



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

FINAL Project Instructions

Date Submitted: May 31, 2013

Platform: NOAA Ship *Rainier*

Project Number: RA-13-02 (OMAO)

Project Title: South Alaska Peninsula & Shumagin Islands, AK

Project Dates: July 8, 2013 to September 30, 2013

Prepared by: _____ Dated: May 31, 2013
LCDR Marc S. Moser, NOAA
Chief, Operations Branch
Hydrographic Surveys Division
Office of Coast Survey

Approved by: _____ Dated: _____
Jeffrey Ferguson
Chief, Hydrographic Surveys Division
Office of Coast Survey

Approved by: _____ Dated: _____
Captain Wade J. Blake, NOAA
Commanding Officer
Marine Operations Center - Pacific



I. Overview

A. Brief Summary and Project Period

B. Service Level Agreements

73 DAS are scheduled for this project. 73 DAS are base funded in support of NOS and 0 DAS are program funded. This project is estimated to exhibit a high Operational Tempo.

C. Operating Area

This project area is located in the South Alaska Peninsula, AK. Maps of the survey areas can be found in Appendices 1 and 2.

D. Summary of Objectives

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 |
|--------------------|-------|-------------|----------------|--------|-------------|-------------|
| Argento, Adam | PS | 9/9/2013 | 9/26/2013 | M | NOAA | USA |
| Greenaway, Megan | PS | 7/29/2013 | 8/15/2013 | F | NOAA | USA |
| Mueller, Kurt | PS | 8/19/2013 | 9/4/2013 | M | NOAA | USA |
| Raymond, Annie | PS | 7/29/2013 | 8/15/2013 | F | NOAA | USA |
| Scharff, David | PS | 7/8/2013 | 7/25/2013 | M | NOAA | USA |
| Tegeder, Joe | PS | 7/8/2013 | 7/25/2013 | M | NOAA | USA |

G. Administrative

1. Points of Contacts:

Principle Investigator:

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

Project Coordinators:

Lucy Hick

Physical Scientist, Operations Branch
Hydrographic Surveys Division
1315 East West Hwy, #6709
Silver Spring, MD 20910
(301) 713-2702 x125
Lucy.Hick@noaa.gov

Megan Greenaway
Physical Scientist, Operations Branch
Hydrographic Surveys Division
439 West York Street
Norfolk, VA 23510
(757) 441-6746 x209
Megan.Greenaway@noaa.gov

Chief Scientist:

CDR Richard Brennan, NOAA
Commanding Officer, NOAA Ship *Rainier*
Marine Operations Center, Pacific
2002 SE Marine Science Drive
Newport, OR 97365-5229
206-218-6129
CO.Rainier@noaa.gov

2. Diplomatic Clearances

N/A

3. Licenses and Permits

Planned hydrographic surveys are included in the OCS National Environmental Policy Act (NEPA) analysis and the Programmatic Environmental Assessment for the Office of Coast Survey Hydrographic Survey Projects, dated June 2012.

II. Operations

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.

B. Staging and Destaging

N/A

C. Operations to be Conducted

Hydrographic survey operations per the appended project instructions using four 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.

E. Applicable Restrictions

Conditions which preclude normal operations:

- poor weather conditions
- equipment failure
- safety concerns
- personnel shortages

III. Equipment

1. 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 4 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.

2. 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

The Chief Scientist is responsible for complying with FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or the OMAO procedure that supersedes it). By Federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and the anticipated quantity brought aboard, MSDS and appropriate neutralizing agents,

buffers, or absorbents in amounts adequate to address spills of a size equal to the amount of chemical brought aboard, and a chemical hygiene plan. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

Per FEC 07, the scientific party will include with their project instructions and provide to the CO of the respective ship 60 to 90 days before departure:

- A list of hazardous materials by name and anticipated quantity
- Include a chemical spill plan that addresses all of the chemicals the program is bringing aboard. This shall include:
 - Procedures on how the spilled chemicals will be contained and cleaned up.
 - A complete inventory (including volumes/amounts) of the chemical spill supplies and equipment brought aboard by the program. This must be sufficient to clean and neutralize all of the chemicals brought aboard by the program.
 - A list of the trained personnel that will be accompanying the project and the training they've completed.

Upon embarkation and prior to loading hazardous materials aboard the vessel, the scientific party will provide to the CO or their designee:

- An inventory list showing actual amount of hazardous material brought aboard
- An MSDS for each material
- Confirmation that neutralizing agents and spill equipment were brought aboard sufficient to contain and cleanup all of the hazardous material brought aboard by the program.

Upon departure from the ship, scientific parties will provide the CO or their designee an inventory of hazardous material indicating all materials have been used or removed from the vessel. The CO's designee will maintain a log to track scientific party hazardous materials. MSDS will be made available to the ship's complement, in compliance with Hazard Communication Laws.

Scientific parties are expected to manage and respond to spills of scientific hazardous materials. Overboard discharge of scientific chemicals is not permitted during projects aboard NOAA ships.

B. Radioactive Isotopes

The Chief Scientist is responsible for complying with OMAO 0701-10 Radioactive Material aboard NOAA Ships. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

At least three months in advance of a domestic project and eight months in advance of a foreign project start date the shall submit required documentation to MOC-CO, including:

1. NOAA Form 57-07-02, Request to Use Radioactive Material aboard a NOAA Ship
2. Draft Project Instructions
3. Nuclear Regulatory Commission (NRC) Materials License (NRC Form 374) or a state license for each state the ship will operate in with RAM on board the ship.

4. Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters (NRC Form 241), if only state license(s) are submitted).
5. MSDS
6. Experiment or usage protocols, including spill cleanup procedures.

Scientific parties will follow responsibilities as outlined in the procedure, including requirements for storage and use, routine wipe tests, signage, and material disposal as outline in OMAO 0701-10.

All radioisotope work will be conducted by NRC or State licensed investigators only, and copies of these licenses shall be provided per OMAO 0701-10 at least three months prior to the start date of domestic projects and eight months in advance of foreign project start dates.

C. Inventory (itemized) of Radioactive Materials

N/A

V. Additional Projects

A. Supplementary (“Piggyback”) Projects

N/A

B. NOAA Fleet Ancillary Projects

N/A

VI. Disposition of Data and Reports

A. Data Responsibilities

B. Pre and Post Project Meeting

Prior to departure, the Chief Scientist will conduct a meeting of the scientific party to train them in sample collection and inform them of project objectives. Some vessel protocols, e.g., meals, watches, etiquette, etc. will be presented by the ship’s Operations Officer.

Post-Project Meeting: Upon completion of the project, a meeting will normally be held at 0830 (unless prior alternate arrangements are made) and attended by the ship’s officers, the Chief Scientist and members of the scientific party to review the project. Concerns regarding safety, efficiency, and suggestions for improvements for future projects should be discussed. Minutes of the post-project meeting will be distributed to all participants by email, and to the Commanding Officer and Chief of Operations, Marine Operations Center.

C. Ship Operation Evaluation Report

Within seven days of the completion of the project, a Ship Operation Evaluation form is to be completed by the Chief Scientist. The preferred method of transmittal of this form is via email to

omao.customer.satisfaction@noaa.gov. If email is not an option, a hard copy may be forwarded to:

Director, NOAA Marine and Aviation Operations
NOAA Office of Marine and Aviation Operations
8403 Colesville Road, Suite 500
Silver Spring, MD 20910

VII. 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 survey.

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 7, 1999 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>. The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan the form into an email using the contact information below. The NHSQ should reach the Health Services Office no later than 4 weeks prior to the project to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the 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.

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
E-mail 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

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. Steel-toed shoes are required to participate in any work dealing with suspended loads, including CTD deployments and recovery. The ship does not provide steel-toed boots. Hard hats are also 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.

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 e-mail 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 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 *NMAO 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 these 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

All foreign national access to the vessel shall be in accordance with NAO 207-12 and RADM De Bow's March 16, 2006 memo (<http://deemedexports.noaa.gov>). National Marine Fisheries Service personnel will use the Foreign National Registration System (FRNS) to submit requests for access to NOAA facilities and ships. The Departmental Sponsor/NOAA (DSN) is responsible for obtaining clearances and export licenses and for providing escorts required by the NAO. DSNs should consult with their designated NMFS Deemed Exports point of contact to assist with the process.

