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: June 13, 2016

Platform: NOAA Ship *Fairweather*

Project Number: FA-16-02

Project Title: South Coast of Kodiak Island

Project Dates: June 20, 2016 to September 30, 2016

Prepared by: _____ Dated: 7 June 2016
Lieutenant Commander Michael Gonsalves, NOAA
Chief, Operations Branch
Hydrographic Surveys Division

Approved by: _____ Dated: 7June2016
Captain Eric W. Berkowitz, NOAA
Chief, Hydrographic Surveys Division
Office of Coast Survey

Approved by: _____ Digitally signed by PARKER.BRIAN.W.1076514042 Date: 2016.06.20 16:21:26 -07'00' Dated: June 20, 2016
Commander Brian Parker, NOAA
Commanding Officer
Marine Operations Center – Pacific

I. Overview

A. Brief Summary and Project Period

This survey is scheduled to begin in June 2016 and end in September 2016. 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 64 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 64 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 medium Operational Tempo.

C. Operating Area

The project area is located on the south coast of Kodiak Island in Alaska. A map of the project area can be found with the detailed project instructions appended to these instructions.

D. Summary of Objectives

This project will support the following primary mission:

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

Office of Coast Survey

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

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Mueller, Kurt	PS	6/5/2016	7/1/2016	M	PHB	US
Pridgen, Kathryn	PS	6/20/2016	7/22/2016	F	OPS	US
Raymond, Annie	PS	7/5/2016	7/22/2016	F	PHB	US
Dr. Weston	PS	7/5/2016	7/22/2016	M	SDLC	US
Holmberg, Peter	PS	9/6/2016	9/16/2016	M	PHB	US
Fandel, Christina	PS	9/19/2016	9/30/2016	F	OPS	US
James, Jacklyn	PS	9/19/2016	9/30/2016	F	OPS	US

G. Administrative

1. Points of Contacts:

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 Manager:
Kathryn Pridgen
Physical Scientist, Operations Branch
Hydrographic Surveys Division
1315 East West Hwy, #6854
Silver Spring, MD 20910
301-713-2702 x178
Kathryn.Pridgen@noaa.gov

Chief Scientist:
LCDR Mark Van Waes, NOAA
Commanding Officer, NOAA Ship *Fairweather*
2002 SE Marine Science Drive
Newport, OR 97365
206-254-2842
Mark.VanWaes@noaa.gov
co.fairweather@noaa.gov

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

The Office of Coast Survey is sensitive to the potential effects of it 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:

DEP: ARR:	6/20/2016 7/1/2016	Ketchikan, AK Homer, AK	FA-16-02 OPR-P335-FA-16 South Kodiak Island	12
DEP: ARR:	7/5/2016 7/21/2016	Homer, AK Kodiak, AK	FA-16-02 OPR-P335-FA-16 South Kodiak Island	17
DEP: ARR:	7/25/2016 8/5/2016	Kodiak, AK Dutch Harbor, AK	FA-16-02 OPR-P335-FA-16 South Kodiak Island	12

DEP: ARR:	9/6/2016 9/16/2016	Kodiak, AK Kodiak, AK	FA-16-02 OPR-P335-FA-16 South Kodiak Island	11
DEP: ARR:	9/19/2016 9/30/2016	Kodiak, AK Kodiak, AK	FA-16-02 OPR-P335-FA-16 South Kodiak Island	12

B. Staging and Destaging:

None Required.

C. Operations to be Conducted:

Hydrographic survey operations shall be conducted per the appended project instructions using four survey launches up to 10 hr/day for data acquisition and project field support. Alternatively, the Commanding Officer may elect 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

Dive operations may occur to support the installation, servicing, and removal of a subordinate water level station. Due to the dynamic schedule of survey operations, the specific dates of the dives are not known well in advance.

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.

E. Applicable Restrictions

Conditions which preclude normal operations:

- Poor weather conditions

- Equipment failure

- Safety concerns

- Personnel shortages

III. Equipment

A. Equipment and Capabilities provided by the ship

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

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

- Personnel and staff to 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/day concurrently, at the discretion of the command to ensure the most efficient survey operations.

- Fully staffed survey department to efficiently manage the project's data processing requirements.

