Thomas Jefferson Data Acquisition and Processing Report Spring Addendum-2008, 2008 Field Procedures Manual, and CARIS HIPS/SIPS 6.1 manual for further discussion.

C. VERTICAL AND HORIZONTAL CONTROL

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

C. 2 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 18 North. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Moriches, NY, at frequency 293 kHz was used during this survey.

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

C. 3 Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at New London, CT (8461490) and secondary station at New Haven, CT (8465705), will serve as datum control for H11997. Verified water levels were applied to all data, with discrete tidal zoning used to correct time offsets.

A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on October 3, 2008 in accordance with the FPM and project letter instructions.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Survey H11997 was compared with Chart 12354, 12358_1, 12358_2, 13205_1, 13209_1, 13209_2, and 13212. Chart comparisons were performed in CARIS, in Pydro using survey-scale excessed soundings, and in MapInfo using survey-scale and chart-scale excessed soundings exported from Pydro.

D.1.1 Chart 12354 Comparison

Depths from chart 12354 generally agree with the current survey, with differences 2 feet or less. All major differences follow.

A 118-ft sounding at location 41/12/15.79N, 072/10/39.93 was found to be a depth of 123 ft following correction with verified water levels.

A 96 foot sounding at location 41/11/56.343N, 072/11/36.536W was found to be a depth of 91.4 feet following correction with verified water levels.

A 113-ft sounding at location 41/12/30.04N, 072/12/01.47W was found to be a depth of 98 feet following correction with verified water levels. A 135-ft sounding 600 meters north of the 113-ft sounding was found to be a depth of 123 feet following correction with verified water levels.

A charted 135 foot sounding at location 41/12/13.485N, 072/09/52.036W was found to be a depth of 125 feet following correction with verified water levels.

A charted 123 foot sounding at location 41/13/03.945N, 072/21/09.811W was found to be a depth of 159 feet following correction with verified water levels.. Additionally, a 170 foot sounding at location 41/12/56.464N, 072/22/02.972W was found to be a depth of 177 feet following correction with verified water levels. Both of these soundings lie within the charted dumping ground in the western end of the survey area and are corrected with verified water levels.

A charted 108 foot sounding at location 41/11/12.422N, 072/23/23.517W was found to be a depth of 100 feet following correction with verified water levels..

A charted 74 foot sounding at location 41/09/51.295N, 072/20/10.507W was found to have a nearby depth of 63 feet following correction with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.2 Chart 13212

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 2 feet or less. All major differences follow.

A charted 121 foot sounding at location 41/11/59.946N, 072/10/20.670W was found to be a depth of 103 feet following corrections with verified water levels.

A charted 172 foot sounding at location 41/14/05.506N, 072/09/27.635W was found to be a depth of 157 feet following corrections with verified water levels.

A charted 138 foot sounding at location 41/13/56.283N, 072/10/10.112W was found to be a depth of 133 feet following corrections with verified water levels.

A charted 129 foot sounding at location 41/14/29.572N, 072/09/09.689W was found to be a depth of 125 feet following corrections with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.3 Chart 13209_2

A charted 136 foot sounding at location 41/13/22.87N, 072/15/11.89W was found to be a depth of 130 feet following corrections with verified water levels.

A charted 140 foot sounding at location 41/13/46.89N, 072/14/19.78W was found to be a depth of 128 feet following corrections with verified water levels.

A charted 116 foot sounding at location 41/13/54.76N, 072/14/28.70W was found to be a depth of 108 feet following corrections with verified water levels.

A charted 144 foot sounding at location 41/13/49.93N, 072/13/45.38W was found to be a depth of 138 feet following corrections with verified water levels.

A charted 124 foot sounding at location 41/12/04.89N, 072/11/36.47W was found to be a depth of 114 feet following corrections with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.4 Chart 12358_1

A charted 167 foot sounding at location 41/10/35.70N, 072/14/44.69W was found to be a depth of 148 feet following corrections with verified water levels.

A charted 119 foot sounding at location 41/10/39.48N, 072/16/45.18W was found to be a depth of 113 feet following corrections with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.5 ENC US4NY1GM

A 27.4 meter sounding at location 41/10/13.25N, 072/19/12.07W was found to be a depth of 28.33 meters following corrections with verified water levels.

A 27.7 meter sounding at location 41/09/33/48N, 072/21/30.47W was found to be a depth of 29.15 meters following corrections with verified water levels.