The following are basic requirements. Full compliance with NAO 207-12 is required.

Responsibilities of the Chief Scientist:

1. Provide the Commanding Officer with the e-mail generated by the FRNS granting approval for the foreign national guest's visit. This e-mail will identify the guest's DSN and will serve as evidence that the requirements of NAO 207-12 have been complied with.
2. Escorts – The Chief Scientist is responsible to provide escorts to comply with NAO 207-12 Section 5.10, or as required by the vessel's DOC/OSY Regional Security Officer.
3. Ensure all non-foreign national members of the scientific party receive the briefing on Espionage Indicators (NAO 207-12 Appendix A) at least annually or as required by the servicing Regional Security Officer.
4. Export Control - Ensure that approved controls are in place for any technologies that are subject to Export Administration Regulations (EAR).

The Commanding Officer and the Chief Scientist will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.

Responsibilities of the Commanding Officer:

1. Ensure only those foreign nationals with DOC/OSY clearance are granted access.
2. Deny access to OMAO platforms and facilities by foreign nationals from countries controlled for anti-terrorism (AT) reasons and individuals from Cuba or Iran without written NMAO approval and compliance with export and sanction regulations.
3. Ensure foreign national access is permitted only if unlicensed deemed export is not likely to occur.
4. Ensure receipt from the Chief Scientist or the DSN of the FRNS e-mail granting approval for the foreign national guest's visit.
5. Ensure Foreign Port Officials, e.g., Pilots, immigration officials, receive escorted access in accordance with maritime custom to facilitate the vessel's visit to foreign ports.
6. Export Control - 8 weeks in advance of the project, provide the Chief Scientist with a current inventory of OMAO controlled technology onboard the vessel and a copy of the vessel Technology Access Control Plan (TACP). Also notify the Chief Scientist of any OMAO-sponsored foreign nationals that will be onboard while program equipment is aboard so that the Chief Scientist can take steps to prevent unlicensed export of Program controlled technology. The Commanding Officer and the Chief Scientist will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.
7. Ensure all OMAO personnel onboard receive the briefing on Espionage Indicators (NAO 207-12 Appendix A) at least annually or as required by the servicing Regional Security Officer.

Responsibilities of the Foreign National Sponsor:

1. Export Control - The foreign national's sponsor is responsible for obtaining any required export licenses and complying with any conditions of those licenses prior to the foreign national being provided access to the controlled technology onboard regardless of the technology's ownership.
2. The DSN of the foreign national shall assign an on-board Program individual, who will be responsible for the foreign national while on board. The identified individual must be a U.S. citizen, NOAA (or DOC) employee. According to DOC/OSY, this requirement cannot be altered.
3. Ensure completion and submission of Appendix C (Certification of Conditions and Responsibilities for a Foreign National

Appendices

1. Primary Project Instructions: OPR-P377-RA-13, South Alaska Peninsula, AK
2. Primary Project Instructions: OPR-P183-RA-13, Shumagin Islands, AK

Hydrographic Survey Project Instructions

| | |
|--------------------------------------|---|
| Project Name: | South Alaska Peninsula, AK |
| Project Number: | OPR-P377-RA-13 |
| Assigned Field Unit: | NOAA Ship <i>Rainier</i> |
| Assigned Processing Branch: | Pacific Hydrographic Branch |
| Signed Date: | 05/29/2013 |
| Project Instructions Version: | Final |
| Planned Acquisition Time: | Start Date: 07/2013 End Date: 09/2013 |
| 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. Specifically, this area has been identified by the AK marine pilots as a traffic route. The project will cover approximately 200 square nautical miles of critical areas as identified in the 2012 NOAA Hydrographic Survey Priorities (NHSP). |
| 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), May 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: South Alaska Peninsula, AK | | | | | | |
| <i>Registry Number</i> | <i>Priority</i> | <i>Sublocality</i> | <i>State or Territory</i> | <i>Scale</i> | <i>Estimated SNM</i> | <i>Instructions</i> |
| H12577 | 1 | Indian Head to Kitchen Anchorage | Alaska | 40000 | 13 | |
| H12578 | 2 | Slavana Pt and Vicinity | Alaska | 40000 | 15 | |
| H12579 | 3 | East Approaches to Deer Passage | Alaska | 40000 | 25 | |
| H12580 | 4 | Deer Pasage | Alaska | 5000 | 20 | |
| H12581 | 5 | North Cold Bay | Alaska | 40000 | 27 | |
| H12582 | 6 | South Cold Bay | Alaska | 40000 | 27 | |
| H12583 | 7 | Kaslokan Pt to Vodapoini Pt | Alaska | 40000 | 26 | |
| H12584 | 8 | Fox Island and Vicinity | Alaska | 40000 | 25 | |
| H12585 | 9 | Thin Pt to West Cape | Alaska | 40000 | 23 | |

| 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: Complete Coverage | |
| Instructions: | |
| <i>Coverage Water Depth</i> | <i>Coverage Required</i> |
| 4 meters to 8 meters water depth | 25 m spaced Set Line Spacing SBES or MBES with Time Series Backscatter |
| Greater than 8 meters water depth | Multibeam with Time Series Backscatter |

Assigned Tasks

| Acknowledgement: |
|---|
| Acknowledge receipt of these instructions and submit any comments or questions via email to Megan Greenaway at Megan.Greenaway@noaa.gov . |

| | |
|--|---|
| Aids to Navigation (ATONs): | |
| Position the two "assigned" private ATONs on Sheet 5 by taking detached positions. | |
| <i>Number of Priority ATONs Assigned by MCD:</i> | 0 |
| <i>Total Number of ATONs Assigned by MCD:</i> | 0 |

| | |
|--|---|
| Feature Investigations: | |
| Investigate AWOIS items in accordance with section 2.2.2.2 and 2.5.4.1 of the FPM. Investigate Maritime Boundary Points in accordance with section 3.5.6 of the FPM. | |
| <i>Number of assigned AWOIS Items for Information Only:</i> | 0 |
| <i>Number of assigned AWOIS Items for Full Investigation:</i> | 0 |
| <i>Number of assigned Maritime Boundary Claim Items: (when safety permits, search inshore of the NALL line for these maritime boundary features)</i> | 4 |

| | |
|---|--|
| 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). The field unit should review the recommended bottom sample locations with the survey data acquired. Contact HSD Operations Branch to discuss modifying the bottom sample plan if the data suggest more appropriate locations for the bottom samples to better differentiate varying bottom characteristics within the survey area when compared to the sample 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. These charts are listed below and will be included with project data from Operations Branch. Compare in accordance with section 4.5 of the FPM and section 8.1.4, D.1 of the HSSD. Resolve any discrepancies in the field and explain them in the Descriptive Report.

| Affected Raster Charts | | | | | |
|-------------------------------|--------------|-----------------------|--------------------------------|-------------------|--------------------|
| <i>Chart Number</i> | <i>Scale</i> | <i>Edition Number</i> | <i>Edition Date</i> | <i>LNМ Date</i> | <i>NM Date</i> |
| 16549 | 80000 | 16 | 03/2010 | 03/16/2010 | 03/20/2010 |
| Affected ENCѕ | | | | | |
| <i>ENC Name</i> | <i>Scale</i> | <i>Edition</i> | <i>Update Application Date</i> | <i>Issue Date</i> | <i>Preliminary</i> |
| US4AK55M | 80000 | | 05/20/2013 | | YES |
| US5AK55M | 5000 | | 05/20/2013 | | YES |

Coast Pilot:

Review and make recommendations for changes to the U.S. Coast Pilot 9, Chapter 6. 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 copy to the project planner and the assigned Processing Branch. The report should be submitted as soon as possible following field work for the project. NOAA field units should 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. Refer to sections 2.2.2.6 and 4.5.2 of the FPM.

| <i>Registry Number</i> | <i>Scale</i> | <i>Year</i> | <i>Platform</i> | <i>Relative Location</i> |
|------------------------|--------------|-------------|--------------------------|--------------------------|
| H11904 | 10000 | 2008 | NOAA Ship <i>Rainier</i> | E |
| H11932 | 10000 | 2008 | NOAA Ship <i>Rainier</i> | E |

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. Survey outlines should be sent to survey.outlines@noaa.gov and shall also be included with the final survey deliverables in Separates II of the Descriptive Report (see Section 8.1.4 for further guidance).

