



HSRP Responses to Dr. Callender's 6 Questions, updated October 24, 2016

1. How does coastal intelligence--the foundational observations, models, and mapping--make coastal resilience better?

- A. With a new national recognition of the need for coastal resilience the need for NOAA's services that provide 'coastal intelligence' is even more important.
- B. NOAA Navigation Services has many core competencies that are critical for Coastal Intelligence and Coastal Resiliency. Data collected for safety of navigation, improving datum, etc. are already available for a wide variety of other uses. Perhaps concentrating on ease of access to existing and future OCS data would better support resilience.
- C. Core navigation services are important in and of themselves. Safety of navigation and national commerce are all supported by the foundational data (i.e. coastal intelligence) that OCS, NGS, and COOPS collect. Trying to "shoehorn" everything that NOS does under Coastal Intelligence and Resilience loses sight of some of NOS' most critical mandates and most important economic and national roles. Since NOAA is part of DOC, it would seem to be logical to emphasize and celebrate how NOS supports commerce, transportation, and other DOC-pertinent issues, rather than try to make them a little-mentioned subset of Coastal Intelligence and Resilience. The NOS RoadMap does not emphasize Navigation Services as a stand-alone entity. There apparently is no NOS comprehensive Strategic Plan that encompasses all NOS activities.
- D. With the 2016 election, leadership at NOAA will almost certainly change, and experience shows that current RoadMaps and Plans are usually changed with a new administration. Like "Ecosystem-based Management" in an earlier administration, the terms "Coastal Intelligence" and "Coastal Resilience" might be changed to some other phrase but the need for information to increase coastal resilience will not disappear.

2. How do we leverage NOS foundational data moving forward?

- A. Make it more easily accessible and understandable to the new users in the coastal resilience areas.
- B. Several issues associated with implementation of Grav-D were noted at the Coastal Intelligence Working Group meeting in the Spring, 2015 that are relevant to coastal resilience. Here is a list of concerns:
 - a. Where to go first?
 - b. Would coastal communities be first
 - c. What regions are at risk?
 - d. Who is willing/ready to partner and fund?
 - e. Who needs it most?
 - f. Where is it easiest to install?
 - g. Places at most risk?
 - h. Timing (e.g. Sandy supplemental, weather)?
 - i. When can you go there?
 - j. Safety features?

- k. What do we want to sell?
- l. What do people want to buy?

3. What criteria should we consider in determining national charting priorities, and balancing the needs of the maritime users with the needs for coastal bathymetry?

- A. Clearly OCS currently has criteria for prioritizing surveys including: commercial traffic volume; adequacy of existing charts (including age of survey) compelling requests; extensive petroleum/HAZMAT transport; underkeel clearance (<http://www.nauticalcharts.noaa.gov/hsd/NHSP.htm>).
- B. Need for data for environmental issues should be included in the prioritization of hydrographic survey needs, particularly if the requested surveys are in the vicinity of planned hydrographic surveys in very remote areas. Rather than penalizing OCS for doing accessory surveys, OCS should be given credit for collaboration and fulfilling outside priorities, particularly if they can be “piggy-backed” on higher priority surveys.
- C. Inclusion of areas that are of interest for recreational boaters and fishermen is also a consideration.
- D. Data needs for environmental issues like inundation models may (we stress ‘may’) require less accurate data than that needed for navigation. Could there be some kind of two tier approach to data acquisition related to non-navigational charting.

4. What criteria should we consider to determine charting priorities within the U.S. Arctic, and how these criteria might be balanced among our priorities in Alaska and in the other U.S. regions that our programs serve?

The following is directly from the meeting of the Emerging Arctic Priorities Working Group Report, Sept. 2015.

- A. The HSRP judges that there are no adequate criteria that can compare the requirements for hydrography/charting in the U.S. maritime Arctic with those requirements for the rest of the Nation, for example, with such ports as Charleston, New York and Los Angeles/Long Beach. Such criteria would have to weigh the current economic viability of U.S. ports and coastal areas with the potential for long-term strategic economic benefits of a frontier area. Such criteria would also have to compare the safety and security concerns of this remote region with that of southern ports. Perhaps safety and national security concerns/interests in Alaska could trump economic issues, but it is unlikely in our judgment that hydrography/charting in the U.S. maritime Arctic would have a higher priority or 'compete' with the needs of America's vital ports and harbors linked to international and domestic trade. The offshore leasing program in Arctic Alaska has provided the Federal Government a unique challenge regarding closing the huge gap in required marine infrastructure for this frontier region. And, importantly, by activating the offshore leases, the USG has assumed (in full or in part) the responsibilities for providing 4 adequate hydrography/charting in Arctic Alaska to attain a high level of safe navigation, marine safety and environmental protection in this sensitive marine region. NOAA (NOS) has done a very credible job of initiating surveys to fulfill these requirements without additional funding. NOS re-prioritized more than \$18M for Arctic hydrography despite a shrinking NOS budget. There is an obvious need for additional (new) funding for the region where

the USG has already leased areas of the offshore and where industrial activity is taking place in summer. The emerging U.S. maritime Arctic requires a budget line item on the NOAA/NOS budget for new funding of Arctic hydrography/charting. Such funding would appropriately align these efforts with the U.S. National Strategy for the Arctic Region, signed by the President in May 2013, which places an emphasis on 'Chart the Arctic region.' NOAA's internal Arctic strategy should also identify hydrography (and geoid models and data) and charting as the highest priority Arctic items in its annual budget request.

