UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Marine and Aviation Operations
Marine Operations Center
439 W. York Street
Norfolk, VA 23510-1114

MEMORANDUM FOR: Commander James Crocker, NOAA
Commanding Officer, NOAA Ship *Thomas Jefferson*

FROM: Captain Anne K. Lynch, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for TJ-14-01
Buzzards Bay, Narragansett Bay, Vicinity

Attached is the final Project Instruction for TJ-14-01, Buzzards Bay, Narragansett Bay, Vicinity, which is scheduled aboard NOAA Ship *Thomas Jefferson* during the period of 31 March to 30 September, 2014. Of the 59 DAS scheduled for this project, 59 days are funded by Line Office Allocation. This project is estimated to exhibit a High Operational Tempo. Acknowledge receipt of these instructions via e-mail to **OpsMgr.MOA@noaa.gov** at Marine Operations Center-Atlantic.

Attachment

cc:
MOA1

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

FINAL Project Instruction

Date Submitted: March 26, 2014

Platform: NOAA Ship *Thomas Jefferson*

Project Number: TJ-14-01(OMAO)

Project Title: Buzzards Bay, Narraganset Bay, and Vicinity

Project Dates: 03/31/2014 – 09/30/2014

Prepared by: Digitally signed by GONSALVES.MICHAEL.O.127563 5126 Date: 2014.03.27 07:03:24 -04'00' Dated: _____
LCDR Michael Gonsalves, NOAA
Chief, Operations Branch
Hydrographic Surveys Division

Approved by: Date: 2014.03.27 07:36:12 -04'00' Dated: _____
Jeffrey Ferguson
Chief, Hydrographic Surveys Division
Office of Coast Survey

Approved by: Anne K Lynch Dated: 3/31/2014
CAPT Anne K. Lynch, NOAA
Commanding Officer
Marine Operations Center - Atlantic

I. Overview

A. Brief Summary and Project Period

This survey is scheduled to begin in April 2014 and end in September 2014. This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce survey backlog in the area.

B. Days at Sea (DAS)

Of the 59 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 59 DAS are funded by a Line Office Allocation, 0 DAS are Program Funded, and 0 DAS are Other Agency funded. This project is estimated to exhibit a High Operational Tempo.

C. Operating Area

The project area is located in the Approaches to Buzzards Bay, MA. A layout of the project area can be found with the detailed project instructions appended to these instructions.

D. Summary of Objectives

To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

E. Participating Institutions

N/A

F. Personnel/Science Party: name, title, gender, affiliation, and nationality

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Chauveau, Bryan	PS	03/31/2014	4/11/2014	M	NOAA	USA
Marshall, Jeff	PS	03/31/2014	4/11/2014	M	NOAA	USA
Chauveau, Bryan	PS	08/18/2014	08/27/2014	M	NOAA	USA
Self-Miller, Vanessa	PS	09/22/2014	09/30/2014	F	NOAA	USA
Chauveau, Bryan	PS	09/22/2014	09/30/2014	M	NOAA	USA

G. Administrative

1. Points of Contact:

Principal Investigator:

LCDR Michael Gonsalves, NOAA
Chief, Operations Branch
Hydrographic Surveys Division
1315 East West Hwy, #6854
Silver Spring, MD 20910
(301) 713-2702 x112
Michael.Gonsalves@noaa.gov

Project Coordinator:

Paul Turner
Physical Scientist, Operations Branch
Hydrographic Surveys Division
1315 East West Hwy, #6708
Silver Spring, MD 20910
(301) 713-2702 x106
Paul.Turner@noaa.gov

Chief Scientist:

CDR James Crocker, NOAA
Commanding Officer, NOAA Ship *Thomas Jefferson*
439 West York Street
Norfolk, VA 23510-1114
(603) 812-8784
CO.Thomas.Jefferson@noaa.gov

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

The Office of Coast Survey is sensitive to the potential effects of its operations on the physical, biological, and cultural marine environment. In accordance with the National Environmental Protection Act, Coast Survey prepared a Programmatic Environmental Assessment to gauge the environmental impacts resulting from surveying and other data-gathering activities. As a result, the National Ocean Service has published a Finding of No Significant Impact (FONSI) for the Office of Coast Survey program of conducting hydrographic surveys for the calendar years 2013 - 2018. For further information, please refer to http://www.nauticalcharts.noaa.gov/Legal/

II. Operations

The Chief Scientist is responsible for ensuring the scientific staff are trained in planned operations and are knowledgeable of project objectives and priorities. The Commanding Officer

is responsible for ensuring all operations conform to the ship's accepted practices and procedures.

A. Project Itinerary:

Itinerary will be based upon the ship's schedule and executed under the direction of the Commanding Officer. Every effort shall be made by the Commanding Officer to maximize the operational efficiency of assigned projects. Please refer to ships sailing schedule below:

DEP: 3/31/2014	Mon	Norfolk,VA	TJ-14-01 Leg 1
ARR: 4/11/2014	Fri	Newport, RI	OPR-B367 Buzzards Bay/Narragansett Bay
DEP: 4/14/2014	Mon	Newport, RI	TJ-14-01 Leg 2
ARR: 4/25/2014	Fri	Boston, MA	OPR-B367 Buzzards Bay/Narragansett Bay
DEP: 8/18/2014	Mon	Newport, RI	TJ-14-01 Leg 3
ARR: 8/27/2014	Wed	Norfolk, VA	OPR-B367 Buzzards Bay/Narragansett Bay
DEP: 9/4/2014	Thu	Norfolk, VA	TJ-14-01 Leg 4
ARR: 9/19/2014	Fri	Boston, MA	OPR-B367 Buzzards Bay/Narragansett Bay
DEP: 9/22/2014	Mon	Boston, MA	TJ-14-01 Leg 5
9/30/2014	Tue	Underway	OPR-B367 Buzzards Bay/Narragansett Bay

B. Staging and Destaging: N/A

C. Operations to be Conducted:

Hydrographic survey operations per the appended project instructions using two survey launches up to 10 hr/day for data acquisition and project field support. Additionally, the ability to run concurrent 24 hr ship survey operations for short periods of time or for extended periods of time with reduced launch operations.

