Meeting Summary
Hydrographic Services Review Panel (HSRP)
May 22-24, 2012
Anchorage, AK

Tuesday, May 22, 2012

On the call of the Designated Federal Official, Captain John Lowell, NOAA, the Hydrographic Services Review Panel (HSRP) meeting was convened on May 22, 2012 at the Hilton Anchorage, 500 West Third Avenue, in Anchorage, Alaska. The following report summarizes the deliberations of this meeting. Presentations and documents are available for public inspection online at http://www.nauticalcharts.noaa.gov/ocs/hsrp/meetings.htm. Copies can be requested by writing to the Director, Office of Coast Survey (OCS), 1315 East West Highway, SSMC3, N/CS, Silver Spring, Maryland, 20910. The Agenda is available online at http://www.nauticalcharts.noaa.gov/ocs/hsrp/archive/2012/May/Agenda-Anchorage.pdf.

Welcoming Remarks and Introductions
Matt Wellslager, HSRP Chair

The meeting was called to order at 8:20 a.m. Chair Wellslager introduced the distinguished NOAA administration members present, and announced that Capt. John Lowell will be stepping down as the HSRP Designated Federal Official.

The Chair thanked the Cook Inlet Regional Citizens Advisory Council for providing images from the exhibit Coastal Impressions: A Journey Along Alaska's Gulf Coast, to decorate the meeting room.

Capt. Lowell outlined the statutory role of the HSRP. The Chair then invited the panel members to introduce themselves. Dr. Kathy Sullivan then swore in the four new members: Rear Admiral Ken Barbor, Capt. Deborah Dempsey, Rear Admiral Evelyn Fields, and Dr. Frank Kudrna.

Opening Remarks from NOAA Leadership
Dr. Kathryn D. Sullivan, Assistant Secretary of Commerce for Environmental Observation & Prediction, Deputy Administrator and Acting Chief Scientist, NOAA

Dr. Sullivan began her presentation by reminding the panel of NOAA's importance to U.S. maritime commerce. Over 95 percent of foreign trade enters or leaves the U.S. by ship; no other transportation system generates as much economic benefit as America's ports and waterways. The informational infrastructure provided by NOAA navigation services is critical to keeping this commerce safe and efficient, as well as preserving the health of coastal ecosystems and the long-term vitality of coastal communities.

NOAA's navigation services can help position Alaska for the future. Some examples of NOAA's current work in the Arctic are:

- Arctic nautical charting plan for updated, more accurate charts;
- New water level sensors suited for Arctic conditions;
- Working with international organizations to coordinate Arctic mapping and charting efforts;
- First transect of the Arctic Ocean using modern survey technologies;
- Supporting emergency response needs along the Arctic Coast;
- Arctic Emergency Response Management Application (ERMA);
- Collaboration with AOOS and the Arctic Council's Emergency Prevention, Preparedness and Response Working Group;
- Data-sharing agreement with Shell, ConocoPhillips and Statoil USA: data will begin flowing shortly, and will be made public after quality control; and
- Arctic Vision and Strategy.

NOAA envisions an Arctic where decisions and actions related to conservation, management and resource use are based on sound science and support healthy, productive and resilient communities and ecosystems. Accurate data is essential to this goal. Recognizing that no single agency or entity has adequate resources to meet this task alone, collaborative efforts and data-sharing arrangements are essential.

NOAA's Arctic Strategy enunciates six goals:

- Improve forecasting of sea ice;
- Strengthen foundational science;
- Improve weather and water forecasts and warnings;
- Enhance international and national partnerships;
- Improve stewardship and management of ocean and coastal resources in the Arctic; and
- Advance resilient and healthy Arctic communities and ecosystems.

Dr. Sullivan outlined the efforts of the Committee on Marine Transportation Systems (CMTS).

- With the White House Navigation Task Force to help coordinate federal infrastructure investment;
- Recommending E-navigation technologies to deliver enhanced navigation information to mariners;
- Recommending integration of NOAA's PORTS with Coast Guard AIS for the Tampa port area (which is now being beta-tested);
- Sponsoring a conference to develop use of performance indicators in marine transportation and waterways management (with who/what agency?); and
- Developing a user-friendly web portal for access to government marine transportation reports and statistics.

Dr. Sullivan added that looking beyond the traditional navigation services area can help NOAA find new opportunities and efficiencies. Work done under the heading of navigation services may be beneficial to other scientific needs. For example, the Kachemak Bay State Park Ranger uses NOAA data for trail maintenance and planning.

Dr. Sullivan concluded by asking for the panel's input on how NOAA can improve and advance its navigation services. She asked members to use Alaska's pragmatic can-do spirit as inspiration in their work.

Keynote Address--Welcome to Alaska and the Importance of NOAA's Navigation Products, Services & Information for the Arctic Region
The Honorable Mead Treadwell, Lieutenant Governor of the State of Alaska

Dr. Lawson Brigham introduced Lt. Governor Mead Treadwell. Lt. Governor Treadwell thanked the panel for coming to Alaska. His keynote address pointed out relevant hydrographic and navigation issues and concerns, and the importance of this data for the state of Alaska. Alaska has 44,000 miles of coastline, including several disputed borders. Coastal erosion, changes in sea ice, and seismic events which may lead to underwater changes, all of which contribute to the need for accurate and comprehensive hydrographic data. Moreover, the state is a major player in the areas of fishing, mining, shipping, oil and gas exploration, and tourism. All of these industries depend on hydrographic and meteorological data to be successful. Advancement of Arctic multi-beam mapping is essential.

Lt. Governor Treadwell called attention to Vladimir Putin's statement that the Northern Sea Route through the Arctic would take on the global significance of the Suez Canal. This is an ambition which the U.S. should pay attention to.

Technology, global demand, and receding sea ice have resulted in an increase in Arctic shipping. In particular, the energy market will be a major driver of Arctic shipping. The largest European energy producers now have the option of shipping to Asia through the Arctic, and so do North American producers.

The State of Alaska has four major concerns related to shipping. First, marine safety. The state does not currently have the regulatory capability to identify ships transiting the Arctic Ocean or determine if they have an appropriate contingency plan; that capability will depend on passage of the U.N. Conference on Law of the Sea.

Another concern is the high price of energy in Alaska, which should be brought down to approximate global market prices.

Third, how can the state benefit economically from increased shipping? Will there be a transshipment port for the Arctic, and if so, where? Some believe the Aleutians would be an appropriate place.

Fourth, there are gaps in Arctic observation data. Changes in the nature, timing and extent of sea ice means that 30-year averages for snowfall, ice flows and fall sea storms are useless. The state needs more data to prepare for the worst.

In order to prepare for a new, accessible Arctic, Alaska has been actively involved with the Arctic Council, and has negotiated a new Search and Rescue Agreement. The search and rescue exercise planned under the agreement is expected to point up deficiencies in Arctic modeling data and provide an opportunity to fill those gaps.

The importance of the Bering Strait creates the need for international cooperation. The way Canada and the U.S. have worked together on the St. Lawrence Seaway is an example of how international waterways should be managed.

Other state initiatives include:

- Aleutian Risk Assessment Study
- Working with the Coast Guard to establish forward basing in Alaska
- Northern Waters Task Force
- Port study conducted with U.S. Army Corps of Engineers
- Statewide Digital Mapping Initiative
- Support of the International Maritime Organization mandatory code for ships in polar waters
- Support of ratification of Law of the Sea
- Work with unmanned aerial vehicles

Lt. Governor Treadwell asked the panel to ensure that the CMTS's draft report on Arctic shipping includes recommendations on Alaskan hydrographic needs.

Questions from the HSRP

Dr. Gary Jeffress asked whether the choke point in the Bering Strait will require some kind of transportation traffic system to monitor the flow of traffic. Lt. Governor Treadwell responded that the Coast Guard's Port Access Routing Study is intended to address that problem. Alaskans rely on the Bering Sea for food as well as for trade, so shipping traffic should be managed so as not to conflict with the need for subsistence fishing.

Admiral Barbor asked about the need for hydrographic services in support of ecotourism. Lt. Governor Treadwell agreed that in several places there is a need for more data for the purpose of ecotourism as well as for military purposes.

Capt. Mike Terminel asked about the need for icebreakers in the Arctic, and Lt. Governor Treadwell answered that investment in the Arctic Ocean is necessary in the interests of global commerce. Leasing icebreakers instead of buying them might save money.

Dr. Sullivan presented Lt. Governor Treadwell and Representative Reggie Joule with a special token: copies of the new charts of Kotzebue Sound, which are the result of a three-year hydrographic surveying effort led by NOAA.

Delivering NOAA's Navigation Products & Services for the Alaska/Arctic Region: Kotzebue Example

Capt. John E. Lowell, Jr., NOAA Director, Office of Coast Survey

Capt. Lowell's presentation outlined how the new charts of Kotzebue were produced. In response to the National Ocean Policy's objectives, NOAA sent its Alaska Navigation Manager to the Arctic to determine user needs, and industry and government requested a larger-scale chart for Kotzebue.

Kotzebue is a village on the northwest coast of Alaska, which hosts an airport and supports a large part of the interior. The port is very small, and is typically used by fuel and cargo barges.