A 34.7 meter sounding at location 41/09/47.39N, 072/22/07.03W was found to be a depth of 35.19 meters following corrections with verified water levels.

A 51.2 meter sounding at location 41/10/39.82N, 072/23/32.17 was found to be a depth of 50.28 meters following corrections with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.6 ENC US5MA22M

A 51.2 meter sounding at location 41/14/45.33N, 072/09/01.58W was found to be a depth of 52.91 meters following correction with verified water levels.

A 41.4 meter sounding at location 41/14/47.53N, 072/09/18.22W was found to be a depth of 42.76 meters following correction with verified water levels.

A 49.9 meters sounding at location 41/14/33.00N, 072/09/35.48W was found to be a depth of 49.19 meters following correction with verified water levels.

A 45.3 meter sounding at location 41/13/14.62N, 072/09/50.76W was found to be a depth of 42.64 meters following correction with verified water levels.

A 52.4 meter sounding at location 41/12/29.00N, 072/09/44.47W was found to be a depth of 51.03 meters following correction with verified water levels.

A 41.1 foot sounding at location 41/11/21.14N, 072/16/45.84W was found to be a depth of 42.53 meters following correction with verified water levels.

The depths of these chart discrepancies are such that a danger to navigation report is not deemed necessary.

D.1.7 ENC US4CN21M

Although listed in the project instructions, this ENC does not lie within the survey area and thus would not be affected by this survey.

D.2 Additional Results

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

One assigned AWOIS items was located within the modified limits of H11997 and investigated during this survey. AWOIS items were investigated with coverage multibeam over the search radius. AWOIS items located in the Pydro Survey Session which were not in the survey area were given a Primary status, resolved, and identified as outside the survey area. All AWOIS items are described in detail in Appendix II of this report.

D.2.1 Shoreline

There is no shoreline within the sheet limits of survey H11997.

D.2.2 Charted Features

A charted wreck was found to be in error. The wreck, originally charted in position 41-12.9'N, 072-17.5'W, is actually located in position 41-12.8'N, 072-17.5'W. The hydrographer recommends charting the wreck in the surveyed location.

All other charted features and item investigations are described in detail in Appendix II of this report.

D.2.3 Charted Pipelines and Cables

One charted cable transects the survey area. The cable is buried and not visible in the multibeam digital terrain models. The Hydrographer has no recommendations for this cable.

D.2.4 Bridges, Ferry Routes, and Overhead Cables

Ferry routes within the survey limits are not charted, and no bridges or overhead cables are located within the survey area. The hydrographer has no recommendations regarding their charting.

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

Two dangers to navigation were located during this survey.

A rock, located at 41° 11' 41.2" N, 072° 11' 39.1" W, has a least depth of 50.03 feet following correction with verified water levels. It has no sounding over it and the nearest soundings having values of 84 and 96 feet. The feature appears to be the beginning of a charted area of shoaling. These do not accurately represent the true bathymetry of the area of the item in question, and is believed to represent a danger to navigation.

A rock, located at 41° 09' 50.3" N, 072° 20' 12.9" W, has a least depth of 63.6 feet following correction with verified water levels. It lies directly over a charted 74 foot sounding. This item is believed to represent a danger to navigation.

Please refer to Appendix I for the full Danger to Navigation report.

D 3.2 Shoals

One area of potentially navigationally significant shoaling was found over the course of survey H11997.

It is located in location 41° 11' 41.2" N, 072° 11' 39.1" W, and has a least depth of 50.03 feet following correction with verified water levels. It is covered in the survey's Danger to Navigation report, and is a part of an inshore shoal that appears to extend offshore considerably more than is charted. Please refer to Appendix I for the Danger to Navigation report item referring to this shoal.

D.4 Aids to Navigation

There are three charted Aids to Navigation (ATON) within the revised limits of H11997.

The private yellow buoy (Fl Y 6s), in position 41-13.5'N, 072-14.3'W, was not found on station. The hydrographer recommends that the buoy be removed from the chart.

All other aids to navigation were on station, serving their intended purpose.

D.5 Coast Pilot Information

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

D.6 Miscellaneous

Bottom Samples

Six bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H11997 is contained in the Pydro PSS. A list of all bottom samples acquired during Survey H11997 is contained in Appendix V.