Horizontal Control Requirements:

Horizontal control shall meet requirements in Section 3 of the HSSD.

Vertical Control Requirements:***Discrete Zoning***

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.

NWLON Gauges

| <i>Operating Water Level Station</i> | <i>Station ID</i> |
|--------------------------------------|-------------------|
| King Cove | 945-9881 |

Subordinate Gauges

| <i>Operating Water Level Station</i> | <i>Station ID</i> | <i>Leveling Required</i> | <i>Installation Required</i> | <i>Pre-Existing Benchmarks</i> |
|--------------------------------------|-------------------|--------------------------|------------------------------|--------------------------------|
| Cold Bay | 945-9949 | YES | YES | YES |

Orthometric Imagery:

No Orthometric Imagery has been provided for this project.

Shoreline and Nearshore Features:

A limited shoreline verification will be accomplished using the composite source file (CSF). The CSF was compiled from the preliminary ENC's US4AK55M and US5AK55M which had GC1651 and GC1652 applied. Preliminary analysis of the nautical chart and imagery from Google Earth was conducted at HSD OPS. 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. For reference, prior survey features are provided in S57 format on the project CD. See section 3.5.5.2.2 of the FPM.

| | |
|--|-----|
| <i>Number of Assigned Features:</i> | 394 |
|--|-----|

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, AK

LT Matthew Forney
NOAA
4230 University Blvd #102
Anchorage, Alaska 99508
Phone: 907-271-3327
Fax: 206-491-8913
Email: Matthew.Forney@noaa.gov
Obligation: Mandatory

Seventeenth U.S. Coast Guard District, Commander (DPW)

Robert McCormick
USCG
P.O. Box 25517
Juneau, Alaska 99802
Phone: 907-463-2272
Fax:
Email: Robert.P.McCormick@uscg.mil
Obligation: For Reference

U.S. Army Corps of Engineers Alaska District, Office of the District Engineer

James E. Adair
USACE
P.O. Box 6898
Elmendorf Air Force Base
Anchorage, Alaska 99506
Phone: 907-753-5632
Fax:
Email: James.E.Adair@usace.army.mil
Obligation: For Reference

Alaska State Historical Preservation Officer (SHPO)

Judith E. Bittner
Alaska DNR, Office of History and Archaeology
550 West 7th Avenue
Suite 1310
Anchorage, Alaska 99501
Phone: 907-269-8721
Fax: 907-269-8908
Email: judy.bittner@alaska.gov
Obligation: For Reference

Southwest Alaska Pilots Association

Captain Jeff Pierce

PO Box 977

Homer, Alaska 99603

Phone: (907) 235-8783

Fax: (907) 235-6119

Email:

Obligation: For Reference

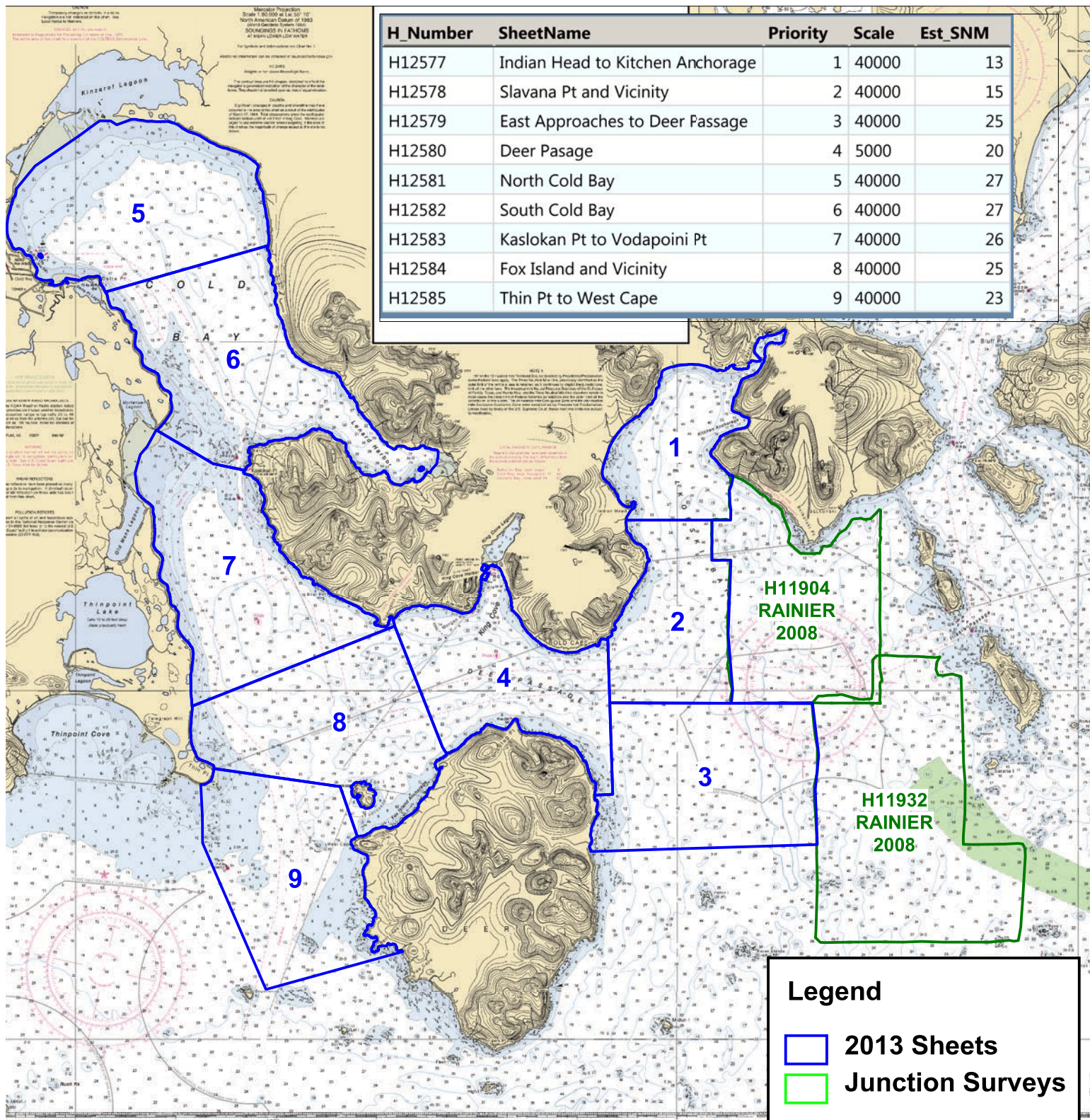
OPR-P377-RA-13

South Alaska Peninsula, AK

Sheet Layout

05/21/2013

Total SNM: 201
Critical Area SNM: 201



WATER LEVEL INSTRUCTIONS
OPR-P377-RA-2013 Southern Alaska Peninsula, AK
(05/02/2013 LH)

1.0. TIDES AND WATER LEVELS

1.1. Specifications

Tidal data acquisition, data processing, tidal datum computation and final tidal zoning shall be performed utilizing sound engineering and oceanographic practices as specified in National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD), dated April 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>, email data transmissions through TIDEBOT, or through regular communications with CO-OPS/Engineering Division (ED) personnel before and during operations. During traditional non duty hours, the Commanding Officer/Team Leader may contact the Continuous Operational Real-Time Monitoring System (CORMS) watch stander who is available 24 hours/day - 7 days/week for assistance in assessing the status of applicable water level station operation. The CORMS watch stander may be contacted either by phone at 301-713-2540 or by Email: CORMS@noaa.gov. Problems or concerns regarding the acquisition of valid water level data identified by the Commanding Officer/Team Leader shall be communicated with CO-OPS/ED (Colleen Roche, 301-713-2897 ext. 137, Email: nos.coops.oetteam@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 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 |
|-----------|------------|------------------------|--------------------------------|---------|
| King Cove | 9459881 | Control | NWLON | |
| Cold Bay | 9459949 | Subordinate | | |

Table 1: All stations that need to be added to the HHL in support of P377-RA-2013

This project requires a subordinate installation. Therefore, please contact OET and HPT via e-mail at least three business days before the subordinate stations are installed and send the site report listing the DCP and sensor serial numbers and GOES satellite information so that stations can be configured in the database and also can be added to HHL. For station removal, inform OET and HPT 3 business days prior to the actual removal of a station and confirm with OET upon final station removal.