NOAA's Navigation Services, other federal agencies, and contractors were all involved in producing the data for the Kotzebue chart. Tide gauge data was collected by CO-OPS and NGS collected shoreline data from non-classified satellite imagery (with the help of the Department of Defense).

Prior to the release of the new chart, the best coverage of Kotzebue was at a 1:700,000 scale. The final chart of Kotzebue provides coverage at a 1:50,000 scale, with harbor coverage at 1:25,000. Also, maritime boundaries were adjusted inward by about three nautical miles. The new Kotzebue chart will be included in the August 2012 edition of Coast Pilot, and will also be used in ENC Direct to GIS, the Digital Coast website, and Arctic ERMA.

Questions from the HSRP

Dr. Jeffress asked whether the State Department is involved in determination of borders. Capt. Lowell said that they are typically not involved unless there is a border dispute.

Ms. Miller asked what the magnitude of charting requests for Alaska is. Capt. Lowell said that the Arctic Charting Plan lays out the areas where vessels most frequently travel. The NOAA ship *Fairweather* will go to the Canadian border and back this year.

Vice Chair Scott Perkins noted that the new Kotzebue chart took two years to be completed. How can that time be shortened to one season? Capt. Lowell said that starting from square one does take time. In the current tight budgetary environment, focusing on the right priorities is critical.

Mr. Hanson asked about how local residents requested this mapping and how it was paid for? Capt. Lowell responded that NOAA's navigation managers, such as Matt Forney, the Alaska regional navigation manager, are stationed around the country and tasked with collecting stakeholder feedback and user needs. The Kotzebue chart was paid for out of Navigation Services's regular budget. Creating a new chart does increase the volume of work over the long term, since the new chart needs to be maintained.

Dr. Jay commented that the harbor chart did not include the depth of wetland areas. Capt. Lowell replied that the Kotzebue chart was designed to support safe navigation to meet the community's economic needs.

Dr. Brigham asked how much of the United States maritime Arctic is charted to international navigation standards. Capt. Lowell did not give a percentage, but said that a cautionary approach is needed when navigating in the Arctic.

Dr. Dionne asked whether sedimentological changes are expected in the Kotzebue area. Capt. Lowell said yes. For instance, the harbor channel occurs in a slightly different place every year.

Overview of Arctic ERMA
Michele Jacobi, Office of Response and Restoration, Arctic ERMA

Next, Michele Jacobi presented an overview of the Arctic Environmental Response Management Application (ERMA), which will be launched in June 2012. Arctic ERMA is basically a data compilation and visualization tool, intended to give environmental responders the information they need to prepare for and respond to incidents which may impact Alaskan trust resources. Having the full picture of an incident leads to making more of the right decisions.

Information is received from ships, satellites, weather buoys, or a command post, then put into the data center and streamed over the internet. No special software is needed to access this information. Information sets are customizable to display data related to the user's particular needs. Restricted data is available using a special login and password, but much of the data is publicly available. Ms. Jacobi provided an on-line demonstration of the real-time data available on Arctic ERMA.

Questions from the HSRP

In response to a question from Vice Chair Perkins, Ms. Jacobi said that ERMA is built on open-source GIS standards. Vice Chair Perkins asked whether there is a common data standard between Arctic ERMA and the Norwegian ERMA? Ms. Jacobi said that there is an informal agreement that open-source standards are the best practice. Dr. Brigham added that international standards are being developed through the World Meteorological Organization, the International Hydrographic Organization and the Arctic Regional Commission. However, the observational network to support models does not yet exist.

Dr. Jeffress asked about the possibility of incorporating crowdsourced data through smart phone apps? Ms. Jacobi said that the possibility is being investigated.

Dr. Kudrna asked about the relationship between ERMA and AOOS's regional associations? Ms. Jacobi replied that she is seeking to leverage AOOS's existing compilations of data in order to avoid duplicating effort.

Ms. Schawna Thoma of Senator Begich's office asked whether ERMA would be an appropriate tool for tracking tsunami debris. Ms. Jacobi said that, when confirmed reports of debris arrive, they are incorporated in the Pacific Islands ERMA and displayed in other ERMAs as needed.

Dr. Dionne asked about whether the Arctic ERMA model can be transplanted to other areas of the country? The answer was yes. Dr. Dionne suggested dialogue with other Coastal Ocean Observing Systems.

Michelle Ridgway inquired whether ERMA was involved in tracking dispersal of oil underwater. Ms. Jacobi replied that ERMA is not a 3D visualization tool; subsurface modeling is done by the Emergency Response Division.

Dr. Jay asked about ERMA's web hosting? Ms. Jacobi said that the goal is to go within the federal cloud computing environment, although at the moment hosting is out of the University of New Hampshire.

Capt. Lowell asked whether it is possible to see data across regions. Ms. Jacobi said that a centralized database might slow down ERMA, so data for different regions is currently accessible separately.

Joel Cusick of the National Park Service asked where ERMA shoreline data comes from. Ms. Jacobi replied that the goal is to provide the best rectified NOAA shoreline.

Ms. Miller noted that the International Pacific Research Center of the University of Hawaii is doing modeling of debris paths too.

Alaska Northern Waters Task Force
The Honorable Reggie Joule, Representative, Alaska State Legislature and Chair, ANWTF

Rep. Reggie Joule gave a luncheon address. The Alaska Northern Waters Task Force (ANWTF) was created by the Alaska legislature in 2010. The ANWTF is charged with monitoring the Arctic in response to the increased human activity and loss of sea ice in the area. Members of the task force come from the state legislature, state and local administration, and the Alaska Marine Conservation Council.

The goals of the ANWTF are to create a state and federal commission responsible for overseeing development and to facilitate regional cooperation and outreach. Task force members heard public testimony, studied the research, and toured many sites, including the small communities of Wales and Wainwright.

The evolving Arctic will require unprecedented cooperation among Arctic nations to sustain communities and environments. Oil and gas exploration continues to be a critical part of the Arctic economy, and infrastructure and transportation systems should be expanded to accommodate it.

The top recommendations of the ANWTF were:

- The State of Alaska and the federal government should provide Alaskans (particularly those who are most affected by changing conditions) with meaningful opportunities to participate in Arctic policy and development decisions.
- The Alaska legislature should create a commission to develop a comprehensive state strategy for the Arctic. This recommendation led to the creation of the 20-member Arctic Policy Commission.
- The legislature should continue to urge the Senate to ratify the U.N. Convention on the Law of the Sea.
- Alaska should support greater international engagement with the Arctic Council and Inuit Circumpolar Council.
- A comprehensive U.S. Arctic strategy should be developed and implemented.
- The U.S. and the State of Alaska should adopt international agreements governing shipping, fisheries, oil and gas development, and other transboundary issues.
- Continued improvement in the ability of industry and government to prevent and remediate Arctic oil spills is needed.
- The University of Alaska should establish an oil spill research center.
- The U.S. and the State of Alaska should prepare strategies to maximize the benefit which local communities derive from development of commercial fisheries north of the Bering Strait.

The full ANWTF report and list of recommendations can be found on:
http://housemajority.org/coms/anw/pdfs/27/NWTF_Full_Report_Color.pdf

Representative Joule made a specific recommendation in the ANWTF report that "the ANWTF supports increased funding to expedite NOAA's Hydrographic Arctic mapping and updated mapping of coastal navigation and village entrance routes."

Dr. Dionne asked whether indigenous people might be vulnerable to displacement as a result of oil and gas development. Rep. Joule said that maintaining dialogue with local residents is important, but that the long history of oil and gas development in the Arctic region shows that coexistence is possible. Offshore exploration, which may threaten the food security of some residents, is the newest concern.

Port of Anchorage Site Visit

Panel members then toured the Port of Anchorage.

HSRP Working Group Updates

Legislative Policy Initiatives: Scott Perkins

Scott Perkins, the Vice Chair of the Legislative Policy Initiatives Working Group, stated that the upcoming reauthorization of the Hydrographic Services Improvement Act (HSIA) presents the opportunity to calibrate legislation to support the panel's goals. For instance, current legislation prohibits the use of user fees for the acquisition of nautical data, but different wording in the Act could open the door for user-fee-funded programs. A 2013 Ten Most Wanted report could be tied into HSIA as well.

Given a reduction of about 17 percent in the budget of NOAA navigation services, the HSRP has the chance to lead by example and change the logistics of its meetings in order to save money for NOAA programs. For instance, what if panel members hosted a meeting at their business or university? The cost of meeting locations should also be considered. Some East Coast stakeholders see HSRP meetings as hard to attend, although Vice Chair Perkins pointed out that stakeholder attendance in Anchorage and Honolulu was higher than in Norfolk, Virginia. Lastly, HSRP members are compensated for their time, although many Federal Advisory Committee members are not.

Dr. Kudrna commented that the NOAA budget reduction is large enough that merely saving money on HSRP meetings will not be enough.

Chair Wellslager commented that, by having one HSRP meeting in the D.C. area, more NOAA administration members might be able to attend and travel costs for them would be eliminated.

Dr. Brigham pointed out that other FACA committees with senior-level members, such as the Arctic Research Commission, also pay members stipends.