Environmental Conditions and Notes

No environmental conditions hindered data acquisition over the course of the survey.

D.7 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.

Summary and Recommendations for Additional Work

There are no recommendations for additional work.

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.

Survey H11997 is adequate to supersede charted soundings in their common areas.

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report Spring Addendum-2008	4 Feb 2009	N/CS33
Horizontal and Vertical Control Report for OPR-B370-TJ-08	N/A	N/CS33
Tides and Water Levels Package for OPR-B370-TJ-08	N/A	N/OPS1
Coast Pilot Report for OPR-B370-TJ-08	N/A	N/CS26

Approved and Forwarded:

LT Jasper D. Schaer, NOAA
Field Operations Officer

CDR P. Tod Schattgen, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

ENS Andrew J. Ostapenko, NOAA
Junior Officer

Matthew R. Forrest
Survey Technician

Appendix I

Dangers to Navigation

H11997 Dangers to Navigation

Registry Number: H11997
State: New York
Locality: Long Island Sound
Sub-locality: 3 NM North of Mulford Point
Project Number: OPR-B370-TJ-08
Survey Date: 09/22/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13209	25th	04/01/2007	1:40,000 (13209_1)	[L]NTM: ?
12358	20th	04/01/2008	1:40,000 (12358_1)	[L]NTM: ?
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 04/29/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 12/04/1999 (06/07/2008)
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: ?

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

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Rock	19.41 m	41° 09' 50.3" N	072° 20' 12.9" W	---
1.2	Rock	15.89 m	41° 11' 39.9" N	072° 11' 40.5" W	---

1 - Danger To Navigation

1.1) Profile/Beam - 475/122 from h11997 / tj_s222_reson7125_port / 2008-266 / 938_2121

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 09' 50.3" N, 072° 20' 12.9" W
Least Depth: 19.41 m (= 63.67 ft = 10.612 fm = 10 fm 3.67 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.000 m ; TVU (TPEv) ± 0.387 m
Timestamp: 2008-266.21:21:59.572 (09/22/2008)
Survey Line: h11997 / tj_s222_reson7125_port / 2008-266 / 938_2121
Profile/Beam: 475/122
Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dangerous rock- The 19.41 meter (63.67 foot) least depth on this rock was acquired by multibeam echosounder and corrected to MLLW using verified water levels and final zoning. The charted depth in the area is 74 feet.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11997/tj_s222_reson7125_port/2008-266/938_2121	475/122	0.00	000.0	Primary

Hydrographer Recommendations

Chart according to position, depth and S-57 attribution.

Cartographically-Rounded Depth (Affected Charts):

63ft (12358_1, 12354_1)

10 ½fm (12300_1, 13006_1, 13003_1)

19.4m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 1:depth known
 RECDAT - 20080922

SORDAT - 20080922

SORIND - NOAA Ship Thomas Jefferson

TECSOU - 3:found by multi-beam

VALSOU - 19.408 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

1.2) Profile/Beam - 2415/237 from h11997 / tj_s222_reson7125_port / 2008-266 / 954_1823

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 11' 39.9" N, 072° 11' 40.5" W
Least Depth: 15.89 m (= 52.13 ft = 8.689 fm = 8 fm 4.13 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.000 m ; TVU (TPEv) ± 0.388 m
Timestamp: 2008-266.18:28:32.796 (09/22/2008)
Survey Line: h11997 / tj_s222_reson7125_port / 2008-266 / 954_1823
Profile/Beam: 2415/237
Charts Affected: 13209_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dangerous rock- The 15.25 meter (50.03 foot) least depth on this rock was acquired by multibeam echosounder and corrected to MLLW using verified water levels and final zoning. Charted depths in the area are 84 and 96 feet.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11997/tj_s222_reson7125_port/2008-266/954_1823	2415/237	0.00	000.0	Primary

Hydrographer Recommendations

Chart according to position, depth and S-57 attribution.