D. Dive Plan

All dives are to be conducted in accordance with the requirements and regulations of the NOAA Diving Program (http://www.ndc.noaa.gov/dr.html) and require the approval of the ship's Commanding Officer.

Dives are not planned for this project.

E. Applicable Restrictions

Conditions which preclude normal operations:

- Poor weather conditions
- Equipment failure
- Safety concerns
- Personnel shortage

III. Equipment

A. Equipment and Capabilities provided by the ship (itemized)

1. Two fully-outfitted and operational survey launches to support shallow water survey operations utilizing hull-mounted side scan sonar, multibeam, and vertical beam sonar systems.

2. Ship fully-outfitted with hydrographic survey equipment to support multibeam survey operations.

3. Personnel to staff and operate the ship's survey equipment for 24 hr/day operations and a minimum of 2 survey launches and equipment for up to 10 hr per day concurrently, at the discretion of the command to ensure the most efficient survey operations.

4. A fully-staffed survey department to efficiently manage the project's data processing requirements.

B. Equipment and Capabilities provided by the scientists (itemized)

Hydrographic Surveys Division shall provide Physical Scientists for hydrographic data acquisition, processing, training, and data quality assurance support during project survey operations. Additionally, shore-based technical support shall be provided for survey systems and data acquisition and processing software.

IV. Hazardous Materials

A. Policy and Compliance

No Hazardous Materials are being brought aboard the ship for this project.

B. Radioactive Materials

No Radioactive Isotopes are planned for this project

V. Additional Projects

A. Supplementary ("Piggyback") Projects

No Supplementary Projects are planned.

B. NOAA Fleet Ancillary Projects

No NOAA Fleet Ancillary Projects are planned.

VI. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships will conform to NAO 216-101 *Ocean Data Acquisitions* and NAO 212-15 *Management of Environmental Data and Information.* To guide the implementation of these NAOs, NOAA's Environmental Data Management Committee (EDMC) provides the *NOAA Data Documentation Procedural Directive* (data documentation) and *NOAA Data Management Planning Procedural Directive* (preparation of Data Management Plans). OMAO is developing procedures and allocating resources to manage OMAO data and Programs are encouraged to do the same for their Project data.

VII. Meetings, Vessel Familiarization, and Project Evaluations

A. Pre-Project Meeting: The Principal Investigator and Commanding Officer will conduct a meeting of pertinent members of the scientific party and ship's crew to discuss required equipment, planned operations, concerns, and establish mitigation strategies for all concerns. This meeting shall be conducted before the beginning of the project with sufficient time to allow for preparation of the ship and project personnel. The ship's Operations Officer usually is delegated to assist the Principal Investigator in arranging this meeting.

B. Vessel Familiarization Meeting: The Commanding Officer is responsible for ensuring scientific personnel are familiarized with applicable sections of the standing orders and vessel protocols, e.g., meals, watches, etiquette, drills, etc. A vessel familiarization meeting shall be conducted in the first 24 hours of the project's start and is normally presented by the ship's Operations Officer.

C. Post-Project Meeting: The Commanding Officer is responsible for conducted a meeting no earlier than 24 hrs before or 7 days after the completion of a project to discuss the overall success and short comings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements shall be discussed and mitigations for future projects will be documented for future use. This meeting shall be attended by the ship's officers, applicable crew, the Chief Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.

D. Project Evaluation Report

Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at http://www.omao.noaa.gov/fleeteval.html and provides a "Submit" button at the end of the form. Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships, specific concerns and praises are followed up on while not divulging the identity of the evaluator.

VIII. Miscellaneous

A. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the project, and ending two hours after the termination of the project. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship's command at least seven days prior to the project.

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Chief Scientist. The Chief Scientist and Commanding Officer will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement. The Chief Scientist is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 17, 2000 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

B. Medical Forms and Emergency Contacts

The NOAA Health Services Questionnaire (NHSQ, Revised: 02 JAN 2012) must be completed in advance by each participating scientist. The NHSQ can be obtained from the Chief Scientist or the NOAA website http://www.corporateservices.noaa.gov/~noaaforms/eforms/nf57-10-01.pdf.

All NHSQs submitted after March 1, 2014 must be accompanied by NOAA Form (NF) 57-10-02 - Tuberculosis Screening Document in compliance with OMAO Policy 1008 (Tuberculosis Protection Program).

The completed forms should be sent to the Regional Director of Health Services at the applicable Marine Operations Center. The NHSQ and Tuberculosis Screening Document should reach the Health Services Office no later than 4 weeks prior to the start of the project to allow time for the participant to obtain and submit additional information should health services require it, before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of either form. Ensure to fully complete each form and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

The participant can mail, fax, or email the forms to the contact information below. Participants should take precautions to protect their Personally Identifiable Information (PII) and medical information and ensure all correspondence adheres to DOC guidance (http://ocio.os.doc.gov/ITPolicyandPrograms/IT_Privacy/PROD01_008240).

The only secure email process approved by NOAA is Accellion Secure File Transfer which requires the sender to setup an account. Accellion's Web Users Guide is a valuable aid in using this service, however to reduce cost the DOC contract doesn't provide for automatically issuing full functioning accounts. To receive access to a "Send Tab", after your Accellion account has been established send an email from the associated email account to accellionAlerts@doc.gov requesting access to the "Send Tab" function. They will notify you via email usually within 1 business day of your approval. The 'Send Tab" function will be accessible for 30 days.