Dr. Jay suggested that the working groups might want to meet over dinner to discuss the input of the larger HSRP. Dr. Brigham said that, in the HSRP letter to the Administrator, it would be appropriate to have one page for each working group with a bulletized list of each group's recommendations.

HSRP Working Group Updates

Strategic Effectiveness Subcommittee: Dr. David Jay

The Strategic Effectiveness Subcommittee worked on four key areas:

- Improving and supporting the PORTS® system
- Responding to changing water levels and inundation threats
- Improving NOAA products and services
    - Learning from international innovation
    - Historic data recovery
    - GPS units should routinely be installed on tide gauges when possible
    - Coordination of data levels
- Improving NOAA outreach and branding
    - Can legislation be changed to ensure that the NOAA logo accompanies use of NOAA data?
    - Could NOAA have a mascot?
    - What if tide gauges had Facebook pages?

Dr. Jay said that PORTS® is inconsistently funded, and there is no systematic way to upgrade a system. The funding mechanism or mechanisms should be clarified. Expanding PORTS® to other ports will probably not happen absent a user fee. There will continue to be a tension between localizing models to conform to local needs and the desire to standardize PORTS® systems across the nation.

Capt. Gerd Glang drew the working group's attention to NOAA's storm surge road map, which was intended to address NOAA's storm surge modeling activities holistically across the different line offices.

Dr. Dionne commented that FVCOM could be customized for specific PORTS® or non-PORTS® systems.

HSRP Working Group Updates

Emerging Arctic Priorities Working Group: Dr. Lawson Brigham

Dr. Brigham suggested that the Arctic Working Group should be a standing group, because of the broad, complex nature of Arctic issues. The message of the Arctic as a global trade route is exaggerated. The key is to tie Alaskan natural resources and the rest of the circumpolar world to the rest of the globe. The Arctic is still partially or fully ice-covered nine to ten months out of each year, and this will continue through the century and beyond, although the character of the ice is changing.

Recommendations in the Arctic Marine Shipping Assessment which Dr. Brigham helped to create, provides a framework for the HSRP to address Arctic issues.

- Novel public-private partnerships will become necessary. There is no way the federal government will be able to fund all needs for Arctic infrastructure.
- A seamless, integrated and comprehensive monitoring and surveillance system based on the Automatic Identification System (AIS) could be created, pursuant to the Arctic Council recommendation.
- HSRP, either as a panel or as individuals, should communicate thoughts on the Arctic to those responsible for the new GAO study which Congress has called for.
- The HSRP could do a survey of Arctic stakeholders, if legally appropriate.
- The U.S. delegation to IHO and its Arctic Regional Hydrographic Commission should press for internationally coordinated surveying.
- The Outer Continental Shelf needs to be explored.
- A mandatory Polar Code for navigation should be created.
- New hydrographic surveying assets should be made available in the Arctic; more tide and current observations are needed.

One particularly sensitive area is the west coast of St. Lawrence Island. The magnitude of shipping traffic in that area creates a high probability of an accident unless proper observations and surveying are done.

Larry Mayer wondered whether the logistical difficulties of Arctic issues might provide an opportunity to improve collaboration within government. Dr. Brigham noted the issue of which parts of the federal fleet should be involved in surveying. Recognizing that not many new hydrographic survey ships will be funded, what existing ships could be used?

Ms. Miller pointed out that Arctic representation on the IOCM (Integrated Ocean and Coastal Mapping program) could be helpful.

Tom Lakosh, a public commenter, spoke about the need to bring the regulatory standard for emergency response up to the OPA ’90 (Oil Pollution Act of 1990) level. Will regulated vessel traffic be required to fully fund oil spill response organizations in cooperation with Coast Guard? Dr. Brigham answered that the GAO study is fairly narrow and will not address those issues. International agreement is needed to coordinate the different regulatory systems of the eight Arctic states. Dr. Brigham invited Mr. Lakosh to participate in tomorrow’s discussion of Arctic Emerging Priorities.

HSRP Panel Discussion: Discussion of Site Visit
Matt Wellslager, HSRP Chair

Admiral Barbor commented that, on the Port of Anchorage site visit, he learned that mariners don’t have adequate information on how current port surveying data is. The shoaling in the port makes this a concern. Capt. Lowell replied that the date of surveying is actually available on the chart itself. Dr. Dionne noted that updates won’t necessarily show up on paper charts.

Dr. Brigham added that 1,000-foot cruise ships have been encouraged to use the port. There may not be enough space and depth for them. Chair Wellslager stated that the Army Corps of Engineers plans to conduct a five-year study to determine the status of the Point MacKenzie shoal. Lt. Matt Forney showed the panel a chart of the area in question.

Rich Edwing and Dr. Dionne discussed the PORTS® and NWLON systems for Anchorage.

HSRP Panel Discussion: Deliberations and Recommendations for NOAA
Matt Wellslager, HSRP Chair

Dr. Kudrna commented that hydrographic services are related to classic Commerce issues such as jobs and economic growth. This should be communicated to the Department of Commerce.

Dr. Jay asked why Corps surveys are not simply merged into electronic charts. Capt. Lowell replied that higher-resolution point data would be unusable at the scale of a paper chart.

Dr. Jeffress asked whether Lt. Forney would be informed if a vessel scrapes the bottom of the port. LTJG Forney said he would. Dredging is going to be necessary to avoid such incidents. Ms. Miller suggested it might be a good idea to meet with captains or perhaps create a web page to inform them of when a survey is going to be done.

Public Comment Period

Mr. Lakosh asked whether there has been any data collection to determine whether dredging would adversely impact the endangered beluga or its prey species. Lt. Forney stated that the question would be better directed to the Army Corps of Engineers, which is responsible for dredging. Mr. Lakosh further requested that NOAA data be communicated to Coast Guard in order to determine what types of emergency towing vessel are needed for oil spill response.

Jon Dasler, a former member of the HSRP, commented that getting the right kind and quality of data will minimize the effort NOAA Navigation Services need to put in. Also, subsidence and sea level rise is different and should be addressed separately.

Mr. Dasler said that NWLON stations should be tied into the National Spatial Reference System to make the link to geodesy. Finally, Mr. Dasler noted that 50 percent of the data on U.S. nautical charts predates 1940; this shows that updating U.S. charts should continue to be a priority. Ms. Miller praised some of the coordinated mapping that has been done in the Pacific and the Caribbean.

Mr. Mayer suggested sending an official HSRP liaison to IOCM. Capt. Lowell agreed that the two groups are intimately tied. The new IOCM lead will be Ashley Chappell, and the new IOCM mapping standards are now past the draft stage. Ms. Miller said that, unfortunately, more remote regions such as the Pacific and Alaska may get overlooked in the IOCM program.

Dr. Brigham commented that the new UNOLS icebreaking ship, the Sikuliaq, ought to be used for hydrographic surveying, perhaps by detailing people from NOAA with the right equipment.

Mr. Lakosh made a final request that current profilers be made available to gauge currents between the surface and the bottoms of oil tankers. Jeff Carothers commented that equipping NOAA vessels with Acoustic Doppler Current Profiler (ADCP) units might resolve that issue.

Adjournment

The meeting was adjourned at 5:52 p.m.

Wednesday, May 23, 2012

The meeting was called to order at 8:33 a.m.

NOAA's Navigation Services and the Emerging Arctic
Holly Bamford, NOS Deputy Assistant Administrator

Dr. Holly Bamford discussed NOAA's current challenges. To fulfill its mission under fiscal constraints, NOAA needs to think outside the box, and the HSRP can help. Dr. Bamford asked the panel to provide recommendations for the long term. What do we need to do today to be prepared for 2035?

Dr. Bamford listed some of the gaps in Arctic Navigation Services. First, charting data for many areas of Alaska is vintage -- dating from 1970 or even earlier. NOAA is pursuing partnership opportunities to fill this gap.

Second, collaborative sharing of oceanographic data and products can help address Arctic needs. The wave buoy in Cook Inlet and the tide gauge near Barrow are examples. Dr. Bamford emphasized how important it is to bring all capabilities to bear to produce the best available science, make the most educated decisions, and ultimately to position the country for the future.

Questions from the HSRP

Mr. Carothers asked whether GRAV-D is planned for Alaska. Ms. Blackwell replied that GRAV-D collection is completed for over half of Alaska.

Dr. Brigham suggested that, at the next meeting, the panel could be briefed on the progress of NOAA's Arctic Strategy.

Stakeholder Panel 1: Alaska Regional Needs for NOAA's Navigation Services, Products & Information

Steve Boardman, Chief, Civil Works Project Management, U.S. Army Corps of Engineers, Alaska District
Capt. Ed Page, Marine Exchange of Alaska
Walt Tague, Crowley Tug & Towing
Mark Smith, VITUS Marine
Capt. Dana Jensen, Alaska Marine Highway System

Steve Boardman began the stakeholder panel presentations. Mr. Boardman outlined the history of Army Corps navigational improvements in Alaska. Unalaska and Akutan Harbors are currently under construction, and Douglas Harbor is being improved. The Army Corps uses NOAA services and products in project planning and maintenance.