Cartographically-Rounded Depth (Affected Charts):

52ft (13209_1, 12354_1, 13205_1)

8 $\frac{3}{4}$ fm (12300_1, 13006_1, 13003_1)

15.9m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 1:depth known

RECDAT - 20080922

SORDAT - 080922

SORIND - NOAA Ship Thomas Jefferson

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 15.890 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Appendix II

Survey Features Report

Registry Number: H11997
State: New York
Locality: Long Island Sound
Sub-locality: 3 NM North of Mulford Point
Project Number: OPR-B370-TJ-08
Survey Date: 09/22/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12372	34th	11/01/2006	1:40,000 (12372_11)	[L]NTM: ?
13209	25th	04/01/2007	1:40,000 (13209_1)	[L]NTM: ?
12358	20th	04/01/2008	1:40,000 (12358_1)	[L]NTM: ?
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 04/29/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 12/04/1999 (06/07/2008)
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: ?

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

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS	[no data]	[no data]	[no data]	---
2.1	Rock	19.41 m	41° 09' 50.3" N	072° 20' 12.9" W	---
2.2	Rock	15.89 m	41° 11' 39.9" N	072° 11' 40.5" W	---

1 - AWOIS Features

1.1) AWOIS #1831 - CITIES SERVICES #4

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 12' 48.4" N, 072° 17' 37.3" W
Historical Depth: 38.71 m
Search Radius: 100
Search Technique: S2,MB
Technique Notes: [None]

History Notes:

H9181/70-71--OPR-474; LIMITED DEVELOPEMENT OF 25 METER LS FOUND APPARENT WRECK RISING 15 FT IN 140 FT, 127 FT LD (ACTUAL); FATHO TRACE BROKEN, NO DIVER VERIFICATION; AT POS.41-12-48N, 72-17-39W.■ CL1291/81--CG; WK FOUND W/SS IN 143 FT OF WATER, DIVER IDENTIFIED AS BARGE RIVETED CONSTRUCTION, STEEL, MUCH MARINE GROWTH. INFO VERIFIED BY TELECON CGC MAHONING.■■ DESCRIPTION■ 01 1936■ 24 NO. 8373. BARGE, 810 GT, SUNK 1/24/36 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE■ 206 LORAN C RATES: 9960-W 14806.9; 9960-Y 43970.7. (ENTERED MSM 3/89)■ **** IT WAS DETERMINED THAT ITEM 1830 WAS THE SAME AS THIS ITEM. THE DATA FROM ITEM 1830 WAS COMBINED WITH THIS ITEM.

Survey Summary

Charts Affected: 12372_11, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Feature located.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS_B370-TJ-08	AWOIS # 1831	0.00	000.0	Primary

Hydrographer Recommendations

Chart according to surveyed depth, position and S-57 data.

S-57 Data

[None]

2 - Dangers to Navigation

2.1) Profile/Beam - 475/122 from h11997 / tj_s222_reson7125_port / 2008-266 / 938_2121

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 09' 50.3" N, 072° 20' 12.9" W
Least Depth: 19.41 m (= 63.67 ft = 10.612 fm = 10 fm 3.67 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.000 m ; TVU (TPEv) ± 0.387 m
Timestamp: 2008-266.21:21:59.572 (09/22/2008)
Survey Line: h11997 / tj_s222_reson7125_port / 2008-266 / 938_2121
Profile/Beam: 475/122
Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dangerous Sounding. The sounding was acquired by Reson 7125 multibeam and corrected to MLLW using observed water levels. Final Verified Water Levels and Final zoning were applied and resolved the sounding to 63.6 feet. It lies over a 74 foot sounding. Item is believed to represent a danger to navigation.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11997/tj_s222_reson7125_port/2008-266/938_2121	475/122	0.00	000.0	Primary

Hydrographer Recommendations

Chart according to position, depth and S-57 attribution.

Cartographically-Rounded Depth (Affected Charts):

63ft (12358_1, 12354_1)

10 ½fm (12300_1, 13006_1, 13003_1)

19.4m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 1:depth known
 RECDAT - 20080922

SORDAT - 20080922

SORIND - NOAA Ship Thomas Jefferson

TECSOU - 3:found by multi-beam

VALSOU - 19.408 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

2.2) Profile/Beam - 2415/237 from h11997 / tj_s222_reson7125_port / 2008-266 / 954_1823

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 11' 39.9" N, 072° 11' 40.5" W
Least Depth: 15.89 m (= 52.13 ft = 8.689 fm = 8 fm 4.13 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.000 m ; TVU (TPEv) ± 0.388 m
Timestamp: 2008-266.18:28:32.796 (09/22/2008)
Survey Line: h11997 / tj_s222_reson7125_port / 2008-266 / 954_1823
Profile/Beam: 2415/237
Charts Affected: 13209_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dangerous Sounding. The sounding was acquired by Reson 7125 multibeam and corrected to MLLW using observed water levels. Final Verified Water Levels and Final zoning were applied and resolved the sounding to 52.1 feet. The nearest soundings are 84 and 96 feet, which do not accurately represent the change in depth in this area. Item is believed to be a danger to navigation.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11997/tj_s222_reson7125_port/2008-266/954_1823	2415/237	0.00	000.0	Primary

Hydrographer Recommendations

Chart according to position, depth and S-57 attribution.