Contact information:

Regional Director of Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone 757-441-6320
Fax 757-441-3760
Email MOA.Health.Services@noaa.gov

Prior to departure, the Chief Scientist must provide an electronic listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: contact name, address, relationship to member, and telephone number.

C. Shipboard Safety

Hard hats are required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when required.

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs) outside of private berthing areas is not permitted. At the discretion of

the ship CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship's Operations Officer should be consulted by the Chief Scientist to ensure members of the scientific party report aboard with the proper attire.

D. Communications

A progress report on operations prepared by the Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the project instructions. The ship's primary means of communication with the Marine Operations Center is via email and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged at least 30 days in advance.

E. IT Security

Any computer that will be hooked into the ship's network must comply with the *OMAO Fleet IT Security Policy* 1.1 (November 4, 2005) prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

(1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.

(2) Installation of the latest critical operating system security patches.

(3) No external public Internet Service Provider (ISP) connections.

Completion of the above requirements prior to boarding the ship is required.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms

Foreign National access to the NOAA ship or Federal Facilities is not required for this project.

VIII. Appendices

1. Primary Project Instructions: OPR-B367-TJ-14, Buzzards Bay and Approaches

Hydrographic Survey Project Instructions

Project Name:	Buzzards Bay, Narraganset Bay, and Vicinity
Project Number:	OPR-B367-TJ-14
Assigned Field Unit:	NOAA Ship *Thomas Jefferson*
Assigned Processing Branch:	Atlantic Hydrographic Branch
Signed Date:	03/26/2014
Project Instructions Version:	Final
Planned Acquisition Time:	Start Date: 03/2014 End Date: 09/2014
Delivery Dates:	120 days from completion of data acquisition.

Purpose and Location:
This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce the survey backlog within the area. This project will cover approximately 279 square nautical miles (snm) of which 160 snm are critical survey areas as designated in the NOAA Hydrographic Survey Priorities, 2012 edition.
Supporting Documents:
Hydrography shall consist of Navigable Area Surveys in accordance with the following support documents. Data from surveys is intended to supersede all prior survey data in the common area.
NOS Hydrographic Surveys Specifications and Deliverables Manual (HSSD), April 2013
NOS Field Procedures Manual for Hydrographic Surveying (FPM), April 2013
Hydrographic Survey Technical Directive (HTD): 2013-4 Configuration Management

PERSONNEL SAFETY AND DATA QUALITY SHALL ALWAYS BE EMPHASIZED OVER DATA QUANTITY! THE HYDROGRAPHER SHALL NEVER SUBJECT PERSONNEL OR BOATS TO UNDUE RISKS AND HAZARDS.

Registry Details:

General Locality: Buzzards Bay, MA

Registry Number	*Priority*	*Sublocality*	*State or Territory*	*Scale*	*Estimated SNM*	*Instructions*
H12642	1	Approaches to Newport	Rhode Island	10000	19	
H12643	2	Little Compton to Horseneck Beach	Massachusetts Rhode Island	10000	20	
H12644	3	Slocums Neck to New Bedford	Massachusetts	10000	20	
H12645	4	New Bedford to Naskatucket Bay	Massachusetts	10000	17	
H12646	5	Mattapoisett to Marion	Massachusetts	10000	16	
H12647	6	Entrance to Cape Cod Canal	Massachusetts	10000	20	
H12648	7	Silver Beach to Woods Hole	Massachusetts	10000	16	
H12649	8	Weepecket Islands to Nashawena Island	Massachusetts	10000	14	
H12650	9	Nashawena Island to Buzzards Bay Channel Light	Massachusetts	10000	15	
H12651	10	Point Judith Neck	Rhode Island	10000	16	
H12652	11	17 NM South of New Bedford	Rhode Island	40000	36	
H12653	12	Approaches to Vineyard Sound	Massachusetts	40000	31	
HXXXXX	13	Buzzards Bay Ship Channel, Sheet 1	Massachusetts Rhode Island	10000	11	Secondary, Optional Ship Sheet. Assigned as time allows and not to interfere with primary sheets 1 - 12.

Registry Number	*Priority*	*Sublocality*	*State or Territory*	*Scale*	*Estimated SNM*	*Instructions*
HXXXXX	14	Buzzards Bay Ship Channel, Sheet 2	Massachusetts	10000	8	Secondary, Optional Ship Sheet. Assigned as time allows and not to interfere with primary sheets 1 - 12.
HXXXXX	15	Buzzards Bay Ship Channel, Sheet 3	Massachusetts	10000	8	Secondary, Optional Ship Sheet. Assigned as time allows and not to interfere with primary sheets 1 - 12.
HXXXXX	16	Buzzards Bay Ship Channel, Sheet 4	Massachusetts	10000	12	Secondary, Optional Ship Sheet. Assigned as time allows and not to interfere with primary sheets 1 - 12.

Coverage & Limits:

Inshore Limit:The inshore limit of hydrography will be the farthest offshore of the following: (1) the 4-meter depth contour or (2) the line defined by the distance seaward from the MHW line which is equivalent to 0.8 millimeters at the scale of the largest scale nautical chart.

Coverage Type: Object Detection
Instructions:

Coverage Water Depth	*Coverage Required*
4 meters to 20 meters water depth	200% SSS with concurrent Set Line Spacing SBES or MBES with Backscatter, or Object Detection MBES with Backscatter
Greater than 20 meters water depth	Complete Multibeam with Backscatter

Assigned Tasks

Acknowledgement:

Acknowledge receipt of these instructions and submit any comments or questions via email to Paul Turner at Paul.Turner@noaa.gov.

Aids to Navigation (ATONs):

There are no ATONs specifically assigned for this project. Any ATONs located within the survey area should be verified so that they serve their intended purpose in accordance with section 7.2 of the HSSD.