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 station King Cove, AK (9459881) 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 King Cove, AK (9459881) by NOAA's Platform RAINIER 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

For this project, it will be necessary to install and continuously operate water level measurement systems (tide gauges) at one or more approved subordinate station locations. These subordinate stations identified for hydrography or photogrammetry are required to be installed to provide the tidal datums, water level reducers, refinement of final zoning, and harmonic constituents for predictions needed to meet NOS hydrographic specifications' accuracies as well as to support other NOAA objectives. The stations listed in Section 1.2. will provide control for datum computations at subordinate stations by using the NOS method of comparison of simultaneous observations.

A 30-day minimum of continuous data acquisition is required for all required subordinate station installations. If the data is collected for less than 30 days at the required subordinate stations, then according to the operating guidelines and business rules, CO-OPS may not publish tidal datums and bench marks sheet. This means CO-OPS may not be able to provide smooth 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 subordinate stations, 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 subordinate tide gauges are required to support the TCARI process, then all the gauges 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, minimum 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 discreet 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 subordinate station is required:

| <u>Station Number</u> | <u>Station Name</u> | <u>Latitude(N)</u> | <u>Longitude(W)</u> |
|-----------------------|---------------------|--------------------|---------------------|
| 9459949 * | Cold Bay, AK | 55° 12.5' | 162° 41.9' |

* Historical water level station information has been provided for this station.

1.3.3. Tide Component Error Estimation

The estimated tidal error contribution to the total survey error budget in the vicinity of Southern Alaska Peninsula, AK cannot be computed due to a lack of available water level time series data.

1.3.4. GOES Satellite Enabled Subordinate Stations

In the event that water level stations with Geostationary Operational Environmental Satellite (GOES) capability are utilized, information about the station is needed at CO-OPS so that the station(s) can be configured in CO-OPS' Data Management System (DMS) before GOES data transmission is started. A minimum of two weeks prior to initiating data transmission, please contact the CO-OPS/ED (Colleen Roche) at 301-713-2897 ext. 137 or FAX 301-713-4465 and provide the station number, platform ID, transmit time and channel. In addition, FAX a copy or email a digital copy of the site report before beginning transmission.

Whenever a station number needs to be assigned, the field party should provide the latitude and longitude of the location where a tide gauge will be installed to the Operational Engineering Team (OET; nos.coops.oetteam@noaa.gov) at least 3 days before the installation. OET will assign a new tide station number and provide that promptly (within 1 business day) to the field party.

GOES data transmissions must use a message format identical to the format currently implemented in NOS' Next Generation Water Level Measurement System (NGWLMS). Refer to Section 1.1. for information on the NGWLMS data format. The document, **NGWLMS GOES MESSAGE FORMATTING**, found under the Publications option of the CO-OPS web site at <http://tidesandcurrents.noaa.gov/> will give an explanation of the NGWLMS GOES message format.

The following preliminary satellite antenna pointing angles are provided for the stations in Sections 1.3.1. to facilitate GOES satellite transmission. Complete GOES information will be provided after the station location is finalized and reported to CO-OPS/ED . If a suitable site for transmitting via satellite cannot be found within the required area, then a station should be established within the area and the data downloaded onto diskette/CD and forwarded to CO-

OPS/ED. As a backup for all stations, data must be forwarded to CO-OPS/ED on diskette.

| <u>STATION</u> | <u>GOES West</u> |
|----------------|----------------------------------|
| 9499949 | ELEV. 22.3° AZIMUTH(T) 147.4° |

1.3.5. Benchmark Recovery and GPS Requirements

Recover all historical bench marks at each required subordinate water level station. If a total of five benchmarks cannot be found, install the number of benchmarks necessary for the subordinate station to have the total five benchmarks. In the event of a new station with no historical marks, installation of a minimum of five bench marks will be required. Third-order levels from the tide staff or sensor to a minimum of five bench marks (including the primary bench mark) are required at the beginning and end of the survey period. See Section 1.1. for clarification of requirements.

1.3.5.1. Hand held GPS latitude and longitude positions on all historical subordinate water level station bench marks are required. In addition, one of the subordinate water level station bench marks shall be selected for high accuracy static differential GPS observations to obtain ties between the tidal datums and GPS derived datums. Refer to Section 1.1 for further details on the GPS positioning requirements.

1.3.6. Operate the water level stations listed in Section 1.3.1. of these Project Instructions for the following hydrographic area(s) or zone(s):

| <u>Station Number</u> | <u>Hydrographic Area(s) or Zone(s)</u> |
|-----------------------|--|
| 9459949 | Entire Survey |

1.4. Discrete Tidal Zoning

1.4.1. The water level station at King Cove, AK (9459881) is the reference station for preliminary tides for hydrography in Southern Alaska Peninsula, AK. The time and height correctors listed below for applicable zones should be applied to the preliminary data at King Cove, AK during the acquisition and preliminary processing phases of this project. Preliminary data may be retrieved in one month increments over the Internet from the **CO-OPS SOAP web services** at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>. The Commanding Officer (or Team Leader) must notify CO-OPS/ED personnel immediately of any problems concerning the preliminary tides. Preliminary data are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. For the time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the preliminary tides at the reference station. A positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights **relative to MLLW** at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

| <u>Zone</u> | <u>Time Corrector(mins)</u> | <u>Range Ratio</u> | <u>Predicted Reference Station</u> |
|-------------|-----------------------------|--------------------|------------------------------------|
| SWA218 | 0 | x0.97 | 9459881 |
| SWA218A | 0 | x0.99 | 9459881 |
| SWA218B | +6 | x1.04 | 9459881 |
| SWA218C | +12 | x1.06 | 9459881 |
| SWA218D | +6 | x1.08 | 9459881 |
| SWA218E | +6 | x1.12 | 9459881 |
| SWA218F | +6 | x1.13 | 9459881 |
| SWA218G | 0 | x0.99 | 9459881 |
| SWA219 | +6 | x0.93 | 9459881 |

1.4.2. Polygon nodes and water level corrections referencing King Cove, AK (9459881) are provided in CARIS® format denoted by a *.zdf extension file name.

NOTE: The tide corrector values referenced to King Cove, AK (9459881) are provided in the zoning file “P377RA2013CORP” for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a MapInfo® representation of West longitude

“Preliminary” data for the control water level station, King Cove, AK (9459881), are available in near real-time and verified data will be available on a weekly basis for the previous week. **These water level data may be obtained from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>.**

1.4.3 Zoning Diagram(s)

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

1.4.4 Final Zoning

Upon completion of project OPR-P377-RA-2013, submit a Pydro generated request for final 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 a sheet number, in the subject line of the email.

CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. After review, CO-OPS will send a notice indicating that the tidal zoning scheme sent with the project instructions has been approved for final zoning. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised tidal zoning scheme to the field group and processing branch for final processing.

1.5 TideBot

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

TideBot for time series data retrieval. Six minute preliminary and verified data may also be retrieved in one month increments over the internet from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html> by clicking on "Six Minute Data".