Cartographically-Rounded Depth (Affected Charts):

52ft (13209_1, 12354_1, 13205_1)

8 ¾fm (12300_1, 13006_1, 13003_1)

15.9m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 1:depth known

RECDAT - 20080922

SORDAT - 080922

SORIND - NOAA Ship Thomas Jefferson

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

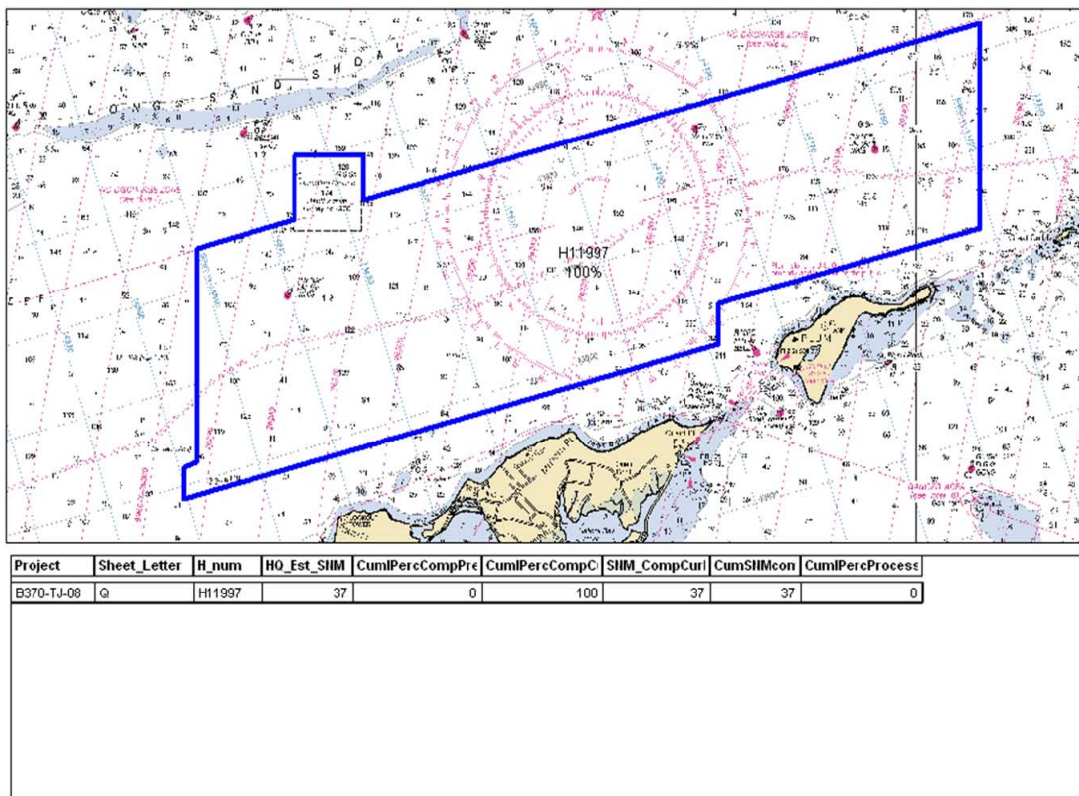
VALSOU - 15.890 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Appendix III

Progress Sketch



Progress Sketch OPR-B370-TJ-08
September 2008

Appendix IV

Tides and Water Levels



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

October 03, 2008

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

FROM: CDR P. Tod Schattgen, NOAA, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

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 the following:

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.: OPR-B370-TJ-08
Registry No.: H11997
State: New York
Locality: Long Island Sound
Sublocality: 3 NM North of Mulford Point

Attachments containing:

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

cc: N/CS33



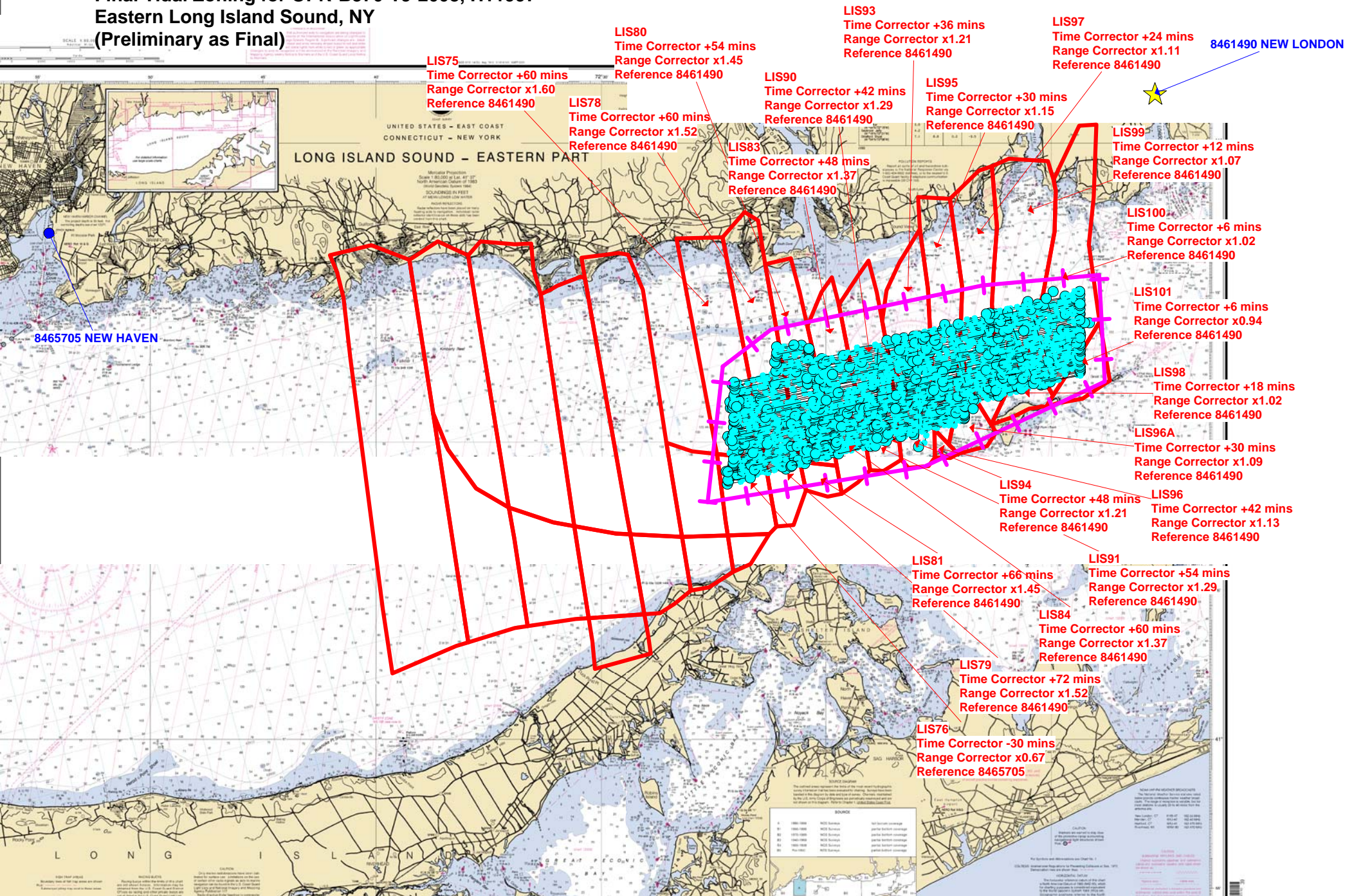
Year_DOY	Min Time	Max Time
2008_259	18:46:05	23:56:54
2008_260	00:34:55	23:56:00
2008_261	00:03:12	23:59:58
2008_262	00:04:31	23:59:56
2008_263	00:03:39	23:59:54
2008_264	00:05:11	21:04:26
2008_265	12:54:04	20:04:38
2008_266	14:02:04	21:23:11
2008_267	12:30:19	20:03:30



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



Final Tidal Zoning for OPR-B370-TJ-2008, H11997
Eastern Long Island Sound, NY
(Preliminary as Final)



Appendix V

Supplemental Survey Records & Correspondence

Subject: Re: for the Appendix V record, OPR-B307, H11920 & H11921

From: "shep.smith" <smith.shepard@gmail.com>

Date: Sat, 26 Jul 2008 14:26:28 -0400

To: jasper schaeer <jasper.schaer@noaa.gov>

Sounds like a good approach.

jasper schaeer wrote:

Sir,

Will AHB accept object detection MB coverage, in place of complete MB coverage, in the 4-20 meter survey area of the project, which already been covered by 100% SSS?