AWOIS Items:
There are no AWOIS investigation requirements for this project.

Maritime Boundary Points (MBPs):
Investigate Maritime Boundary Points in accordance with section 3.5.6 of the FPM.

Bottom Samples:
Obtain bottom samples in accordance with section 7.1 of the HSSD in areas designated by the feature object class springs (SPRING) in the Project Reference File (PRF). Review the recommended bottom sample locations with regards to the acquired survey data. Contact HSD Operations Branch if it is determined that modifying the bottom sample plan would better differentiate the varying bottom characteristic within the survey area. Any modification to the bottom sample plan shall closely maintain the same plan provided. This may increase or decrease the sample density but should closely maintain the same numbers of samples per survey as originally assigned.

Chart Comparison:

Use only the latest editions of the largest scale NOS charts covering the project area. Compare in accordance with section 4.5 of the FPM and section 8.1.4, D.1 of the HSSD. Resolve any discrepancies identified in the field and explain them in the Descriptive Report. The charts, listed below, were used in the preparation of these project instructions and accompanying project files.

Affected Raster Charts

Chart Number	*Scale*	*Edition Number*	*Edition Date*	*LNM Date*	*NM Date*
13235	5000	7	07/2012	06/26/2012	07/07/2012
13223	20000	43	06/2013	06/18/2013	06/29/2013
13232	20000	5	11/2009	10/27/2009	11/07/2009
13228	20000	12	11/2009	11/10/2009	11/21/2009
13236	20000	31	04/2012	04/03/2012	04/14/2012
13219	15000	13	12/2011	11/29/2011	12/10/2011
13221	40000	59	03/2012	03/06/2012	03/17/2012
13230	40000	50	08/2012	08/03/2010	08/14/2010
13229	12000	32	06/2013	06/18/2013	06/29/2013
13218	80000	42	07/2013	07/16/2013	07/27/2013

Affected ENCs

ENC Name	*Scale*	*Edition*	*Update Application Date*	*Issue Date*	*Preliminary*
US5MA28M	5000	7	08/20/2012	09/11/2013	NO
US5RI21M	15000	6	01/04/2013	03/25/2013	NO
US5RI22M	20000	23	09/16/2013	11/15/2013	NO
US5MA24M	20000	11	08/10/2012	11/21/2013	NO
US5MA26M	20000	14	08/14/2012	06/06/2013	NO
US5MA27M	20000	22	08/31/2012	09/26/2013	NO
US5RI20M	40000	13	12/26/2012	12/26/2012	NO
US5MA25M	40000	19	08/28/2012	06/06/2013	NO
US5MA20M	40000	7	10/25/2013	10/25/2013	NO
US4MA23M	80000	27	11/07/2013	12/11/2013	NO

Coast Pilot:
Review and make recommendations for changes to the Coast Pilot. Coast Pilot excerpts can be downloaded from the Coast Pilot website (http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm). Submit the revised Coast Pilot section or a report stating no changes are recommended, via email to Coast.Pilot@noaa.gov and ocs.ndb@noaa.gov with a courtesy copy to the HSD OPS project planner and the appropriate Processing Branch. The report should be submitted as soon as possible following field work for the project. Refer to sections 3.5.7 and 5.2.2.2.5 of the FPM for more information.

Dangers to Navigation (DTONs):
Generate DTON reports in accordance with the HSSD, section 8.1.3. DTON reports should be sent to ocs.ndb@noaa.gov. It is of paramount importance that DTONs be reported as soon as possible.

Junctions:

Junction with data from the surveys listed below. A Survey Junction Analysis is NOT required for Junction Surveys H10461, H10496, H10575, and H10434 if the Secondary, Optional Ship Sheets are surveyed. Refer to sections 2.2.2.3 and 4.5.2 of the FPM.

Registry Number	*Scale*	*Year*	*Platform*	*Relative Location*
H10404	10000	1991	NOAA Ship *Rude*	W
H10434	10000	1992	NOAA Ship *Rude*	N
F00373	10000	1992	NOAA Ship *Rude*	N
H10461	10000	1993	NOAA Ship *Rude*	NE
H10496	10000	1993	NOAA Ship *Rude*	NE
H10511	10000	1993	NOAA Ship *Rude*	NE
H10530	10000	1994	NOAA Ship *Rude*	NE
H10575	10000	1994	NOAA Ship *Rude*	N
H10520	10000	1994	NOAA Ship *Rude*	NE
H10648	10000	1995	NOAA Ship *Rude*	SW
H10659	10000	1995	NOAA Ship *Rude*	SW
H10605	10000	1995	NOAA Ship *Rude*	W
H10711	10000	1996	NOAA Ship *Rude*	NW
H11318	10000	2004	NOAA Ship *Rude*	NE
H11319	10000	2004	NOAA Ship *Rude*	NE
H11076	5000	2004	NOAA Ship *Thomas Jefferson*	E
H11922	10000	2008	NOAA Ship *Thomas Jefferson*	SE
H11995	10000	2008	NOAA Ship *Thomas Jefferson*	SW
H11996	10000	2008	NOAA Ship *Thomas Jefferson*	SW
H11921	10000	2008	NOAA Ship *Thomas Jefferson*	S
H12324	10000	2011	Navigation Response Team 5	S

Progress Reports:

Email monthly progress reports in accordance with section 5.2.2.2.1 of the FPM to progress.sketches@noaa.gov with a copy to the chief of the assigned Processing Branch. The submittal is due within 5 days after the end of each month.

Survey Outlines:

Generate a survey outline in accordance with the HSSD, section 8.1.2. Submit survey outlines to survey.outlines@noaa.gov.

Horizontal Control Requirements:

Comply with the horizontal control requirements in section 3 of the HSSD.