Alternately, users may download preliminary and verified six minute water level time series data from the CO-OPS database via the Fetchtides application. Fetchtides provides a mechanism to store imported data locally and combine multiple days' worth 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

Preliminary Tidal Zoning for OPR-P377-RA-2013 Southern Alaska Peninsula, AK

SWA218F
Time Corrector +6 mins
Range Corrector x1.13
Reference 9459881

9459949 COLD BAY

SWA218B
Time Corrector +6 mins
Range Corrector x1.04
Reference 9459881

SWA218A
Time Corrector 0 mins
Range Corrector x0.99
Reference 9459881

SWA218E
Time Corrector +6 mins
Range Corrector x1.12
Reference 9459881

SWA218D
Time Corrector +6 mins
Range Corrector x1.08
Reference 9459881

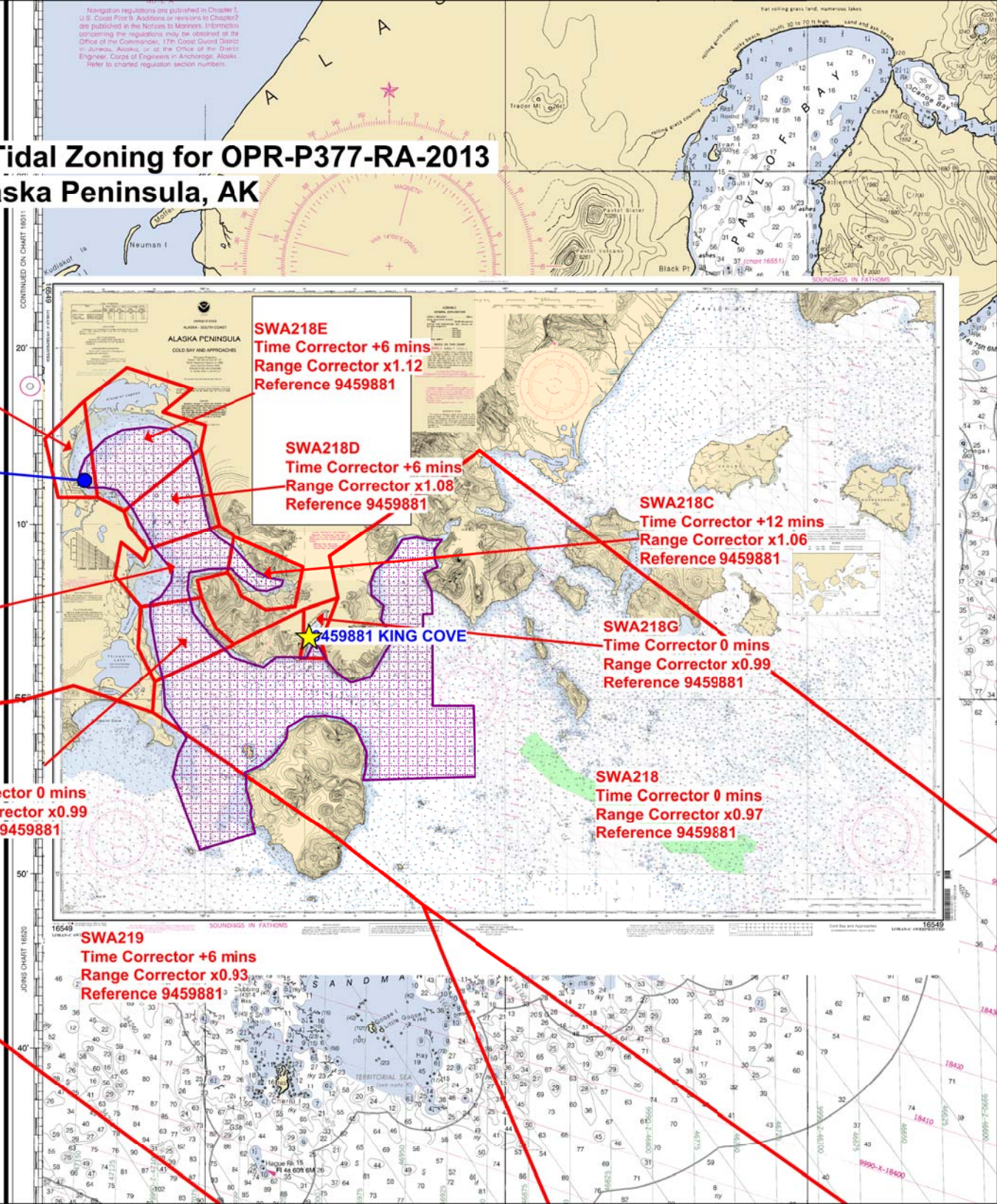
9459881 KING COVE

SWA218C
Time Corrector +12 mins
Range Corrector x1.06
Reference 9459881

SWA218G
Time Corrector 0 mins
Range Corrector x0.99
Reference 9459881

SWA218
Time Corrector 0 mins
Range Corrector x0.97
Reference 9459881

SWA219
Time Corrector +6 mins
Range Corrector x0.93
Reference 9459881



Hydrographic Survey Project Instructions

| | |
|--------------------------------------|---|
| Project Name: | Shumagin Islands, AK |
| Project Number: | OPR-P183-RA-13 |
| Assigned Field Unit: | NOAA Ship <i>Rainier</i> |
| Assigned Processing Branch: | Pacific Hydrographic Branch |
| Signed Date: | 04/16/2013 |
| Project Instructions Version: | Final |
| Planned Acquisition Time: | Start Date: 07/2013 End Date: 09/2013 |
| Delivery Dates: | 120 days from completion of data acquisition. |

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| Purpose and Location: |
| The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. This project will cover approximately 299 square nautical miles (SNM) of critical area as identified in the 2012 NOAA Hydrographic Survey Priorities (NHSP) document. |
| 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), May 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: Shumagin Islands, AK | | | | | | |
| <i>Registry Number</i> | <i>Priority</i> | <i>Sublocality</i> | <i>State or Territory</i> | <i>Scale</i> | <i>Estimated SNM</i> | <i>Instructions</i> |
| H12588 | 1 | East of Nagai Island | Alaska | 40000 | 20 | |
| H12589 | 2 | Saddlers Mistake to Mountain Pt | Alaska | 40000 | 24 | |
| H12590 | 3 | 5 NM South of Turner Island | Alaska | 40000 | 36 | |
| H12591 | 4 | 4 NM North of Bird Island | Alaska | 40000 | 36 | |
| H12592 | 5 | 5 NM West of Little Koniuji Island | Alaska | 40000 | 50 | |
| H12593 | 6 | Vicinity of Bird Island | Alaska | 40000 | 46 | |
| H12594 | 7 | Vicinity of Chernabura Island | Alaska | 40000 | 44 | |
| H12595 | 8 | 5NM South of Simeonof Island | Alaska | 40000 | 58 | |

Coverage & Limits:

Inshore Limit:The inshore limit of hydrography will be the farthest offshore of the following: (1) the 4-meter depth contour; (2) the line defined by the distance seaward from the Mean High Water (MHW) line which is equivalent to 0.8 millimeters at the scale of the largest scale nautical chart (MHW buffer); or (3) the line of good Lidar coverage (known as the "Lidar Good Line") as determined through analysis of the data by Pacific Hydrographic Branch (PHB) and Operations Branch Personnel. Because this largest scale chart for this region is 1:300,000, a 240 meter MHW buffer would typically be used to help determine the inshore limit of hydrography. However, because of the likelihood for a new 1:80,000 chart in this area, it was decided that a 64 meter MHW buffer would be more appropriate. For Nagai Island, the MHW line was derived from the ENC. For Bird and Churnabura Islands, the MHW line was derived from the Lidar HOB files, which were provided by PHB. For Near Island and the Twins, the MHW line was derived from the Remote Sensing Division Geographic Cell (GC) 10588. Although best effort was made to evaluate the Lidar junction surveys, it still may be necessary for the ship to acquire data inshore of the sheet limits and/or inshore of the Lidar Good Line to investigate assigned Lidar features and unassigned rocks, shoals, or other navigationally significant areas and/or if the Chief of Party has concerns about the quality of the Lidar data. Some of the areas with limited Lidar coverage may have been influenced by kelp or breaking waves. The ship should take every precaution when

| | |
|--|---|
| Coverage & Limits: | |
| investigating these areas but also attempt to define navigationally significant areas pertinent to local maritime traffic. | |
| Coverage Type: Complete Coverage | |
| Instructions: | |
| <i>Coverage Water Depth</i> | <i>Coverage Required</i> |
| Greater than 4 meters water depth | Multibeam Echosounder (MBES) with concurrent backscatter |

Assigned Tasks

| |
|--|
| Acknowledgement: |
| Acknowledge receipt of these instructions and submit any comments or questions via email to Lucy Hick at Lucy.Hick@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. |

| | |
|--|----|
| Feature Investigations: | |
| Investigate AWOIS items in accordance with section 2.2.2.2 and 2.5.4.1 of the FPM. Investigate Maritime Boundary Points in accordance with section 3.5.6 of the FPM. | |
| <i>Number of assigned AWOIS Items for Information Only:</i> | 0 |
| <i>Number of assigned AWOIS Items for Full Investigation:</i> | 0 |
| <i>Number of assigned Maritime Boundary Claim Items: (when safety permits, search inshore of the NALL line for these maritime boundary features)</i> | 11 |

| |
|---|
| 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). The field unit should review the recommended bottom sample locations with the survey data acquired. Contact HSD Operations Branch to discuss modifying the bottom sample plan if the data suggest more appropriate locations for the bottom samples to better differentiate varying bottom characteristics within the survey area when compared to the sample 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 in the field and explain them in the Descriptive Report. The chart, listed below, were used in the preparation of these project instructions and accompanying project files.