One problem is that the efforts of different agencies are not coordinated, so redundant data may be collected. There is a lack of wind data, tidal datum data, and current hydrographic surveys.

Mr. Boardman made several recommendations:

- Data standardization
- User groups such as the Alaska Interagency Hydrographic Survey Working Group
- Collaboration on S57 products

Mr. Boardman discussed the Alaska Regional Ports Study, intended to analyze Alaska ports and harbors as a system. An ancillary goal is to identify potential sites for Arctic deep water ports.

Mr. Mayer asked whether there is a formal process for consultation between the Corps and NOAA. Mr. Boardman answered that NOAA and other stakeholders will be consulted.

Ms. Miller asked about projects related to the Port of Anchorage? Mr. Boardman answered that the Corps has a close relationship with the Port of Anchorage. The Corps is responsible for dredging up to the face of the dock, which is unusual. As port expansion proceeds, transitional dredging will be conducted.

Capt. Ed Page next presented. The Marine Exchange of Alaska, he said, is a non-profit organization established to provide information and communication services to aid maritime operations. One important tool is the Automatic Identification System (AIS), which broadcasts a large amount of information and is required for larger commercial vessels. The Marine Exchange also uses Vessel Monitoring Systems and the Global Marine Distress Safety and Signal System.

Tracking vessels provides a safety net, as well as facilitating environmental protection, validating compliance, and improving maritime security. Knowing that they are being monitored makes captains less likely to take risks. In Alaska, the stakes are high; 99.9% success is not enough.

Since the Marine Exchange has limited resources, small partners such as lighthouse associations, fish hatcheries, and so forth have partnered to help build the AIS system. Capt. Page gave several examples of how vessel tracking can help in emergency response.

Mr. Tague of Crowley Tug & Towing explained that the cost of living in western Alaska is increased by the high price of transportation. Some villages have very limited port facilities, and vessels may have to wait for days before unloading cargo. The limited Alaskan shipping season means that every day counts and delays in planning may lead to villages not getting enough fuel. Tidal plain transits are required in some locations.

Captains use chart information to achieve the largest possible economies of scale for each cargo load. Realtime water datums would be as useful or more useful than weather charts and NAVTEX (international automated medium frequency for navigation & meteorological forecasts & warnings) forecasts.

Mark Smith of Vitus Marine agreed with Mr. Tague's comments. Vintage tidal datums are not reliable, so local maritime knowledge is necessary to correct them. Coast Guard presence is limited in the area. In western Alaska, aids to navigation are virtually nonexistent.

The small barges that serve Alaska's coastal villages operate in areas where less than 12 feet of draft is available. This year, the Wood River Special Harvest District will host over 300 vessels in a short stretch of river with very little data available.

Mr. Smith told the story of the unprecedented trip to Nome to deliver fuel this winter. When the final barge to Nome missed its regular delivery, Vitus decided to use the Renda, a Russian double-hulled vessel with high ice class capability, to deliver fuel and gas. The cost of doing so was about half of the cost of flying in fuel. The Renda met up with the Coast Guard vessel Healy at Dutch Harbor, and then headed north to Nome. Very cold conditions and the necessity of keeping a safe distance from the Healy meant that the Renda was constantly beset with ice, even squeezed by ice as the wind and currents came sideways against the vessel. About a half mile of hose was used to get fuel and gas from the Renda to the harbor. The trip back was even icier due to north winds which drove ice south.

The Coast Guard was critical to the success of the mission. NOAA also helped by gathering ice, weather, and current data on one specially designed website.

Capt. Dana Jensen introduced the Alaska Marine Highways System (AMHS), a division of the State Department of Transportation which operates from Bellingham, Washington to the eastern Aleutians and Dutch Harbor. AMHS operates a fleet of 11 ferries, moving an average of 350,000 people and 100,000 vehicles a year.

Overall, AMHS is very pleased with its NOAA support. Its schedules are built on NOAA Tides & Currents. Capt. Jensen made several specific requests to NOAA:

- Tidal current predictions for Tongass Narrows should be studied and updated. A tidal or current station would be valuable.
- Updated published predictions would be useful for Wrangell Harbor as well.
- Chart-16594 of the Port Lions/Port Wakefield area is displayed at too small a scale. A larger scale inset is desired.
- A larger-scale inset would also be useful for Chart-16535 (covering False Pass and Isanotski Strait). Coast Pilot 9 has not been updated to describe the breakwater and harbor constructed two years ago in False Pass.
- A new survey of Akutan Harbor is recommended. The current chart does not show the town wharf, cannery pier, or the large fill area which was extended into the water in 2008.
- Portions of Olga and Neva Strait appear to be experiencing significant erosion, so updating Chart-17324 would be appropriate.

Questions from the HSRP

Dr. Kudrna suggested to Mr. Boardman that it might be appropriate to have a three-party cost-sharing agreement between NOAA, the Corps and local sponsors. Dr. Jeffress asked whether the Corps has its own tide gauges for Corps projects. Mr. Boardman answered that it does, but they are not permanently located and not tied into the National Water Level System. Anne Dollard of the Corps clarified that all Corps datums used for existing harbors are done to NOAA's standards, but not those used for new harbors. Dr. Jeffress said that the three-party model in Texas presents an example to follow.

Dr. Brigham asked how AIS data relates to satellite data. Capt. Page answered that satellite data provides a valuable overview, but to get granular, frequently updated detail, AIS data is preferable.

Ms. Miller asked Capt. Page about payments for Marine Exchange Services? The answer was that the Coast Guard pays for services and shares data with other federal agencies, including NOAA. The maritime industry also pays, and contributions are received from NGOs and the State of Alaska.

Mr. Mayer wondered why such a critical mission is being handled by the Marine Exchange rather than by a government agency. Rich Edwing stated that CO-OPS has been collaborating with the Coast Guard to get realtime water level data into an AIS format, although Coast Guard's limited funding has slowed down the progress. Weather and current sensors could be added to AIS sites. Dr. Brigham commented that it might be preferable to have a leaner, privately run system rather than a massive federal organization. Mr. Mayer was concerned that private funding may dry up unpredictably. Capt. Page agreed that a more institutionalized approach might ensure the long-term stability of Marine Exchanges.

Dr. Jay asked whether Marine Exchange data is archived. Capt. Page answered that it is. The Marine Exchange recognizes the importance of this data for risk assessment.

Mr. Hanson asked about how the national interest can be balanced with the local interest in more remote areas? Mr. Tague said that a little more or less data can have a large impact on western Alaskan economies. Mr. Smith responded that, taking a long view, Alaska is America's last frontier. Alaska's rich endowment of natural resources makes it in the national interest to develop the state, even though the population is currently small. Dr. Jay added that federal investment in navigation has been viewed as an aspect of national security since the 19th century.

Capt. Deborah Dempsey asked about NAVTEX forecast. Is it NOAA's responsibility to make them more user-friendly or could ship officers be trained in reading meteorological charts? Mr. Tague said that industry naturally makes the effort to train its officers, but unreliable charts are still a problem.

Dr. Jeffress pointed out that GPS positioning data gets less accurate further north because of the dearth of satellite coverage in the northern sky. Mr. Tague described several incidents when GPS data did not accord with charts, which can lead to expensive incidents.

Vice Chair Perkins asked about AMHS's economic model. Could charging additional user fees help fund essential navigation services? Capt. Jensen said that, unfortunately, AMHS is not profitable and survives on state subsidies, as do other public transportation systems.

Admiral Barbor and Mr. Boardman discussed Corps plans for future dredging and for adjusting charts between dredging operations. Unfortunately, the Corps is not positioned to incorporate sudden changes in charts. Dr. Brigham stated that the large military ships which use Alaskan harbors create a national security argument for port maintenance. Ms. Miller agreed that the potential for cost-sharing exists, for instance with NAVOCEANO. Mr. Boardman commented that agencies are reluctant to make specific requests because they might then be obligated to contribute funding.

Public Comment Period

Mr. Lakosh suggested that the Coast Guard and the State might use the Oil and Hazardous Substance Release Response Fund Legislative House Bill 470 and Oil Spill Response Organizations funds to fund hydrographic services.

In response to a question from Mr. Dasler, Capt. Page said that the Marine Exchange picks up both Class A and Class B AIS data. AIS data is used to facilitate communication between vessels, so that one captain knows exactly what kind of other vessels are in the area.

Ms. Miller suggested that NOAA Navigation Response Teams (NRTs) could be used to do surveying in small areas.

Luncheon Address: Bering Strait Port Access Route Study
Commander James Houck, Chief, Waterways Management Division, U.S. Coast Guard

Commander James Houck updated the panel on the Bering Strait Port Access Route Study (PARS), whose goal is to evaluate the need for ship routing measures in the Bering Strait, and ultimately, with the Russian Ministry of Transport, to make a joint recommendation to the International Maritime Organization.

The IMO's primary concern is maritime safety. There are several potential ship routing measures which could be taken, such as a recommended route, precautionary area, area to be avoided, or a traffic separation scheme (similar to traffic lanes).

Commander Houck said that objective AIS data has been important in determining where vessels are actually going in their progress through the Strait.