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

1. Tide Buoys (2)
    a. Dimensions
        i. Diameter: 0.6m
        ii. Weight: 156 lbs.
        iii. Telemetry: Iridium (WiFi available)
    b. Charging Requirements
        i. Standard 120V AC outlet
        ii. 12 hours charge time
        iii. D-Cell" Lithium non-rechargeable batteries (Supplied by Coast Survey)
    c. Assembly / Hardware
        i. 11mm torque wrench
        ii. 12 bolts around equator

C. Equipment and Capabilities provided by the scientists

Hydrographic Surveys Division may provide Physical Scientists for hydrographic data acquisition, processing, training, and data quality assurance support during project survey operations. Additionally, shore based technical support may 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

D. 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 Chief Scientist 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 Chief Scientist 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 HSD Operations Branch. 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, NF 57-10-01 (3-14)) 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 – Pacific
2002 SE Marine Science Dr.
Newport, OR 97365
Telephone 541-867-8822
Fax 541-867-8856
Email MOP.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 through the ship's Commanding Officer 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-P335-FA-16 South Coast of Kodiak, Alaska

Hydrographic Survey Project Instructions

Project Name:	South Coast of Kodiak Island
Project Number:	OPR-P335-FA-16
Assigned Field Unit:	NOAA Ship *Fairweather*
Assigned Processing Branch:	Pacific Hydrographic Branch
Signed Date:	04/21/2016
Project Instructions Version:	Draft
Planned Acquisition Time:	Start Date: 06/2016 End Date: 08/2016
Delivery Dates:	120 days from completion of data acquisition.

Purpose and Location:
The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. Survey areas will address 208 SNM of navigationally significant waters, of which 176 SNM are classified as emerging critical areas and 32 SNM are classified as Priority 1, in accordance with the National Hydrographic Survey Priorities Edition 2012. This survey will also support seismic research for tsunami risk analysis by USGS and ADF&G.
Supporting Documents:
Hydrography shall consist of Navigable Area Surveys in accordance with the following support documents.
NOS Hydrographic Surveys Specifications and Deliverables Manual (HSSD), March 2016
NOS Field Procedures Manual for Hydrographic Surveying (FPM), April, 2014
Hydrographic Survey Technical Directive (HTD): HTD 2015-1 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: Alaska

Registry Number	*Sheet Number*	*Sublocality*	*State or Territory*	*Scale*	*Estimated SNM*	*Instructions*
H12896	1	Due East of Aiaktalik Island	Alaska	40000	32	
H12897	2	Geese Channel	Alaska	40000	17	
H12898	3	South of Cape Kaguyak	Alabama	40000	21	
H12899	4	South of Twoheaded Island	Alaska	40000	17	
H12909	5	2 NM Southeast of Twoheaded Island	Alaska	40000	15	
H12910	6	South of Black Point	Alaska	40000	16	
H12911	7	2 NM South of Cape Kiavak	Alaska	40000	21	
H12912	8	Kiavak Bay	Alaska	40000	15	
H12913	9	Natalia Bay	Alaska	40000	13	
H12914	10	Kiaugnak Bay	Alaska	40000	10	
H12915	11	Sitkalidak Strait	Alaska	40000	25	

Limits & Coverage:

Inshore Limit: The Inshore Limit is the Navigable Area Limit Line (Refer to HSSD 1.2.2).

Coverage Requirements:

Coverage Water Depth	*Coverage Required*
All waters in survey area	Complete Coverage accomplished using either: A) Complete coverage MBES depth and backscatter data, or B) 100% SSS coverage with concurrent set line spacing MBES depth and backscatter data. Refer to HSSD Section 5.2.2.2

Assigned Tasks

Acknowledgement:
The project manager for this project is Kathryn Pridgen. Contact information for the project manager may be found in the User Contacts section of this document. The field unit shall acknowledge receipt of these instructions and submit any comments or questions via email to the project manager. Additionally, the project manager shall be included on all discussions or correspondence involving issues concerning the project.

Environmental Compliance Requirements
Comply with the marine mammal observation and reporting requirements in Section 1.4 of the HSSD. For further guidance see the attached Environmental Assessment.

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. For reference, a dataset containing all AWOIS items can be accessed within the GIS files located within the project folder or found in multiple formats at http://www.nauticalcharts.noaa.gov/hsd/wrecks_and_obstructions.html

Maritime Boundary Points (MBPs):
There are no Maritime Boundary investigation requirements for this project.