Vertical Control Requirements:

Comply with the horizontal control requirements in section 4 of the HSSD. HSD Ops has performed preliminary analysis of CORS Stations. Results are shown on the attached image following the Sheet Layout. Available CORS stations are shown in addition to a 30 km buffer surrounding the station.

TCARI

Comply with the requirements from CO-OPS which are included with the project data from the Operations Branch. Submit surveys with final approved water levels applied. Contact the Operations Branch if this causes the survey to miss a submission deadline.

VDatum

Please refer to Appendix 1 attached to this document for ERS vertical specific deliverables. Vertical control will either be the CO-OPS provided model or VDATUM, and will officially be decided on upon delivery of interim deliverable products, as per Appendix 1. The uncertainties contained in the table below are reported at the 1-sigma confidence level.

VDatum Version	Geoid	Area	Area Version	Separation Uncertainty
3.2	2012	NY, CT, RI	2	10.2 centimeters

NWLON Gauges

Operating Water Level Station	*Station ID*
Woods Hole	8447930
Newport	8452660
Quonset Point	8454049

Orthometric Imagery:

No Orthometric Imagery has been provided for this project.

Shoreline and Nearshore Features:

Conduct a limited shoreline verification using the composite source file (CSF). All other submerged or visible cultural features inside the limit of survey shall be verified. All features with attribute asgnmt populated with 'Assigned' shall be addressed even if they are inshore of NALL. Preliminary analysis of the nautical chart was conducted at HSD OPS. See section 3.5.5.2.2 of the FPM.

User Contacts

The following primary offices and persons shall be contacted at or near the beginning and end of the field operations to discuss survey objectives and accomplishment (Mandatory) or are listed for contact at the discretion of the Commanding Officer (Reference).

NOAA Navigation Manager, Northeast
LCDR Brent Pounds, NOAA
National Marine Fisheries Service's, Narragansett Laboratory
Phone: 401-782-3252
Fax: 701-782-3292
Email: Brent.Pounds@noaa.gov
Obligation: Mandatory

Northeast Marine Pilots
CAPT Howard McVay Jr., President
Phone: 401-847-9050
Fax:
Email: captmcvay@cox.net
Obligation: For Reference

Chief, Waterways Management Division, USCG
CDR Ed LeBlanc, Commander
U.S. Coast Guard, Sector Southeastern New England
Phone: 401-435-2351
Fax:
Email: Edward.G.LeBlanc@uscg.mil
Obligation: For Reference

Chief, Navigation Section, USACE, New England District
Mr. Ed O'Donnell
US Army Corps of Engineers
Phone: 978-318-8375
Fax:
Email: Edward.G.O'Donnell@usace.army.mil
Obligation: For Reference

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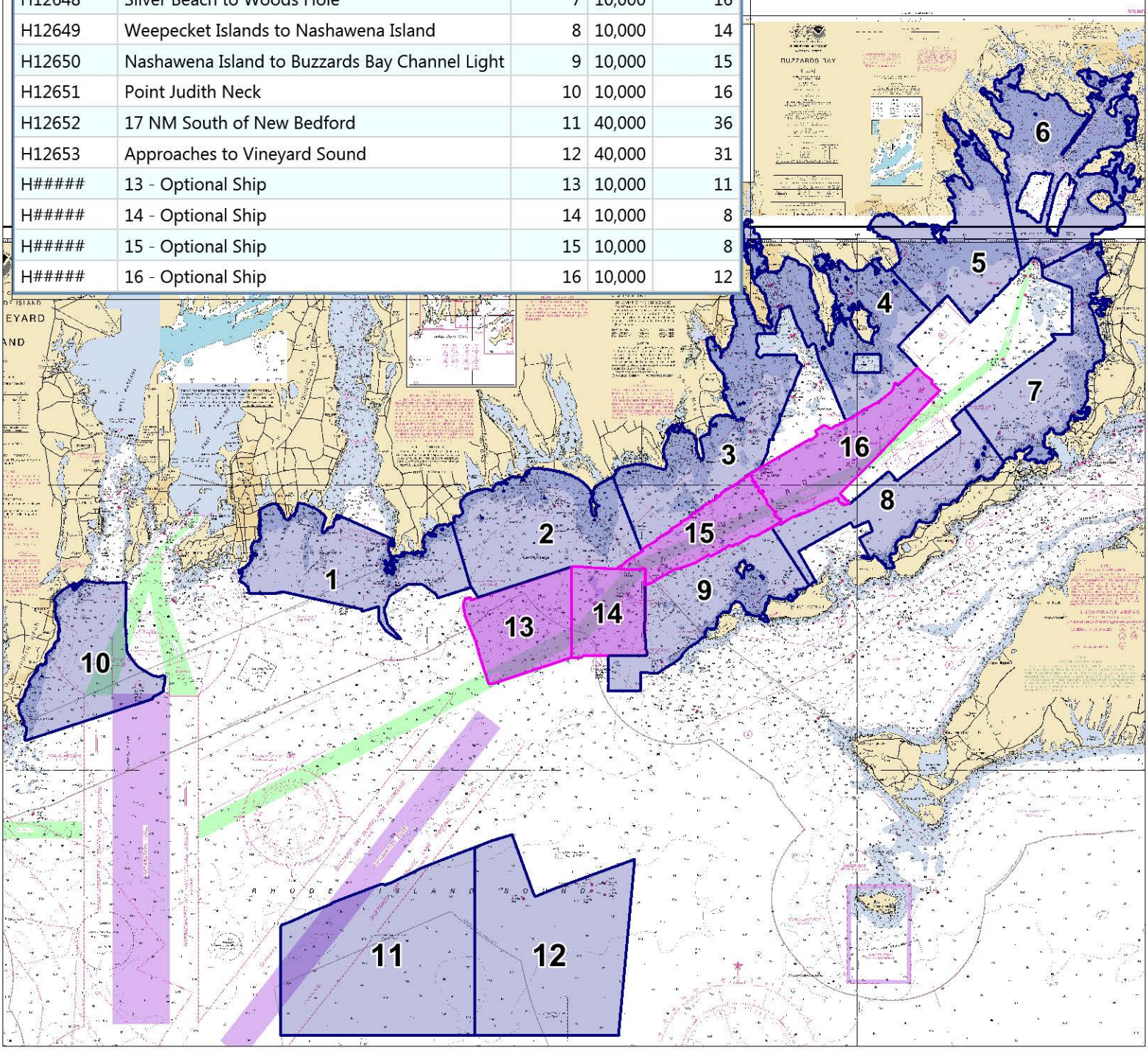
OPR-B367-TJ-14
Buzzards Bay and Approaches
Project Layout
3/10/14