Questions from the HSRP

Dr. Brigham asked how relevant routing schemes are in ice-covered winter waters, when vessels may need to go far out of their way to avoid ice. Commander Houck admitted that this is an issue. Dr. Jeffress asked about visibility in the strait? Commander Houck said that only about half the time is weather conditions ideal with visibility greater than 8 nautical miles.

Commander Houck went on to say that governmental change in Russia and the U.S. has delayed any U.S./Russia agreement. Going to the IMO without Russian concurrence is an option, but would delay a final outcome by at least four years.

The Coast Guard has conducted extensive outreach with hunting and subsistence groups and other stakeholders and reviewed their comments. Comments can be emailed to Lt. Reynolds at faith.a.reynolds@uscg.mil.

Capt. Glang asked how different vessels' needs will be balanced in the routing scheme. Commander Houck said that different routing plans could be used for different types of vessels. Routing schemes could also be tailored to fit with the time of year or other environmental conditions. Also, a scaled-down Vessel Traffic Service could be used.

Dr. Jeffress asked if there was a major cruise ship or oil tanker accident today, what assets could respond and how long would it take? Commander Houck said that right now, the closest asset would be the Coast Guard cutter SPAR out of Kodiak, and it would take at least ten days. In the case of a cruise ship accident, non-Coast-Guard ships might be used to rescue people.

Dr. Brigham suggested that NOAA could provide an analysis of the Bering Strait environment to support Coast Guard. Admiral Barbor added that the proposal to IMO would be submitted to the International Hydrographic Bureau and other international organizations. Commander Houck stated that his goal is to work through these organizations to confirm the data presented in the proposal before sending it to IMO.

Vice Chair Perkins asked whether AIS data enables tracking of near misses. Commander Houck replied this is not being actively looked at. Dr. Sullivan described the volunteer reporting effort NASA manages in the area of aviation; in which pilots can anonymously report near misses.

Mr. Mayer asked about the Russian perspective on the maritime boundary? Commander Houck stated that the maritime boundary is still in dispute. The proposed traffic separation scheme would not be in alignment with the boundary.

Stakeholder Panel 2: Alaska Multi-Mission Applications of NOAA's Geospatial, Tides & Currents and Hydrographic Services

Michael O'Hare, Alaska Division of Homeland Security and Emergency Management
Commander James Houck, Chief, Waterways Management Division, U.S. Coast Guard
Aimee Fish, National Weather Service
Molly McCammon, Alaska Ocean Observing System
Tom Heinrichs, Director, GIS Network of Alaska, University of Alaska Anchorage, and Statewide Digital Mapping Initiative
William Hazelton, Geomatics, University of Alaska Anchorage

Michael O'Hare spoke on behalf of the Alaska Division of Emergency Management, which has partnerships with the University of Alaska Fairbanks's Geophysical Institute and FEMA. These partnerships allow the Division to plan evacuation routes during storm surge and tsunamis and do wave runup modeling.

Some Alaskan communities have experienced very dramatic coastal erosion. Mr. O'Hare's agency can physically mitigate shoreline erosion or help a community move to another location.

Commander Houck stated the NOAA's aids to navigation are critical to safe navigation through Alaskan waters. In some areas, such as the Kuskokwim River, Bechevin Bay, and Port Moller, data is especially important. Coast Guard captains are given letters of indemnification when they venture into certain poorly charted areas where it may be impossible not to scrape bottom.

Aimee Fish's presentation centered on the Bering Sea Storm in November 2011, the same storm which caused the ship bringing fuel to Nome to turn away. The storm extended over about a thousand miles of coastline and more than 35 communities were damaged. The western Alaska coastline, which is extremely vulnerable to coastal erosion and storm surge damage, has few water level stations.

Ms. Fish talked about the November 2011 epic Arctic weather storm that hit Alaska and the community of Golovin, a community located east of Nome on Norton Sound. During this storm event, Golovin encountered sustained winds at 60mph with gusts up to 100mph and high tide levels predicted to seven feet above the mean high tide level. She talked about how Community leaders in Golovin, with the National Weather Service's assistance, used the water level observations and tidal prediction data to decide whether and when to evacuate due to the threat of storm surge. Community leaders also needed to know how the storm would compare to historical conditions, and whether or when the local power plant would be inundated. Golovin was lucky because it had tidal predictions, although historical benchmarking data was lacking.

Without tidal predictions data, it's impossible to predict how high water levels will get or when high tide will be. New tidal predictions have been created for some critical areas, but much work remains to be done.

She further commented that in Alaska, it might be advisable to relax some data standards. Installing NWLONs in all villages is not feasible, but grassroots water level observation could be done. Bad data can be better than no data. For instance, historic tidal data for Golovin dated from only September 1899, but nevertheless helped the community prepare for the storm.

Molly McCammon gave a presentation on the Alaska Ocean Observing System (AOOS). AOOS is a regional part of the national Integrated Ocean Observing System created by Congress.

AOOS has a very broad mandate with diverse stakeholders, who depend on hydrographic services for their diverse needs, not just for navigation. Not only does AOOS collect data, it provides tools for informed decision-making. Ms. McCammon gave several examples of AOOS projects, such as the historic sea ice atlas and high-frequency radar in the Chukchi Sea. AOOS did a pilot project in the Prince William Sound which showed that modeling works better when realtime observations are incorporated in models. However, that is not a cost-effective approach on a large scale. Leveraging resources from partners is the only plausible way of getting things done in Alaska. She talked about how the AOOS ocean portal allows users to view multiple types of data on one interface, and allows AOOS to create integrated informational products with multiple layers of data.

The Arctic Research Assets Map in northern Alaska has helped stakeholders avoid collisions, identify gaps in data and reduce duplication of effort. The Cook Inlet response tool incorporates layers of data from satellite data to sensor data and videography. In the next two to three years, the entire state will be mapped with ShoreZone.

Ms. McCammon outlined the data-sharing agreement between NOAA, Shell, Statoil and ConocoPhillips. When industry data is available, it will be accessed through the AOOS portal.

In the area of coastal and marine spatial planning, AOOS has $760,000 to fund the STAMP (Spatial Tools for Arctic Mapping & Planning) project. This will address, among other things, the question of how commercial fisheries in the Arctic could be accommodated if the current moratorium is lifted.

Tom Heinrichs, the Director of Alaska's GIS network, spoke next. The Statewide Digital Mapping Initiative (SDMI) seeks to make ongoing improvements to Alaska's maps on a statewide scale and to make mapping data more accessible. Alaska is the only state in the nation lacking current, accurate, high-resolution maps.

SDMI will use orthoimagery and digital elevation models (DEMs) to produce the "best data layer"--a mosaic of the best available imagery for a given area. Mr. Heinrichs reviewed the progress of SDMI's contractors' work. The ultimate goal is wall to wall coverage of the state, which is expected to be done by June 2014. Mr. Heinrichs gave an example of the maps currently available for Golovin.

The Alaska Department of Natural Resources conveyed requests for the NOAA Digital Coast tool for Homer, shoreline updates, and sustained ShoreZone data.

Bill Hazelton from the University of Alaska Anchorage discussed geodetic measurement. Geodetic measurement products, like datums and geoids, are critical for almost every aspect of NOAA's work and to the larger community. Dr. Hazelton emphasized the need for intelligent integration of data to form meaningful, workable data sets.

Alaska, unlike the Lower 48, has little traditional survey control data, because of its relative paucity of roads. That means that CORS (Continually Operating Reference Stations) will be the basis for realization of datums in Alaska into the foreseeable future. However, CORS are thin on the ground along the critical western and northern Alaskan coasts. For instance, there is an Alaskan National Park about the size of West Virginia with not a single CORS within it.

One indication of what the inclusion of quality data can do for geodesy is the shift of two meters seen at Anchorage between the 1999 and 2006 geoids.

The highest priorities for geodetic measurement, Dr. Hazelton said, are to determine a stable, modern geoid for Alaska; establish a dense network of CORS; and to increase local partnerships and crowdsourcing to build effectiveness and decrease cost.

Questions from the HSRP

Capt. Dempsey asked if AOOS and NOAA compete for the same funds. Ms. McCammon said they do not. In fact, AOOS's main funding comes through NOAA's National Ocean Service.

Mr. Mayer asked whether there has been cross-pollination between AOOS and Arctic ERMA. Ms. McCammon said there is, and a formal letter of agreement is in the works.

Dr. Jeffress asked whether the federal Bureau of Land Management is interested in supporting Alaskan CORS. Dr. Hazelton said that the BLM has suffered budget cuts and has not expressed interest.

Dr. Sullivan noted that the habits and the level of comfort people develop day to day while consistently using a set of tools can determine which tools they go to in an emergency. If different parties have different default tool sets, for instance, AOOS versus Arctic ERMA, it could make collaboration difficult at crucial times. Ms. McCammon agreed that different sets of tools present challenges. There is a tension between using the best possible tools and using familiar, nationally standardized tools.

Dr. Jay asked whether AOOS is collecting tide data. Ms. McCammon said it is not. Ms. Miller asked whether AOOS and ERMA are on common platforms. Ms. McCammon said they are both open-source, although the AOOS platform has some capabilities the ERMA platform lacks.