Bottom Samples:
Obtain bottom samples in accordance with Section 7.2 and 7.2.2.

Chart Comparison:

Perform a chart comparison in accordance with Sections 8.1.4 and D.1 of the HSSD. Use only the latest editions of the largest scale NOS charts covering the project area. 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, however, this list is for reference only and not exhaustive. Some charts listed may have larger scale sections to which survey data must be compared.

Affected Raster Charts

Chart Number	*Scale*	*Edition Number*	*Edition Date*	*Kapp Number*	*LNM Date*	*NM Date*
16590	81529	12	09/2014	2548	02/16/2016	02/20/2016
16592	80728	11	07/2014	2550	02/16/2016	02/20/2016

Affected ENCs

ENC Name	*Scale*	*Edition*	*Update Application Date*	*Issue Date*	*Preliminary*
US4AK5LM	81529	9	10/27/2015	10/27/2015	NO
US4AK5NM	80728	10	11/19/2015	11/19/2015	NO

Coast Pilot:

Perform a Coast Pilot Review as described in HSSD Section 8.1.3.

Dangers to Navigation (DTONs):

Generate DTON reports in accordance with Section 1.5 of the HSSD. DTON reports should be sent to ocs.ndb@noaa.gov with a courtesy copy to the project manager. It is of paramount importance that DTONs be reported as soon as possible.

Junctions:

Perform a junction analysis with the surveys listed below and between current project sheets. Refer to HSSD 8.1.4 Junction guidance.

Registry Number	*Scale*	*Year*	*Platform*	*Relative Location*
H11665	10000	2007	Tenix Lads Inc.	NW
H11666	10000	2007	Tenix Lads Inc.	NW
H11667	10000	2007	Tenix Lads Inc.	NW
H12683	40000	2014	NOAA Ship *Fairweather*	SW
H12681	40000	2014	NOAA Ship *Fairweather*	W
H12686	40000	2014	NOAA Ship *Fairweather*	N
H11338	10000	2004	NOAA Ship *Rainier*	E

Progress Reports:

Submit weekly (refer to HSSD 8.1.1.1) and monthly (refer to HSSD 8.1.1.2) progress reports.

Survey Outlines:

Generate and submit a survey outline in accordance with Section 8.1.2 of the HSSD.

Special Data Handling Requirements:

ATTENTION: Field Unit

Submit sound speed data to NCEI in accordance with Section 8.3.6 of the HSSD.

Horizontal Control Requirements:

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

PPK

This project has a requirement to reference the survey data to the ellipse, which may require field-installed control stations, using either a single base or smartbase processing solution.
At the commencement of survey operations, check lines should be run across the entirety of these sheets to confirm the operational status of the field-installed stations, and to measure the anticipated uncertainties of the positioning solution. The results of these check lines should be reported back to HSD Operations. Refer to ERZT Section below.

Vertical Control Requirements:

Comply with the vertical control requirements in Section 4 of the HSSD.

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. This is tides option two, please disregard stations 945AAAA, 945BBBB, 945CCCC as they have been removed from the survey area.

ERZT

This project has a requirement to reference the survey data to the ellipse. Based on the analysis of existing CORS and PBO stations, this will most likely be achieved through a combination of PBO stations or through a field-installed control station. At the commencement of survey operations, check lines should be run across the entirety of these sheets to confirm the operational status of the control stations, and to measure the anticipated uncertainties of the single base solution. The ERZT results should be compared to the PMVD separation model. The results of these check lines should be reported back to HSD Project Manager with a CC to ERS.Deliverables@noaa.gov . All survey lines shall be delivered with SBET/RMS files applied and GPS tides computed. The field shall be required to use the Ellipsoid Referenced Zoned Tides (ERZT) model. Should the ERZT method prove successful, all delivered grids at chart datum shall be derived via the ellipse. Within 60 days of the completion of acquisition, the field unit shall prepare an ERS Capability Memorandum, submitted to HSD Project Manager with a CC to ERS.Deliverables@noaa.gov, summarizing the degree to which ERS surveying campaign was successful.