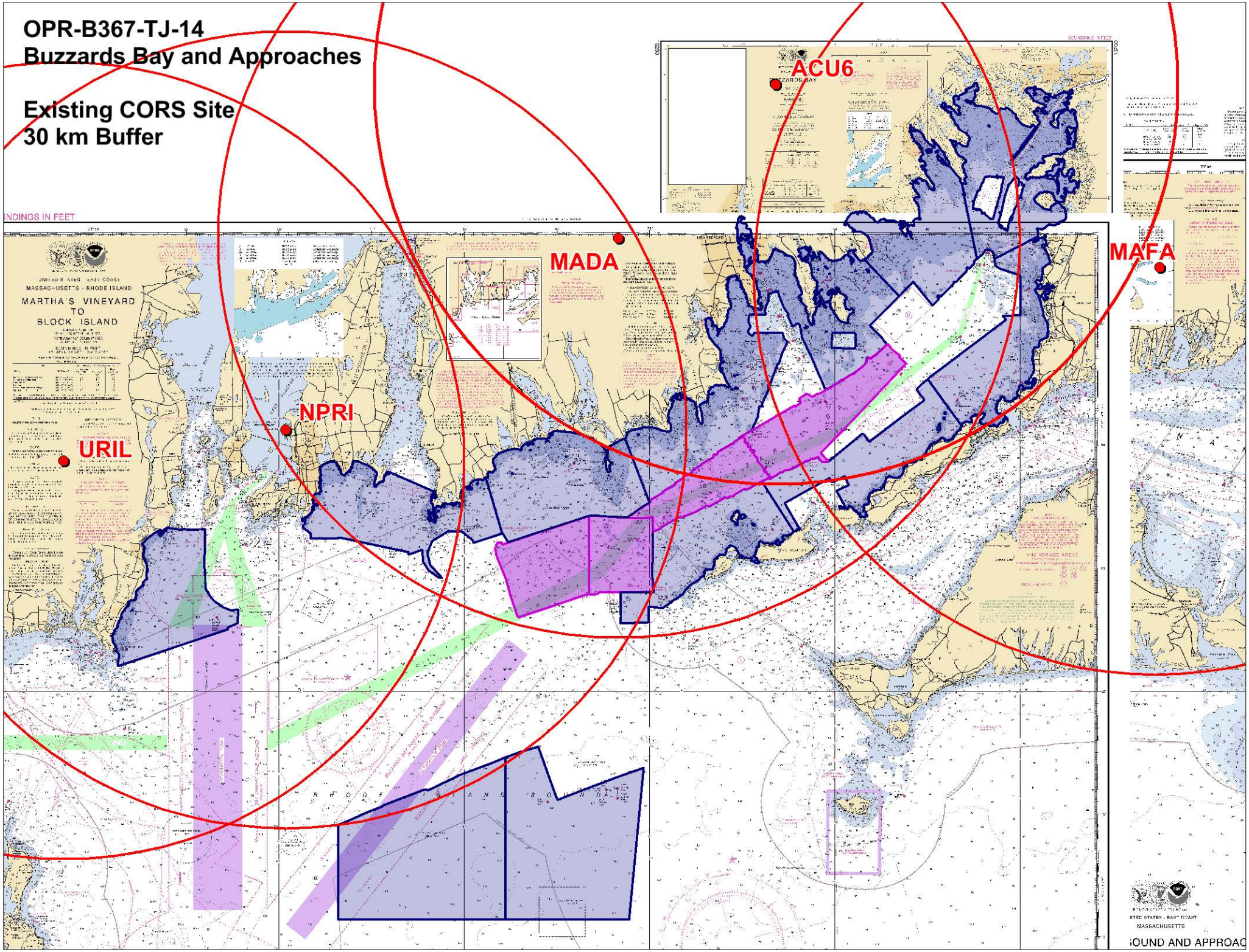
Project Total

SNM -- Primary Sheets -- 240
SNM -- Optional Sheets -- 39

SNM Total -- 279
SNM Crit -- 160

H_Number	SheetName	Priority	Scale	Est_SNM
H12642	Approaches to Newport	1	10,000	19
H12643	Little Compton to Horseneck Beach	2	10,000	20
H12644	Slocums Neck to New Bedford	3	10,000	20
H12645	New Bedford to Naskatucket Bay	4	10,000	17
H12646	Mattapoisett to Marion	5	10,000	16
H12647	Entrance to Cape Cod Canal	6	10,000	20
H12648	Silver Beach to Woods Hole	7	10,000	16
H12649	Weepecket Islands to Nashawena Island	8	10,000	14
H12650	Nashawena Island to Buzzards Bay Channel Light	9	10,000	15
H12651	Point Judith Neck	10	10,000	16
H12652	17 NM South of New Bedford	11	40,000	36
H12653	Approaches to Vineyard Sound	12	40,000	31
H#####	13 - Optional Ship	13	10,000	11
H#####	14 - Optional Ship	14	10,000	8
H#####	15 - Optional Ship	15	10,000	8
H#####	16 - Optional Ship	16	10,000	12