Chair Wellslager asked Dr. Hazelton about the possibility of getting CORS funding from the State Department of Transportation and railroads, as has been done in South Carolina?

Dr. Hazelton stated the DOT is a strong supporter of CORS. Telecommunication towers and village school buildings can also help.

Ms. Blackwell gave an update on the current state of the CORS network and the National Spatial Reference System. The CORS network alone provides an estimated $758 million per year of benefits to the nation.

Ms. Miller asked how many CORS stations are in Alaska or planned? Ms. Blackwell said that there are currently about 50, and no new CORS are currently planned. However, if another organization established CORS, NGS would incorporate those stations into its network.

Dr. Jeffress asked whether NGS is working with the FAA, in particular in the area of avoiding collisions between unmanned aircraft. Ms. Blackwell replied that, although NGS is not concerned with realtime positioning of aircraft, the CORS network is beneficial in post-processing aircraft positions.

Dr. Bamford asked how quality control is done with measurement stations. Are there baseline data quality standards? Ms. McCammon said that AOOS does notice data anomalies and would call them to the attention of the data provider, who is responsible for quality control.

Public Comment Period

Joel Reynolds of the Western Alaska Landscape Conservation Cooperative (LCC) commented that the gaps in navigation data being discussed have a big impact on wildlife and habitat resource management agencies as well as mariners. Dr. Reynolds stated that the Yukon-Kuskokwim delta is the world's most important breeding area for migratory waterfowl. Detailed storm surge modeling is necessary to model historic and future climate change impacts on waterfowl, and more baseline data is needed to drive those models.

Capt. Bob Pawlowski described the one-semester class on hydrographic surveying he developed at the University of Alaska. The intention is to make sure Alaskans can find jobs in the surveying industry. It is the only one-semester hydrography class in the country. Mr. Dasler added that one of the recommendations in the 2010 Ten Most Wanted Report was the development of a program to foster the hydrographic profession and encourage young people to pursue that career.

HSRP Panel Discussion
Matt Wellslager, HSRP Chair

Mr. Hanson reminded the panel of its fear that LightSquared's plans to provide high-speed internet might interfere with the country's GPS network and other uses of the spectrum. LightSquared recently declared bankruptcy when it was unable to secure an FCC approval. This shows the power that the panel and the rest of industry can have to influence decisions.

Mr. Hanson also asked how NOAA will respond to the planned GAO study on NOAA data collection products. Dr. Sullivan answered that NOAA is working to gather more information on the intent of the study. She added that industry would do well to continue monitoring

competition over radio frequency bands. Also, how can receiver technologies be made more resistant to bleedover from nearby radiofrequency usage?

Ms. Miller asked whether there is funding for Navigation Response Teams in the NOAA budget? Dr. Sullivan said that the President's 2013 budget terminates funding for NRTs, although the House Mark would restore it. The final budget has not yet been passed.

Chair Wellslager read a statement from Dr. Brigham that said the HSRP should highlight the critical need for improvement of the Port of Anchorage. If this is not done, it could adversely impact national security as well as the economics of the area. Chair Wellslager commented that, by paying a little more attention to tides, the shipping industry can navigate through shoaling areas. Lt. Forney stated that the Point MacKenzie shoal has recently receded. A five-year Army Corps planning study will begin this year, and there is a dredging plan for the Knik Arm Shoal.

Chair Wellslager suggested that the 911 tax on cellular service could be used to help fund SDMI or tide gauges, as other states have done. Dr. Dionne added that the Estuarine Reserves Division of NOAA is a potential collaborator.

Mr. Mayer stated he was concerned about apparent redundancy between Army Corps, Coast Guard and NOAA surveying. The Corps seems to be treating NOAA as a stakeholder, when in fact they are a potential partner. Vice Chair Perkins said there is a relevant piece of draft legislation called "Map it Once, Use it Many Times." Maybe that should be taken up by the Legislative Working Group.

Dr. Kudrna took up the theme of collaboration. With the new Chief of Engineers on the job, now would be an appropriate time to have a high-level discussion between NOAA and the Corps on how to integrate NOAA's charting and mapping into the Corps project. Cost-sharing could be involved too. Mr. Edwing pointed out there is a policy in place requiring the Corps to use NOAA datums for coastal projects.

Ms. Miller asked whether the Corps does post-dredge surveys. Mr. Hanson replied that they do. Capt. Lowell commented that the structure of Corps funding is challenging. Data NOAA receives from the Corps is put out to users as soon as possible. Dr. Jay agreed that the Corps interprets its survey mandates very tightly. Capt. Lowell clarifies that NOAA accepts Corps depth estimates, although it might apply a correction if data is collected to a different datum.

Dr. Jeffress drew the panel's attention to the fact that FEMA maps to the outdated NGS vertical datum of 1929. More coordination between NOAA and DHS/FEMA is needed.

Mr. Steve Miles, formerly of the Army Corps, said that the Corps does recognize NOAA as a partner. Although the Corps's mission is to conduct dredge surveys, which may not be appropriate for use in navigation, its data is shared with many other agencies. Mr. Miles agreed that the Corps, NOAA and Coast Guard should have a policy for working together in Alaska. Admiral Fields commented that the Corps and NOAA should inform each other of what their priority projects in the area are. Dr. Jay said that the Corps now has a directive to begin thinking of its projects more holistically; dialogue with NOAA could serve that goal.

LTJG Forney stated that Cook Inlet is a high-priority re-survey area. A survey request has been jointly submitted by LTJG Forney and the Corps. LTJG Forney added that the local datum, rather than NAVD88, is still being used in most areas, especially for inundation modeling.

Capt. Pawlowski stated that the new Kotzebue chart will be essential to development of Kotzebue Sound.

Chair Wellslager asked about the possibility of bringing an NRT in to do surveys of potential port sites? Capt. Lowell replied agencies would be more likely to use a contractor, since NRTs are fully occupied in other areas.

Dr. Dionne asked whether drones could be used to collect elevation data. Vice Chair Perkins said that autonomous underwater vehicles are available from contractors, but the turbidity of the water would preclude the use of bathymetric LiDAR. Admiral Barbor stated that next generation LiDAR will perform better over turbid waters.

Admiral Barbor said that innovative ways to fund a coordinated CORS network are needed.

Dr. Jay commented that one ferry in British Columbia has been outfitted with an ADCP to gather current data.

Mr. Cusick commented that the National Park Service is willing to partner with NOAA. One collaborative opportunity between the NPS, NOAA and Alaska Energy Authority was considered but not pursued. Mr. Mayer commented that the National Academy study which led to IOCM legislation recommended a national registry of planned surveys and of desired survey areas. That could help with interagency coordination of surveys.

Ms. Miller suggested that, for future meetings, a brief summary of current and planned NOAA projects in the region in question would be helpful. This should take place on the first day so that the panel could put information about gaps in navigation services in context. Capt. Dempsey agreed that would be useful.

Dr. Sullivan stated she has been asked by the Administrator of NOAA to shepherd innovation within the agency. The real challenges Alaska presents could make the state a unique test bed for innovation. How might crowdsourcing data work? Are there more creative ways to develop talent, perhaps taking a nontraditional pathway?

Dr. Sullivan drew an analogy with the way African telecommunications leapfrogged over the landline stage to arrive all at once at mobile communications. The situation in Alaska might offer a similar opportunity to bypass more traditional development models. Dr. Jay added that the very first tide surveys in the world were crowdsourced, so to speak, in the 1830s by a scientist requesting tide data from missionary societies and others all over the British Empire.

Public Comment Period

There was no further public comment.

Adjournment
The meeting was adjourned at 4:56 p.m. Panel members were invited to dinner at Dr. and Mrs. Brigham's home in Eagle River, Alaska.

Thursday, May 24, 2012

The meeting was called to order at 8:28 a.m.

Overview of Alaskan Navigation Services and Concerns
Lt. Matt Forney, NOAA Navigation Manager for Alaska

LTJG Forney provided the panel with an overview of Alaska hydrographic and navigational issues and concerns, and NOAA's navigation services role in addressing these issues.
He began by saying that Alaska is generally divided into three regions: southeast, south central, and the rest. The southeast region is the most accessible and well-developed area. Tourism and the cruise industry are large economic drivers. NOAA is conducting an effort to collect 100 percent bottom coverage multibeam data in this area, which will support the cruise industry. There is also a large fishing fleet in the southeast.

The south central region hosts the Port of Alaska and the Valdez pipeline. Marine debris is a live issue along the Gulf of Alaska. When marine debris is identified, NOAA will notify the Coast Guard, and the Coast Guard will put out a Notice to Mariners to maintain safe navigation.

In the rest of Alaska, Unimak Pass and Dutch Harbor receive a large amount of shipping traffic. Dutch Harbor has been named a port of refuge for vessels in distress, but resources for receiving those vessels are scant. NOAA is working to put more resources, such as mooring buoys in place. The Bristol Bay fishery, Bering Strait, and Prudhoe Bay are also located in this region. Oil and gas drilling and exploration create much of the vessel traffic here. LTJG Forney noted that the Bering Strait, sometimes referred to as a "choke point", is actually ten nautical miles across on the U.S. side.