V/r-js

Subject: Re: [Fwd: Tide zoning issues on two TJ's survey projects]
From: Carolyn Lindley <Carolyn.Lindley@noaa.gov>
Date: Mon, 20 Oct 2008 15:18:18 -0400
To: jasper.schaer <jasper.schaer@noaa.gov>
CC: NOS.COOPS.HPT@noaa.gov, "james.m.crocker" <James.M.Crocker@noaa.gov>, tod.schattgen <Tod.Schattgen@noaa.gov>

Hi Jasper,
The TPE value is the 95% value.
Thanks,
Carolyn

jasper.schaer wrote:

Our data analysis has revealed that we are at IHO-2, if we use the 0.38 TPE value for B370. Is this tpe value, 0.38m, a 1-sigma or 95% value?

thanks-js

jasper.schaer wrote:

Thanks, Craig for your quick response. -js

Craig Martin wrote:

Jeremy / Jasper,

In response to your email on two of TJ's survey projects:

- 1) The error estimate that should be used for the tides portion of the TPE on the B370 project is 0.38 meters.
- 2) Generally, no revision to preliminary tide zones is conducted, unless the mission is drastically beyond the scope of the original project submitted to CO-OPS. Short overages outside of the preliminary zoning is addressed and covered in the Smooth Tide process. We have not received a request for smooth tides for any B370 sheets to date. Once HPT receives these requests we will adjust the zoning and send back to the ship for application.
- 3) Due to total lack of tide information inside Menemsha Pond, CO-OPS is unable to provide reliable tide correctors to meet OCS specs beyond the southern border of Edy's Island. The TCARI grid was adjusted to the point where information could be confidentially extrapolated to meet these standards. This was annotated in the "Notes" section on the Final Tide note for the H-11920 in which the data was collected. In addition, CO-OPS informed HSD of this lack of tide information when the data was collected.

Regards,
Craig

Jeremy McHugh wrote:

Hi HPT,
Could you please address each of Jasper's three concerns and copy everyone on the reply. Thanks!
Jeremy

----- Original Message -----

Subject: Tide zoning issues on two TJ's survey projects
Date: Sat, 27 Sep 2008 16:39:25 -0400
From: jasper.schaer <jasper.schaer@noaa.gov>
Organization: NOAA-TJ
To: Smooth.Tides@noaa.gov

CC: Jeremy McHugh <Jeremy.McHugh@noaa.gov>
References: <ae8627f11e4ab567.48db6d84@noaa.gov>
<48DBB8BE.3000703@noaa.gov> <48DBC7AE.9080302@noaa.gov>
<48DBDC75.9000507@noaa.gov> <48DBF32E.10601@noaa.gov>
<ad3413f430b07cf.48dcb168@noaa.gov> <48DD051E.6050609@noaa.gov>
<48DD1459.2010202@noaa.gov>

Tide zoning issues on B370 & B307.

1. We were looking for the error estimates to apply to our TPE on B370. There were none given in the tide letter part of the project instruction because at the time it was being determined. If we apply zero, we run the risk of data dropping out in our grid surfaces. We need error estimate for our discreet zoning for B370 or at the very least a high.

2. TJ 's launches survey to the 4m curve and at times we acquire data outside the preliminary tide zone in getting to the 4 m curve. This is the case for B370. Will need a revision for discreet tide zoning for B370. What do you need from us?

3. Data from survey B307 was collected in Menemsha Pond, an area that was not original planned, hence why the B307's tcari files were revised. When we try to apply the verified WL data to the TCARI file, we encounter a host of problems, see attached.

r-js

--

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

Carolyn Lindley <Carolyn.Lindley@noaa.gov>

Oceanographer

NOAA/National Ocean Service

CO-OPS