Affected Raster Charts

| <i>Chart Number</i> | <i>Scale</i> | <i>Edition Number</i> | <i>Edition Date</i> | <i>LNМ Date</i> | <i>NM Date</i> |
|---------------------|--------------|-----------------------|---------------------|-----------------|----------------|
| 16540 | 300000 | 13 | 10/2010 | 10/12/2010 | 10/30/2010 |

Affected ENCѕ

| <i>ENC Name</i> | <i>Scale</i> | <i>Edition</i> | <i>Update Application Date</i> | <i>Issue Date</i> | <i>Preliminary</i> |
|-----------------|--------------|----------------|--------------------------------|-------------------|--------------------|
| US3AK50M | 300000 | 17 | 06/29/2011 | 06/29/2011 | NO |

Coast Pilot:

Review and make recommendations for changes to the U.S. Coast Pilot 2, Chapter 10. 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 copy to the project planner and the assigned Processing Branch. The report should be submitted as soon as possible following field work for the project. NOAA field units should 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. Refer to sections 2.2.2.3 and 4.5.2 of the FPM. Data from surveys H12472, H12473, and H12475 are not yet available from NGDC and not provided with the project files. These surveys should be retained by the field unit in order to complete a junction analysis.

| <i>Registry Number</i> | <i>Scale</i> | <i>Year</i> | <i>Platform</i> | <i>Relative Location</i> |
|------------------------|--------------|-------------|------------------------------|--------------------------|
| H11472 | 20000 | 2005 | NOAA Ship <i>Fairweather</i> | W |
| H11473 | 10000 | 2005 | NOAA Ship <i>Fairweather</i> | W |
| H11489 | 20000 | 2005 | NOAA Ship <i>Fairweather</i> | S |
| H11607 | 10000 | 2006 | NOAA Ship <i>Rainier</i> | N |
| H11682 | 20000 | 2007 | NOAA Ship <i>Fairweather</i> | N |
| H11848 | 10000 | 2008 | NOAA Ship <i>Fairweather</i> | N |
| H11923 | 20000 | 2008 | NOAA Ship <i>Fairweather</i> | N |
| H12101 | 10000 | 2009 | TENIX | E |
| H12102 | 10000 | 2009 | TENIX | E |
| H12119 | 40000 | 2009 | NOAA Ship <i>Fairweather</i> | N |
| H12472 | 40000 | 2012 | NOAA Ship <i>Rainier</i> | E |
| H12473 | 40000 | 2012 | NOAA Ship <i>Rainier</i> | E |
| H12475 | 40000 | 2012 | NOAA Ship <i>Rainier</i> | N |

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 section 8.1.2 of the HSSD

Horizontal Control Requirements:

Horizontal control shall meet requirements in Section 3 of the HSSD.

Vertical Control Requirements:

Discrete Zoning

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.

NWLON Gauges

| | |
|--------------------------------------|-------------------|
| <i>Operating Water Level Station</i> | <i>Station ID</i> |
| Sand Point | 945-9450 |

Subordinate Gauges

| <i>Operating Water Level Station</i> | <i>Station ID</i> | <i>Leveling Required</i> | <i>Installation Required</i> | <i>Pre-Existing Benchmarks</i> |
|--------------------------------------|-------------------|--------------------------|------------------------------|--------------------------------|
| Churnabura Island, AK | 945-9196 | YES | YES | NO |

Orthometric Imagery:

The following orthometric imagery has been included on the project CD for reference:

| <i>File Name</i> | <i>Source</i> | <i>Source Image Date</i> |
|------------------|---------------|--------------------------|
| H12101 | Fugro LADS | 06/13/2009 |
| H12103 | Fugro LADS | 06/13/2009 |

Shoreline and Nearshore Features:

A limited shoreline verification shall be accomplished using the composite source file (CSF). Preliminary analysis of the nautical chart and imagery from Google Maps and Bing was conducted at HSD OPS. Several islets east of Nagai island were not seen in either the GC or imagery. In these instances, the MHW buffer was manually so that the islet would be located within sheet limits and assigned in the CSF. Similarly, the easternmost islet of the "Twins" was not seen in either the GC or imagery. The MHW buffer around this islet was manually removed and the islet has been assigned in the CSF. The MHW line for Near Island and the westernmost islets of the "Twins" appeared to be shifted to the west and do not match either the GC or the imagery. In this case, the MHW line was derived from the GC listed below. All features with attribute asgnmt populated with 'Assigned' shall be verified even if they are inshore of NALL. All other submerged or visible cultural features inside the limit of survey shall be verified. See section 3.5.5.2.2 of the FPM for further guidance.

| | |
|--|----|
| <i>Number of Assigned Features:</i> | 97 |
|--|----|

| | |
|------------------|-------------------------------------|
| <i>GC Number</i> | <i>Horizontal Position Accuracy</i> |
| 10588 | 17 meters |