HSRP Recommendations:

- NOAA should seek additional funding (minimum \$20M annually) in a Congressional line item budget for Arctic hydrography, charting and associated geoid observations consistent with the National Strategy for the Arctic Region.
- NOAA's internal Arctic Strategy should place hydrography & charting of the U.S. maritime Arctic among the highest priority requirements for program execution, consistent with U.S. national Arctic strategies and implementation plans.

B. To establish a priority for hydrography/charting within the U.S. maritime Arctic NOS should consider the following marine operations and uses: the federal offshore lease sites and surrounding approaches; the approaches to Kivalina and the Red Dog Mine complex; national security and maritime law enforcements requirements; coastal community (summer) supply operations (tug-barge operations); summer supply operations to Prudhoe Bay; fisheries needs in the Bering Sea; future emerging Arctic port areas; and the identification and designation of places of refuge. Arctic ship traffic density data derived from AIS (source: the Marine Exchange of Alaska) are being used as a framework or baseline to determine general flow patterns and identify potential areas requiring increased hydrographic coverage. These multiple uses and requirements may or may not overlap with transit lanes being considered. National security requirements may also be significant, but HSRP is not aware of the details of such requirements. Projections of future Arctic Ocean commercial traffic are difficult to determine. However, projections of the traffic related to Arctic offshore development (correlated with the number of exploratory drilling rigs) are available. HSRP believes that the use of a risk-based methodology by NOS in assessing the adequacy of Arctic charting products is a significant key step forward in evaluating the hydrographic needs of this vast area. CMTS should facilitate the gathering of interagency Arctic hydrographic requirements and work closely with the Coast Guard and NOAA (NOS) to identify safe and secure places of refuge in the region.

HSRP Recommendations:

- National security requirements for hydrography & charting of the U.S. maritime Arctic in light of a changing Arctic should be refined and provided to NOAA/NOS for integration with other marine uses and for planning future surveys; CMTS could be used a facilitator to obtain DOD (USN) and DHS (USCG) critical national security requirements for these requirements.
- NOAA/NOS should seek a better understanding of the seasonal traffic levels and charting requirements of coastal tug-barge operations used primarily for resupply of coastal communities and the North Slope within the U.S. maritime Arctic.

- NOAA/NOS should seek, perhaps from CMTS, a better understanding of the hydrography & charting requirements for offshore oil and gas exploration (inside and outside the federal leased areas) and a priority list of the places or harbors of refuge

5. What are the ways in which our Navigation, Observing, and Positioning programs are good at engaging stakeholders? How can NOAA better connect and strengthen our relationships with these stakeholders?

- A. Navigation Services web presence has improved greatly over the past 5 years. OCS, NGS, and COOPS have made excellent strides in getting more information out to the public.
- B. Making data easily available (e.g. COOPS web sites for tidal, inundation, and storm data) is an excellent way to engage stakeholders.
- C. The OCS Navigation Response Teams are an incredible resource for showing the values of Navigation Services in times of crises. They also perform valuable routine surveys when not engaged in emergency response. The NRT's should be well supported and perhaps expanded. NRT and ship services in times of crises should be widely advertised.
- D. Continued expansion of blogs and websites, Facebook and Twitter presence is very important in the age of social media.
- E. NOAA overall does not do a good job of making sure the public knows what NOAA navigation services are and what services they provide.

6. What are the criteria we need to consider to select the next 20 ports for precise navigation? How should we prioritize these?

The following is directly from the HSRP Coastal Intelligence Working Group, Spring 2015 meeting, Long Beach, CA.

- A. Evaluate the USCG Ports and Waterways Safety Assessment (PAWSA) methodology as a starting point. (<http://www.navcen.uscg.gov/?pageName=pawsaMain>).

Waterway Risk Model					
Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
Deep Draft Vessel Quality	Volume of Commercial Traffic	Winds	Visibility Impediments	Personnel Injuries	Health and Safety
Shallow Draft Vessel Quality	Volume of Small Craft Traffic	Water Movement	Dimensions	Petroleum Discharge	Environmental
Commercial Fishing Vessel Quality	Traffic Mix	Visibility Restrictions	Bottom Type	Hazardous Materials Release	Aquatic Resources
Small Craft Quality	Congestion	Obstructions	Configuration	Mobility	Economic

1.

B. Evaluate USACE cost-benefit analysis.

C. Other factors that are not in the PAWSA model

- Who is willing/ready to partner?
- Who needs it most? Places at most risk? (Port expansion?)
- Where is it easiest to install?
- Timing – recent incidents/disasters. Seasonal?
- What does existing infrastructure look like? Are observations and models, and high resolution bathymetry available?
- Economic impacts
- Stakeholder demand signal
- How to market the product?
 - Need to develop new marketing model for Precision Navigation. Look at Grav-D and how it has been/is being implemented.
 - Working group notes that the PORTS marketing model has not been a successful one.
 - If a commercial entity opts to buy this capability using only private funds,
 - Can/should/must the data be available to the public?
 - Can the commercial entity sell the data?