NWLON Gauges

Operating Water Level Station	*Station ID*
Alitak	9457804
Kodiak Island	9457292

Subordinate Gauges

Operating Water Level Station	*Station ID*	*Leveling Required*	*Installation Required*	*Pre-Existing Benchmarks*
Offshore Sitkalidak Island GPS Buoy	945DDDD	NO	YES	NO
MacDonald Lagoon GPS Buoy	945FFFF	NO	NO	NO

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) which used US4AK5LM and US4AK5NM to assign features after investigation with satellite derived bathymetry. Submit a Final Feature File in accordance with Section 7 of the HSSD. Contact the HSD Project Manager if there are any questions regarding feature assignments and feature management.

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).

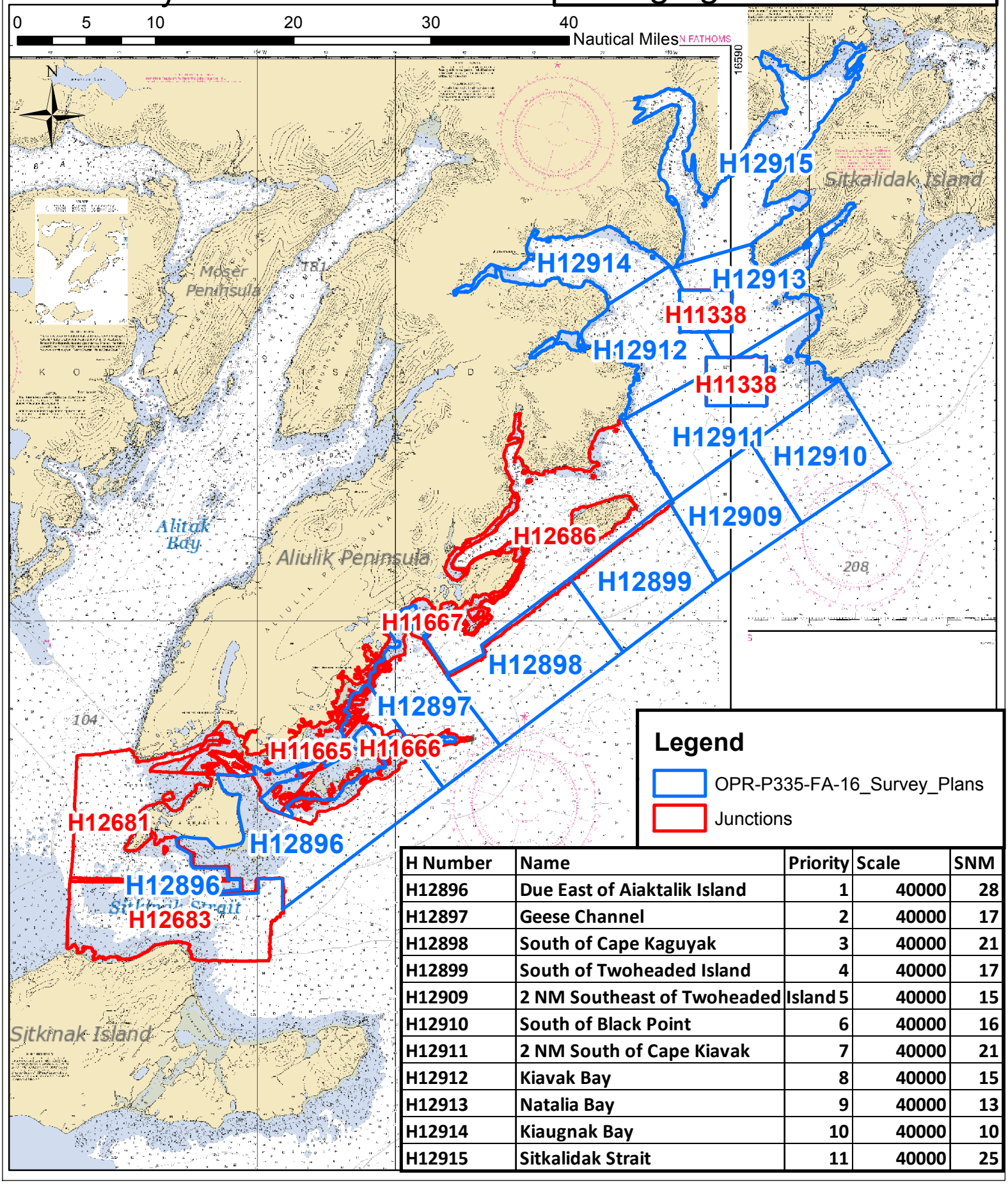
Project Manager
Kathryn Pridgen
NOAA
Phone: 301-713-2702 x178
Fax:
Email: kathryn.pridgen@noaa.gov
Obligation: Mandatory