Mr. Carothers asked about the possibility of getting funding from oil companies? LTJG Forney said that Shell is still only in the exploration stage. NOAA will keep track of their progress. Chair Wellslager suggested that if new pipelines are added, their junction points might be places where a reference station could be established to supply geodetic information.

Ms. Ridgway asked what the status of bathymetry is in Lease Sale 193? LTJG Forney answered that NOAA has not surveyed that area, although the data-sharing agreement, if approved, will give NOAA access to oil company data.

Vice Chair Perkins asked whether Navy data can be declassified and incorporated in charts. Capt. Lowell said that most bathymetric data collected in U.S. waters by the Navy is provided to NOAA Coast Survey.

Multibeam Mapping in Alaska
Larry Mayer and Michelle Ridgway

Mr. Mayer showed the panel the IBCAO (International Bathymetric Chart of the Arctic Ocean) created by Mark Jacobson, which he described as the iconic map of the Arctic. IBCAO data comes from the Healy, from Japanese and Korean ships, and from crowdsourcing data gathered by fisherman around Iceland and Greenland. Russian data has not been contributed.

Ms. Ridgway commented that new multibeam data collected around the plate boundary in southeast Alaska has contributed significantly to managing fish species, and has led to the discovery of submerged sites formerly inhabited as part of early human migration to North America. Mr. Mayer also displayed the disputed Russian/U.S. and U.S./Canada maritime boundaries.

Mr. Carothers asked whether the boundaries depend on an agreed water depth, and Mr. Mayer said that the extended continental shelf boundary is determined by the location of the foot of the slope. The new mapping has therefore led to an extension of the U.S. extended continental shelf by hundreds of kilometers.

In response to a question from Mr. Cusick, Mr. Mayer said that statutory requirement for mapping the morphology of the shelf meant that little of the Beringian margin was mapped.

Stakeholder Breakout Sessions

The panel members then broke into four groups to hold discussions with stakeholders.

Stakeholder Debriefs to HSRP
Alaska Geospatial Framework

Mr. Cusick discussed the recommendations of the geospatial framework group.

- A state geodetic advisor working for NGS should be hired and stationed in Alaska to facilitate partnerships between federal agencies, the University of Alaska and private and native stakeholders.
- NOAA should make funding available for modernization of Alaska shoreline data.
- Expeditiously finish GRAV-D
- Incorporate GLSS into the CORS network and Online Position User Service (OPUS).
- Continue to modernize and densify Alaskan CORS network

Ms. Blackwell stated that the NGS state advisor program is co-sponsored by NGS and states, and cost is shared. In the next few years, NGS expects to move to a regional advisor program. Dr. Jay commented that the State of Alaska should step up and take a very active role here, since Alaska's needs are so large and federal resources limited.

Dr. Dionne suggested that describing NOAA's climate change work as a "war on climate change" might help get resources for this costly struggle.

Alaska Baseline Data Collection & Requirements for NOAA's Navigation Data

Capt. Lowell cautioned the panel that recommendations to the Administrator should not be too detailed, and should define the problem, rather than proposing specific solutions.

Vice Chair Perkins said that his group advocated a "Map it Once, Use it Many Times" approach. Understanding what assets are available makes leveraging them possible. A geospatial czar or geographic information officer might help coordination. Vice Chair Perkins asked how users can be involved with baseline data collection, perhaps through crowdsourcing. Ms. Miller suggested the proposed czar might serve as a one-stop regional data clearinghouse. The navigation manager post is also valuable here as well as in the Pacific.

Arctic Emerging Priorities

Capt. Glang stated that the Arctic Emerging Priorities group came up with 26 Arctic issues. One overarching theme was the need for surveys and data collection done in efficient and innovative ways and for infrastructure to make data available. Prevention and response to oil and hazardous materials spills in Arctic conditions was another theme. The full list of 26 issues can be found on the HSRP website.

Jobs and training specific to Arctic navigation were also discussed. Ms. Miller raised the question of what kind of metadata is needed to evaluate data. This is a relatively inexpensive value add which NOAA could provide.

Mr. Mayer suggested that the discussion is pointing towards the need for a frontier survey strategy, which might work differently from traditional surveys. Chair Wellslager reinforced the idea that imperfect data is better than no data.

Ms. Blackwell said that, if NOAA provides data at different levels of reliability, users should be informed of this, so that they are not misled about the expected accuracy of data. Admiral Barbor said that NGS's practice of having specific requirements for CORS data, but also allowing individual benchmark data to be accessible to the public (appropriately attributed as non-CORS) is a great example of how agencies can embrace all the available data, while keeping standards high. Dr. Jay added that the National Ocean Data Center similarly collects all available data.

Mr. Dasler urged that at least basic standards be maintained; otherwise, when two data sources conflict, figuring out which one is accurate can be more work than collecting the data. Capt. Glang noted that there are ways to identify the quality of data on charts. Chair Wellslager agreed that accurate metadata is needed so that users can make intelligent decisions on how to use data.

Dr. Brigham commented that, as sophisticated coastal and marine spatial planning strategies are being proposed at the higher levels of government, basic baseline data is lacking.

Dr. Jeffress stated that Arctic mapping data needs to be at a high standard, because it may end up being at issue in legal disputes, as it was in the Exxon Valdez case.

Alaska Tides & Currents

Admiral Barbor stated the key to addressing user needs is to recognize that users have different needs and can accept different standards.

- New technology and innovative use of old technology could help. For instance, there was discussion of an acoustic sled left on the ice to collect a winter's worth of tide data.
- Oil and shipping companies might be able to help, especially with transporting equipment to remote areas.
- AOOS could be a good central coordinating body for stakeholders. Outreach could be conducted at the Alaska Marine Science Symposium.
- Some stakeholders feel they should get more advance warning on Coast Survey's projects.
- Users should have access to vintage or non-standard data sets, with appropriate caveats.
- Surveying should be done with ellipsoidal references.
- Water level data can be captured from buoys with GPS devices. GPS or ADCP on ferries could provide water level and current data.

Mr. Carothers asked how long it takes to develop tidal predictions for an area. Mr. Edwing said it takes a minimum of 30 days. Mr. Carothers also wondered whether water level can be measured from satellites using InSAR.

Dr. Kudrna said that the group recognized that NOAA's budgets will be tight. Maybe oil lease agreements between industry and the state could require construction of observation platforms?

Dr. Kudrna conveyed a request from the NOAA Science Advisory Board. All NOAA FACA committees have been asked to submit no more than two pages of comment on the subject of enhancing NOAA's research portfolio. The Science Advisory Board will then brief Congress on the issue. The questions asked by the Board were:

- What are some of the best examples of NOAA research making a huge positive impact on the nation?
- What important research opportunities are being missed by NOAA and why?
- Have you uncovered problems with the management and organization of NOAA's research enterprise that could be solved?
- Is there R&D issues currently receiving substantial funding which might receive less investment, so that other endeavors could be better resourced?

Chair Wellslager decided to form a task force of three or four panel members to respond to those questions, looking at navigation services specifically. The Chair asked the task force to send recommendations to him by June 13th, and the recommendations will then come back for approval by the full panel. The Navigation Services offices will be available to provide advice, and the task force could talk to the Science Advisory Board as well. Ms. Miller pointed out that the line between research and management activities is sometimes hard to draw.

Dr. Jay, Dr. Dionne and Admiral Barbor volunteered for the task force, with Admiral Barbor as its Chair.

HSRP Recommendations Discussion
Matt Wellslager, HSRP Chair

Chair Wellslager asked the panel to think about how to hone down all the recommendations it heard during the meeting into three or four to include in the panel letter to the Administrator. Panel members threw out suggestions for how to formulate those recommendations.

- Different, innovative, new frontier strategy: reconsider what kind of standards need to be used to collect desperately needed data for the U.S. maritime Arctic.
- Ensuring data are discoverable and accessible: need to rank accuracy and precision of whatever data is provided.
- More accurate shoreline mapping.
- Surveys and related data collection should be done in efficient and innovative ways.

Dr. Jeffress suggested that the recommendations could be tied to the Five Most Wanted document. Ms. Blackwell commented that something could be learned from the Weather Service volunteer observation program.

Chair Wellslager stated that he and Vice Chair Perkins would formalize recommendations and send them to the rest of the panel. He asked the Chairs of the HSRP working groups to send him two or three highlights of their work to be included in the letter to the Administrator.

HSRP Consensus Building and Direction Setting
Matt Wellslager, HSRP Chair

The panel next debated potential locations for the next meeting. Capt. Glang reviewed past meeting locations. Members noted the need to economize on meeting costs, while still going where the stakeholders are.

Chair Wellslager suggested meeting in New Hampshire. Mr. Mayer and the University of New Hampshire's Center for Coastal and Ocean Mapping might be able to help educate the panel on regional issues.

Dr. Brigham pointed out few meetings have been held in the South and suggested the next meeting be held in New Orleans. The Port of New Orleans is very large, and meeting there would allow the panel to get an update on the aftermath of the Deepwater Horizon oil spill. The Naval Oceanographic Office is also near New Orleans. Dr. Dionne suggested that representatives of the New Orleans fishing industry and ferry operators could be asked to participate.