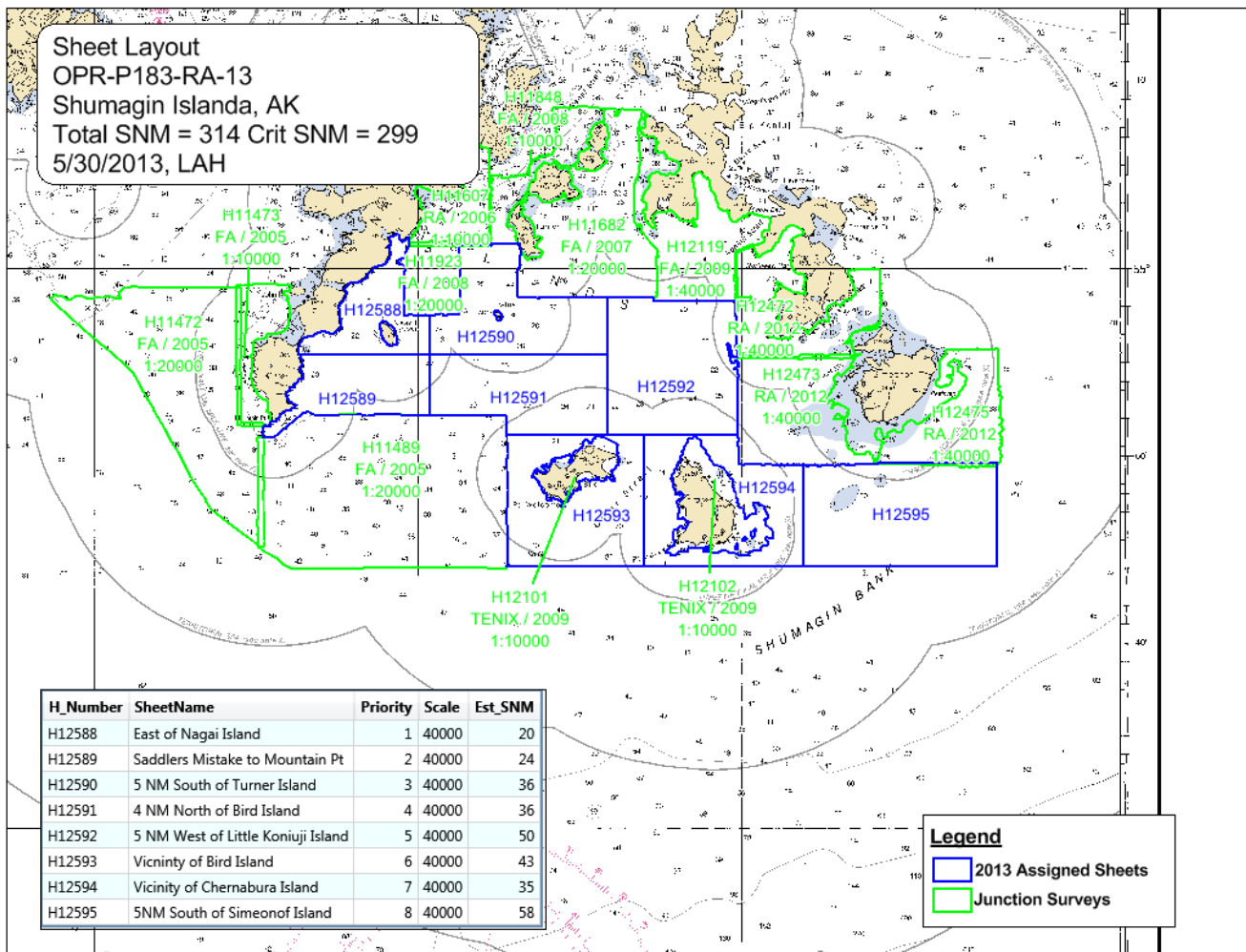


Figure: 1 - OPR-P183-RA-13 Sheet Layout

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, AK

LT Matthew Forney
NOAA
4230 University Blvd #102
Anchorage, Alaska 99508
Phone: 907-271-3327
Fax: 206-491-8913
Email: Matthew.Forney@noaa.gov
Obligation: Mandatory

Seventeenth U.S. Coast Guard District, Commander (DPW)

Robert McCormick
USCG
P.O. Box 25517
Juneau, Alaska 99802
Phone: 907-463-2272
Fax:
Email: Robert.P.McCormick@uscg.mil
Obligation: For Reference

U.S. Army Corps of Engineers Alaska District, Office of the District Engineer

James E. Adair
USACE
P.O. Box 6898
Elmendorf Air Force Base
Anchorage, Alaska 99506
Phone: 907-753-5632
Fax:
Email: James.E.Adair@usace.army.mil
Obligation: For Reference

Alaska State Historical Preservation Officer (SHPO)

Judith E. Bittner
Alaska DNR, Office of History and Archaeology
550 West 7th Avenue
Suite 1310
Anchorage, Alaska 99501
Phone: 907-269-8721
Fax: 907-269-8908
Email: judy.bittner@alaska.gov
Obligation: For Reference

Southwest Alaska Pilots Association

Captain Jeff Pierce

PO Box 977

Homer, Alaska 99603

Phone: (907) 235-8783

Fax: (907) 235-6119

Email:

Obligation: For Reference

WATER LEVEL INSTRUCTIONS
OPR-P183-RA-2013 Shumagin Islands, AK
(04/08/2013 LH)

1.0. TIDES AND WATER LEVELS

1.1. Specifications

Tidal data acquisition, data processing, tidal datum computation and final tidal zoning shall be performed utilizing sound engineering and oceanographic practices as specified in National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD), dated April 2012, and OCS Field Procedures Manual (FPM), dated May 2012. 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>, email data transmissions through TIDEBOT, or through regular communications with CO-OPS/Engineering Division (ED) personnel before and during operations. During traditional non duty hours, the Commanding Officer/Team Leader may contact the Continuous Operational Real-Time Monitoring System (CORMS) watch stander who is available 24 hours/day - 7 days/week for assistance in assessing the status of applicable water level station operation. The CORMS watch stander may be contacted either by phone at 301-713-2540 or by Email: CORMS@noaa.gov. Problems or concerns regarding the acquisition of valid water level data identified by the Commanding Officer/Team Leader shall be communicated with CO-OPS/ED (Colleen Roche, 301-713-2897 ext.137, Email: nos.coops.oetteam@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 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 |
|------------|------------|------------------------|--------------------------------|---------|
| Sand Point | 9459450 | Control | NWLON | |

Table 1: All stations that need to be added to the HHL in support of P183-RA-2013

This project requires a subordinate installation. Therefore, please contact OET and HPT via e-mail at least three business days before the subordinate stations are installed and send the site report listing the DCP and sensor serial numbers and GOES satellite information so that stations can be configured in the database and also can be added to HHL. For station removal, inform OET and HPT 3 business days prior to the actual removal of a station and confirm with OET upon final station removal.

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 station Sand Point, AK (9459450) 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 Sand Point, AK (9459450) by NOAA's Platform RAINIER 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

For this project, it will be necessary to install and continuously operate water level measurement systems (tide gauges) at one or more approved subordinate station locations. These subordinate stations identified for hydrography or photogrammetry are required to be installed to provide the tidal datums, water level reducers, refinement of final zoning, and harmonic constituents for predictions needed to meet NOS hydrographic specifications' accuracies as well as to support other NOAA objectives. The stations listed in Section 1.2. will provide control for datum computations at subordinate stations by using the NOS method of comparison of simultaneous observations.

A 30-day minimum of continuous data acquisition is required for all required subordinate station installations. If the data is collected for less than 30 days at the required subordinate stations, then according to the operating guidelines and business rules, CO-OPS may not publish tidal datums and bench marks sheet. This means CO-OPS may not be able to provide smooth 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 subordinate stations, 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 subordinate tide gauges are required to support the TCARI process, then all the gauges 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, minimum 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 discreet 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 subordinate station is required:

| <u>Station Number</u> | <u>Station Name</u> | <u>Latitude(N)</u> | <u>Longitude(W)</u> |
|-----------------------|-----------------------|--------------------|---------------------|
| 9459196 ** | Churnabura Island, AK | 54° 45.0' | 159° 33.0' |

** While CO-OPS has this station configured in its database, we don't have historical meta data or water level data. Conduct reconnaissance of the area to establish a suitable location for the placement of the water level gauge and provide the CO-OPS personnel listed in Section 1.2.1 with the proposed name and location. CO-OPS/ED will confirm this and then assign a station number. **Do not install these subordinate gauges prior to receiving assigned station numbers. If it is necessary to change the location of a gauge by more than ¼ mile from its assigned location and a station number has already been assigned, then contact CO-OPS/Engineering Division personnel prior to the installation of the gauge.**

1.3.3. Tide Component Error Estimation

The estimated tidal error contribution to the total survey error budget in the vicinity of Shumagin Islands, AK is 0.09 meters at the 95% confidence level, and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Based on this analysis no subordinate stations are required. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

1.3.4. GOES Satellite Enabled Subordinate Stations

In the event that water level stations with Geostationary Operational Environmental Satellite (GOES) capability are utilized, information about the station is needed at CO-OPS so that the station(s) can be configured in CO-OPS' Data Management System (DMS) before GOES data transmission is started. A minimum of two weeks prior to initiating data transmission, please contact the CO-OPS/ED (Thomas Landon) at 301-713-2897 ext. 191 or FAX 301-713-4465 and provide the station number, platform ID, transmit time and channel. In addition, FAX a copy or email a digital copy of the site report before beginning transmission.

Whenever a station number needs to be assigned, the field party should provide the latitude and longitude of the location where a tide gauge will be installed to the Operational Engineering Team (OET; nos.coops.oetteam@noaa.gov) at least 3 days before the installation. OET will assign a new tide station number and provide that promptly (within 1 business day) to the field party.

GOES data transmissions must use a message format identical to the format currently implemented in NOS' Next Generation Water Level Measurement System (NGWLMS). Refer to Section 1.1. for information on the NGWLMS data format. The document, **NGWLMS GOES MESSAGE FORMATTING**, found under the Publications option of the CO-OPS web site at

<http://tidesandcurrents.noaa.gov/> will give an explanation of the NGWLMS GOES message format.