OPR-B367-TJ-14
Buzzards Bay and Approaches
Existing CORS Site
30 km Buffer
ACU6
MADA
MAFA
NPRI
URIL
MARTHA'S VINEYARD
TO
BLOCK ISLAND
RHODE ISLAND SOUND

Appendix I

OPR-B367-TJ-14 ERS Test & Evaluation Deliverables

1 DELIVERABLES

Commanding Officer, NOAA Ship *Thomas Jefferson* shall provide an analysis of VDatum ERS test and evaluation no greater than 60 days from the completion of data acquisition. Preliminary results to include:

- Recommendation on vertical transformation technique (VDatum ERS or Tidal Package) using crossline data. Compare crossline HIPS PVDL ProcessedDepths, referenced to MLLW reduced via discrete zoning, relative to crossline HIPS PVDL ProcessedDepths, referenced to MLLW reduced via VDatum (Pydro/Post Acquisition Tools/Tool/Caris/Compare Time Series Data).

Upon review of interim deliverables, HSD will determine the final vertical transformation technique to be used to create the final deliverables. For further information on final deliverables refer to the HSSD & FPM.

WATER LEVEL INSTRUCTIONS
OPR-B367-TJ-2014, Buzzards Bay, Narragansett, Bay, and Vicinity
(10/15/2013 LL)

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 2013, and OCS Field Procedures Manual (FPM), dated May 2013. 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.

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, or through regular communications with CO-OPS/Oceanographic Division (OD) 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/OD (nos.coops.hpt@noaa.gov) 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 the NWLON stations mentioned above for any reason during periods of hydrography.

1.2.2. The Hydro Hot List (HHL)

Please contact CO-OPS' Hydrographic Planning Team (HPT) at nos.coops.hpt@noaa.gov and CO-OPS' Operational Engineering Team (OET) at nos.coops.oetteam@noaa.gov at least three business days before survey operations begin, and within 1 business day after survey operations are completed so that the appropriate CO-OPS National Water Level Observation Network (NWLON) control water level station(s), as well as any required subordinate station(s), is/are added to or removed from the CO-OPS Hydro Hotlist (HHL) (http://tidesandcurrents.noaa.gov/hydro). Include start and end survey dates, full project number (e.g. OPR-H355-TJ-10), and control and subordinate station numbers. The notification must be

sent to both teams as OET is responsible for configuring the station in the CO-OPS data base and HPT manages the addition and removal of stations from the HHL.

Station	Station ID	Control or Subordinate	Type (e.g. NWLON, PORTS©, etc)	Comment
Woods Hole	8447930	Control	NWLON	
Newport	8452660	Control	NWLON	
Quonset Point	8454049	Control	PORTS	

Table 1: All stations that need to be added to the HHL in support of B367TJ2014

It is important to know that the addition of a water level station to the HHL ensures the station is monitored by CORMS and any problems are reported daily. However, platforms should view the HHL each morning of active survey operations and click on the eyeball icon to double check that there are not problems with the required stations on that day. If a platform notices problems with data on their survey day of operation, please contact HPT at nos.coops.hpt@noaa.gov, CORMS at CORMS@noaa.gov, and their respective headquarters point of contact at HSD or NSD. Stations on the HHL are given priority for maintenance should a station cease normal operation during scheduled times of hydrography. CO-OPS will notify a field unit within 1 business day if a HHL water level station ceases operation during scheduled times of hydrography. This is in addition to the daily CORMS report that CORMS sends to NOAA field units, if the field unit's e-mail address is added to the CORM's daily e-mail list. To be added to the CORMS daily HHL report, the platform should contact CO-OPS' Data Monitoring and Analysis Team (DMAT) at nos.co-ops.dmat@noaa.gov and request to be added.

If the stations are listed on HHL, then weekly priority processing will occur and, for those water level stations, verified 6-minute water level data will be made available every week on Monday or Tuesday. If Monday happens to be a federal holiday, then the 6-minute verified water level data will be made available on the following Tuesday or Wednesday.

1.3. Tide Reducer Stations

1.3.1. CO-OPS Long Term Water Level Station Operation and Maintenance

The NWLON stations, Woods Hole, MA (8447930), Newport, RI (8452660), and Quonset Point, RI (8454049), will provide water level reducers for this project. Therefore it is critical that it remains in operation during the survey. See Sections 1.1. and 1.2. concerning responsibilities.

No leveling is required at Woods Hole, MA (8447930), Newport, RI (8452660), or Quonset, RI (8454049) by NOAA's Thomas Jefferson 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.

1.3.2. Subordinate Station Requirements

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.

1.3.3. Tide Component Error Estimation

This section is not applicable for this project. Tidal Constituent And Residual Interpolator (TCARI) automatically calculates the error associated with water level interpolation. This error is incorporated into the residual/harmonic solutions and included in the Total Propagated Error (TPE) for the survey. Uncertainty values input into TCARI model are 2-sigma. Pydro will automatically supply 1-sigma values to *CARIS* when computing uncertainty.

1.3.4. GOES Satellite Enabled Subordinate Stations

This section is not applicable for this project.

1.3.5. Benchmark Recovery and GPS Requirements

This section is not applicable for this project.

1.3.6. Residual Water Level Station(s) Data

Tidal Constituent And Residual Interpolation (TCARI) method uses harmonic constituents and residuals from historical and operating water level stations to provide precise water level correction for bathymetric surveys. Download the Preliminary/Verified data at following water level station(s) data for all periods of survey.

The operating stations at Woods Hole, MA (8447930), Newport, RI (8452660), and Quonset Point, RI (8454049) will provide residuals for this project and must remain in operation during all periods of hydrography.