NOAA: Navigation Manager: Alaska
LT Tim Smith
NOAA
Phone: 907-271-3327
Fax:
Email: timothy.m.smith@noaa.gov
Obligation: Mandatory

Project Manager Back Up
Christina Fandel
NOAA
Phone: 301-713-2702 x211
Fax:
Email: christina.fandel@noaa.gov
Obligation: For Reference

OPR-P335-FA-16
South Coast of Kodiak Island
Sheet Layout

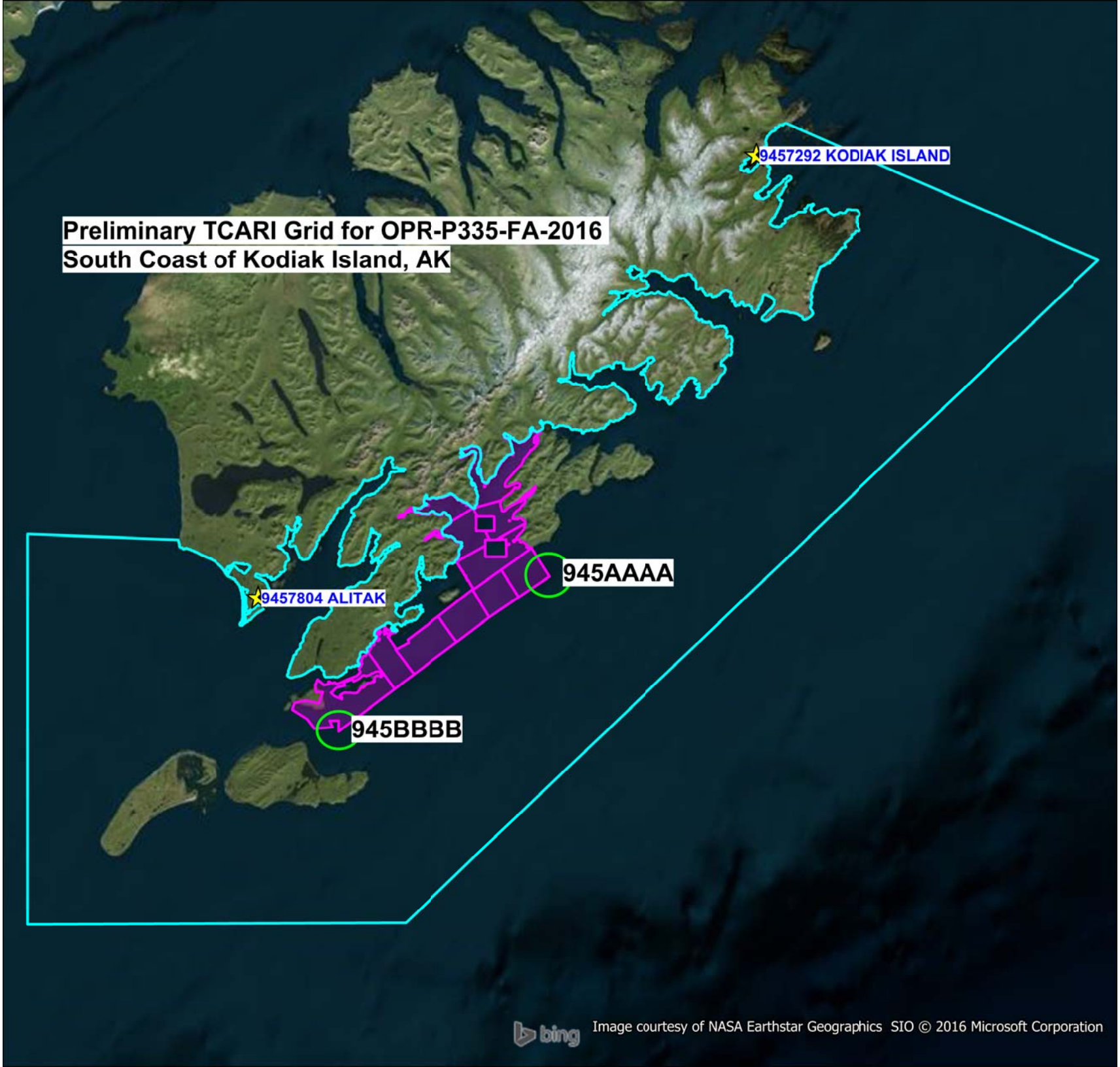
Total - 208 SNM
Priority 1 - 32 SNM
Emerging Crit. - 176 SNM