Chair Wellslager suggested holding the spring meeting in Silver Spring, Annapolis, or Baltimore. That will allow Congressional staffers to participate in the meeting.

After some discussion, Chair Wellslager made a motion to select New Orleans as the fall meeting location and the Silver Spring area as the spring (2013) location. If the New Orleans plan were rejected for budget reasons, the panel could go to Silver Spring in the fall. Mr. Carothers seconded the motion, and it was passed. Ms. Watson said she would contact panel members with potential dates.

Chair Wellslager then asked the panel to comment on the structure of this meeting's agenda. Were the stakeholder breakout sessions productive? Admiral Fields said she thought one on one discussion was beneficial, and Dr. Brigham agreed it was a positive experience.

Admiral Fields stated that, as a new member, she would have liked to have more of an introduction to the panel's work. Maybe the Five Most Wanted document and other background material could be sent to new members before their first meeting.

Dr. Brigham asked whether and how the breakout session recommendations will be shared with the public. Ms. Watson said that they will be cleaned up and posted on the HSRP website.

Dr. Kudrna requested contact information for the other panel members and NOAA staff. Ms. Watson stated that the HSRP website is being redone to make it more user-friendly. There will also be a SharePoint section, where panel members can communicate with each other in a blog-like format. Ms. Watson also promised to send members a full contact list.

Chair Wellslager asked new members to consider joining one of the working groups and inform him via email which one they plan to join.

Chair Wellslager then opened the meeting up to discussion of topics not related to Alaska.

Ms. Miller said she was concerned that the termination of funding for NRTs limits the ability of Coast Survey to respond flexibly. Capt. Lowell replied that it is not yet clear what the final budget will look like. It's possible that the budget will allow Coast Survey to continue using NRTs, but with decreased or no funding. Vice Chair Perkins said that he believes GAO removed the funding. Mr. Hanson added that, as individuals, panel members could help make the case for NRTs to stakeholder organizations.

The HSRP letter to the Administrator would not be able to change this year's budget, but could have an impact on future budget decisions. Admiral Barbor suggested that the letter could say that the elimination of NRTs is viewed with concern.

Dr. Brigham suggested that the panel's concerns over the depth of the Port of Anchorage might be included in the letter. Capt. Lowell again cautioned against making the recommendations in the letter too detailed. A recommendation for coordination with the new Chief of Engineers might be more consonant with the Administrator's role.

Chair Wellslager noted that this will be the final meeting for Capt. Lowell, and a new DFO will be appointed. He thanked Capt. Lowell for his exemplary service.

Capt. Lowell stated that the next Director of Coast Survey will serve as DFO. However, the Department of Commerce, recognizing the importance of Coast Survey, has decided that the next Director of Coast Survey will be a flag officer, which means a certain amount of administrative delay. Capt. Glang is now awaiting Senate confirmation and cannot act as DFO until that happens. Until then, Katie Ries will serve as Acting Director of Coast Survey. If there is no official Director of Coast Survey, someone else, perhaps Ms. Watson, will serve as DFO pro tem. Admiral Barbor suggested that the letter could include recognition of Capt. Lowell's service and acknowledgement of the fact that the rank of Director of Coast Survey has been elevated.

Dr. Brigham thanked LTJG Forney for pulling together local stakeholders for this meeting.

Public Comment Period

Michelle Ridgway, a marine biologist with Oceanus Alaska, commented on the value of NOAA data to her work. For example, NOAA multibeam backscatter data was used to study the habitat of king crab to help determine why their population is not recovering.

Ms. Ridgway suggested that NOAA try to access the Arctic multibeam data which has been collected by industry and by BOEM at the Department of Interior. The National Science Foundation (NSF) could also be encouraged to acquire its data in ways that would allow it to be incorporated in NOAA surveys.

Capt. Lowell suggested that an update on IOCM activities would be appropriate for the next meeting, especially because of the large number of new panel members. NOAA does work with NSF to make sure that their data is preserved and delivered in usable form. There is an active NSF program called Rolling Deck to Repository, which means that NSF ships are asked to collect multibeam data in any area of opportunity.

Mr. Dasler congratulated NOAA on setting the standard to collect backscatter information which is valuable to fisheries.

Adjournment

The meeting was adjourned at 4:21 p.m.

HSRP Voting Members in Attendance:

Matthew Wellslager, HSRP Chair	South Carolina Geodetic Survey
Scott R. Perkins, HSRP Vice Chair	T-Kartor U.S.A.
Rear Admiral Kenneth E. Barbor	U.S. Navy (retired), University of Southern Mississippi
Lawson W. Brigham, Ph.D.	Distinguished Professor of Geography and Arctic Policy, University of Alaska Fairbanks & Senior Fellow, Institute of the North
Jeffery J. Carothers	Fugro Consultants, Inc.
Captain Deborah Dempsey	Columbia River Bar Pilots
Michele Dionne, Ph.D.	Wells National Estuarine Research Reserve
Rear Admiral Evelyn Fields	NOAA Corps (retired)
William Hanson	Great Lakes Dredge & Dock Company
David A. Jay, Ph.D.	Professor, Portland State University
Gary Jeffress, Ph.D.	Professor of Geographic Information Science, Texas A&M University, Corpus Christi and Director of Conrad Blucher Institute for Surveying and Science
Frank Kudrna, Ph.D.	Kudrna & Associates, Ltd.
Joyce E. Miller	Joint Institute for Marine and Atmospheric Research, Research Corporation, University of Hawaii

HSRP Voting Members NOT in Attendance:

Stephen Carmel	Maersk Line Limited
Susan Shingledecker	BoatU.S.

HSRP Non-Voting Members in Attendance:

Juliana Blackwell	Director, National Geodetic Survey, NOAA
Richard Edwing	Director, Center for Operational Oceanographic Products and Services, NOAA
Larry Mayer	Center for Coastal and Ocean Mapping, University of New Hampshire

HSRP Designated Federal Official (DFO):

Captain John E. Lowell, Jr.	Director, Office of Coast Survey, NOAA

Alaska Regional Needs Stakeholder Panel:

Steve Boardman	Chief, Engineering Division, U.S. Army Corps of Engineers, Alaska District
Captain Dana Jensen	Alaska Marine Highway System
Captain Edward Page	Marine Exchange of Alaska
Mark Smith	Vitus Marine
Walt Tague	Crowley Tug & Towing

Alaska Multi-Mission Applications Stakeholder Panel:

Aimee Fish	National Weather Service
Bill Hazelton, Ph.D.	Professor of Geomatics, University of Alaska Anchorage
Tom Heinrichs	Director of GIS Network of Alaska at University of Alaska Fairbanks and Executive Committee for SDMI
Commander James Houck	Chief, Waterways Management Division, U.S. Coast Guard
Molly McCammon	Alaska Ocean Observing System
Michael O'Hare	Alaska Division of Homeland Security and Emergency Management

NOAA Staff Present:

Holly A. Bamford, Ph.D.	NOAA/NOS Assistant Administrator
LTJG Matt Forney	NOAA/OCS, Alaska Navigation Manager
Capt. Gerd Glang	NOAA/NOS
Amy Holman	NOAA Alaska
Bill Knight	NOAA West Coast and Alaska Tsunami Warning Center
Carven A. Scott	NWS/Alaska Region Headquarters
Kathryn D. Sullivan, Ph.D.	Assistant Secretary of Commerce for Environmental Observation and Prediction, Deputy Administrator and Acting Chief Scientist, NOAA
Kathy Watson	NOAA/HSRP Program Coordinator

Other Speakers and Attendees:

Carole Anderson	ADS-B Technologies
Alan Baldivies	Alaska Energy Authority
Larry Bischoff	Holland American Line
Ron Britton	Alaska Peninsula National Wildlife Refuge
Bret Christensen	U.S. Fish & Wildlife Service
Bill Creger	David Evans & Associates
Joel Cusick	National Park Service
Jon Dasler	David Evans & Associates
Anne Dollard	U.S. Army Corps of Engineers

Darcy Dugan	Alaska Ocean Observing System
Shannon Earl	Fugro Consultants
Kas Ebrahim	Fugro Consultants
John Gerhard	Woolpert Inc.
Chuck Gilbert	National Park Service
Pennelope Goforth	SeaCat Explorations
Stuart Greydanus	Port of Anchorage
Clifton Hebert	Witt Associates
Colleen Keane	Pacific Environment
Tom Lakosh	Public Interest Advocate for Oil Spill Prevention and Mitigation and Renewable Energy
Carol Lockhart	Woolpert, Inc.
Steve Miles	David Evans & Associates
Judy Miller	Brendan Environmental
Tom Newman	TerraSond
John Oswald	JOA Surveys
Bob Pawlowski	Office of Steve Senator Kevin Meyer and University of Alaska Anchorage (retired)
Jim Perkins	
Joel Reynolds	Western Alaska Landscape Conservation Cooperative
Michelle Ridgway	Oceanus Alaska and Alaska Deep Ocean Science Institute
Bob Strobe	National Park Service
Captain Michael Terminel	Edison Chouest
Schawna Thoma	Office of Senator Mark Begich
Mike Ziegerl	JOA Surveys