Station Number	Station Name	Latitude(N)	Longitude(W)
8449730	**Woods Hole**	**41° 31.4'**	**70° 40.3'**
8452660	**Newport**	**41° 30.3'**	**71° 19.6'**
8454049	**Quonset Point**	**41° 35.2'**	**71° 24.6'**

1.4. Tidal Constituent and Residual Interpolation (TCARI)

1.4.1. For hydrography in the area of Buzzards Bay and Narragansett Bay, apply the TCARI grid "B367TJ2014.tc" supplied in conjunction with the water level data from Section 1.3.6 to produce a seamless tide correction. Refer to the TCARI Field SOP for detailed TCARI instructions.

1.4.2. This section is not applicable for this project.

1.4.3. TCARI Graphic

A diagram created in Mapinfo, which includes the exported TCARI grid boundary, is provided in digital copy format to assist with the information provided in section 1.4.1.

1.4.4. TCARI Final Solutions

Upon completion of project, submit a Pydro generated request for smooth tides, with times of hydrography abstract and mid/mif tracklines attached. Forward this request to final.tides@noaa.gov. Provide the project number, as well as sheet number, in the subject line of the email.

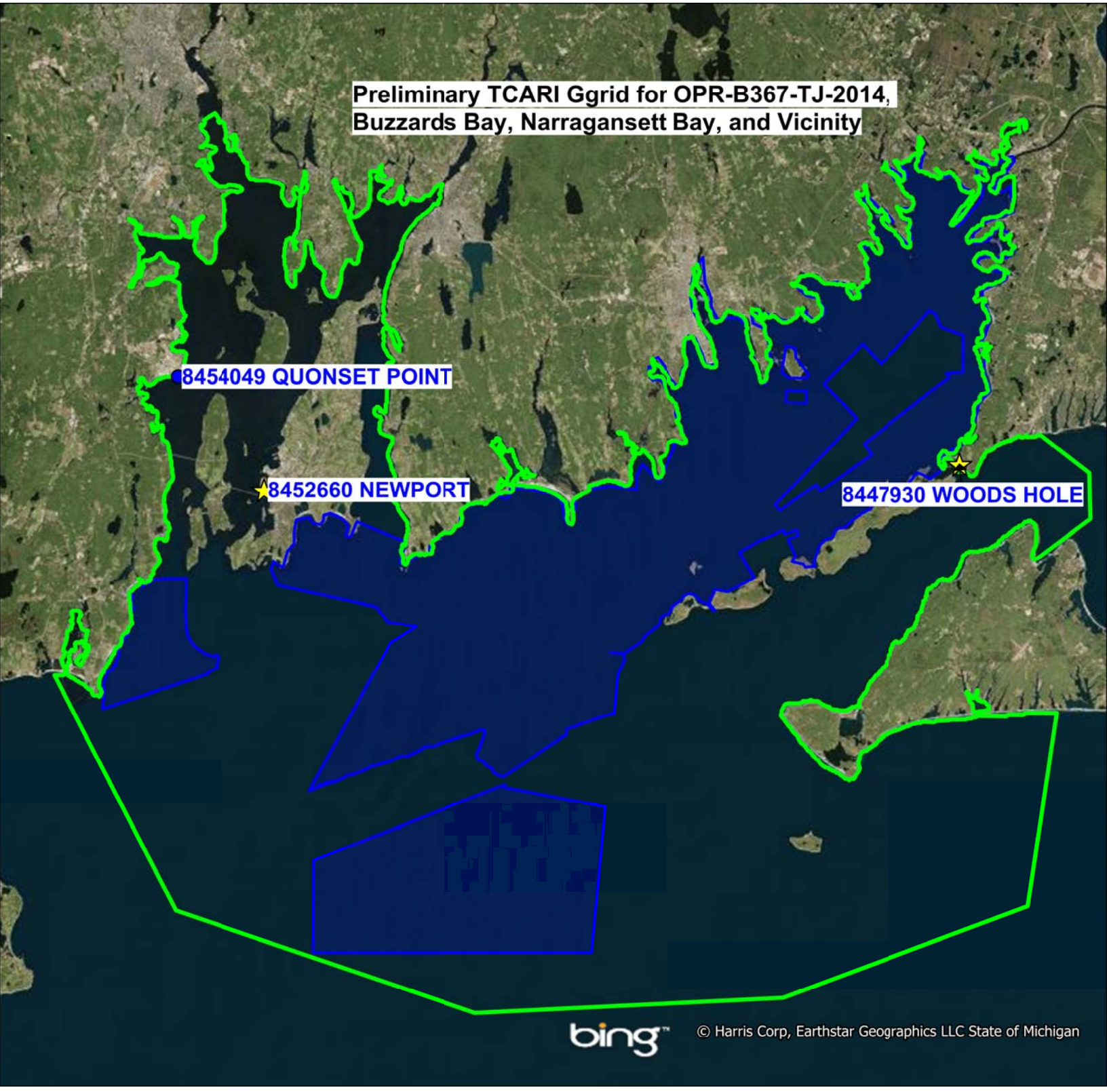
CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised TCARI grid and solutions to the field group and processing branch for final processing.

1.5. Fetchtides

Preliminary and verified six minute water level time series data may be retrieved from the CO-OPS database via the Fetchtides application. Fetchtides provides a mechanism to store imported data locally and combines multiple days of data into one CARIS readable tide (.tid) file. Fetchtides is available for download at Hydrosoft Online (https://inside.nos.noaa.gov/hydrosoft/hydrosoftware.html. For more information, please see the Fetchtides User Manual in the FPM chapter 3 appendix.

1.6 Water Level Records

This section is not applicable for this project.


Preliminary TCARI Ggrid for OPR-B367-TJ-2014,
Buzzards Bay, Narragansett Bay, and Vicinity
8454049 QUONSET POINT
8452660 NEWPORT
8447930 WOODS HOLE
bing
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