The following preliminary satellite antenna pointing angles are provided for the stations in Sections 1.3.1. to facilitate GOES satellite transmission. Complete GOES information will be provided after the station location is finalized and reported to CO-OPS/ED . If a suitable site for transmitting via satellite cannot be found within the required area, then a station should be established within the area and the data downloaded onto diskette/CD and forwarded to CO-OPS/ED. As a backup for all stations, data must be forwarded to CO-OPS/ED on diskette.

| <u>STATION</u> | <u>GOES West</u> |
|----------------|---------------------------------|
| 9459196 | ELEV. 23.7 AZIMUTH(T) 150.8° |

1.3.5. Benchmark Recovery and GPS Requirements

Recover all historical bench marks at each required subordinate water level station. If a total of five benchmarks cannot be found, install the number of benchmarks necessary for the subordinate station to have the total five benchmarks. In the event of a new station with no historical marks, installation of a minimum of five bench marks will be required. Third-order levels from the tide staff or sensor to a minimum of five bench marks (including the primary bench mark) are required at the beginning and end of the survey period. See Section 1.1. for clarification of requirements.

1.3.5.1. Hand held GPS latitude and longitude positions on all historical subordinate water level station bench marks are required. In addition, one of the subordinate water level station bench marks shall be selected for high accuracy static differential GPS observations to obtain ties between the tidal datums and GPS derived datums. Refer to Section 1.1 for further details on the GPS positioning requirements.

1.3.6. Operate the water level stations listed in Section 1.3.1. of these Project Instructions for the following hydrographic area(s) or zone(s):

| <u>Station Number</u> | <u>Hydrographic Area(s) or Zone(s)</u> |
|-----------------------|--|
| 9459450 | Entire Survey |

1.4. Discrete Tidal Zoning

1.4.1. The water level station at Sand Point, AK (9459450) is the reference station for preliminary tides for hydrography in Shumagin Islands, AK. The time and height correctors listed below for applicable zones should be applied to the preliminary data at Sand Point during the acquisition and preliminary processing phases of this project. Preliminary data may be retrieved in one month increments over the Internet from the **CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>**. The Commanding Officer (or Team Leader) must notify CO-OPS/ED personnel immediately of any problems concerning the preliminary tides. Preliminary data are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. For the time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the preliminary tides at the reference

station. A positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights **relative to MLLW** at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

| <u>Zone</u> | <u>Time Corrector(mins)</u> | <u>Range Ratio</u> | <u>Predicted Reference Station</u> |
|--------------------|------------------------------------|---------------------------|---|
| SWA204 | -6 | x0.98 | 9459450 |
| SWA204A | 0 | x0.98 | 9459450 |
| SWA205 | 0 | x0.94 | 9459450 |

1.4.2. Polygon nodes and water level corrections referencing Sand Point, AK (9459450) are provided in CARIS[®] format denoted by a *.zdf extension file name.

NOTE: The tide corrector values referenced to Sand Point, AK (9459450) are provided in the zoning file “P183RA2013CORP” for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a MapInfo[®] representation of West longitude

“Preliminary” data for the control water level station, Sand Point, AK (9459450), are available in near real-time and verified data will be available on a weekly basis for the previous week. **These water level data may be obtained from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>.**

1.4.3 Zoning Diagram(s)

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

1.4.4 Final Zoning

Upon completion of project OPR-P183-RA-2013, submit a Pydro generated request for final 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 a sheet number, in the subject line of the email.

CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. After review, CO-OPS will send a notice indicating that the tidal zoning scheme sent with the project instructions has been approved for final zoning. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised tidal zoning scheme to the field group and processing branch for final processing.

1.5 TideBot

Preliminary and verified six minute water level time series data may be retrieved from the CO-OPS database via TideBot application. TideBot delivers timely preliminary/verified tidal and Great Lakes six minute water level observations via email to users on a scheduled, recurring basis. To access TideBot through an email account, send an email to TideBot@noaa.gov with the

word “help” as the subject. An email reply will be sent with instructions on how to subscribe to TideBot for time series data retrieval.

Alternately, users may download preliminary and verified six minute water level time series data from the CO-OPS database via the Fetchtides application. Fetchtides provides a mechanism to store imported data locally and combine multiple days’ worth 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.

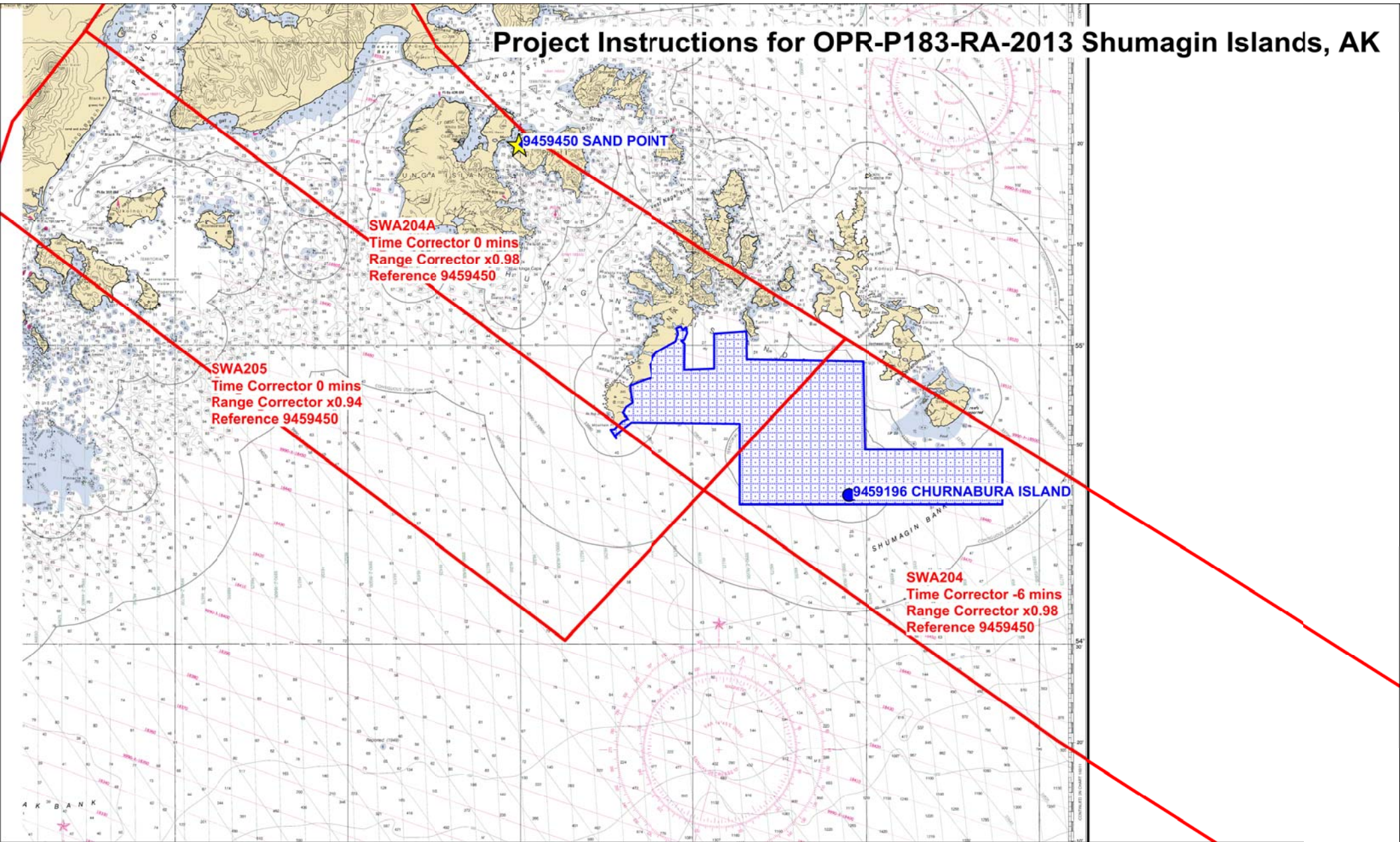
1.6 Water Level Records

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

Project Instructions for OPR-P183-RA-2013 Shumagin Islands, AK



9459450 SAND POINT

SWA204A
Time Corrector 0 mins
Range Corrector x0.98
Reference 9459450

SWA205
Time Corrector 0 mins
Range Corrector x0.94
Reference 9459450

9459196 CHURNABURA ISLAND

SWA204
Time Corrector -6 mins
Range Corrector x0.98
Reference 9459450

AK BANK

SHUMAGIN BANK