Legend

- OPR-P335-FA-16_Survey_Plans
- Junctions

H Number	Name	Priority	Scale	SNM
H12896	Due East of Aiaktalik Island	1	40000	28
H12897	Geese Channel	2	40000	17
H12898	South of Cape Kaguyak	3	40000	21
H12899	South of Twoheaded Island	4	40000	17
H12909	2 NM Southeast of Twoheaded	Island 5	40000	15
H12910	South of Black Point	6	40000	16
H12911	2 NM South of Cape Kiavak	7	40000	21
H12912	Kiavak Bay	8	40000	15
H12913	Natalia Bay	9	40000	13
H12914	Kiaugnak Bay	10	40000	10
H12915	Sitkalidak Strait	11	40000	25


Preliminary TCARI Grid for OPR-P335-FA-2016
South Coast of Kodiak Island, AK
9457292 KODIAK ISLAND
9457804 ALITAK
945AAAA
945BBBB
bing
Image courtesy of NASA Earthstar Geographics SIO © 2016 Microsoft Corporation

WATER LEVEL INSTRUCTIONS
OPR-P335-FA-2016 South Coast of Kodiak Island, AK
(05/03/2016 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 March 2016, and OCS Field Procedures Manual (FPM), dated April 2014. 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/Team Leader before interrupting the acquisition of water level data for the NWLON gauges 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 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 stations, as well as any required subordinate stations, 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	Residual or Datum Control or Subordinate Installation	Type (NWLON, PORTS©, etc.)	Comment
Kodiak Island	9457292	Residual and Datum	NWLON	
Alitak	9457804	Residual and Datum	NWLON	

Table 1: All stations that need to be added to the HHL in support of P335FA2016

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 "Plot" 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. In order to ensure that verified data is correctly downloaded please **select a date that is more than 7 days prior to the day of interest** in the 'From' field on the CO-OPS website.

1.3. Operating Tide Reducer and Datum Control Stations

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

The NWLON stations Kodiak Island, AK (9457292) and Alitak, AK (9457804) will 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.

The operating NWLON stations at Kodiak Island, AK (9457292) and Alitak, AK (9457804) may serve as datum control stations for the buoy deployments. Therefore, it is critical that they remain in operation during all periods of hydrography.

No leveling is required at Kodiak Island, AK (9457292) and Alitak, AK (9457804) by NOAA's FAIRWEATHER 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

The project requires the collection of data by GPS buoy in the offshore areas to improve the accuracy of tide reduction. These buoy deployments identified for hydrography will provide the tidal datums, water level reducers, refinement of final zoning/TCARI grid, and harmonic constituents for predictions needed to meet NOS hydrographic specifications' accuracies, as well as to support other NOAA objectives. The stations listed in the second paragraph of Section 1.3.1. will provide control for datum computations at buoy stations by using the NOS method of comparison of simultaneous observations.

A 30-day minimum of continuous data acquisition is required for all buoy deployments. If the data is collected for less than 30 days at the required locations, then according to the operating guidelines and business rules, CO-OPS may not publish tidal datums. This means CO-OPS may not be able to provide final tides (tide reducers) for less than 30 days of valid and good data. Since all data including water level data collected for hydrographic or photogrammetry surveys is used to derive products that support various NOS multipurpose applications, collection of minimum of 30-days of data is a crucial requirement.

For all buoys, data must be collected throughout the entire survey period in specified areas for which they are applicable, from 4 hours before to 4 hours after the period of hydrography and not less than 30 continuous days. If the buoy deployments are required to support the TCARI process, then all of the deployments are required to collect the data for the entire period of the survey (in addition to the 30 day requirement) because the TCARI tidal grid is developed based upon all the gauges. This is necessary not only to facilitate the computation of an accurate datum reference as per NOS hydro graphic specifications (http://www.nauticalcharts.noaa.gov/hsd/specs/specs.htm), but also to ensure a functional data set that meets CO-OPS' multi-purpose products use and dissemination standards.

Additionally, supplemental and/or back-up stations may also be necessary based upon the complexity of the hydrodynamics and/or the severity of environmental conditions at the project area. If the Commanding Officer (or Team Leader) determines that additional or alternative water level stations are necessary to those required by CO-OPS, then he or she must coordinate with CO-OPS to obtain CO-OPS' approval and to define the timing and location of the additional or alternative subordinate station(s). For all subordinate stations that are approved and installed, a minimum of 30 continuous days of data must be collected throughout the entire survey period for which they are applicable. If the minimum 30-day data collection requirement is not met, CO-OPS may not be able to provide the tide reducers for the survey.

Since NOS uses the data and products derived from the operational NOS Hydrographic Surveys Program, installation of training gauges is discouraged during the operations. Also for training purposes, only Temporary Bench Marks (TBM) shall be installed and permanent bench marks shall not be installed. CO-OPS will not publish water level datums on TBM and CO-OPS is not required to provide data processing for training gauges. Any gauges required for providing tide reducers either via TCARI or discrete tidal zoning shall not be considered training gauges.

All additions and modifications to the original subordinate gauge installation requirements shall be documented via an amendment to the Project Instructions. Delivery of the amended Project Instructions to OCS's Hydrographic Surveys Division Operations Branch will signify CO-OPS' approval of the additions and/or modifications to the gauge installations requirements.

The following GPS buoy deployments are required:

Station Number	Station Name	Approximate Latitude (N)	Approximate Longitude (W)
945AAAA **	Offshore Sitkalidak Island	56° 56.2'	153° 14.0'
945BBBB **	Offshore Geese Islands	56° 38.6'	153° 58.4'

** Conduct reconnaissance of the area to establish a suitable location for the placement of the buoys and provide the CO-OPS personnel listed in Section 1.2.1 with the proposed name and location.

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

1.3.5. Benchmark Recovery and GPS Requirements

This section is not applicable

1.3.6. Residual Water Level Station(s) Data

The 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 stations for all periods of survey.

The operating stations at Kodiak Island, AK (9457292) and Alitak, AK (9457804) will provide residuals for this project and must remain in operation during all periods of hydrography.

Station Number	Station Name	Latitude(N)	Longitude(W)
9457292	**Kodiak Island, AK**	**57° 43.8'**	**152° 30.8'**
9457804	**Alitak, AK**	**56° 53.8'**	**154° 14.9'**

1.4. Tidal Constituent and Residual Interpolation (TCARI)

1.4.1. For hydrography in the area of Approaches to Fernandina Beach, apply the TCARI grid "P335FA2016.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 Diagram(s)

A diagram created 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. f 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

Submit water level data, such as leveling records, field reports, and any other relevant data/reports, including the data downloaded onto diskette/CD as specified in the latest version of the NOS Specifications and Deliverables document.

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

Environmental Assessment for OPR-P335-FA-16 South Coast of Kodiak Island

Our assessment of your South Kodiak project, OPR-P335-FA-16, determined that, outside of the general Best Management Practices (BMPs) that apply to all OCS surveys, there are no survey-specific BMPs unique to your survey area. That written, we've noted there are several regions of critical habitat that lay along the likely transits between your working grounds and scheduled port calls (see image below).

For the North Pacific Right Whale and Beluga Whales, you should avoid entering those areas if possible. If you must enter the areas, then please minimize your transit distances. In all cases, avoid approaching within 200 yards of any cetacean and within 500 yards of a North Pacific Right Whale. Given these are not assigned survey areas, please refrain from using the ship's EM710. Regarding the Stellar sea lions, you should avoid the areas entirely.

In all of the above areas, you should also avoid discharge of ballast water or hull cleaning.

If you would like further information, please refer to the following resources:

North Pacific Right Whale:
-- Map: http://www.nmfs.noaa.gov/pr/pdfs/criticalhabitat/northpacificrightwhale.pdf
-- CFR: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr71-38277.pdf

Beluga Whale:
-- Map: http://www.nmfs.noaa.gov/pr/pdfs/criticalhabitat/belugawhale_cookinlet.pdf
-- CFR: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr76-20180.pdf

Stellar Sea Lion:
-- Map: http://www.nmfs.noaa.gov/pr/pdfs/criticalhabitat/stellersealion.pdf
-- CFR: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr58-45269.pdf